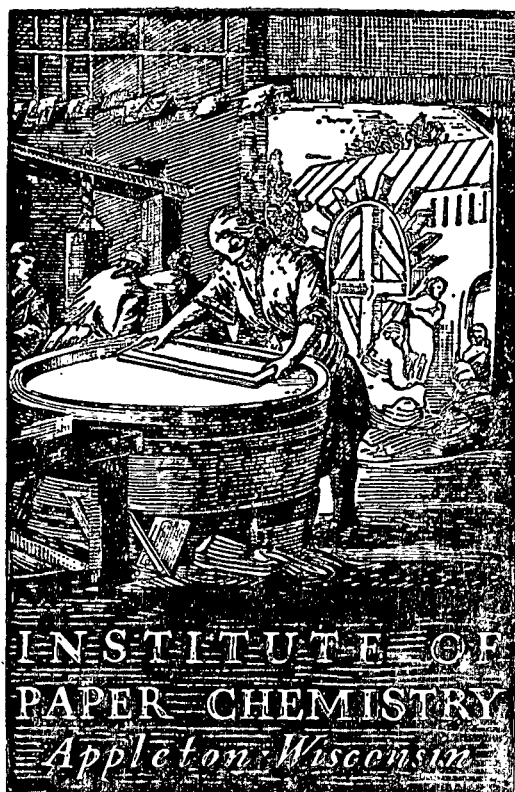




**BIBLIOGRAPHY
ON
THE MANUFACTURE AND USES
OF PAPER BAGS AND SACKS**

Project 2033

Progress Report Sixteen

to

**MULTIWALL SHIPPING SACK
PAPER MANUFACTURERS**

May, 1960

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

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PREFACE

This bibliography is a supplement to Progress Report Seven on the manufacture and uses of paper bags and sacks. The Abstract Bulletin of The Institute of Paper Chemistry and Chemical Abstracts have been searched through February, 1960, and Packaging Abstracts through December, 1959.

1. Abramson, Alvin A. Paper bags. U. S. patent 2,817,474(Dec. 24, 1957); B.I.P.C. 28:1020.

A reinforced paper bag having a body of rectangular cross section is provided with overlapping seams on each end wall and a separate panel of stiff cardboard attached to the bottom. Food cans and other relatively heavy articles may be safely transported in the bag.

2. Adhesives for Siebler bag-closing machines. Verpackungs Rundschau 9, no. 5:332(May, 1958); Packaging Abstr. 15:568.

The adhesives are for models SII, SFH and SPH. They are synthetic resins which give rapid adhesion so that machine capacity is almost doubled. Bags 10 cm. wide can be closed at the rate of 100 per minute. The adhesives can be so varied in composition, that with a suitable paper, a bag can be reclosed after opening.

3. Air controls move bags of sugar through dryer to wrapper. Packaging News, London 5, no. 12:6(Dec., 1958); Packaging Abstr. 16:220.

A packaging unit by Brecknell, Dolman & Rogers Ltd. which fills, seals, dries and batch wraps 1 and 2 lb. bags of sugar automatically at a rate of 120 per min. uses pneumatic equipment by Maxam Power Ltd., Cambourne, Cornwall, to control movement of the bags of sugar. The whole system is described.

4. Air-actuated valve bag packer. Modern Packaging 31, no. 12:140 (Aug., 1958); Packaging Abstr. 15:896.

This Air-Pac machine by the E. D. Coddington Mfg. Co., Milwaukee, utilizes small amounts of low-pressure air to fill standard valve bags with powdery or free-flowing materials. Dispersion of the air through an air dome in the machine's hopper activates the material to be packed, causing it to flow through a spout. It fills valve bags of 20 to 100 lb. capacity.

5. Air-powered bag stitcher is world's first. Packaging News, Sept., 1959:45; Packaging Abstr. 16:837.

The sack closing time is cut to two seconds by air operation. The unit is portable.

6. Announce new method of bag closure. Ind. Packaging 5, no. 1:8 (Jan., 1959); Packaging Abstr. 16:312.

For products requiring maximum moisture protection, the Moistite system and unit by the Chase Bag Co. use a special tape, adhesive and method of application. The tape is applied at such high speed that heat will not scorch the paper or melt a polyethylene-coated inner sheet. The faster it is applied, the better Moistite operates. A schematic diagram shows how the unit adapts to an existing conveyor, bag-filling unit and other equipment.

7. Annual Packing Number. Paper Container, entire issue (1958); B.I.P.C. 28:1609.

Descriptions are given of numerous recent applications of paper bags, cartons, setup boxes, folding boxes, and other containers. The use of polyethylene carton liners and tear-tape openers for cartons are seen as two of the most significant developments in the field during the past year.

8. Applies header labels to bags. Packaging Rev. 78, no. 142:70 (June, 1958); Packaging Abstr. 15:570.

A pedal-operated machine for sealing bags, with 'Imatac' Heatfix labels taken from a continuous roll, operates at 30 bags per minute. The standard model is adjustable for bags between 3 in. and 4 in. wide, but units to seal bags above or below these widths can be made.

9. Arenco have new bag filler. Packaging Rev. 78, no. 140:52 (April, 1958); Packaging Abstr. 15:441.

The new VUF filler dispenses with the need for an operator per machine. All that is necessary is to replenish the bag hopper. A gripper arm and fingers take the bag from the stack, open it, and present it to the filling orifice. It can be adapted to suit various weighing machines, and when serving, say, two such units, it automatically actuates the release of the charge. It can accept a wide range of products from flaked cereals to biscuits.

10. Aroma-proof bags with external lacquering. Neue Verpackung 10, no. 11:779 (Nov., 1957); Packaging Abstr. 15:35.

The bags are made by the Northwest-Papierwerk Karl Götze, of paper coated with 'Feikopal'. They are water-vaporproof with a highly glossy appearance and are suitable for such products as coffee. The coating can also be applied to cellulose film or vegetable parchment and with the addition of gold or silver resembles aluminum foil in appearance. The coating is rub-resistant.

11. Aust, Paul C. Apparatus for filling powdered or granular materials into containers. U. S. patent 2,905,362 (Sept. 22, 1959); A.B.I.P.C. 30:687.

A machine which mixes powdered or granular material with air in a tank so as to cause entraining of the material in the air, and which then loads the air-borne material into bags, is designed to enhance the accuracy of the amount of material loaded into each bag.

12. Automatic bagging replaces hand-wrapping operation. Packaging Parade 27, no. 3:70-2 (March, 1959); A.B.I.P.C. 29:1804.

To expedite the shipment of some 25 million comic books every month from its Poughkeepsie, N. Y. plant, the Western Printing and Lithographing Co. has recently installed machinery that automatically packages 100 comic books in kraft paper bags at the rate of 800 copies/min.

13. Automatic multiwall-bag feeder. Modern Packaging 32, no. 12:140 (Aug., 1959); Packaging Abstr. 16:766.

The Auto-Mac open-mouth bag feeder operates at speeds of more than 16 bags (of 50 lb. and greater capacity) per min. The magazine holds a large supply of bags in vertical position. A switch activates the cycling operation and individual controls regulate speed. After the product is discharged, the filled bag is delivered automatically along a conveyor belt to the closing station.

14. Automatic tuck-in sleeve machine developed by Coty. Paper Film and Foil Converter 32, no. 5:54 (May, 1958); Packaging Abstr. 15:578.

The tuck-in sleeve is a pasted valve supplement which presents a means of filling the multiwall bag and after filling, becomes an effective seal. It is pasted, formed, cut off, delivered to, and inserted in the valve while the bottomer is in operation.

15. Automatic-feed bag printer. Ind. Packaging 4, no. 7:37 (July, 1958); Packaging Abstr. 15:798.

The unit is for inplant imprinting of multiwall bags, and handles 20 per min.

16. Bag closer sews paper bags. Packaging Parade 27, no. 4:80 (April, 1959); Packaging Abstr. 16:467.

Series BA is designed so that the bags themselves start the sewing operation when they reach the sewing head. After the sewing is completed the thread is cut automatically and the sewing action stops as the conveyor belt continues to move the bag.

17. Bag closing made simple. Materials Handling Eng. 14, no. 9:171-2 (June, 1959); Packaging Abstr. 16:677.

The Style 80600 HZ closer applies a strip of pressure-sensitive tape over a sewn closure. The tape may be from 2-1/8 to 1-1/2 in. wide.

18. Bag feeder opens bags for filling. Packaging Parade 27, no. 5:72 (May, 1959); Packaging Abstr. 16:577.

The machine feeds, opens and presents open bags to any type of scale filler. It is interlocked with and controlled by the filler. A wide range of bag sizes may be handled by the machine, some sizes requiring change parts and others merely altered settings.

19. Bag making machines. Paper Box Bag Maker, Ann. Rev. no., 1958: 27; Packaging Abstr. 15:584.

The CX 1294 by Windmüller & Hölscher makes flat and satchel lock seam bags, with flush-cut tops or with flaps. Carding and punching units form

part of the equipment so that hand-grips can be formed. The punching unit is also used to make round holes when producing record covers.

20. Bag neck taping. Packaging Rev. 78, no. 143:54(July, 1958); Prod. Packaging 4, no. 3:29(July, 1958); Packaging Abstr. 15:692.

A new automatic bag closer by the Minnesota Mining & Mfg. Co. Ltd, Wigmore St., London, W1, closes up to 80 bags of produce per minute with pressure-sensitive tape. It applies a double-flag type seal from two rolls of tape. 'Scotch Boy' no. 246 crepe paper tape is used for this purpose.

21. Bag packaging machine. Emball. mod. 3, no. 22:21(Dec., 1957); Packaging Abstr. 15:897.

The machine packs rectangular packets, bags, cans, etc. into paper sacks.

22. Bag sealing with heat-fix header label. Packaging Digest 3, no. 6:94(June, 1958); Packaging Abstr. 16:395.

The machine is designed for sealing bags by heat-fixing a Samuel Jones 'Imatac' label. The standard model is adjustable to seal bags between 3 and 4 in. wide, but a model for sealing bags above or below these widths can be made to meet individual requirements. The output is approximately 30 bags per min.

23. Bag-closing machine. Modern Packaging 31, no. 9:234(May, 1958); Packaging Abstr. 15:578.

Model 171 (International Paper Co.) is designed primarily for closing open-mouth multiwall paper bags. A conveyor can be adjusted vertically to accommodate a wide range of bag sizes.

24. Bagging machines. Prod. Packaging 4, no. 4:11(Aug., 1958); Packaging Abstr. 15:787.

A potato bagging machine by Lockwood Graders has a range of 1/2 to 10 lb. at the rate of about 5 packs per min. (15 cwt. per hr.). All bags are adjustable and the unit is easily moved on wheels fitted to the front. A new Gatineau bulk bagger handles bulk bags up to 112 lb. at a rate of 3 ton per hr. It will weigh from 28 lb. upwards of potatoes, carrots, grain, and coal.

25. Bags for rice--new paper use. Pulp & Paper Int. 1, no. 4:19 (April, 1959); Packaging Abstr. 16:433.

A preliminary test of kraft paper containers for rice has been made successfully by the Japanese government. It is disclosed that a newly developed bag saves loss in transportation from refining mills to consumers and no unhulled rice and dust are mixed with the contents as in straw bags.

26. Bahamas Paper Co. Ltd. Carrier bag. British patent 797,755(1958); Packaging Abstr. 15:750.

In this carrier bag, e.g., of paper, opposite faces adjacent the mouth are retained together by tongues of flaps cut from such faces.

27. A baler-bagger for soft goods. Paper Packs, March, 1959:41; Packaging Abstr. 16:391.

Four models of this unit by the American Tele-Sonic Packaging Corp., accommodate bags ranging from 2 to 22 in. in width. The bags may be of polyethylene, paper, cellulose film, kraft paper or Mylar. The unit is semiautomatic and is capable of speeds of 500 to 1,000 packages per hr.

28. Bauder, Ulrich, and Hornsteiner, Maximillian. Apparatus for manufacturing heat-sealed flat bags and for pulling such bags over mandrels of square section. U. S. patent 2,854,899(Oct. 7, 1958); A.B.I.P.C. 29:756.

An apparatus for manufacturing flat bags of waxed paper, thermoplastically coated paper, or the like by longitudinally folding the bag-forming material and then heat sealing appropriate seams is provided with means to pull a flat blank so formed over a folding mandrel which shapes the flat bag into a square or rectangular cross section. The bags are suitable for use as such or as liners for outer containers.

29. Belt conveyor bag closer. Ind. Packaging 4, no. 8:34(Aug., 1958); Packaging Abstr. 15:900.

Model B-5 is a belt conveyor sewing unit. A two-stage switch operation is controlled by foot pressure by the operator. The first stage starts the movement of the conveyor belt to the sewing head; the second stage starts the sewing operation.

30. Bemis Bro. Bag. Co. Bag apparatus. U. S. patent 2,830,295(April 15, 1958); Packaging Abstr. 16:234.

Apparatus for stapling the draw cords of filled draw cord bags is claimed.

31. Bemis Bro. Bag Co. introduces improved bag packer. Food Field Reprtr. 27, no. 4:42(Feb. 16, 1959); Packaging Abstr. 16:310.

The Jumbo Packer-Ette, designed to improve the packaging speed of low-density products, fills and weighs up to eight 100 lb. bags per min. The machine packs cracker meal, poultry feeds and other feeds.

32. Berghgracht, M. Paper, etc., bags. British patents 785,821-2 (1958); Packaging Abstr. 15:113.

In British patent 785,821, a flat-bottomed bag suitable for automatic erection is formed from plastic-impregnated paper, etc., scored at the folds.

In British patent 785,822, a mandrel on which tubular bag material is formed is tapered at the end, where rollers produce side folds in the material.

33. Bibby & Baron Ltd. Bags. British patent 801,013(1958); Packaging Abstr. 15:961.

Opposed trays form a package for stacked paper, etc., bags, e.g. for use in an automatic packing machine.

34. Bibby & Baron Ltd. Carrier bags. British patent 817,606(Aug. 6, 1959); Packaging Abstr. 16:864.

Carrier bags, e.g., for drapery purchases, are made from a paper length with continuous stuck-on reinforcement along an edge later forming the bag mouths.

35. Bibby & Baron Ltd. Paper bag. British patent 817,161(July 22, 1959); Packaging Abstr. 16:864.

The bag has an inserted paper strip, e.g., for decorative or advertising purposes, which is detachably held by folding with the bag bottom.

36. Bily, Thomas S. Tie bag. Canadian patent 554,802(March 25, 1958); B.I.P.C. 28:1430.

A windowed paper bag has a wire hanger attachment at the top, the lower part of the hanger being adapted to support a tie hanging down within the bag.

37. Bodolay, Stephen M., and Bodolay, William A. Machine for making bags from a continuous web. U. S. patent 2,877,609(March 17, 1959); A.B.I.P.C. 29:1700.

The machine provided forms bags or pouches from a continuous web of paper or other suitable material and fills and seals them while the bags are still in continuous form, then severs the continuous length of filled bags to provide separate bags.

38. Bonar & Co. (Canada) Ltd. Bags. British patent 804,559(1958); Packaging Abstr. 16:109.

A tear strip is described for longitudinally opening a bellows folded multiply paper bag suitable for batts of builders' insulating material.

39. Bowater V-trough sack-closer. Packaging 41, no. 350:206(Sept., 1959); Packaging Abstr. 16:837.

This sack-stitching and sealing machine has a V-trough transporting conveyor which facilitates the handling of heavily loaded multiwall sacks. Two models can be supplied. One provides for a plain stitched closure: the other for a crepe-tape bound seal.

40. Brace, George A. Disposable filter bag for suction cleaners. U. S. patent 2,864,462(Dec. 16, 1958); A.B.I.P.C. 29:1227.

A disposable filter bag for vacuum cleaners comprises a paper bag closed at both ends and having incorporated into its construction a combination mounting plate and valve unit.

41. Brace, George A. Rectangular filter bags. U. S. patent 2,832,433 (April 29, 1958); B.I.P.C. 28:1547.

A paper filter bag for use in vacuum cleaners is fabricated from a pre-formed and precreased blank into a flat-folded assembly which can be connected as such to the vacuum cleaner, the operation of the cleaner then being effective to erect the bag.

42. Brady, Charles V. Bag. U. S. patent 2,889,979(June 9, 1959); A.B.I.P.C. 30:106.

Various improvements are made in a multi-ply paper valve bag of the type having a pasted end closure, in which the valve is narrower than the width of the pasted closure at the valve end of the bag.

43. Brady, Charles V., and Ottinger, August F. Bag. U. S. patent 2,870,955(Jan. 27, 1959); A.B.I.P.C. 29:1391.

A multi-ply paper bag having a stitched end closure is provided with a cutout portion in at least one, but not all, of the plies at one end of the stitching so that a tear may be easily started and the bag then completely torn open along the line of needle holes formed by the stitching.

44. Brady, Charles V., and Williams, Russell J. Apparatus for and method of making bags. U. S. patent 2,857,826(Oct. 28, 1958); Canadian patent 584,114(Sept. 29, 1959); A.B.I.P.C. 29:905; 30:692.

A flat nongusseted multi-ply bag with diamond-shaped bottom is constructed so as to facilitate the tucking in of the sides after the bag has been filled and before it is closed.

45. Brown, Justin W. Apparatus and process for filling bags. U. S. patent 2,853,105(Sept. 23, 1958); A.B.I.P.C. 29:775.

A machine for filling bags with pulverized material, such as cement or fertilizer, is provided with a resiliently extensible bag-filling spout constructed so that the filled bag may be lowered to the discharge conveyor without loss of the material being packaged.

46. Browning, Randolph M. Apparatus for manufacturing bag tubes. U. S. patent 2,897,730(Aug. 4, 1959); A.B.I.P.C. 30:532.

A machine for manufacturing multi-ply paper bags, wherein several paper webs--one of which carries a preprinted series of impressions--are superposed,

certain operations are performed on the assembly, the assembly is formed into a tube, and further operations are performed on the tube, is provided with control means permitting the automatic phasing and co-ordination of the successive series of operations.

47. Browning, Randolph M., and Lee, Harry E. Apparatus for making a multi-ply valve bag having an extended intermediate valve ply. U. S. patent 2,818,003(Dec. 31, 1957); B.I.P.C. 28:1181.

Machines for making multi-ply paper bags are provided with a mechanism for forming an extended flap in an intermediate ply at the corner of the bag tube.

48. Broyles, Horace N., Evans, George W., Pavoni, Paul, and Kindel, William H. Packing apparatus. U. S. patent 2,850,857(Sept. 9, 1958); A.B.I.P.C. 29:629.

The machine compresses a mattress and inserts it, while compressed, into a paper bag of a size slightly small than the mattress in uncompressed condition.

49. Burroughs, Edwin E. Bag bottomer. Canadian patent 574,739(April 28, 1959); A.B.I.P.C. 30:262.

A machine for automatically forming the bottom of a multi-ply bag is modified so as to produce bags at a high rate of speed and so as to permit positive control of each bag as it is moved from one station to the next.

50. Burroughs, Edwin E. Scoring apparatus. U. S. patent 2,837,012 (June 3, 1958); A.B.I.P.C. 29:131.

Paper-bag tubes are conveyed past a scoring station where the co-operating action of groove-and-blade scoring bars forms bottom-defining score lines transversely of the moving tubes.

51. C & H sugar. Consumer Packaging 27, no. 8:72-5(Aug., 1959); A.B.I.P.C. 30:767.

The package lines and machinery at the Crockett plant of the California and Hawaiian Sugar Refining Corp. are described. Packaged consumer items consist of 8 kinds of sugar packaged in a variety of cartons, paper pockets, and paper bags of more than a dozen different shapes or sizes.

52. Campins, Frank C., and Siegel, Daniel. Analyzing the adhesion operation. Package Eng. 3, no. 3:34-6, 49-51, 54(March, 1958); B.I.P.C. 28:1465.

The causes of adhesion difficulties in various packaging and converting operations are often elusive. In tracking them down, it is necessary to trace the materials involved back through a long heritage of accumulated

events. This procedure is applied to several case histories involving failure of multi-ply bag seams, corrosion of foil laminated to paper, and adhesion failure of foil-paper laminates.

53. Capell, Richard L. Bag filling and weighing apparatus. U. S. patent 2,817,488(Dec. 24, 1957); B.I.P.C. 28:1041.

The apparatus fills valve bags of various sizes with granular materials with minimum weight variations between bags. Spillage and flushing are minimized by the use of solenoid-operated valves and a double-flight screw-type feeding mechanism.

54. Carnes, Sheldon Y., and Searle, Robert F. Supplemental sleeve for multiwall gusseted valve bag. U. S. patent 2,838,225(June 10, 1958); A.B.I.P.C. 29:125.

A multi-ply paper gusseted valve bag, particularly for packaging finely divided pulverulent materials, is provided with a supplemental sheet of paper so constructed and positioned in the valve that it supplements the valving action and facilitates the filling and sealing.

55. Carter, Clarence F. Filling machine for open mouth bags. Canadian patent 583,919(Sept. 29, 1959); A.B.I.P.C. 30:837.

In the bag-filling machine provided, a paper bag is supported in association with a bag-filling spout, and a vacuum is drawn through the walls of the bag to fill the bag with powdered material passing through the filling spout.

56. Central States--a really 'flexible' converter. Paper, Film and Foil Converter 32, no. 9:30-3(Sept., 1958); A.B.I.P.C. 29:815.

The numerous products of Central States Paper and Bag Co., St. Louis include such diverse items as bags for packaging candy, shirts, luggage, cans, and giblets; drum and case liners; waxed and treated papers; custom-made containers; and disposable paper dresses.

57. Checkweigher for cases and bags. Modern Packaging 31, no. 9:244 (May, 1958); Packaging Abstr. 15:603.

The Selectrol Model 1250 weighs items in a range of 20 to 100 lb. Weighing speeds are 30 per minute. The cases or bags are weighed in motion.

58. Chemicals bulge the multiwall bag market. Chem. Week 83, no. 7: 33-4, 36(Aug. 16, 1958); A.B.I.P.C. 29:684.

Production of paper for multi-ply paper bags will reach an estimated total of 850,000 tons in 1958, a slight decrease from the previous year. The decrease is primarily due to reduced tonnage shipments of fertilizer and building materials, to the broad industry trend (now possibly tapering off) toward bulk shipments, and to the buildup of large container inventories

in the latter part of 1957 in anticipation of a paper price rise. Of the bags produced this year, approximately 36% will be used in shipping chemicals, fertilizers, and drugs; about 35% for agricultural and food shipments; about 19% for building materials; 8% for minerals; and 2% for miscellaneous uses. Increased consumption of multi-ply bags in the second half of 1958 has been met by the industry with the opening or construction of two new plants and two new product and development laboratories.

59. Clay, Calvin M. Self-closing bag. U. S. patent 2,855,136 (Oct. 7, 1958); Canadian patent 579,525 (July 14, 1959); A.B.I.P.C. 29:756; 30:409.

In a bag which is designed to be filled by means of a spout or nozzle inserted through a valve which subsequently is closed by the pressure of the bag contents when the bag is tipped, the valve spout is lengthened and its bottom opening is inclined from the usual horizontal position in order to eliminate leakage during handling of the filled bag.

60. Clothing packed in paper sacks. Packaging Rev. 79; no. 153:88 (May, 1959); Packaging News 6, no. 5:37 (May, 1959); Packaging Abstr. 16: 522.

Cotton clothing, such as overalls, jeans, etc., is being successfully packaged in Scrimtex reinforced kraft paper sacks made by William Palfrey Ltd. The garments are compacted in a hydraulic press into a squared-off shape. The sacks have perforations to allow air to escape. The garments are slid through a metal chute, which maintains their squared shape, and are pressed down into the sack. Two cords are so threaded that they can be taken down and tied round the garments.

61. Coal merchants deliver fuel sealed in small paper sacks. Packaging News 6, no. 2:1 (Feb., 1959); Packaging Abstr. 16:303.

The 2 and 3-ply sacks, which incorporate wet-strengthened and bitumenized kraft, hold 28 or 56 lb. of coal or coke and are made by Medway Paper Sacks Ltd. Potato baggers can be adapted for the filling operation. The bags are closed by a sewing unit.

62. Combi (web-fed) block-bottom bag-making machine. Graph. Neuh.-Fachkartei 9, no. 10:9-10 (April 1, 1958); Packaging Abstr. 15:584.

This bagmaking machine can be used for the production of cellulose and greaseproof paper bags, as well as plain and lined block-bottom bags for the packaging of coffee, tea, cocoa and flour. The bag is folded at the side and has a rectangular base and the filled package stands upright like a carton. The Combi model can be used for one-walled transparent bags.

63. Creped adhesive tape folds over bag mouth to seal polythene and paper. Packaging News, London 5, no. 10:9-10(Oct., 1958); Packaging Abstr. 16:64.

The Sticla machine by the Thames Sack & Bag Co. Ltd, 28 City Road, London, EC1, effects a satisfactory seal on bags up to 56 lb. A length of nylon cord can be sealed inside the strip of paper to rip the bag open. Drop tests with 10, 15, and 56 lb. bags indicate that a polyethylene or paper sack will split before the seal is damaged.

64. Cropley, William D. Disposable paper filter bag. Canadian patent 559,308(June 24, 1958); A.B.I.P.C. 29:125.

This is identical with U. S. patent 2,751,041[see Progress Report Seven, Project 2033, Abstr. no. 306].

65. Cushioned shipping bag. Modern Packaging 31, no. 2:184(Oct., 1957); Packaging Abstr. 15:35.

Corro-Bags are made from a single-wall corrugated sheet and offer resilient cushioning on the inside and scuff and puncture resistance on the outside. The bags are shipped flat with one end sewn. They have double-scored edges as protection against end blows. They can be sealed with staples or gummed tape.

66. Custom-made bags and covers. Paper Sales 19, no. 4:20-3, 45-6 (April, 1959); A.B.I.P.C. 30:43.

As a result of improved manufacturing techniques, form-fitting flexible packaging is of increasing importance in industrial packaging. A market analysis is presented, and the principal users and the types of bags they use are listed. Among the items illustrated is the largest paper bag in the world, made of fiberglass-reinforced paper and used to cover an earthmover; it weighs 113 lb. and spans 15 by 15 by 43 ft.

67. Dambacher, Xaver. Device for folding paper so as to form the block bottom of a paper bag. U. S. patent 2,888,859(June 2, 1959); A.B.I.P.C. 30:262.

In a machine for forming bags from paper tubes, the block bottoms are formed on the tubes by means of a device provided with a pair of rotating spreading fingers, controlled by eccentric cams. This device permits the use of a folding blade throughout the process of folding the bottom-forming elements, and provides other advantages.

68. D'Angelo, Joseph. Bag making machine. U. S. patent 2,884,988 (May 5, 1959); A.B.I.P.C. 30:262.

The machine employs a reciprocating sealing element to apply spaced transverse heat seals to a continuously traveling tube of bag or pouch material.

69. Davis, John S. Bag bottoming machine. U. S. patent 2,847,914(Aug. 19, 1958); A.B.I.P.C. 29:607.

In a machine for forming the bottoms in satchel-bottom shopping bags from a flattened kraft-paper tube, easy separation of the walls of the bag tube is permitted without weakening the bottom structure by forming a temporary notch in the end of each bag section. After the tube has been opened, the notch-forming portions are returned to their proper place. No waste is created, since nothing is cut from the blank.

70. Denisson, Harold K., and Dresch, George. Container closing devices. U. S. patent 2,817,840(Dec. 31, 1957); B.I.P.C. 28:1042.

The tops of filled bags are gathered and closed by an electrically controlled and synchronized apparatus in which the bags are continuously urged along the production line by conveying means and prevented from moving while at an operating station by a rod element extendable across the bag path.

71. Derby Sealers Inc. Bag tying. British patent 814,841(1959); Packaging Abstr. 16:677.

Improvements are claimed in a machine for wrapping pressure sensitive adhesive tape around the twisted neck of a bag.

72. Derby Sealers Inc. Bag-tying machine. British patent 807,665 (1959); Packaging Abstr. 16:315.

The machine feeds adhesive tape around a wheel to tie plastic, etc., bags with necks projecting into notches in the wheel.

73. Derrah, Norman S., and Derrah, Helen J. Bags and bag handling machines. U. S. patent 2,892,297(June 30, 1959); A.B.I.P.C. 30:274.

The bag provided has a cylindrical side wall and a circular bottom; the side wall may be collapsed upon itself by rolling or the like. The apparatus provided withdraws a collapsed bag and holds it in a position for filling, so that the side wall is unrolled or extended and the bottom is supported throughout the filling operation.

74. Design for a special market. Modern Packaging 31, no. 8:128-30 (April, 1958); A.B.I.P.C. 29:48.

Improved package designs for can labels for paint, grease, and oil products and multiwall bags for feed and fertilizer products of the Consumers Co-operative Association of Kansas City, Mo. are described.

75. Double-action fitments raise speed of bag filling. Packaging News, London, 5, no. 5:7(May, 1958); Packaging Abstr. 15:525.

The FS-1 MfM model by the Industrierwerke, Karlsruhe, Germany has increased its speed to 200 bags per minute and is now known as the FS-6. As the bags are removed from the pile they are automatically opened by an air blast. They are closed by adhesive.

76. Douglas, Edwin J. Bag packer. U. S. patent 2,827,256(March 18, 1958); B.I.P.C. 28:1447.

Paper bags are filled with an accurate weight of granular material by a machine having two speeds of feeding and a weight-sensing device which checks two weight points during the filling operation. At the first weight point the feeding speed is reduced to the slower rate, and at the second point the feed is stopped.

77. Dowty, Lee B., and Heavin, Leonard J. Automatic bag opening machine. U. S. patent 2,828,596(April 1, 1958); B.I.P.C. 28:1547.

Paper or fabric bags are removed from a supply stack of folded bags, the bag tops are partially opened, and the bags are presented to an operator or to another machine for filling.

78. Doyle, James F. Bags. U. S. patent 2,816,700(Dec. 17, 1957); B.I.P.C. 28:1020.

A multi-ply bag for seeds and related products to be sampled by an inspector is provided with a flap which is coated with pressure-sensitive adhesive and can be pressed down and resecured after a probe has been inserted between the ply seams to withdraw a sample of the contents.

79. Duffin, Earle R. Blockbottom multi-ply valve bag. U. S. patent 2,875,944(March 3, 1959); A.B.I.P.C. 29:1561.

The block bottom closure of a multi-ply valve bag, formed by the adhesive sealing of the stepped-ply face flaps, is constructed to provide improved strength and siftproofness at the corners of the closure.

80. Eagles, Robert P., and Crowder, John P., Jr. Bag valving and sleeving machine. U. S. patent 2,830,504(April 15, 1958); B.I.P.C. 28:1548.

The machine described folds the corner of a flattened tubular multi-ply paper bag blank to form a valve, inserts a valve sleeve, and delivers the structure to a conventional bag-sewing machine in one automatic continuous operation.

81. Easy-open bag. Ind. Packaging 4, no. 2:42(Feb., 1958); Packaging Abstr. 15:501.

A bag for packaging can ends, called the Flick-Opener, has been developed by the Central States Paper & Bag Co. The bag has a specially constructed

bottom with a small flap. When this is pulled downward, the bag bottom opens to release the can ends. When open, the bottom of the bag has a large lip which helps the operator hold onto the lids while inserting them into a closing machine.

82. Eaton, Lawrence V., and Kane, James A. Bag lining and cuffing machine. U. S. patent 2,893,294(July 7, 1959); A.B.I.P.C. 30:409.

The apparatus provided lines a kraft bag with a PE^a bag having side walls of greater height than the walls of the kraft bag, then folds the protruding portions of the PE bag down, cufflike, over the walls of the kraft bag.

83. Evers, Arthur J. Banding machine for bag bundles. Canadian patent 556,650(April 29, 1958); B.I.P.C. 28:1725.

This corresponds to U. S. patent 2,751,731[see Progress Report Seven, Project 2033, Abstr. no. 374].

84. Evers, Arthur J. Transfer mechanism for bagmaking machines. Canadian patent 560,721(July 22, 1958); A.B.I.P.C. 29:442.

This is the same as U. S. patent 2,729,151[see Progress Report Seven, Project 2033, Abstr. no. 377].

85. Faltin, William G. Bag-like receptacle. U. S. patent 2,861,735 (Nov. 25, 1958); A.B.I.P.C. 29:1070.

A flat-folding baglike receptacle is provided for use in automobiles, kitchens, hospitals, and the like. The paper bag has a coating of pressure-sensitive adhesive on one area which may be employed to attach the bag to the surface of any convenient support.

86. Fast-weight bagger. Ind. Packaging 5, no. 2:32(Feb., 1959); Packaging Abstr. 16:392.

The unit weighs and fills twenty-two 50 lb. or sixteen 100 lb. paper or textile bags per min. It handles crumbled, pelleted, cubed and other type materials, and is capable of weighing and filling 25 to 200-lb. capacity bags.

87. Feed-bag filler. Modern Packaging 31, no. 7:214(March, 1958); Packaging Abstr. 15:443.

The Southland feed packer accommodates feed ranging in size from fine granules to 3/4 inch pellets for packing into 25-, 50-, or 100-lb. bags at speeds of up to 20 bags per minute.

^a PE = polyethylene

88. Felsch, Willi. Material consumption of modern paper-bag machines. Papier u. Druck (Buchbinderei u. Papierverarbeitung) 7, no. 4:62-4(April, 1958); A.B.I.P.C. 29:33.

The costs of replacement of old bag-making machines with newer models will amortize itself rapidly, owing to the savings in paper (and paperboards) that can be made with modern converting machines. Data on the paper requirements and advantages and disadvantages of various types of bags and on the output of modern bagmaking machines are given.

89. 50-lb. Multiwall bag with side handles. Modern Packaging 32, no. 3:158(Nov., 1958); Packaging Abstr. 16:108.

The side handle, which is securely applied by a patented method, is capable of supporting loads of up to 300 lb.

90. Filling machines by Industrie-Werke. Packaging Rev. 78, no. 140:56(April, 1958); Packaging Abstr. 15:441.

The FS6 fills and closes flat bags with free-flowing products at 200 per minute. It provides a glue seal. Bags are delivered standing up. The TF22 tube filler has a new type filling mechanism by which the filling nozzle enters the tube for its whole length, and gradually lifts as the product is filled so as to eliminate air bubbles. Tube capacities can be from 2 to 310 cc., and filling takes place at 80 to 85 tubes per minute. The TF12 is semi-automatic at 40 to 50 tubes per minute with capacities from 1-1/2 to 310 cc.

91. Finke, Arno. Bag. U. S. patent 2,845,214(July 29, 1958); A.B.I.P.C. 29:442.

A single- or multi-ply valve bag is described, the construction being such that the bag may be filled with a predetermined amount of material, based on the known volume of the bag. The bag has a rectangular block shape in filled condition.

92. Fischer, Walter. Container and closure for the same. U. S. patent 2,868,435(Jan. 13, 1959); A.B.I.P.C. 29:1391.

An easily opened closure for a paper bag comprises a paper strip folded over the bag-mouth edges and enclosing a wire or strip material in the fold adjacent the bag-mouth edges. The strip is easily torn free to open the bag.

93. Flo-pack. Bowater-Eburite News no. 1:2(Feb., 1959); Packaging Abstr. 16:355.

A multiwall sack with an opening which can be varied in size, can be closed if all the contents are not to be used at once, and from which the rate of flow can be controlled, has been developed.

94. Fogwell, Joseph W., Hoffman, Herbert I., Oakey, William E., and Donaldson, Willis L. Packaging machine. U. S. patent 2,834,166(May 13, 1958); B.I.P.C. 28:1725.

A packaging machine picks up an empty folded paper bag, opens it, fills it with a granular material such as carbon black, compacts the contents to the required density and depth in the bag, and delivers the bag to a sealing machine. The violent compacting action employed is specifically designed to compact difficultly-compactable materials without rupturing the bag.

95. Fox, Richard M. Bag structure with pocket. U. S. patent 2,867,372 (Jan. 6, 1959); A.B.I.P.C. 29:1392.

A multi-ply paper bag for fertilizer, seeds, and similar materials is provided with a pocket for an instruction leaflet or the like. The pocket is located between the wall plies at the mouth of the bag and is closed by the usual bag-closing operation.

96. Frank, Helmut. Possibilities of automatic machine control and regulation in the bag industry. Allgem. Papier-Rundschau no. 9:415-17(May 5, 1958); A.B.I.P.C. 29:63.

The Productograph, a German recording and regulating system for the automatic control of bagmaking machines, is described.

97. French, Gordon W. Delivering bags, envelopes, sheets and the like from machines. Canadian patent 570,087(Feb. 3, 1959); A.B.I.P.C. 29:1561.

Machines for forming bags or envelopes from paper, cellophane, or the like are provided with delivery means which slow down each item as it leaves the machine, so that it may be aligned and stacked without sagging or creasing.

98. Fully automatic production of carrying bags. Allgem. Papier-Rundschau no. 23:1199-1200(Dec. 5, 1957); B.I.P.C. 28:1091.

A German machine which produces 130 two-seam paper bags or envelopes (with or without cover flap)/min. is described. The machine can make flat bags ranging in size from 15.5 by 13 to 50 by 50 cm. The bags are suitable for carrying x-ray pictures, phonograph records, and the like.

99. Fungicidal paper in multi-wall sacks. Packaging Rev. 79, no. 156:161(Sept., 1959); Packaging Abstr. 16:860.

A new 3-ply Palfsack, incorporating one ply of Nevermold 101 fungicidal paper, has been developed by William Palfrey Ltd. It is for the bagging of both seed and ware potatoes.

100. Gatward, Harry F. Carrier bags. U. S. patent 2,836,344(May 27, 1958); B.I.P.C. 28:1699.

A paper bag of the type which is stiffened along each edge adjacent the mouth by means of paperboard members including closure flaps which can be folded inward in opposite directions so that the bag virtually assumes the form of a box is provided with string handle members attached to the lower flap. The handles are adapted to be passed through slots in the upper flap to secure the flaps in closed position.

101. Gatward, Harry F. Carrier bags. Canadian patent 567,387 (Dec. 16, 1958); A.B.I.P.C. 29:1227.

A paper carrier bag of the type having paperboard closure flaps is provided with string handles which also serve to effect locking of the closure flaps.

102. Gelbcke, Alexander. Multi-ply bags and methods for making the same. Canadian patent 573,075 (March 31, 1959); A.B.I.P.C. 29:1850.

An improved process is described for scoring or perforating a number of paper webs, superposing the webs, forming the assembly into a tube, and severing the tube into bag lengths suitable for formation into multi-ply bags having stepped end-closure flaps. All corners of the bag have equal strength and flexibility, and the process avoids cutting out and wasting any scraps of paper.

103. Gelbcke, Alexander. Multi-ply bags with stepped corner flaps. U. S. patent 2,810,509 (Oct. 22, 1957); B.I.P.C. 28:1020.

A flat bottom closure is formed in a multi-ply paper bag by cutting end portions of each ply along lines spaced away from the edges of other plies. The method is adapted for making bags having pasted or glued closure flaps and for making sewn-end valve bags.

104. German bagger in the U. K. Prod. Packaging 4, no. 2:21 (June, 1958); Packaging Abstr. 15:601.

A bagging machine for potatoes and other root crops made by Greif-Werk, Lübeck, is being handled in the U. K. by W. J. Hart & Sons (London) Ltd. Single and double-headed models are available. A rate of up to 400 packs per hour per bagging head is claimed.

105. German window bag. Prod. Packaging 3, no. 12:32 (March, 1958); Packaging Abstr. 15:344.

A double-walled kraft paper prepack made by a German firm, NaBfest, and incorporating a net window and carrying handle is being used by a prepacking firm in Scotland. It has a cut-out carrier top, which is strengthened by the inclusion of cardboard.

106. Göpel, Wolfgang. Die-cutting tools for paper and board conversion. Papier u. Druck (Buchbinderei u. Papierverarbeitung) 6, no. 12:185-8 (Dec., 1957); B.I.P.C. 28:1482.

Various types of the most common die-cutting, stamping, creasing, slitting, slotting, and punching machines for use in the manufacture of envelopes, bags, cartons, and other packaging units are described.

107. Goodner, James R. Bag holder. U. S. patent 2,852,045(Sept. 16, 1958); Packaging Abstr. 16:74; A.B.I.P.C. 29:775.

In a machine for filling large paper bags with pulverulent materials, a device is provided which holds each bag during the filling operation. Tearing and scuffing of the paper bag are prevented, and the bag is held in proper position for subsequent stitching of the bag mouth, i.e., the gussets are held in and the bag mouth is kept in folded shape.

108. Goodrich, John J. Container with trough feeding means and trough insert therefor. U. S. patent 2,885,141(May 5, 1959); A.B.I.P.C. 30:106.

A multi-ply paper bag for poultry feeds and the like is provided with interior elements and opening means near the bag bottom so that the bag may be used as a feed-dispenser and feeding trough.

109. Gorton, Edward S., and Hayward, Claude E. Bag. U. S. patent 2,904,241(Sept. 15, 1959); A.B.I.P.C. 30:692.

A multi-ply pasted valve bag of the type used for packaging portland cements is provided with an improved closure construction at the corner of the bag opposite the valve. The closure prevents the finely divided material from blowing between the bag plies at the corner.

110. Grcic, Peter. Packaging medium and process for manufacturing the same. Canadian patent 566,297(Nov. 18, 1958); A.B.I.P.C. 29:1070.

A material for making bags or the like comprises a base of a fibrous material to which criss-crossing strips of a thermoplastic material have been applied under heat and pressure.

111. A guide to multiwall bags. Materials Handling Eng. 14, no. 6: 88-91, 159-62; no. 7:88-9, 114(March, April, 1959); Packaging Abstr. 16:433.

The article deals with materials, construction, types of sack, handling methods, loading techniques, storage, repairing, and filling and closing methods and equipment.

112. Gusseted bags opened for filling at 90 a minute. Packaging News, London 5, no. 7:34(July, 1958); Packaging Abstr. 15:665.

The machine spreads the gussets wide so that the bag will stand unsupported ready for filling.

113. Hahn, Willard E. Method and apparatus for producing bags. U. S. patent 2,845,849(Aug. 5, 1958); A.B.I.P.C. 29:442.

A satchel-bottom paper bag of the single- or multi-ply type is provided with a bottom construction similar in squareability to a gusseted bag, but superior in strength. The improvements are accomplished without use of gussets.

114. Hahn, Willard E., and Burroughs, Edwin E. Method and apparatus for application of valve sleeves during tubing operation. Canadian patent 562,833 (Sept. 2, 1958); A.B.I.P.C. 29:442.

This corresponds to U. S. patent 2,753,768 [see Progress Report Seven, Project 2033, Abstr. no. 486].

115. Harker, Charles B. Bag opening mechanism for packaging machine. U. S. patent 2,899,786 (Aug. 18, 1959); A.B.I.P.C. 30:528.

A machine for filling a bag with loose granular or powdered material, such as tobacco or cornstarch, is provided with means for holding the mouth of the bag open during the filling operation, so that the complete bag charge may be dropped in mass into the bag.

116. Hartman, Newton H. Methods and apparatus for handling bags. U. S. patent 2,856,741 (Oct. 21, 1958); A.B.I.P.C. 29:924.

In a machine for filling paper bags with cement, fertilizer, or other pulverulent material, means are provided to position each filled bag centrally and vertically upon a horizontal conveyor and to shape and close the top of each bag prior to stitching the closure.

117. Haver, Fritz, Bruder, Alfred, and Bahr, Willy. Valve bag packing machine. U. S. patent 2,888,961 (June 2, 1959); A.B.I.P.C. 30:99.

A machine for filling valve bags with cement, flour, or the like is provided with compression means to remove entrapped air from the material being packaged before it is charged into the bag.

118. Heat-sealed multiwall bag holds out air, moisture. Chem. Processing 22, no. 6:143 (June, 1959); A.B.I.P.C. 30:769.

A description is given of the Uniseal bagmaking and closing machine developed by the Union Bag-Camp Paper Corp.^a The bag is a multi-ply paper bag, the inner liner of which is made of PE-coated material. The outer plies are staggered, so that the inner ply is exposed to take a direct heat-seal. After the inner ply is heat-sealed, the outer plies are pasted down and a strip of gummed tape is applied over the closure. The bag decreases moisture pickup by the packaged product.

119. Henriksen, Arthur L. Machine for packing bags with powdered or granulated material. U. S. patent 2,900,774 (Aug. 25, 1959); A.B.I.P.C. 30:528.

The packaging apparatus provided supports a multi-ply bag, moves it through a station where it is filled with granular or powdered material while

^a PE = polyethylene

holding the mouth of the bag open, and then closes the bag mouth for sealing, stitching, wax-dipping, or the like. Bag-shaking and other stations may be included in the packaging line.

119A. Hermorion Ltd. Packages, etc. British patent 795,015(1958); Packaging Abstr. 15:584.

An improved mounting for a pressure roller co-operable with a backing roller in sealing a longitudinal seam in a bag tube, is claimed.

120. Hesser, F. Filling machine. British patent 793,007(April 9, 1958); Packaging Abstr. 15:528.

The filling machine is for bags which are transferred without shock from a filling mechanism to a conveyor via a rotary device.

121. Hesser, F., Maschinenfab. AG. Bags. British patent 815,035 (1959); Packaging Abstr. 16:813.

A ractangular-section packaging bag of heat-sealable or other material, having longitudinal and transverse seams set at improved locations is described.

122. High speed plant for self opening bags. Brit. Packer 20, no. 10:579(Oct., 1958); A.B.I.P.C. 29:1130.

Using paper of 40 to 150 g./sq. m. basis weight, the Weber Special high-speed bagmaking machine manufactures rectangular bags of various sizes which open automatically when exposed to a jet of air and are sufficiently rigid to stand upright during automatic filling.

123. High-speed bag tying machine. Good Packaging 20, no. 1:26(Jan., 1959); Packaging Abstr. 16:315.

The operator places the full bag into a trough, twists the end of the bag closed, and steps on a foot trip. The tying arm of the machine encircles the neck of the bag, ties a double loop, nonslip knot and cuts the twine in less than 4 seconds.

124. Hitt, Dwight A. Sealable sanitary bags. U. S. patent 2,825,497 (March 4, 1958); B.I.P.C. 28:1307.

A one-piece paper bag for use in the sanitary disposal of refuse materials has a mouth section the inner edge of which is coated with a continuous band of suitable pressure-sensitive adhesive. The adhesive layers on front and back panel edges are prevented from coming in contact by a flap extending from one panel and folded into the mouth of the envelope. When the bag is to be sealed, the flap is removed and torn from the bag along a perforated line and the adhesive-coated edges are pressed together.

125. Hölischer, Martin. Only a paper bag; bag-making machines offer new possibilities. Allgem. Papier-Rundschau no. 16:846-52 (Aug. 20, 1957); A.B.I.P.C. 29:33.

The development of better quality papers and a variety of synthetic packaging materials was paralleled by progress in the design of bagmaking machines, resulting in a tenfold increase in production in recent years. Better bag-printing and bag-sealing techniques were also developed. The favored block-bottom and cross-bottom bags are manufactured by fully automatic high-speed machines. Block-bottom bags in many different sizes are produced from paper reels, including finer quality papers. The new plastic materials, because of their homogeneous structure, thermoplasticity, and flexibility, posed new problems in the design of bagmaking machines and in sealing and printing techniques. Some of the newer machines and techniques used for the manufacture, heat sealing, and printing of plastic and laminated flat and edge-folding bags, double-seam flat bags, and cross- and block-bottom bags are described in some detail.

126. Hoepfner, Arthur D. Closures for flexible walled containers. Canadian patent 573,785 (April 7, 1959); A.B.I.P.C. 29:1850.

A flat bag has top and bottom closures constructed so that, when the bag is filled and sealed, both end closures present a tight rectangular neat appearance.

127. Hoepfner, Arthur D. Closures for flexible walled containers. U. S. patent 2,842,179 (July 8, 1958); A.B.I.P.C. 29:299.

A flat paper bag designed to be closed at both top and bottom after filling has the closures constructed so that the filled bag is held in rectangular configuration.

128. Hoff, Jean M. Bag packing machine. U. S. patent 2,886,072 (May 12, 1959); A.B.I.P.C. 30:99.

A machine for filling a valve-type multi-ply paper bag with powdered material is provided with means to subject the side of the bag, during the filling operation, to a vacuum which removes entrained air from the interior of the bag.

129. Hollis, Clinton R. Bag feeding, valving and sewing machine. Canadian patent 583,260 (Sept. 15, 1959); A.B.I.P.C. 30:828.

The machine provided supports a stack of valve bag tubes, feeds individual tubes to a valving and sleeving station, performs the valving and sleeving operations on the tube, withdraws the tube from the station, and sews closures on both ends of the tube to complete the formation of a multi-ply valve bag.

130. Hollis, Clinton R. Delivery mechanism for automatic feeding, valving and sewing machines. U. S. patent 2,883,034(April 21, 1959); A.B.I.P.C. 29:1850.

In a machine for manufacturing multi-ply paper bags, means are provided to engage each of a series of bags successively delivered from the valving and sleeving sections of the machine and to present the bags in timed synchronized sequence to the sewing portion of the machine.

131. Holweg, C & A. Carrier bags. Holweg Vous Parle, Strasbourg, no. 30:2(1958); Packaging Abstr. 15:665.

The firm's Roto Simplex no. 2 bagmaking machine has been adapted to produce paper carrier bags at 200 per minute.

132. The Holweg Royal machine manufactures S.O.S. bags at high speed. Papier, carton et cellulose 7, no. 2:130-1; summaries: 4, 6, 165, 168(May, 1958); A.B.I.P.C. 29:32.

The "Royal" model bag machine, manufactured by C. & A. Holweg, makes S.O.S. (self-opening satchel) bags of several dimensions from strong bleached kraft paper at a rate of 500/min. The machine can be coupled with a printing press and equipped with a photoelectric cell regulator to synchronize the printing and bag-forming operations.

133. Honsel, Carl. Bag-producing machine. U. S. patent 2,903,946 (Sept. 15, 1959); A.B.I.P.C. 30:675.

A machine for producing flat and side-fold two-seam bags is characterized in that the bags may be produced either in transverse or longitudinal direction.

134. Hopkins, Frank L. Bag holding device for filling machine. U. S. patent 2,890,006(June 9, 1959); A.B.I.P.C. 30:99.

A hopper-and-chute apparatus for filling bags is provided with a filling chute of downward tapering configuration, together with means for holding the bag onto the chute during the filling operation.

135. Hopkins, Frank L., and Ayres, Richard H. Bag top closing and sealing machine. U. S. patent 2,845,760(Aug. 5, 1958); A.B.I.P.C. 29:465.

The walls adjacent to the mouths of large bags filled with sugar, cement or other granular material are brought together, the mouth is sealed by stitching, and a length of pressure-sensitive tape is applied over the row of stitches.

136. Hopkins, Frank L., and Ayres, Richard H. Container filling and weighing machine. U. S. patent 2,889,031(June 2, 1959); A.B.I.P.C. 30:99.

The machine provided accepts bags, cartons, or other containers which have been filled with a bulk quantity of material weighing less than the total predetermined charge, then weighs each container and fills it with an additional small amount of material sufficient to raise the total weight to the desired level.

137. Hummel, F. New block-bag making machine. Sigmaringen, W. Germany; Packaging Abstr. 15:857.

The Maschinenfabrik Gartemann & Hollmann, Bielefeld (Western Germany), are manufacturing, in conjunction with the American firm of H. G. Weber & Co., a high-capacity plant for the production of self-opening paper square bags. Details of the machines and the bags produced on them are given.

138. Hutchinson, A. R. Multiwall paper sacks: their use in the chemical industry. Chem. & Ind. (London) no. 52:1716-20; A.B.I.P.C. 29:1297.

Experience has shown that a correctly constructed and developed multi-ply paper bag is an economical and satisfactory package for a wide range of chemical products. Valuable knowledge has been accumulated regarding bag performance, based on laboratory tests, large-scale trials, and actual shipments, but much basic work must yet be carried out to enable users to predict bag performance more accurately. At the same time, transporters of paper bags must be educated in proper handling methods. Despite the growing interest in bulk and intermediate bulk shipments, the wide adoption of multi-ply bags in new fields indicates that their use will become even more widespread than at present. Descriptions are given of methods of making various types of kraft-based bagmaking materials; of methods of making and testing multi-ply bags; of the effect on bag strength of moisture-barrier plies, folds and seams, physical nature of product, moisture resistance, and heat; and of principal causes of bag failure.

139. Improved padded shipping bag. Modern Packaging 32, no. 11:143 (July, 1959); Packaging Abstr. 16:725.

In the 'Jet-Pak' insulated paper bag a protective batten made of macerated newspaper is placed between two papers bound together with asphalt. The asphalt holds the padding in position for control over cushioning.

139A. International Paper Co. Paper bags. British patent 781,623 (1957); Packaging Abstr. 15:24.

A machine is specified for automatically valving multiwall bags, and sleeving them under improved control.

139B. International Paper Co. Paper bags. British patent 791,630 (1958); Packaging Abstr. 15:340.

A machine for feeding gusseted multiwall valve bag tubes to and from a valving and sleeving station is claimed.

140. Iyengar, N. V. R., Sharangapani, M. V., and Pingale, S. V. Packaging wheat flour in laminated jute bags. Food Sci. 7, no. 12:357-60 (Dec., 1958); Packaging Abstr. 16:301.

Experimental bags, made from B-twill jute fabric laminated to either 150 or 200-gage polyethylene film or union kraft paper, were filled with flour and closed by stitching. Moisture content, acidity of fat and insect penetration of the stored flour were determined; the experimental bags were compared with jute bags. Tables of results are given. The polyethylene laminated bags seemed satisfactory as far as moisture content and content and acidity of fat of the stored flour were concerned; the bags could be made insect-proof by impregnation. Other advantages were that they prevented seepage of flour, quick changes in moisture content and contamination of the flour by extraneous material. The kraft-laminated bags were not quite so good as the polyethylene laminated bags as they might allow greater rancidity development.

141. Kachanov, Ya, M. Some problems of increasing the production of paper bags. Bumazh. Prom. 33, no. 9:24-5 (Sept., 1958); A.B.I.P.C. 29:1130.

Russian paper bag manufacturing plants presently have a total capacity of 570 million bags/year, considerably below the demand of domestic markets. Even by assuming a planned capacity increase to 2-2.5 billion bags/year within the next 6-7 years, the production of paper bags will be insufficient because of increasing demand. Some means of speeding the expansion of the bag industry are the reconstruction of existing equipment, the installation of modern high-capacity machines, the lowering of the basis weight of bag paper while maintaining or improving its quality, the improvement of bag-testing methods, and the manufacture of bags better adapted to the type of merchandise for which they are intended.

142. Kardon, Emanuel S., and Volksdorf, Hans. Method of making bags. U. S. patent 2,846,928 (Aug. 12, 1958); A.B.I.P.C. 29:607.

In a method of forming paper bags, a bellows-folded tube is cut into suitable lengths, slits are made near one end of each tube length, the material adjacent the slits is folded in diamond folds to form the bottom of the bag, and the bottom-forming flaps are heat-sealed to complete the formation of the bag. The heat-sealing operation is improved by bending down the sides of the bag so that it assumes the shape of an inverted V in lateral cross section.

143. Kincaid, Thomas G. Process for forming and sealing containers. Canadian patent 578,074 (June 23, 1959); A.B.I.P.C. 30:408.

Paper having a thermoplastic coating is folded and heat-sealed to form a square-bottom liner for cartons or bags.

144. Kindseth, Harold V. Bag-filling machine. Canadian patent 568,091 (Dec. 30, 1958); A.B.I.P.C. 29:1248.

This is identical with U. S. patent 2,767,743 [see Progress Report Seven, Project 2033, Abstr. no. 640].

145. Kindseth, Harold V. Bag filling, weighing, and sealing machines. U. S. patent 2,821,354 (Jan. 28, 1958); B.I.P.C. 28:1331.

A bag-filling and sealing machine is provided with a conveyor for transporting each filled bag from the filling to the sealing station. The conveyor has a built-in scale which indicates the amount of additional material that must be loaded into underweight bags before they are sealed.

146. Kindseth, Harold V. Method of making bag closure. U. S. patent 2,899,347 (Aug. 11, 1959); A.B.I.P.C. 30:532.

A method of sealing a multi-ply paper bag involves perforating the bag walls near the end of the bag, extruding thermoplastic material on both sides of the bag walls, and forcing the material through the perforations to bond with itself and form a secure seal.

147. Kindseth, Harold V., Hopkins, Frank L., and Fox, Harold F. Apparatus for weighing and closing flexible walled containers. Canadian patent 579,778 (July 21, 1959); A.B.I.P.C. 30:405.

This is the same as U. S. patent 2,766,001 [see Progress Report Seven, Project 2033, Abstr. no. 643].

148. Klasing, Arthur P. Machines for making vacuum cleaner bags. U. S. patent 2,867,183 (Jan. 6, 1959); A.B.I.P.C. 29:1392.

The machine provided automatically forms paper filter bags for vacuum cleaners of the type requiring a bag having a pair of spaced folded seams on opposite sides of the collar that attaches the bag to the vacuum cleaner discharge throat.

149. Klein, Will. German paper bags; problems of the German converting industry. Can. Pulp Paper Ind. 12, no. 1:66-7 (Jan., 1959); A.B.I.P.C. 29:1466.

Some of the problems presently facing the German paper bag industry are discussed, and the principal types of bags in current output and the types of machinery being used are described.

150. Knisely, James D. Bag handling and filling machine. U. S. patent 2,864,219 (Dec. 16, 1958); A.B.I.P.C. 29:1248.

The machine provided accepts a stack of small thin bags (e.g., glassine or paper bags), withdraws successive bags from the stack, opens and fills each bag, and moves the bags to positions for removing and sealing.

151. Kohl, William R. Device for packaging shirts and the like in bags. Canadian patent 572,232 (March 17, 1959); A.B.I.P.C. 29:1722.

The apparatus provided automatically expands a partially opened paper bag to a rectangular cross-section, holds the bag in this shape, and braces the bag laterally so that a stack of shirts may be inserted.

152. Kraft papers and paper bags. Allgem. Papier-Rundschau no. 15: 796-800(Aug. 5, 1957); Verpackungs-Rundschau 8, no. 8:455-8(Aug., 1957); A.B.I.P.C. 29:65.

The history of Natronag (Natronzellstoff- und Papierfabriken A. G.) since its foundation in 1918, is outlined, and the present production of kraft papers and paper bags is described. The company's mill in Oker, Germany, manufactures various types of bags (cross-bottom, flat, folding, and valve bags) and kraft paper for general use, as well as kraft papers particularly suitable for paper bags (such as creped paper and bitumen-laminated papers). The paper bags are filled mechanically by different types of machines, adapted to the type of merchandise handled.

153. Krueger, Alfred P. Bag-tying machine. Canadian patent 582,527 (Sept. 1, 1959); A.B.I.P.C. 30:529.

The machine provided applies a length of pressure-sensitive adhesive tape to the twisted neck of a filled bag.

154. Krueger, Alfred P. Bag-tying machine. U. S. patent 2,841,935 (July 8, 1958); A.B.I.P.C. 29:286.

The machine wraps a length of adhesive tape about the gathered neck of a bag, and severs the tape after the desired length has been delivered from a supply roll.

155. Kilstahler, Reinhold. "Opi-matic," a new technique of adhesive application. Allgem. Papier-Rundschau no. 15:754-5(Aug. 5, 1959); A.B.I.P.C. 30:593.

The Opi-matic adhesive applicator is based on a completely closed glue-circulation system which is protected from atmosphere influences and on a machine design which applies an even (nonarching) layer of adhesive. In the production of cross-bottom bags, the machine is claimed to have permitted up to 50% savings in adhesive cost to be made.

156. Kulesza, Chester P. Vacuum package. U. S. patent 2,870,954 (Jan. 27, 1959); A.B.I.P.C. 29:1388.

A packet, bag, envelope, or similar package for foods, formed for example of a paper-aluminum foil laminate carrying a heat-sealable layer, is provided with a valve device which permits a vacuum to be drawn within the package after it has been filled and which will retain the vacuum over an extended period of time.

157. Kurachenko, N. I., and Geint, V. Y. Automatic bag cutting. Bumazh. Prom. 33, no. 3:18-19(March, 1958); A.B.I.P.C. 29:348.

An automatic bag-sewing and cutting device consists of a photoelectric cell placed underneath a hole in the sewing-machine table and a system of electric circuits. The hole is located so that it is uncovered when the seam is finished. The electric current generated thereby in the circuit activates a mechanism to lift a knife, which cuts off the bag. A system of pulleys built into the sewing machine serves to collect the finished bags.

158. Langdon, Arthur J. Method and means for folding and sealing the open ends of flexible bags. U. S. patent 2,892,293 (June 30, 1959); A.B.I.P.C. 30:274.

A lever-operated device for dispensing pressure-sensitive tape from a supply roll is provided with a slotted mandrel device for attachment to one of the feed rolls. The mouth of a bag to be sealed is inserted in the slot, the lever is actuated to dispense the tape, and the dispensing action automatically causes the mouth of the bag to be folded over ready for application of the tape.

159. Lau, Erwin M. Bag settling device. U. S. patent 2,863,475 (Dec. 9, 1958); A.B.I.P.C. 29:1248.

A bag-filling machine of the type in which the increasing weight of the bag and its contents, as the bag is filled, is used to cut off the filling mechanism is provided with means to effect the settling of the bag contents during the filling operation without interfering with the weight-controlled cut-off means.

160. Lau, Erwin M. Control for bag filling machine. U. S. patent 2,871,891 (Feb. 3, 1959); A.B.I.P.C. 29:1590.

In a bag-filling machine in which the bag is held to the machine discharge nozzle while being filled, the material being filled into the bag being moved from the supply hopper through the discharge nozzle by an auger feeder, the bag being vibrated during the filling, and the filling being terminated by bag-weight sensing means, control means are provided to terminate the vibrating and settling action before the weight limit is reached and to prevent dribbling from the discharge nozzle after the auger feeder has been stopped.

161. Lee, Harry E. Valve bag with pasted end closure. U. S. patent 2,891,716 (June 23, 1959); A.B.I.P.C. 30:276.

Leakage and sifting of a filled multi-ply valve bag are prevented by means of an inwardly directed sleeve secured in the valve so that a pocket is provided between the inner portions of the valve lip and portions of the sleeve above it which are forced up against the top of the bag when the bag is filled.

162. Leighton, C. R. Bag tying machine. British patent 810,708 (1959); Packaging Abstr. 16:468.

The machine comprises a rotary tape supply co-operable with a notched wheel and specified spring-loaded control device.

163. Leighton, Charles R. Bag-tying machines. U. S. patent 2,882,663 (April 21, 1959); A.B.I.P.C. 29:1870.

The machine provided draws tape from a supply roll, wraps it around the gathered neck of a bag, then severs the tape.

164. Leighton, Charles R., and Buck, James W. Bag-tying machine. Canadian patent 563,214 (Sept. 16, 1958); A.B.I.P.C. 29:744.

A wall-mounted device automatically applies pressure-sensitive tape to the twisted neck of a bag of produce as the bag is manually moved through the device, and automatically severs the tape to permit removal of the sealed bag.

165. Les Etablissements Morquin & Muguet. Rev. papiers et cartons 21, no. 8:23-5 (April 15, 1958); A.B.I.P.C. 29:32.

The Morquin & Muguet bagmaking plant, founded in 1885, is one of the largest converting plants of France, manufacturing 15% of the total bag production of the country. The plant, which specializes in the manufacture of small and medium-sized paper bags, bags made of cellulosic film, polyethylene and other synthetic films, and aluminum-foil laminates, is equipped with modern bagmaking machines, laminating units, and heliogravure and aniline printing presses.

166. Lewis, Charles A. What the future holds for flexible packaging. Paper, Film and Foil Converter 32, no. 11:39-41 (Nov., 1958); A.B.I.P.C. 29:1174.

The author briefly reviews the growth and developing trends in the flexible packaging industry. Flexible packaging, which includes paper wrapping products, laminated papers, transparent films, aluminum foil, converted flexible packaging products, paper and textile bags, etc., totaled \$1912 million in value in 1939 and increased to a value of \$2519 million in 1957. By 1975, if present growth trends continue, the flexible packaging industry will have doubled the 1957 volume of business.

167. Lewis, Dan, Jr., and Needham, Hal S. Packaging rubber. U. S. patent 2,885,074 (May 5, 1959); A.B.I.P.C. 30:106.

A multi-ply paper bag for use in packaging rubber is provided with an interior release coating composed of PE^a and a silicone polymer.

168. Liénart, Marcel. Apparatus for closing open mouth bags or the like. U. S. patent 2,893,184 (July 7, 1959); A.B.I.P.C. 30:406.

^a PE = polyethylene

An apparatus for closing the open mouths of bags filled with several smaller filled bags is designed so that the line of folding of the upper portion of the outer bag is determined by the height to which the bag is filled.

169. Litterbags for litterbugs. Paper Sales 18, no. 8:25(Aug., 1958); A.B.I.P.C. 29:684.

The sale of litterbags represents extra business for paper salesmen; customers include gasoline companies, tourist associations, service clubs, and other firms and groups concerned with car travel and highway beauty.

170. Little, Leslie E., Sr., and Little, Harold E. Bag. U. S. patent 2,815,165(Dec. 3, 1957); Canadian patent 564,449(Oct. 7, 1958); B.I.P.C. 28:1021; A.B.I.P.C. 29:756.

An upper corner portion of a multi-ply paper bag is folded inward to form a valve through which the bag can be filled by means of a spout. A flexible valve sleeve which provides a closure flap can be tucked automatically into a position blocking the inner end of the valve upon removal of the bag from the filling spout.

171. Lutz, Friedrich, and Daniel, Hermann. Pedestal mounted portable bag closing machine. U. S. patent 2,901,992(Sept. 1, 1959); A.B.I.P.C. 30:529.

An apparatus for forming stitched closures in paper bags is designed so that it may be operated as a fixed-position pedestal machine when stitching small easily lifted bags, or as a portable hand stitcher when closing large bags.

172. McDaniel, Ruel. Why a Texas house has a brisk trade in ice bags. Paper & Paper Prods. 101, no. 1:2(July 5, 1959); A.B.I.P.C. 30:611.

The development of special kraft bags for packaging ice, sales prospects for this type of bag, and the advertising value of printing for ice bags are reviewed.

173. McIntyre, Thomas W., and Smith, Archibald H. Packaging machines. U. S. patent 2,851,838(Sept. 16, 1958); A.B.I.P.C. 29:776.

In a bagging machine wherein each bag is opened by an air blast so that an article may be inserted, guide arms are provided which enter the opened bag and hold it properly while the insertion is accomplished.

174. MacDonald, Donald. Trims \$thousands off packaging. Food Eng. 30, no. 3:78-9(March, 1958); B.I.P.C. 28:1372.

Diamond Crystal Salt, St. Clair, Mich. has saved thousands of dollars in industrial packaging costs by redesigning the bulk bag used for industrial

salt shipments to provide greater strength. The new container is a light-weight multi-ply paper bag closed with creped board tape pasted and sewn through the bag at the closures. The company has also redesigned its consumer salt container for better store display.

175. Macey, W. J., and Hill, E. H. Multiwall bag manufacture at St. Regis Paper Co. 1 and 2. Paper Ind. 41, no. 2:86-8, 100; no. 3:170-2, 181-2(May, June, 1959); Packaging Abstr. 16:644.

The methods and plant used by the company at their Franklin, Va., plant are described and illustrated. Water-resistant adhesives developed in conjunction with Corn Products Co. are made from urea resins cooked with starches and dextrans; their advantages are given. The plant has an improved universal tuber and a new Burroughs bottomer, both of which are described. A special paste, based on polyvinyl acetate, has been formulated to dry almost instantaneously and is used for spot or cross pasting; thus, freshly pasted tubes can be bottomed almost immediately, without having to be stacked to dry. Seam paste application, bottom paste application, the development of water resistance in the adhesive, special starch properties and additives, paste preparation and storage of the cooked paste are described.

176. Macey, W. J., and Hill, E. H. Multiwall bag manufacture at St. Regis Paper Company. 3. Paper Ind. 41, no. 5:313-14(Aug., 1959); Packaging Abstr. 16:810.

Steps in the preparation of seam and bottom pastes and properties and tests of the finished pastes are described.

177. Mahaffy, Reid A. Bag sealing machine. Canadian patent 556,109 (April 15, 1958); B.I.P.C. 28:1447.

This is identical with U. S. patent 2,740,243 [see Progress Report Seven, Project 2033, Abstr. no. 725].

178. Martens, Henry F. Poultry package. U. S. patent 2,871,131 (Jan. 27, 1959); A.B.I.P.C. 29:1395.

A shipping container for refrigerated dressed poultry comprises a bag or pouch (e.g., a multi-ply paper bag, preferably including wet-strength paper) having orifices that permit the drainage of water from the ice in which the poultry is packed.

179. Maxey, Hillis I., Steinert, Orville G., and Clougherty, Regis J. Packaging machines. U. S. patent 2,902,812(Sept. 8, 1959); A.B.I.P.C. 30:689.

A bag-filling machine for use with flat-tube satchel-bottom bags is provided with a conveyor for supporting the bags for movement through filling and sealing stations.

180. Mead, H. A. Bags. British patent 802,707(1958); Packaging Abstr. 16:33.

Rotary, relatively-adjustable folding and cutting mechanism for a machine making paper, etc., bags.

181. Mengis, Albin J. Apparatus for making bags. U. S. patent 2,855,832(Oct. 14, 1958); A.B.I.P.C. 29:906.

In an apparatus for forming paper bags, paper patches are adhesively applied to the web of bag-forming material, the web is gummed along one edge, perforated transversely at bag-length intervals, and formed into a tube. The tube is separated into bag lengths along the perforated lines, and finger openings are cut in each bag through the previously applied patches. The die-cutting roll which forms the finger openings is so positioned that it may be operated at constant speed regardless of the length of bag being produced.

182. Mercer, Lewis P. Art of producing side-gusseted bags. U. S. patent 2,871,771(Feb. 3, 1959); A.B.I.P.C. 29:1562.

An improved method is provided of forming a side-gusseted bag comprising a flat tube having gussets extending longitudinally along opposite sides between its outer walls, each of the gussets having a fold thereof adhesively secured to the inner surface of the adjacent outer wall at a zone near one end of the tube with the tube end being folded back upon itself along a fold line beyond the zone and the adjacent surfaces of the outer walls being adhesively secured directly to each other.

183. Meyerhoefer, Carl E. Filter bag. U. S. patent 2,792,076(May 14, 1957); Canadian patent 557,361(May 13, 1958); B.I.P.C. 28:264, 1698.

A paper filter bag for vacuum cleaners is provided with an air-impervious piece of kraft paper, against which dust particles are impinged to prevent their escape from the bag.

184. Meyerhoefer, Carl E. Filter bag. Canadian patent 571,395(Feb. 24, 1959); A.B.I.P.C. 29:1562.

A paper filter bag for use in vacuum cleaners is provided with an area formed of air-impervious kraft paper. Incoming dirt-laden air is impinged first on this area to prevent penetration of the bag wall by the dirt particles.

185. Meyerhoefer, Carl E. Filter bag. Canadian patent 571,396(Feb. 24, 1959); A.B.I.P.C. 29:1562.

This is similar to Canadian patent 571,395, an integral portion of the bag being rendered air-impermeable by treatment with a melamine resin. [see Abstr. no. 184].

186. Meyerhoefer, Carl E. Filter bag. U. S. patent 2,848,062(Aug. 19, 1958); A.B.I.P.C. 29:607.

A strip of kraft paper is fixed to the inner surface of a vacuum cleaner filter bag so that airborne particles drawn into the bag and impinged against the strip will not penetrate the bag.

187. Meyerhoefer, Carl E. Filter bag. U. S. patent 2,848,063(Aug. 19, 1958); A.B.I.P.C. 29:607.

This is similar to U. S. patent 2,848,062, except that a melamine resin-impregnated area is used instead of a kraft paper strip to prevent penetration of the particles. [see Abstr. no. 186].

188. Milk bottles in paper bags. Svensk Emballage Forpackningstidskr. 25, no. 4:100(April, 1959); Packaging Abstr. 16, no. 8:586(Aug., 1959); A.B.I.P.C. 30:610.

Milk bottles are delivered to dairies in wet-strength paper sacks, each holding 16 one-liter bottles. The sacks can safely be stacked and handled with mechanical handling equipment. They are lighter and occupy less space than the wooden or metal crates used in the past.

189. Millidge, Brydone D. Padded packaging materials. Canadian patent 561,268(Aug. 5, 1958); A.B.I.P.C. 29:608.

A bag is made of two-ply asphalt-impregnated paper, the inner layer of which is impregnated with a vapor-phase inhibitor. An insulating layer of waste paper or waste jute fibers or the like is included between the paper layers.

190. Modern Coffees Inc. Bags. British patent 806,128(1958); Packaging Abstr. 16:196.

A continuous process is described for making bags from two paper webs, filling the bags with coffee, chemicals, food, etc., and sealing them.

191. Modern machinery and equipment. Paper Packs, annual rev. no.: 33-65(1959); A.B.I.P.C. 30:578.

Descriptions are given of a wide variety of packaging and converting machines manufactured by 28 British companies. The equipment described includes machines for making cartons, bags, envelopes, and other containers; printing machine; cutting, creasing, slotting, folding, gluing, and embossing machines; slitters and rewinders, and others.

192. Moore, George A. Air extractor and sealing device. U. S. patent 2,863,267(Dec. 9, 1958); A.B.I.P.C. 29:1248.

The apparatus provided evacuates air from a container, such as envelopes, bags, and carton-liners, and, at the same time, heat-seals the mouth-forming portions of the container.

193. Morgan, Tracy B., Jr. Bellows bag construction. Canadian patent 577,272(June 9, 1959); A.B.I.P.C. 30:276.

A bellows-fold bag is designed so that it may be made on automatic machinery, so that the edges may be sealed while the panels are flat together, and so that no additional strips are necessary in joining the panel edges together.

194. Morgan, Tracy B., Jr. Gusset bottom bag. U. S. patent 2,821,337 (Jan. 28, 1958); B.I.P.C. 28:1307.

The gusset bottom of a bag formed of two panels sealed along opposite side margins is designed so that flaps turn outward from the lower corners when the bag is filled and act as guides to facilitate insertion into a carton without damaging the bag.

195. Mosse, Richard W. E. Bag closing machines. U. S. patent 2,850,856 (Sept. 9, 1958); A.B.I.P.C. 29:630.

The apparatus applies a vacuum to the interior of a bag filled with the article to be packaged (or alternatively, flushes the bag interior with an inert gas), then heat seals the mouth of the bag.

196. Mossor, George W. Sleeving apparatus for valved paper bags. U. S. patent 2,842,032(July 8, 1958); A.B.I.P.C. 29:299.

The apparatus accepts paper bags one at a time at a high rate of speed, cuts and shapes sleeves for the valves of the bags, assembles the sleeves into operative position with respect to the bag valves, and then discharges the sleeved valve bags.

197. Multiple unit bagger. Ind. Packaging 4, no. 5:49(May, 1958); Packaging Abstr. 15:602.

The Union Bag-Camp Paper Corp., New York City, manufactures an automatic machine for packaging multiple units into paper bags at speeds ranging from 6 to 18 bags per minute, depending on the type of product packed. It loads both soft and hard goods.

198. Multiwall bag sewing machine. Ind. Packaging 5, no. 5:37(May, 1959); Packaging Abstr. 16:601.

Model 53(Potdevin Machine Co.) will do tape-over sewing where the selvage is pasted over the stitches rather than having the stitches go through the selvage. It also provides all the techniques for sewn open mouth, sewn valve and regular sewing and will sew either one or both ends of multi-wall bag tubes in one operation.

199. Murphy, J. R. Stepped-end multiwall bags. Packaging Inst. papers 19, part 3:217-21(1957); B.I.P.C. 28:935.

The four basic types of multiwall bags are sewn open mouth, sewn valve, pasted open mouth, and pasted valve. The stepped-end multiwall bag (I) falls into the fourth category. This bag was introduced into the United States in 1948; about 200 million have been manufactured, most being used in the cement industry. There are three types of (I): the Diamond O, Hoppe, and Gelbke, the last not in use in the United States. Construction differences on corners and inline slits result in many variations of these basic types. Two advantages of this newer bag are that greater use of barrier sheets can be effected than in a standard pasted-valve bag and that the stepped end reduces sifting.

200. Negoro, Ki. Packaging machine. U. S. patent 2,826,881(March 18, 1958); Canadian patent 568,708(Jan. 6, 1959); B.I.P.C. 28:1447; 29:1410.

Automatic packaging machines for filling powdered material into bags and then depositing one or more of the bags in a carton are provided with a conveyor and synchronizing means so that the entire process may be accomplished continuously and completely automatically. Means are also provided for vibrating and flattening the bags before loading them into the cartons and for halting the machine in case of improper positioning of the receiving carton or jamming of the bags or cartons.

201. A new bag opener and packaging aid. Packaging Digest 5, no. 7: 119(July, 1959); Packaging Abstr. 16:774.

Designed to handle all types of bags, plain, gusset and flap; film or paper, the Speedy bag packager opens the bag by directing a jet of air at the mouth of the bag. The operator has only to push the product down an adjustable chute or guide into the bag. Models are available to cover a range of bag sizes from 4 to 18 in. wide, and length from 6 to 39 in.

202. New bagging machine. News & Tips 11, no. 10:1(Oct., 1958); Packaging Abstr. 16:142.

Tele-sonic Packaging Corp., New York, has introduced a new model of its bagging machine which incorporates a carrier delivery system for semi-automatic insertion of products in polyethylene, kraft or other type bags. The low-cost unit can be used for many different kinds of products such as shirts, bolts of cloth, meats and other items which are normally bag-packaged. A burst of air opens the bag when the product is placed on the delivery system. Then the product guide arms, custom-made for the product being packaged, 'float' the item to the bottom of the bag. Thus, heavy products with sharp corners can be loaded without tearing the bag.

203. New Beasley French 6 Model Rotacut bag machine. Paper, Film and Foil Converter 32, no. 6:46(June, 1958); Packaging Abstr. 15:583.

This machine has been improved to produce bags measuring 21 by 24 in. and 17 by 4 by 24 in. at the rate of 250 per minute. Speeds of 600 per minute on smaller bags are claimed. These speeds also apply when the bags are printed on the Befanco tail end printer which can be used in conjunction with this machine.

204. New embossing attachment for Befanco twin bag machine. Paper, Film and Foil Converter 32, no. 3:52(March, 1958); Packaging Abstr. 15:344.

The embossing unit is attached beneath the machine. A two or four color, 26-in. aniline printer completes this installation for the production of bags from glassine wax paper up to 60 lb. kraft, with a range from 2 by 3 to 6-1/4 by 10 in.

205. New high speed multi-wall paper sack plant. Brit. Packer 20, no. 11:631(Nov., 1958); A.B.I.P.C. 29:982.

The "Perforaster Tuber," Potdevin Machine Co.'s model 62XS bag machine, produces 150-300 bag tubes/min. in sizes from 20 by 10 to 54 by 26 in. The most unique feature of the machine is the simultaneous perforating and cross-pasting operation.

206. New improvement in multi-wall bag making. Paper Box Bag Maker, Jan., 1958:28; Paper Trade J. 141, no. 50:35(Dec. 16, 1957); Packaging Abstr. 15:178.

The 'Sew-Strong' method by the Union Bag-Camp Paper Corp. consists of reinforcing tapes which are fastened to both ends of the bag at the sewing line. This reinforcement serves to strengthen the bag ends where most bag breakages occur. Tests showed that the reinforcing tapes make possible a reduction of at least 10% in the basis weight of the bag. This reduction, however, depends upon the basis weight of the original multiwall bag, the commodity being packaged, and handling and shipping conditions. This new closure can be effected with any sewing head having a bound-over tape attachment.

207. A new liquid and air-tight multi-wall paper sack. Paper Packs, July, 1959:35-6; Packaging Abstr. 16:724.

Designed to hold up to 100 lb., the 'Uniseal' bag is constructed from 2 to 6 plies of paper. The inner ply is coated with polyethylene or any other heat-sealable material. Depending on the product being packaged, the plies are made up of various combinations of kraft paper, kraft and foil or polyethylene coated kraft and foil. The outer plies of the bag are staggered leaving the inner ply exposed to take a direct heat seal. The closing machine then applies adhesive to the tops of the outer plies. The entire lip is folded over and pasted to the outside of the bag so that no pressure is exerted on the heat seal. Simultaneously, the machine adds a strip of 2-1/2-inch gummed tape, centered over the edge of the lip. The machine heat seals, pastes the lips and applies gummed tape at the rate of 6 bags per min.

208. New multi-wall bag feeder developed. Food Field Reptr. 27, no. 14:30(July 6, 1959); Packaging Abstr. 16:725.

The Auto-Mac automatically feeds a bag to the bagholder. A second arm moves behind the bag and opens it. It operates at 16 bags per minute.

209. New multiwall saves space. Modern Materials Handling 14, no. 3:91(March, 1959); Packaging Abstr. 16:354.

This bag, which has a pasted bottom of the squared grocery bag type and is used for packaging low-density polyvinyl chloride, holds 25% more product than the usual multiwall type, requires 20% fewer bags per ton, and will build into a 2,000-lb. pallet load instead of 1,280-lb. load, giving more stable stacking.

210. New single gusset multiwall bag. Paper Trade J. 142, no. 35:13 (Sept. 1, 1958); Packaging Abstr. 15:951.

The bag, which is difficult to distinguish from the two-gusset multi-wall bag when filled, stacks uniformly and can be easily palletized. The advantages include additional usable space created by the flat tube side, more room for product flow during filling operations, and reduction of blowouts. The product fed into the bag does not back up and clog the filler spout.

211. New uses found for one-ply kraft. Packaging Parade 26, no. 11:103-4(Nov., 1958); A.B.I.P.C. 29:1130.

Shipping containers composed of single thickness kraft paper have found application in packaging flour, paper towels, sugar, grass seed, and even canned products like biscuits, frozen juice, and cleansers. The latest construction is the Bax, a cross between a bag and a box; only materials which possess some self-support are packaged in this process.

212. Newnham, Frank R. A. Ticket issuing machine. U. S. patent 2,845,886(Aug. 5, 1958); A.B.I.P.C. 29:465.

A machine for filling paper bags and then sewing shut the mouth of each bag is provided with means for supplying the sewing head with tickets or labels to be attached to each bag during the sewing operation.

213. Nicoli, Vincent J. Bag sealing and printing device. U. S. patent 2,898,717(Aug. 11, 1959); A.B.I.P.C. 30:530.

The device secures a length of pressure-sensitive tape about the end of a bag filled with produce or the like to seal the bag, and simultaneously imprints pricing or other information on the tape.

214. No-twist multiwall thread. Modern Packaging 31, no. 7:206, 208 (March, 1958); Packaging Abstr. 15:414.

'Zero-twist' thread spreads after sewing to fill the needle holes and thus alleviates the sifting problem in sewn multiwall bags. It is specially coated to assure trouble-free sewing.

215. The Novo-Pak King--a new bagging machine for coal, etc. Brit. Packer 21, no. 3:153(March, 1959); Packaging Abstr. 16:391.

This unit bags coal in 14 to 56-lb. quantities and is similar in design to other machines by Novotechnics Ltd., Letchworth, except that it has been made to handle an abrasive commodity such as coal.

216. O'Brien, Charles S., Jr. Bag with tie member for closing and carrying it. U. S. patent 2,849,171(Aug. 26, 1958); A.B.I.P.C. 29:608.

A flexible ribbon is attached at its opposite ends to opposite sides of the flat side wall of a bag near the bag mouth. The ribbon may be used to tie the gathered neck of the filled bag and to provide a carrying handle.

217. Offutt, Harold H. Bag overslip machine. U. S. patent 2,850,855 (Sept. 9, 1958); A.B.I.P.C. 29:630.

The machine slips an inverted heavy paper bag over articles being moved along a conveyor line without interrupting or changing the direction of their straight-line travel.

218. Olivette, Ralph K. Bag filling machine. U. S. patent 2,859,574 (Nov. 11, 1958); A.B.I.P.C. 29:1086.

The machine provided fills a large bag with smaller window bags containing produce or the like, the construction emphasizing means for supporting, positioning, and opening the large bag.

219. Ottinger, August F., and Stetson, Bradford R. Bag. Canadian patent 582,111(Aug. 25, 1959); A.B.I.P.C. 30:532.

A stitched closure for a paper bag is formed using a sewing thread consisting of a nylon core and several bulking strands of rayon or cotton. This thread forms a satisfactory and lasting closure even when the bag contains fertilizer or other material which releases acid under moist conditions.

220. Ottinger, August F., and Stetson, Bradford R. Bag closure. U. S. patent 2,855,881(Oct. 14, 1958); A.B.I.P.C. 29:906.

A multi-ply paper bag, of the type used in packaging fertilizer and other materials which may release acids after packaging, has a stitched closure formed of a thread of nylon and rayon strands. The nylon resists acid attack, whereas the rayon strands act as bulking material to plug the needle holes in the closure.

221. Overman, Earl R. Two-stage bagging machine. U. S. patent 2,869,296 (Jan. 20, 1959); A.B.I.P.C. 29:1411.

The machine compresses a charge of rock wool or the like, then packages the charge in a bag.

222. Overseas flour in multiwall bags. Good Packaging 19, no. 1:19 (Jan., 1958); Packaging Abstr. 15:267.

A bag improvement involves slitting the top of the baler at each corner so that after it is filled, flaps are formed which fold as easily as those on a box. This also provides a greater gluing surface and means a stronger closure at the top.

223. Owens, William V. Multi-ply valve sacks. Canadian patent 559,758 (July 1, 1958); A.B.I.P.C. 29:299.

This corresponds to U. S. patent 2,764,339 [see Progress Report Seven, Project 2033, Abstr. no. 881].

224. Packaging in the sugar industry. Verpackungs Rundschau 10, no. 2:89-91 (Feb., 1959); Packaging Abstr. 16:381.

The following machines are all made by Höfflinger & Karg, Stuttgart. Types EMWN and EMWD weighers and fillers are for granulated sugar with speeds of 22 and 28 per min. Type EMU/DU is for lump sugar with 20 weighings per min. For icing sugar (and similar powdery materials like milk powder) type DOS is recommended. On all these machines the operator must hold the bags under the filler, but type MBO can be added to any of the machines to open and feed the bags to the filler. Types LG and LG/FL fold the top of the bag and glue it down. Type CAR/Ha bottom seals cartons ready for inner packs of sugar. Type KB takes only block-bottom paper bags for filling and closing by means of gluing, and fills all types of sugar. It is available in models which make 1/2 and 1, and 2 and 2-1/2 kg. packets, and is fully automatic.

225. Packaging Institute. Bag and bulk packaging seminar. Papers presented at 19th Annual Forum, 3:217-48 (Oct. 28-30, 1957); Packaging Abstr. 15:629.

The following papers were given: 'Stepped-end multiwall bags' by J. R. Murphy; 'Multiwall bag test methods' by G. T. Steward; 'Package designing for an international pharmaceutical company' by T. F. Davies Haines.

226. Palm, Glenn A. Packaging apparatus. U. S. patent 2,850,993 (Sept. 9, 1958); A.B.I.P.C. 29:618.

A machine for stitching the mouth of a filled bag is provided with means for including a label in the stitched closure.

227. Palmer, William E., and Keller, Herbert B. Bag closing device. U. S. patent 2,884,749(May 5, 1959); A.B.I.P.C. 30:101.

The machine provided gathers the neck of a filled bag, applies tension to the gathered neck while restraining the bag from movement, and, while the bag is thus drawn tightly about the article within the bag, applies a metal sealing clip over the bag neck, close to the article within the bag.

228. The paper sack in Europe. Verpackungs Rundschau 9, no. 6:358, 360-1, 364(June, 1958); Packaging Abstr. 15:738.

Some impressions are given of the Eurosac congress in Baden-Baden. Among the subjects discussed were the use of plastics and silicone coated sacks, and the method of coating and sealing. Heat-sealing is possible, and special adhesives have been developed.

229. Paper sacks--European view. Neue Verpackung 11, no. 6:484-5, 491(June, 1958); A.B.I.P.C. 29:32.

EUROSAC, an association of paper-bag manufacturers from 15 European countries, held its annual meeting on May 8-10, 1958, in Baden-Baden, Germany. The following papers, presented by the indicated authors, are summarized: Guillaud, --. Packaging applications of silicone-coated papers; Elo, Niilo. Application of plastic-laminated papers in sack manufacture; Johnson, J. Swedish experience in the use of garbage-disposal bags made of paper; and Beauvais, A. Minor fields of application for paper sacks.

230. Paper sacks for fruit and vegetables. World's Paper Trade Rev. 151, no. 2:129(Jan. 8, 1959); Packaging Abstr. 16:215.

An experiment in the prepacking of fruit and vegetables was carried out recently by a well-known company in co-operation with William Palfrey Ltd., London. The company has been packing prepacked potatoes in 'Palfsacks' for some considerable time, and decided to investigate their use for the packaging of prepacked apples, carrots, and cabbages. Ten 3-lb. packs of apples or carrots were packed into each sack. The weight of cabbages packed varied according to the requirement. The sacks were dispatched to London by road and the consignors noticed an immediate saving of approximately 12-1/2% carriage costs. On arrival, all the produce was subjected to the strict quality control of a large multiple shop and was found to be up to specification in every respect. In addition to the saving of carriage costs, the packers calculate an immediate saving of about 60% in container cost per 30-lb. pack.

231. Paper Sacks Ltd. Bags. British patent 789,981(Jan. 29, 1958); Packaging Abstr. 15:842.

A blow-pipe flame heats travelling thermoplastic-coated paper for bag tubes along one margin to be sealed to another. A bag-tubing machine using this method of sealing is claimed.

232. Paper sacks provide a new method of packing rose trees. Paper Box Bag Maker, Feb., 1958:91; B.I.P.C. 28:1240.

A description is given of the packaging of rose bushes for overseas shipment in multi-ply kraft sacks.

233. Paper sacks shown to improve seed corn germination. Packaging Rev. 78, no. 143:65-6(July, 1958); Packaging Abstr. 15:686.

Trials with 4-ply 1 cwt. paper sacks for packaging seeds have been successfully carried out by Dunns Farm Seeds Ltd. and Conder Seeds Ltd. The sacks protect seeds specially treated against disease, allow them to breathe and yet also prevent the absorption of excessive moisture.

234. Parmer, D. J. Opening device for bags. U. S. patent 2,851,212 (Sept. 9, 1958); Packaging Abstr. 15:971.

In a package comprising superposed layers of packaging material which it is difficult to start tearing from an edge, a tear-initiating zone is provided where the layers are not sealed together and tearing can be initiated at a line of weakness.

235. Pasted-bottom multiwall bag cures resin-handling headache. Chem. Processing 22, no. 5:54-6(May, 1959); A.B.I.P.C. 30:611.

By substituting a pasted-bottom multi-ply bag for the previously used stitched-bottom bag, General Tire & Rubber Co. was able to load a heavier weight of bagged resin onto pallets without unduly increasing the dimensions of the palletized load.

236. Paul, Walter. Apparatus for automatically controlling the paper feed speed in large paper bag machines. U. S. patent 2,830,811(April 15, 1958); B.I.P.C. 28:1562.

In large paper-bag machines, the speed of paper feed is increased or decreased by means including a photoelectric element capable of sensing variations in the workpieces produced, a reversible electric motor controlled by the photoelectric element, and a continuously regulatable transmission and differential interposed in the main drive of the bag machine, and a further differential interposed in the main drive of the feed mechanism.

237. Peeled vegetables in poly-lined bags. Packaging Progress 1, no. 1:44-5(April, 1959); Packaging Abstr. 16:588.

Peeled potatoes and apples retain their freshness 10 to 12 days after processing when kept in 3 mil. polyethylene-lined two-ply paper bags at 30°F. The bags have a 45-lb. capacity.

237A. Pelleter, L. A. Bags. British patent 784,932(1957); Packaging Abstr. 15:36.

The bottom of a paper, etc. bag is formed while the bag is traveling in a rotary path in a continually operating machine.

238. Peterson, William R. Bag closing apparatus. U. S. patent 2,817,936(Dec. 31, 1957); B.I.P.C. 28:1201.

The apparatus described levels the upper edges of the mouths of conveyer-borne, filled, open-mouth bags so that a straight sealing line may be obtained in the subsequent closing operation.

239. Peterson, William R. Bag closing apparatus. U. S. patent 2,847,955(Aug. 19, 1958); A.B.I.P.C. 29:630.

The apparatus folds a closure tape over the closed mouth of a filled multi-ply bag and then holds the bag-closure elements in proper interrelation as the bag is passed through a stitching station.

240. Peterson, William R. Bag closing apparatus. Canadian patent 567,983(Dec. 23, 1958); A.B.I.P.C. 29:1249.

A machine for taping and stitching the mouth of a multi-ply paper bag is provided with means for holding the mouth edges pressed flat together during the closing operation. The apparatus is designed to prevent tilting of the edges from interfering with the smooth operation of the stitching head.

241. Petrea, James C. Bag closer and sealer. U. S. patent 2,902,805 (Sept. 8, 1959); A.B.I.P.C. 30:689.

Filled bags are received by the pockets of a turret which turns to move the bags through stations in which the upper end of each bag is flattened, closed, and heat-sealed.

242. Petrea, James C., and Howe, James W., Jr. Bag applying and filling machine. U. S. patent 2,859,036(Nov. 4, 1958); A.B.I.P.C. 29:1086.

In a bag-filling machine including a turret to the periphery of which are affixed a number of material delivery chutes, the turret being indexed for rotation through a number of stations at which bags are clamped to the turret-mounted chutes, and the bags are filled, vibrated, and delivered, means are provided for feeding the bags from a supply magazine to the delivery chutes and for attaching the bags to the chutes.

243. Petrea, James C., and Howe, James W., Jr. Bag applying machine. U. S. patent 2,833,097(May 6, 1958); B.I.P.C. 28:1726.

The machine draws one flattened bag at a time from a supply stack, opens the bag with a blast of compressed air, grips the bag to the chute of a filling apparatus, and releases the bag for delivery to a conveyor.

244. Piazza, Thomas E. Container filling, closing and sealing machine. U. S. patent 2,676,443 (April 27, 1954); Canadian patent 552,621 (Feb. 4, 1958); B.I.P.C. 24:854; 28:1201.

Open-end tubular bags are carried in compartments on a conveyor through filling, closing, and sealing operations. During filling, the compartment is vibrated to pack the contents into the bags. Tucking plates make a bellows fold in the top before the bag passes between the jaws of the heat-sealing mechanism.

245. Piazza, Thomas E. Container opening mechanism. Canadian patent 577,260 (June 9, 1959); A.B.I.P.C. 30:102.

This corresponds to U. S. patent 2,758,764 [see Progress Report Seven, Project 2033, Abstr. No. 980].

246. Placzek, Longin. Flexible packaging of thermoplastic materials. Verpackungs-Rundschau 9, no. 5:314, 316 (May, 1958); A.B.I.P.C. 29:33.

The filling of hot saponified resins (at 150-200°C.), bitumens, and related viscous and tacky materials into paper sacks is discussed.

247. Platt, John D., Platt, Leland H., Jr., and Platt, Leland H. Apparatus for closing flexible bags. U. S. patent 2,867,067 (Jan. 6, 1959); A.B.I.P.C. 29:1411.

The apparatus provided gathers the neck of a large-sized bag filled with produce and tapes the gathered neck with pressure-sensitive tape.

248. Platt, L. H., Platt, L. H., Jr., and Platt, J. D. Bag closing machine. U. S. patent 2,840,967 (July 1, 1958); Packaging Abstr. 15:801.

Apparatus for gathering and closing the neck portion of open flexible bags is claimed.

249. Platt, Leland H., Platt, Leland H., Jr., and Platt, John D. Bag closing apparatus. U. S. patent 2,867,066 (Jan. 6, 1959); A.B.I.P.C. 29:1411.

This is similar to U. S. patent 2,867,067 [see Abstr. No. 247].

250. Platt, Leland H., Platt, Leland H., Jr., and Platt, John D. Fastening of flexible bags in closed condition. U. S. patent 2,821,055 (Jan. 28, 1958); B.I.P.C. 28:1201.

An apparatus which passes filled bags along a conveyor holds the gathered neck of the bag in closed position, wraps pressure-sensitive tape about it, and discharges the bag.

251. Poly bagging gains. Chem. Week 84, no. 5:67(Jan. 31, 1959); A.B.I.P.C. 29:1297.

Hudson Pulp & Paper Co. has introduced a new sealer for multi-ply paper bags. The new unit caps a 2.5-in. wide tape of polyethylene-coated kraft over the stitched bag end with the aid of heat and pressure. The molten polyethylene flows into the stitching perforations to make a tight moisture-resistant seal. Monsanto Chemical Co. has introduced an all-polyethylene valve bag, the self-closing feature eliminating the troublesome heat-sealing of filled polyethylene bags.

252. Poppe, George W. Paper bag with locking element having concealed ends. U. S. patent 2,868,436(Jan. 13, 1959); A.B.I.P.C. 29:1392.

A locking closure for a paper bag is formed by folding over the bag-mouth edges and passing a locking strip through slits provided in the folded portion of the bag and in the bag body.

253. Poppe, George W. Paper bag with locking means through slits. U. S. patent 2,866,591(Dec. 30, 1958); A.B.I.P.C. 29:1227.

A paper bag of the type having a closure flap is provided with a separate paperboard member which is passed through registering slits in the closure flap and the bag body to lock the bag.

254. Porowski, Thaddeus. Thick-pasting starch containing urea-formaldehyde and process of making the same. U. S. patent 2,838,465(June 10, 1958); A.B.I.P.C. 29:287.

A starch product useful as an adhesive in making paperboard and paper bags, characterized by its ability to cook rapidly in aqueous medium to form high-viscosity starch pastes which are stable at high temperatures and which are relatively nonsensitive to pH, is prepared by reacting (at a pH of 3-5 and at an elevated temperature substantially below the pasting temperature of the starch) an aqueous slurry of unmodified starch containing 0.05-0.15% (based on dry starch weight) of at least one water-soluble heat-reactive urea-formaldehyde composition (dimethylol urea, monomethylol urea, and water-soluble urea-formaldehyde resin), adjusting the pH of the reacted medium to an alkaline pH ranging up to 10, and recovering the starch-resin reaction product.

255. Potdevin, Adolph, and Bechle, Rudolph P. Bags. U. S. patent 2,837,267(June 3, 1958); A.B.I.P.C. 29:126.

A gusseted, long-lip, square paper bag is designed to have a full side seam so that both walls of the bag are available for printing. The bag is fabricated from a single blank with the ends shaped complementary to each other, thereby eliminating waste of material. An improved bag bottom holds the ends of the gussets securely in place to prevent displacement and resultant bag leakage.

256. Potdevin, Adolph, and Bechle, Rudolph P. Bags. U. S. patent 2,837,268 (June 3, 1958); A.B.I.P.C. 29:128.

This is similar to U. S. patent 2,837,267 [see preceding abstr.].

257. Přibyl, J. The application of plastics in the manufacture and use of paper bags. Papír a celuloza 13, no. 2:39-42 (Feb., 1958); A.B.I.P.C. 29:518.

Various methods are discussed of combining plastics, such as polyethylene or polyvinyl chloride, with paper to provide adequate protection for packaged materials during shipping or storage. Small heat-sealed plastic bags can be inserted into plain or double-walled kraft-paper tubing, which is then cut and glued to form a flat bottom and top. Flat multi-ply paper bags with heat-sealed plastic liners provide adequate protection during overseas shipment. Corrosive or moisture-sensitive materials can be safely packaged in bags made of polyethylene laminated to bituminized kraft paper. The seams of paper bags can be reinforced with polyvinyl chloride strips. Plastic films can be used to cover filled paper bags during transport. Valve bags, made impermeable by plastic liners and machine-filled, can be used for packaging a variety of goods, but are not suitable for materials which require "breathing" (e.g., sugar or flour).

258. Přibyl, J. Manufacture and applications of special type paper sacks. Papír a celuloza 12, no. 1:18-20 (Jan., 1957); A.B.I.P.C. 29:207.

Heavy-duty multi-ply paper sacks are manufactured in a variety of types, each adapted to the particular task the sack is to perform (to resist abrasive or moist materials, rough handling, and long-range shipping). They have up to six plies of strong kraft paper, often paraffin-impregnated, bituminized or plastic-coated, to make them moisture-resistant. These sacks are either of the block-bottom type, with individual plies usually glued separately, or of the flat valve-bag type, with ends closed by stitching or stapling. The strength of the sacks is determined by drop tests, which specify the requirements for each type. Some of the recent developments in the manufacture of multi-ply heavy-duty sacks include improvement of chemical resistance and moistureproofness by the use of polyethylene-coated kraft paper, and strengthening of the seams by the use of nylon or terylene yarn for stitching.

259. Přibyl, J. Modern bag making machinery. Papír a celuloza 12, no. 7:153-5 (July, 1957); A.B.I.P.C. 29:518.

The equipment needed in a fully mechanized bag plant is listed, and a description is given of the operation of a modern bag machine manufacturing flat-bottom and valve bags.

260. Produce packer handles 75 lb. bags. Packaging 40, no. 337:37 (Aug., 1958); Prod. Packaging 4, no. 4:7 (Aug., 1958); Packaging Abstr. 15:787.

The Novo-pak Major fills about five 75-lb. sacks per min., handling paper, net or hessian. Special models can be supplied for weights of 112 lb.

261. The production of block-bottom bags. Allgem. Papier-Rundschau no. 9:427, 430-1(May 5, 1958); A.B.I.P.C. 29:32.

American and European problems in the manufacture of block-bottom bags are contrasted. The plain kraft bags, with or without a simple liner, that are so common in the United States permit much higher machine speeds than can be obtained in the manufacture of the fancy multi-ply bags (pergamyn, metal foil, cellophane) used in Germany for coffee and related packages. Three models of the Triumph bagmaking machine, their operation, limitations, and control are described.

262. 'Protecta' polythene-lined bags. Food Trade Rev. 28, no. 4:34 (April, 1958); Packaging Abstr. 15:419.

These bags are the gusseted satchel variety and are constructed of bleached kraft of any standard weight, laminated to polyethylene. Length ranges from 5-1/2 to 12-1/4 in., width from 2-1/2 to 8 in.

263. Protective shipper bag for coffee. Modern Packaging 31, no. 12: 134(Aug., 1958); Packaging Abstr. 15:872.

The Bulk-O-Tainer, an institutional-size shipper bag for coffee, is fabricated of kraft paper lined with rubber hydrochloride film and heat sealed to help maintain product freshness during storage. The film lining on the shipper bag, which holds a dozen 1-lb. bags of coffee, cuts cost by eliminating the need for protective linings in the individual bags. The bags can be re-used.

264. Randall, John W. Manufacture of self-sealing bags, envelopes and like containers. Canadian patent 567,245(Dec. 9, 1958); A.B.I.P.C. 29:1234.

This is the same as U. S. patent 2,759,400 [see Progress Report Seven, Project 2033, Abstr. No. 1080].

265. Randall, Ralph S. Vacuum bag sealing machine. U. S. patent 2,833,096(May 6, 1958); B.I.P.C. 28:1726.

A bag containing sausage or sliced meat is supplied to a machine which exhausts the air from the bag and heat seals the mouth of the bag.

266. Rawe, M. Bags. British patent 819,979(Sept. 16, 1959); Packaging Abstr. 16:864.

A control valve system for suckers used in spreading paper tubes in the manufacture of cross-bottom bags is provided.

267. Rawe, Martin. Securing device for valve-bags in valve-bag manufacturing machines. U. S. patent 2,859,670(Nov. 11, 1958); A.B.I.P.C. 29:1070.

In a machine for manufacturing valved paper bags, means are provided to hold the valve sleeve in proper position during the formation of the bag bottom.

267A. Rigot-Stalars Fils. Bags. British patent 812,381(1959); Packaging Abstr. 16:511.

A removable cover strip for an adhesive-coated closable mouth part of a bag or sack for powder is claimed.

268. Robinson, Paul C. Apparatus for heat sealing a ply of a bag tube. U. S. patent 2,875,673(March 3, 1959); A.B.I.P.C. 29:1562.

The apparatus provided heat-seals the longitudinal seam of a thermoplastic (e.g., polyethylene) ply included among paper plies in a multi-ply paper bag tube. The edges of the thermoplastic ply are sealed together to form a continuous waterproof layer.

269. Robinson, Paul C., and Staffileno, Arch L. Multiply bag with supplemental sleeve. U. S. patent 2,895,387(July 21, 1959); A.B.I.P.C. 30:409.

In the manufacture of a multi-ply bag, the supplemental valve sleeve is pasted to a ply of the bag before the ply is formed into tubular configuration.

270. Rockland, Louis B., and Atkinson, Lawrence F. Method and apparatus for packaging powders and the like. U. S. patent 2,875,070(Feb. 24, 1959); A.B.I.P.C. 29:1590.

In a process for vacuum sealing powdered materials within small bags, sucking part of the powdered material from the bag during the vacuumizing process is prevented by a patterned sealing of the side walls of the bag to each other in the areas between the vacuum-applying means and the top level of the powdered material within the bag.

271. Rose, Boyd W. Apparatus for filling bags. U. S. patent 2,866,484 (Dec. 30, 1958); A.B.I.P.C. 29:1249.

In a bag-filling apparatus wherein powdered or granular material is passed through a filling spout into the bag by means of air entrainment, improved means are provided to release the bag from the spout when the filling is completed, and to prevent loss of the powdered material into the atmosphere as a result of pressure building up in the bag.

272. Rose Bros. (Gainsborough) Ltd. Bags. British patent 802,250 (1958); Packaging Abstr. 16:33.

A bladed device for use in the folding of an end portion of a seamed bag tube is described.

273. Rotary-action bag former, filler, sealer. Modern Packaging 32, no. 11:44(July, 1959); Packaging Abstr. 16:764.

The Compak Series J by the Hayssen Mfg. Co., Sheboygan, Wis., makes a four-side seal as well as pillows and pouches at 150 bags per min. Bag sizes range from 1 by 2-1/2 inches to 8 inches by any desired length.

274. St. Regis Paper Co. Bag filling. British patent 809,612(1959); Packaging Abstr. 16:393.

Pulverulent or granular material is fed to flat bags through a tapered filling spout adapted to spread yieldable bag gripper elements.

274A. St. Regis Paper Co. Bag forming. British patent 798,706(1958); Packaging Abstr. 15:738.

A system of press-bars, etc., in an apparatus for folding, pasted, etc., bottom flaps of spread ends of laterally advanced bag tubes is claimed.

275. Schachte, John H. Automatic weighing and loading apparatus. U. S. patent 2,903,230(Sept. 8, 1959); A.B.I.P.C. 30:690.

A machine for filling bags by gravity discharge from a supply hopper is provided with an improved filling valve which prevents premature closing of the valve during the loading operation. Means are also provided to effect partial closing of the valve when the bag has been filled to a weight slightly less than that eventually desired, then to close the valve completely when the total desired weight has been reached.

276. Schoch, W. Paper bags and paper sacks. Verpackungs-Rundschau 9, no. 5:322-4(May, 1958); A.B.I.P.C. 29:33.

Since the invention of the first paper-bagmaking machine by Francis Wolle of Bethlehem, Pa., patented in 1852, the paper-bag industry has risen to an 800-million dollar business in the United States alone. Paper bags and sacks are made by about 400 U. S. companies, the largest of which (Union Bag-Camp Paper Corp. in Savannah, Ga.) manufactures 35 million bags daily. About 40% of the total bag production covers multi-ply and shipping sacks. The various applications of paper bags and sacks are outlined, including frozen-food, raincoat, Bar-B-Q, and mothproof bags, as well as various supermarket-specialty bags and milk and juice cartons.

277. Sealer on the bag line. Chem. Week 84, no. 12:60(March 21, 1959); A.B.I.P.C. 30:333.

Chase Bag has introduced a new apparatus and system for effecting moisture-tight seals on multi-ply paper bags. The new Moistite system involves melting a PE-base adhesive cord, extruding the molten adhesive onto paper tape, folding the tape into V-shape, and sealing a length of the tape over the stitches of the bag closure.

278. Sewing line guide for multiwall bag. Paper Trade J. 142, no. 20: 16(May 19, 1958); Packaging Abstr. 15:578.

The Sew-Straight guide makes it possible to sew a straight line closure within one inch of the bag top.

279. Simonsen, Jens P. Bag with closing strip, a blank of paper, cardboard, or other sheet material for such bags, and a method of manufacturing bags from such blanks. U. S. patent 2,855,137(Oct. 7, 1958); A.B.I.P.C. 29:756.

Bags which are sealed by means of a wire or aluminum strip fixed to the mouth edge of one wall of the bag, the ends of the strip being folded about the bag mouth after the mouth has been closed by rolling or folding, are formed from paper or board blanks which are designed to prevent the aluminum strip ends from projecting beyond the periphery of the bag when the bag is in flat collapsed condition prior to use.

280. Simplify bag handling with new valve insert. Paper, Film and Foil Converter 31, no. 12:39(Dec., 1957); B.I.P.C. 28:1091.

A new type of multiwall paper bag, which holds promise of improving palletization, handling, and warehousing of industrial chemicals and other dry products, includes a pasted valve reducing insert that makes it possible to fabricate a bag of standard length and width but with a thickness when filled that may range from 3.5 to 6.5 inches.

281. Simpson, Frank E. Stacking machine. U. S. patent 2,892,631(June 30, 1959); A.B.I.P.C. 30:271.

An apparatus for receiving bags from a bagmaking machine and arranging them in an orderly stack requires no adjustment to handle various sizes of bags.

282. Simultaneous cross pasting and perforation on new tuber. Paper Box Bag Maker July, 1958:32,34; Paper Trade J. 142, no. 27:18(July 7, 1958); Packaging Abstr. 15:658.

On the 'Perforaster Tuber', Model 62XS (Potdevin Machine Co.) for stepped-end, multiwall bags each web is both perforated and cross-pasted simultaneously. Output is from 150 to 300 tubes per minute. The machine produces bags in sizes from 10 to 26 inches in width, to 20 to 54 inches in length. The machine is equipped to handle up to six paper rolls.

283. Smidth, F. L., & Co. A.S. Bag filling. British patent 808,437 (1959); Packaging Abstr. 16:393.

A single camshaft controls operating cycles of multiple units for simultaneously filling valve bags with fluidized pulverulent or granular material.

284. Stafford, Neil S. Valve for fluids or fluidized solids especially for the spouts of bag filling apparatus. U. S. patent 2,874,925 (Feb. 24, 1959); A.B.I.P.C. 29:1590.

The discharge spout of a machine for filling bags with fluids or powdered or granular material carried in a moving airstream is provided with valve means capable of closing the conduit through which the materials to be packaged are passing without deforming the conduit by pinching or the like. The valve means comprise hollow inflatable rubber tongues positioned within the conduit so that when they are inflated by compressed air they effectively block the passageway.

285. Stahmer, Bernhardt. Hinging bag content dispenser. U. S. patent 2,903,161 (Sept. 8, 1959); A.B.I.P.C. 30:686.

A self-supporting device, apparently formed of metal, is provided to support a bag so that its contents may be dispensed by the consumer as desired.

286. Stein, Sam. Self-attaching disposable litter bag. U. S. patent 2,894,675 (July 14, 1959); A.B.I.P.C. 30:410.

A paper bag is provided with adhesive means for attaching the bag to the dashboard of an automobile or the like and for sealing the bag after it is filled. The bag is also provided with a separable sheet which may be used to wrap materials before they are deposited in the bag.

287. Sticky business. Rohm & Haas Repr. 16, no. 2:2-6 (March-April, 1958); A.B.I.P.C. 29:1.

A description of the manufacture of a wide range of glues and adhesives by the Union Paste Co., Mass., emphasizes the use of Rhoplex acrylic resin emulsions in the adhesive formulations. The adhesives produced by the company find many applications: bookbinding, paperhanging, bag and carton manufacture, paper laminating, packaging, labeling, and many others.

288. Stoakes, Harold R. How western bag firm is geared to farm demands; big multiwall bag plant set to serve California market; Portland envelope firm sells unique packaging idea; upgrading sells packaging for western plant. Paper, Film and Foil Converter 32, no. 8:23-33 (Aug., 1958); A.B.I.P.C. 29:686.

The expansion of the converting industry in the West, regarded as the greatest modern industrial growth area, is exemplified by descriptions of

four plants: Package Containers, Inc., Salinas, Calif., producers of film bags and overwraps; Crown Zellerbach Corp.'s multiwall bag plant at Antioch, Calif.; Mail-Well Envelope Co. at Portland, Ore.; and Shellmar-Betner Division plant of Continental Can Co. at South Gate, Calif.

289. Strine, Eli R. Bag closing mechanism. U. S. patent 2,848,961 (Aug. 26, 1958); A.B.I.P.C. 29:631.

An apparatus for filling paper bags with fertilizer or other pulverulent material is provided with means which receive the bags from a filling station, hold the opposite sides of the upper part of the bag in proper relation while air is expelled from the bag, and then maintain the mouth of the bag in closed position while it is conveyed through a sealing station.

290. Styers, Henry H. Litter bag and hanger therefor. U. S. patent 2,900,156 (Aug. 18, 1959); A.B.I.P.C. 30:533.

A litter bag for use in an automobile has a top closure construction involving a covered flexible metal strip which may be used to effect secure closure of the bag when it is filled, together with a metal clip which may be used to suspend the bag from a door bracket or the like.

291. Super-strength multiwall. Modern Packaging 31, no. 5:148 (Jan., 1958); Packaging Abstr. 15:267.

In a new 4-ply bag made by the St. Regis Paper Co., the plies are staggered as for the regular stepped-end bag, with slits made to form the top and bottom staggered in three different positions rather than in the same position. Glue is applied and the plies are pasted together. Since each of the three plies is bonded, together, as well as the outside ply, a stronger bottom closure results.

292. Taylor, James, and Bauknecht, Joseph A. Apparatus and method for making valve bags. Canadian patent 558,281 (June 3, 1958); A.B.I.P.C. 29:131.

This is identical with U. S. patent 2,762,272 [see Progress Report Seven, Project 2033, Abstr. No. 1295].

293. Taylor, Jesse B., Sr. Bag formers. U. S. patent 2,818,004 (Dec. 31, 1957); B.I.P.C. 28:1021.

Bagmaking machines in which a strip of paper is converted first into a continuous tube are provided with tube-forming elements which are adjustable in width to permit the manufacture of bags of different sizes on the same machine.

294. Tear-strip opens bag on face, gusset or seam. Packaging News 6, no. 3:13 (March, 1959); Packaging Abstr. 16:371.

The Kwik-Rip (E.S. & A. Robinson Ltd.) is incorporated in the bag during manufacture. It allows the container to be opened either completely or only in part so that the bag can serve as a dispenser.

295. The third DRUPA exhibition. Neue Verpackung 11, no. 7:547-54, 556, 558, 560, 562, 564-79(July, 1958); A.B.I.P.C. 29:70.

The machinery and materials exhibited at the third International Printing and Paper Fair, held May 3-16, 1958 in Düsseldorf, Germany, are described and illustrated. Among the 154 machines were gumming and gluing machines, bagmaking machines, printing presses, cutter-creasers, die-cutting and embossing machines, folding and stitching machines, carton-making and erecting machines, packaging machines, converting machinery, paper- and board- finishing equipment, and miscellaneous machinery. Among materials on exhibit were various wrapping and packaging papers and boards, cartons and other containers, colors and dyes, lacquers, bronzes, and adhesives.

296. Tilton, William J., and Leslie, William T. Liner inserting device. U. S. patent 2,896,516(July 28, 1959); A.B.I.P.C. 30:410.

The device provided supports a plastic film liner bag so that a multi-ply paper bag may be slipped over the liner.

297. Titchenal, Oliver R. Valve bag packing apparatus. U. S. patent 2,887,292(May 19, 1959); A.B.I.P.C. 30:103.

In a machine for filling valve bags, the filling spout comprises an inner flexible tube partially surrounded by a rigid casing and means for compressing the inner tube against the casing in order to cut off the flow of material through the tube into the bag.

298. Tostado, Javier A. Mechansim for sealing bags. U. S. patent 2,872,061(Feb. 3, 1959); A.B.I.P.C. 29:1547.

The apparatus provided applies a strip of adhesive tape about the gathered neck of a filled bag which is presented to the taping machine manually.

299. Trescott introduces a new high-speed bagger. Prod. Market. 1, no. 4:28(April, 1958); Packaging Abstr. 15:526.

The unit is for the automatic weighing, filling and bagging of potatoes, oranges and onions. It will take plastic, paper, or mesh bags and all weights from 2 to 15 lb. The model 310 may be set to turn out from 1,200 to 2,400 bags per hour. It has three scales, each supplied by its own automatically-controlled elevator.

300. Turret-action bag-filling machine. Modern Packaging 32, no. 9: 52(May, 1959); Packaging Abstr. 16:598.

The VUF model by Arenco Machine Co. Inc., New York, operates at 35 fills per min., packaging such products as cookies, ground coffee, flaked cereals and similar small, lightweight products. Bags are taken one at a time by suction and the bag top opened by an air blast.

301. Ultrafast, precise bag packer permits quick product switch. Food Processing 20, no. 7:64-5(July, 1959); Packaging Abstr. 16:767.

The DX packer (H. L. Stoker Co., Claremont, Calif.) fills preset weights of powdered, granular, pelleted or flaked materials into valve or open-mouth bags and drums. An automatic bag settling attachment is optional. The packer handles weight ranges to 100 lb.

302. Valentin, William F. Specialty bag industry dons seven-league boots! I and II. Paper & Paper Products 99, no. 11:10-11, 14-15; no. 13:10-11, 22(Dec. 5, 1957; Jan. 5, 1958); B.I.P.C. 28:1092.

Two qualifications that will lead to the greatest success for the paper-bag producer are imagination and an engineering turn of mind. A number of ingenious bags which show the result of imagination applied to the development of special types of bags to meet special needs of various users are illustrated.

303. Vaughan, Jerold. How multiwall bag lines attain higher production at lower cost. Package Eng. 3, no. 2:43, 45, 47-8(Feb., 1958); B.I.P.C. 28:1271.

Getting higher production at lower cost on a multi-ply bag packaging line was achieved in one company by attention to the following points: maintaining an adequate supply of product at the filling machines, keeping adequate bag supplies within reach, using a finger hole on the bag to facilitate its being opened, using a bag holder on the filler, employing a stop-and-start automatic control unit on each sewing machine, using an air jet to facilitate string cutting, keeping bags as close together as possible during production operation, using a drop-off conveyor leading to the palletizing operation, making adequate provision for clean-up and change-over, coding of bags, careful handling of the tagging function, and properly controlling package net weights.

304. Vergobbi, John G. Container forming machine. U. S. patent 2,821,121(Jan. 28, 1958); B.I.P.C. 28:1182.

The machine claimed folds, seals, and severs a strip of bag-forming material to form individual flat bags, then opens each bag and transfers it to an expansible mandrel. The machine is particularly suited for use in the manufacture of container liners.

305. Versatile bag machine. Modern Packaging 31, no. 2:190(Oct., 1957); Packaging Abstr. 15:35.

The PFF by the Potdevin Machine Co., produces both the flush-cut and the full-lip types of bags in sizes from 2 by 6-1/2 in. to 10-1/2 by 16-1/4 in. Materials handled by the machine include cellulose film, Pliofilm, Kodapak, acetate, polyethylene laminations, polyester film, paper and foil. Combination bags with cellulose film fronts and paper backs are also produced by the machine. Finished bags are delivered stacked vertically with every 50th bag raised for the count.

306. Versatile bag-neck sealer. Packaging Rev. 78, no. 146:62(Oct., 1958); Packaging Abstr. 15:992.

Tape control is achieved by trapping the tape in the sealing gate in such a way that it cannot fly back on cutting. The machine handles paper, cloth or film tapes in widths up to 1/2 inch. It handles any kind of bag-neck sealing or small bundling operation.

307. Vineberg, Joseph H. Packaging means. U. S. patent 2,891,715 (June 23, 1959); A.B.I.P.C. 30:276.

A transverse paperboard panel is provided in a paper bag to hold the bag in the desired rectangular shape.

308. Voegel, James E., and Thomas, Leonard C. Bag. U. S. patent 2,888,187(May 26, 1959); A.B.I.P.C. 30:106.

A paper bag is opened by means of a tear string included within the bag, running the full height of one of the side panels of the bag. Means giving easy access to one end of the tear strip are provided.

309. Vogt, Clarence W. Apparatus for and method of combining enwrapments. U. S. patent 2,854,898(Oct. 7, 1958); A.B.I.P.C. 29:744.

An apparatus removes paper bags from a supply stack and attaches them to a strip of adhesive tape or other enchaining member, providing a bag series which can be more easily handled by filling and other processing machinery than can the single bags.

310. Vogt, Clarence W. Bag arrangements. Canadian patent 557,842 (May 27, 1958); A.B.I.P.C. 29:300.

Several methods are described for producing a series of two or more interconnected bags, the chain of bags serving to facilitate handling during the filling and final sealing operations. All methods employ as bag material a tube of thermoplastic film or a paper tube lined with thermoplastic film, the interconnections being formed either by portions of the tube left uncut between bags or by the inclusion of nonintegral interconnecting means, such as paper-backed adhesive tape.

311. Vredenburg, Edric W. Apparatus for filling and closing bags. U. S. patent 2,853,842 (Sept. 30, 1958); A.B.I.P.C. 29:776.

A machine for filling open-mouth bags with powdered or granulated material is provided with bag-supporting and conveying means which grip each bag just below the mouth opening between rubber-covered members which resiliently urge the bag mouth to a closed position but permit the insertion and withdrawal of the bag-filling spout. After filling, the supporting and conveying means then move the bag to stitching and taping stations.

312. Vredenburg, Edric W. Open mouth bag filling and closing apparatus. Canadian patent 582,919 (Sept. 8, 1959); A.B.I.P.C. 30:691.

In a bag-filling machine, means are provided to support each bag, convey it to a filling station, and resiliently urge the mouth portions of the bag inward against the filling spout as the latter is inserted and withdrawn, so as to provide a relatively tight seal during the filling operation and prevent the loss of the material being packaged.

313. Watts, Aaron P. Bag valve opener. U. S. patent 2,848,857 (Aug. 26, 1958); A.B.I.P.C. 29:631.

In a packaging operation involving the filling of valve bags, an apparatus operated by a foot treadle is provided which effects the opening of each valve bag preparatory to receiving the filling nozzle of the machine.

314. Weaver, Paul J., and Titchenal, Oliver R. Container filling apparatus. U. S. patent 2,860,848 (Nov. 18, 1958); A.B.I.P.C. 29:1412.

The apparatus provided fills containers (e.g., 100-lb. bags of sugar) to an accurate weight at a high rate of speed. In the filling operation, a major portion of the product is supplied to the container at a very rapid rate, then the flow is cut down so that any error at the precise moment of complete cut-off results in only a minor error in the total weight of the product filled into the container.

315. Weeks, Arnold N., and Coakley, Lige. Bag. U. S. patent 2,830,750 (April 15, 1958); B.I.P.C. 28:1548.

A valve bag of the type filled with granular material by blowing the material through a spout inserted through the valve is provided with an improved closure construction relative to the corner of the bag opposite the valve. The improved construction prevents the material from being blown into the folds of the closure.

316. Weigher-bagger. Emballages 27, no. 170:129 (Nov., Dec., 1957); Packaging Abstr. 15:691.

Type 'Universelle', model UV-III, fills valve bags of 25 to 50-kg. capacity with flour, powdery or granular materials.

317. A weighing and bagging machine. Emballages 28, no. 173:61(March-April, 1958); Packaging Abstr. 16:311.

Model FA handles all types of bags, from 30 to 130-mm. wide, and up to 280-mm. high.

318. Weissshuhn, Peter. Method and apparatus for manufacturing bags. U. S. patent 2,903,947(Sept. 15, 1959); A.B.I.P.C. 30:676.

The machine provided forms two-seam paper bags, i.e., bags in which both principal panels are joined to each other by a single bottom fold line and by two side seams.

319. Wheeler, Oscar G. Tamper-proof shipping bag. U. S. patent 2,843,309(July 15, 1958); A.B.I.P.C. 29:443.

The mouth of a heavy paper bag for shipping mail is closed by a strip of paper folded over the bag-mouth edges and a number of snap-fastener elements which pass through both the paper strip and the bag. The construction prevents opening the bag except by cutting.

320. Whitmire, Emmett S. Bag filling spout. Canadian patent 575,062 (April 28, 1959); A.B.I.P.C. 30:104.

A machine for filling valve bags with pulverulent material is provided with a filling-spout attachment which is effective to exhaust trapped air from the interior of the bags.

321. Whitmire, Emmett S. Bag filling spout. U. S. patent 2,861,604 (Nov. 25, 1958); A.B.I.P.C. 29:1070.

A spout for filling a valve bag is designed to exhaust the air from within the bag so that, upon withdrawal of the spout, none of the material filled into the bag is blown out of the bag by escaping air.

322. Williams, Russell J. Bag. U. S. patent 2,854,186(Sept. 30, 1958); A.B.I.P.C. 29:757.

A multi-ply paper bag having offset ply seams and end closures formed by stitching or by folding and pasting procedures is provided with reinforcing patch elements in the vicinity of the closures, whereby leakage between the stitches or folds is prevented without including extra full-size plies in the construction of the bag.

323. Williams, Russell J. Bag. U. S. patent 2,865,556(Dec. 23, 1958); A.B.I.P.C. 29:1227.

A multi-ply valve bag of the type used for packaging fertilizer and other pulverulent materials is provided with an improved valve construction which prevents escape of the packaged material after the bag is filled.

324. Williams, Russell J. Bag. U. S. patent 2,869,772 (Jan. 20, 1959); A.B.I.P.C. 29:1392.

In a multi-ply paper bag, a reinforcing band is sealed between the plies near the end closure to compensate for the weakness caused by the formation of the closure.

325. Williams, Russell J. Bag. U. S. patent 2,892,580 (June 30, 1959); A.B.I.P.C. 30:276.

Multi-ply paper bags having folded and pasted end closures are reinforced to offset the weakness in the paper otherwise caused by the folding and creasing incident to forming the closures.

326. Williams, Russell J. Bag. U. S. patent 2,906,446 (Sept. 29, 1959); A.B.I.P.C. 30:693.

An improved valve-and-sleeve construction is provided in a pasted valve bag of the type used in packaging fertilizer.

327. Williams, Russell J., and Heimos, Milton J. Manufacture of bags. Canadian patent 556,141 (April 15, 1958); B.I.P.C. 28:1699.

A machine is provided for forming a multi-ply web having patches between the plies spaced at bag length intervals along the length of the web. The web is suitable for forming into bags by conventional tubing, segmenting, and bottoming operations. The patches applied may be paper patches or a patch of mesh to cover a window opening in the bag.

328. Williams, Russell J., and Heimos, Milton J. Manufacture of bags. U. S. patent 2,822,733 (Feb. 11, 1958); B.I.P.C. 28:1307.

A multi-ply web of bag-forming material has patches of paper or other suitable material affixed between the plies at bag-length intervals.

329. Wilson, James S., Perman, Douglas V., Hansen, H. H., Broyles, Horace N., Evans, George W., Pavoni, Paul, and Kindel, William H. Packing apparatus. U. S. patent 2,864,218 (Dec. 16, 1958); A.B.I.P.C. 29:1250.

The apparatus provided packs a compressible article, such as a mattress, into a paper bag.

330. Windmüller and Hölscher. Bottomed bag and its production. German patent 962,766 (1957); Packaging Abstr. 15:345.

A method is given for the production of bags from paper coated with a thermoplastic material, particularly polyethylene-coated paper.

331. Winesett, Frank P. Bag stacking assembly for a bag making machine. U. S. patent 2,898,106(Aug. 4, 1959); A.B.I.P.C. 30:533.

A bagmaking machine is provided with means for receiving the plastic bags produced, eliminating any static electricity accumulated on the surface of the bags (particularly PE^a bags), and transporting and stacking the bags into piles of predetermined number without permitting further static accumulation.

332. Wire tear-strip closure for bags. Packaging News, London 5, no.4: 3(April, 1958); Packaging Abstr. 15:428.

A latex coating on the bag mouth is activated by mild heat. While this seal is being applied, a metal wire, fed from a reel, is folded into the bag-top. This filament serves both to reinforce the enclosure and to enable the purchaser to open it. The closure is said to be as air-tight as a heat-seal.

333. Wittelshofer, Ira S. Bag-like protective wrapping for automobile bumpers and the like. U. S. patent 2,875,945(March 3, 1959); A.B.I.P.C. 29: 1562.

An elongated kraft paper bag is designed to be slipped over the end of an automobile bumper to protect it during the handling and shipment of the automobile.

334. Woodward, Donald E. Sleeve structure for bag valve. U. S. patent 2,884,182(April 28, 1959); A.B.I.P.C. 30:107.

A bellows-folded partially slit construction is provided for a valve sleeve for a multi-ply valve bag used in packaging powdered or granular materials. This construction permits a more thorough automatic closing of the valve and prevents the escape of material packaged in the bag.

335. Wyant, Gerald W. Paper tubing. Canadian patent 580,558(Aug. 4, 1959); A.B.I.P.C. 30:533.

The marginal portions of a paper web are folded in upon the center of the web in overlapping relation, and the overlapped margins are adhered to each other to form a flattened tube. The web is then coiled to form a supply roll. Lengths of the paper tubing may be drawn and cut from the supply roll and used either as multi-ply wrapping paper or as a tube for conversion to a bag.

336. Yount, Stanley G. Two-piece paper bag and method and apparatus for making same. Canadian patent 559,178(June 24, 1958); A.B.I.P.C. 29:443.

A strong self-supporting two-piece flat-bottom paper bag for industrial or agricultural use is formed by adhering a bottom-forming member of stiff paperboard or the like to a collapsible paper tube.

^a PE = polyethylene

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2,838,465	255	2,861,735	85	2,889,031	137
2,840,967	249	2,863,267	193	2,889,979	42
2,841,935	155	2,863,475	160	2,890,006	135
2,842,032	197	2,864,218	330	2,891,715	308
2,842,179	128	2,864,219	151	2,891,716	162
2,843,309	320	2,864,462	40	2,892,293	159
2,845,214	91	2,865,556	324	2,892,297	73
2,845,760	136	2,866,484	272	2,892,580	326

[illegible]

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