No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 1.

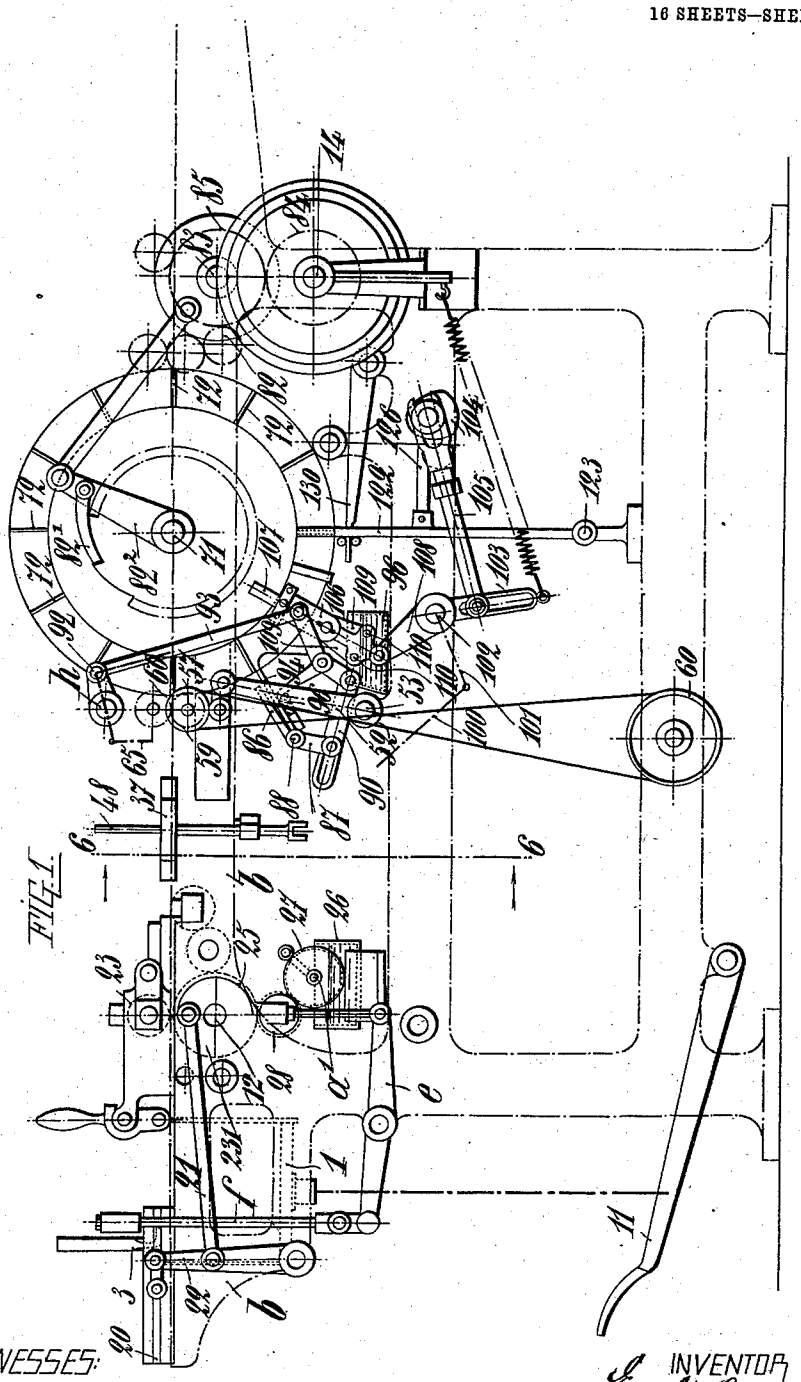


FIG. 1.

WITNESSES:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

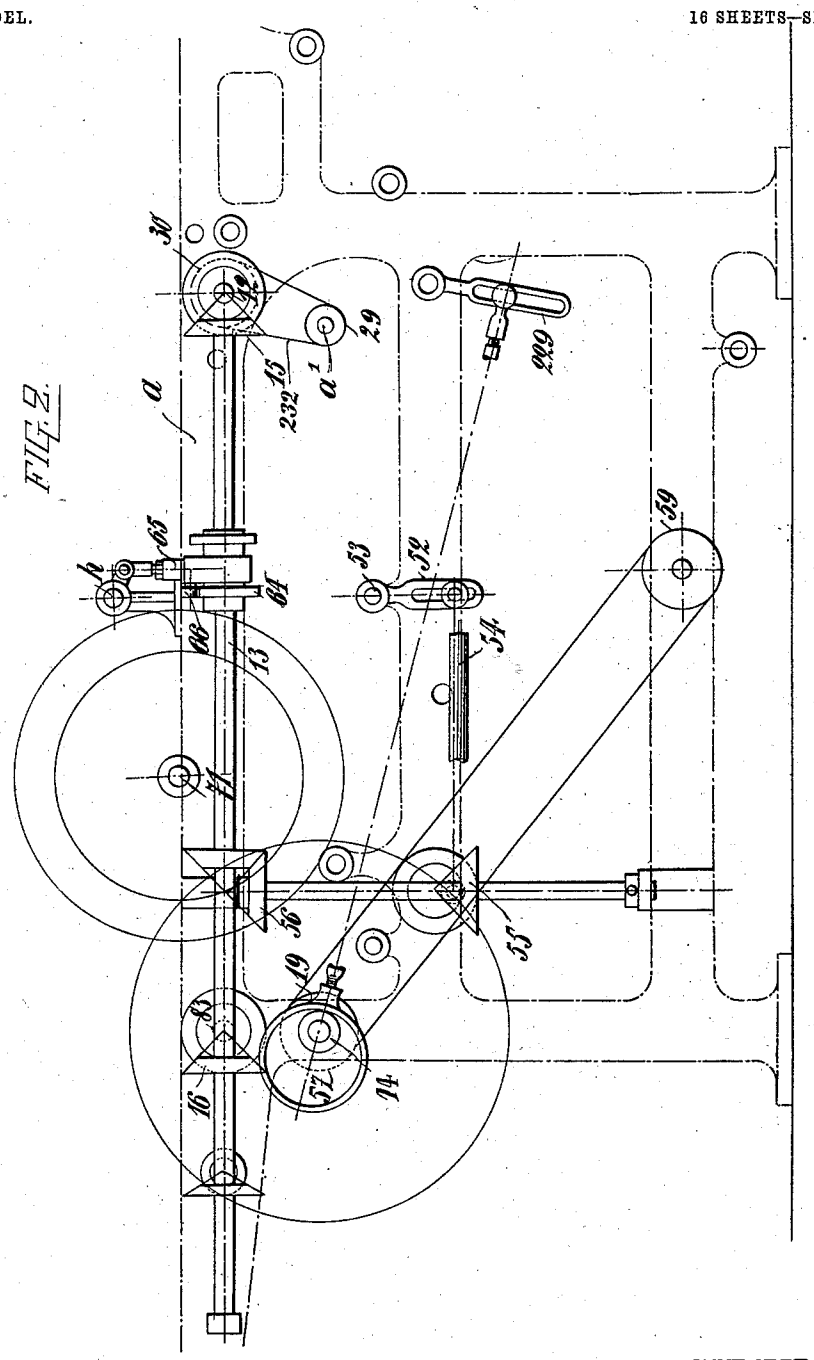
E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 2.

FIG. 2.



WITNESSES

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No. 749,631. PATENTED JAN. 12, 1904.

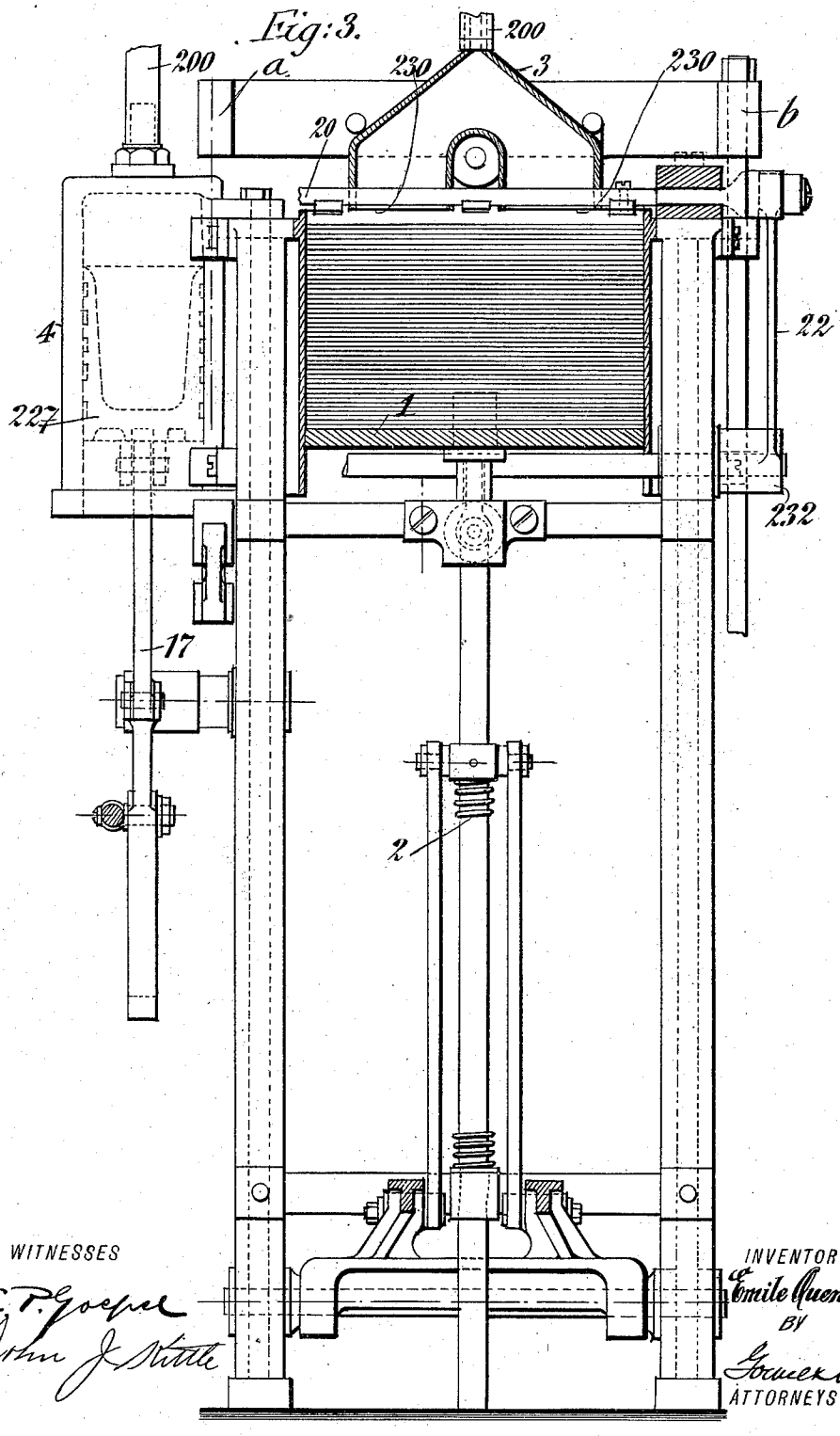
E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 3.

Fig. 3.



WITNESSES

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No. 749,631. PATENTED JAN. 12, 1904.

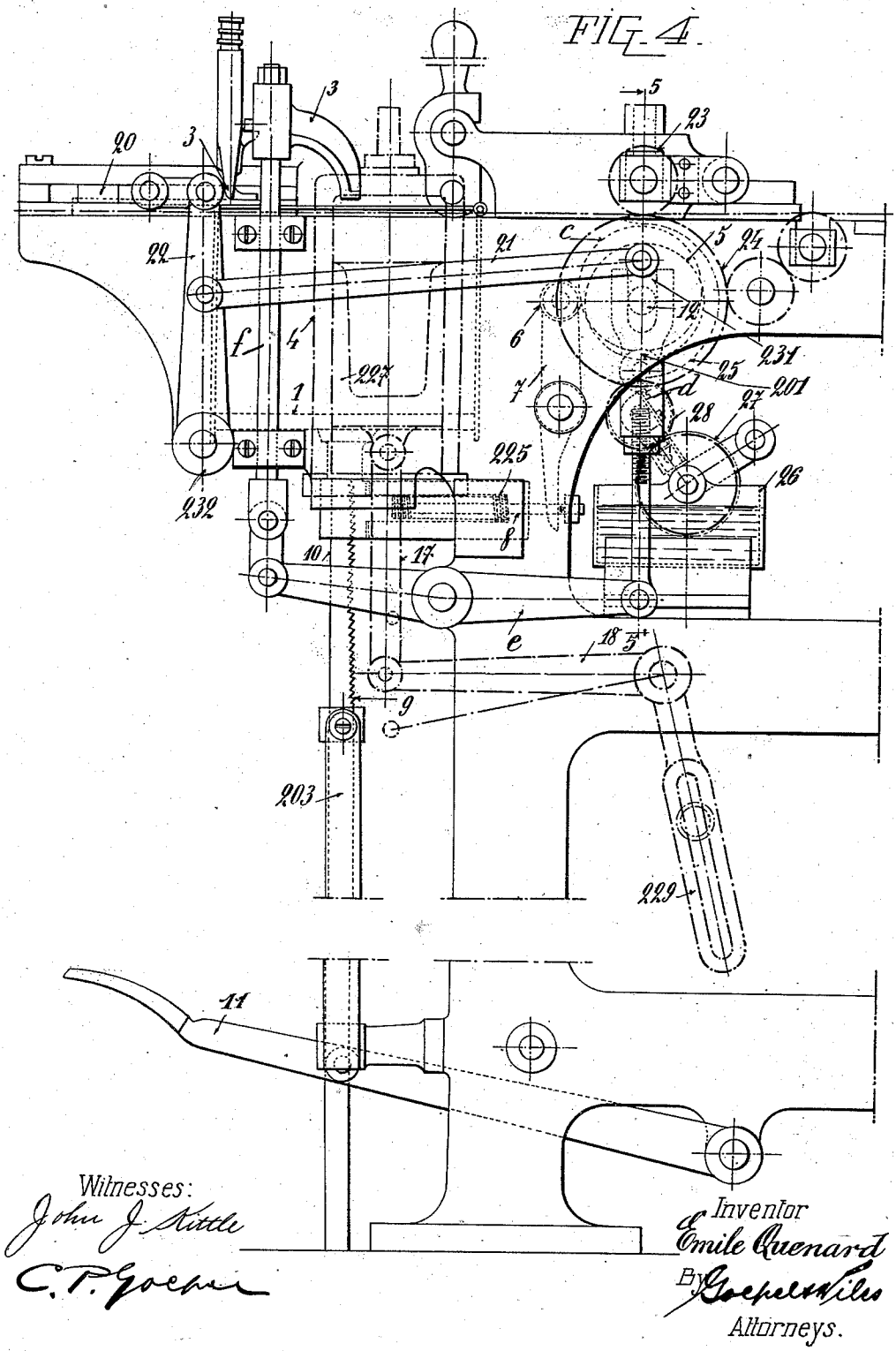
E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 4.

FIG. 4.



Witnesses:
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No. 749,631. PATENTED JAN. 12, 1904.

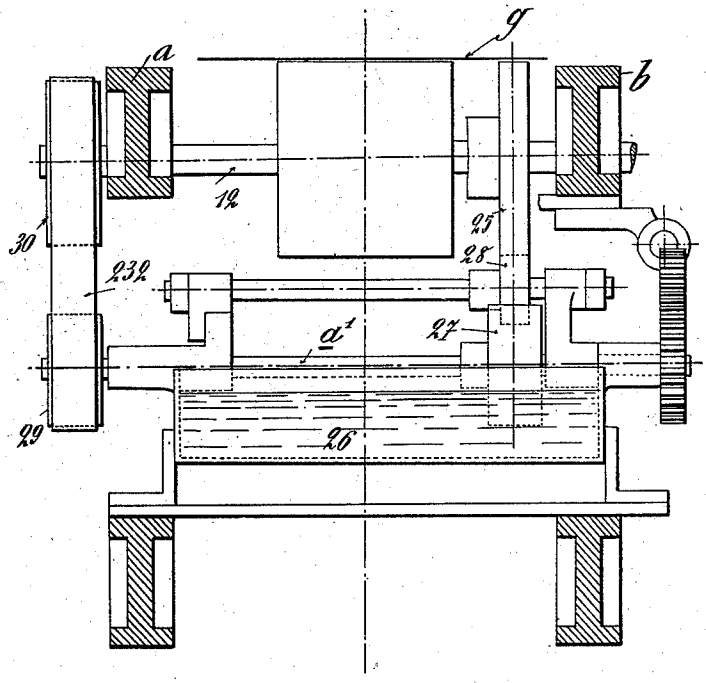
E. QUENARD.

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APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 5.

FIG 5.



Witnesses:
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NO MODEL. 16 SHEETS—SHEET 6.

FIG. 6.

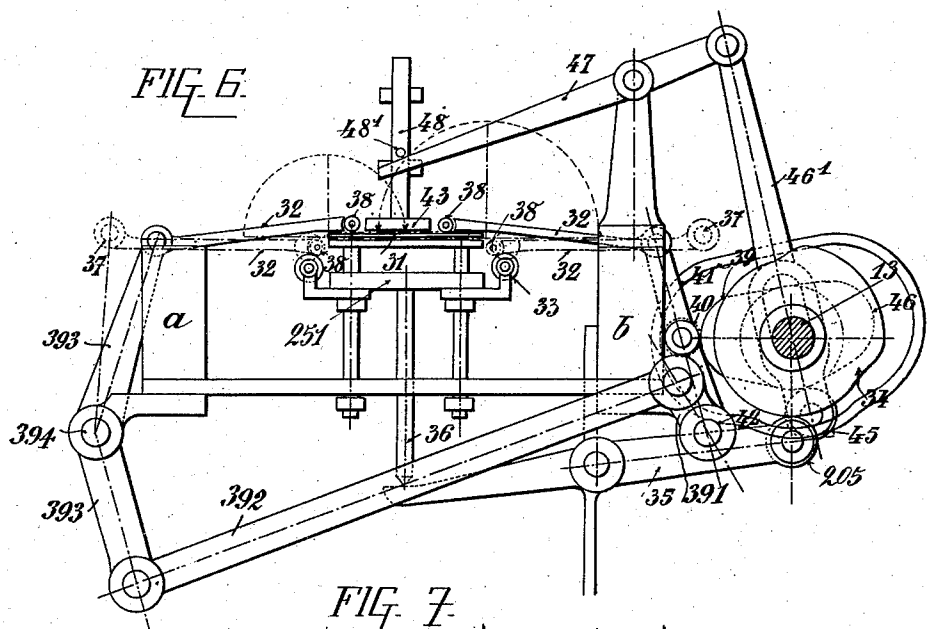
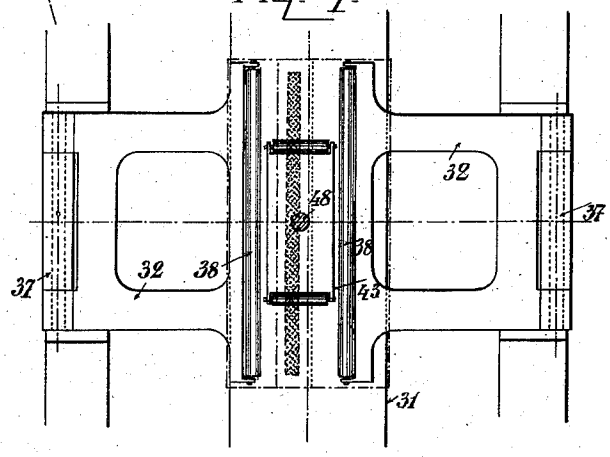


FIG. 7.



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No. 749,631. PATENTED JAN. 12, 1904.

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PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 7.

FIG. 9.

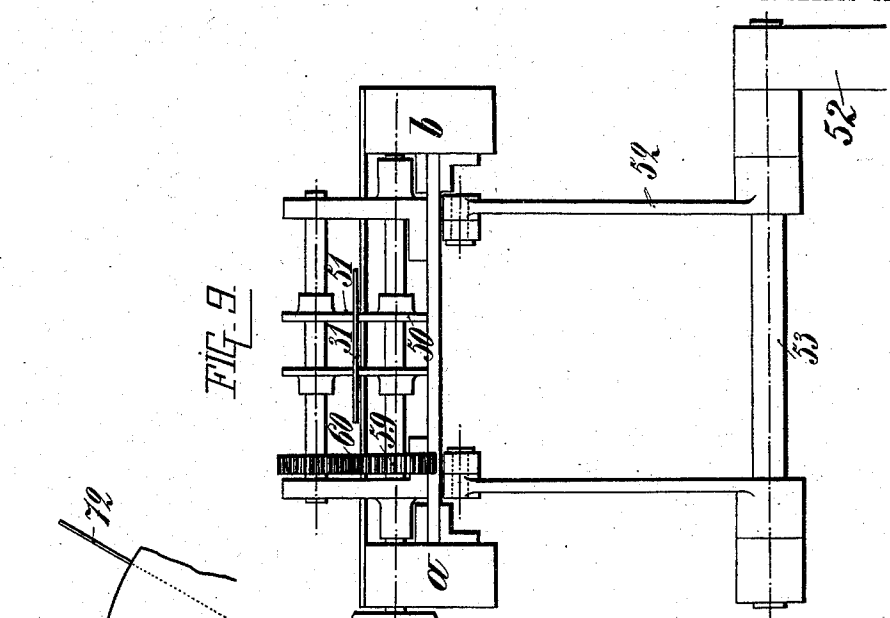
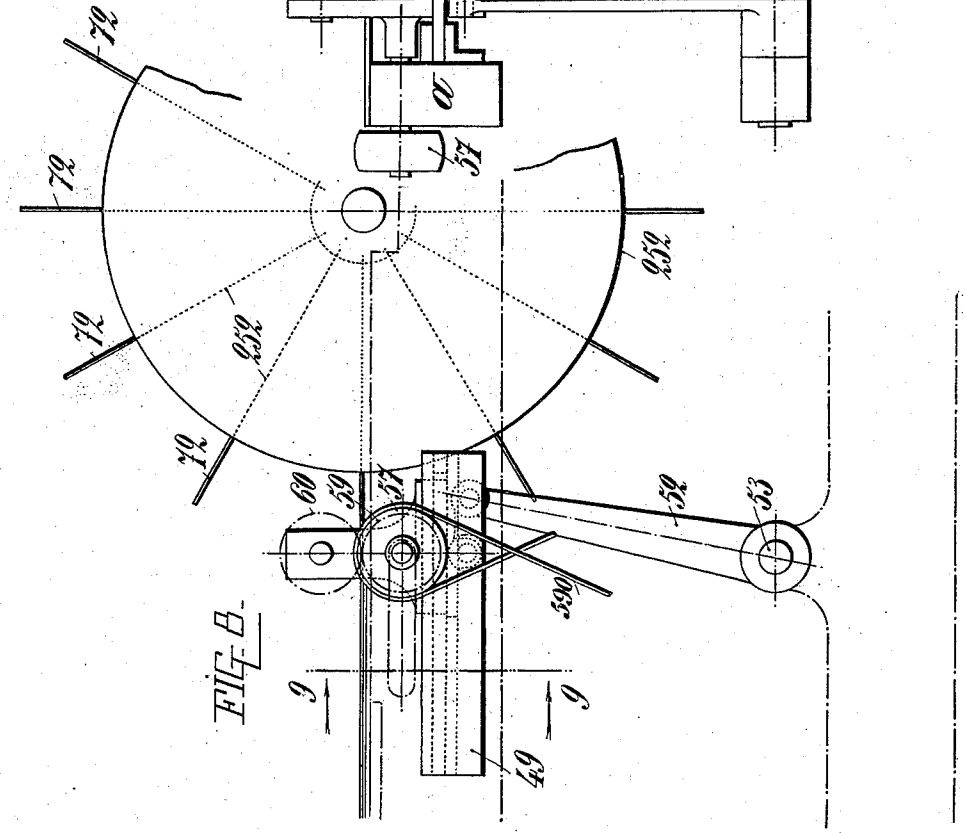


FIG. 8.



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No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 8.

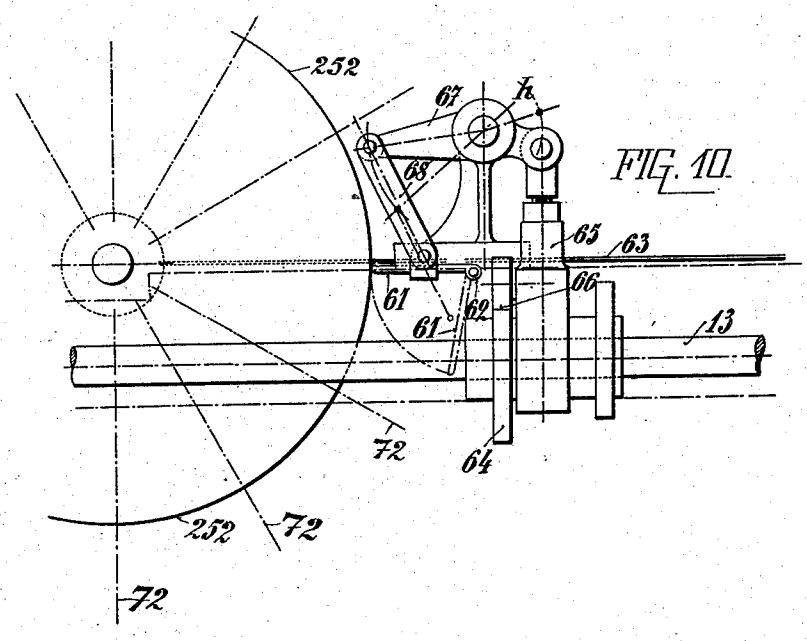


FIG. 10.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

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APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 9.

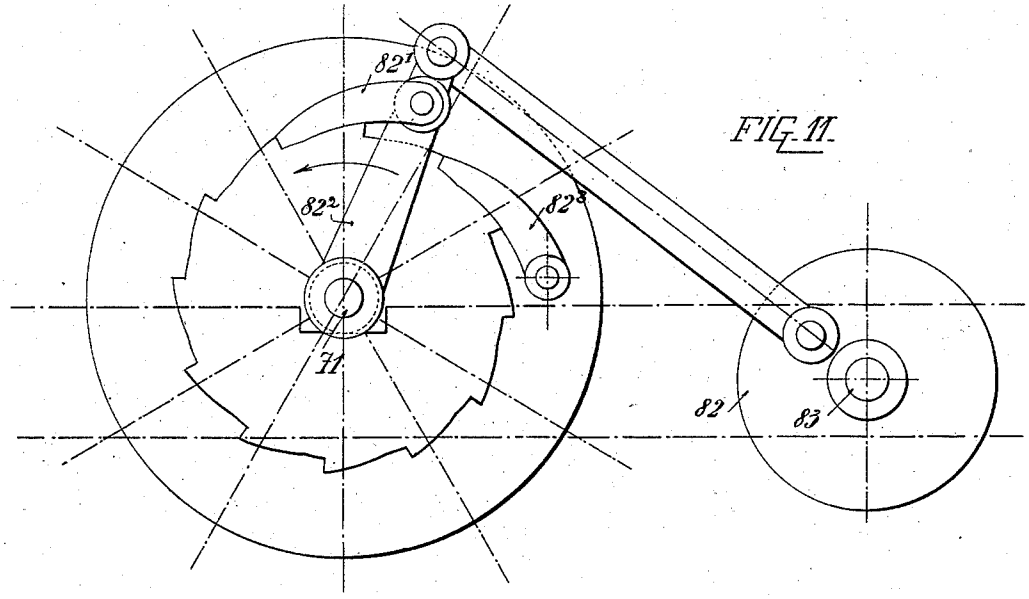


FIG. 11.

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THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

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APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 10.

Fig: 12.

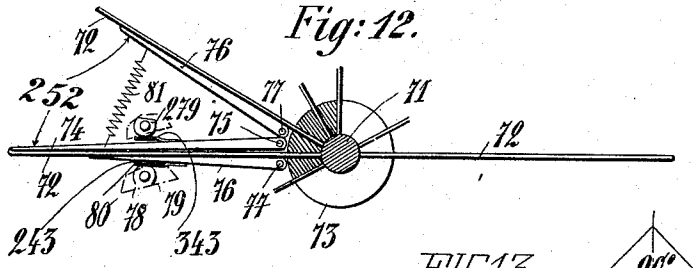


FIG 13

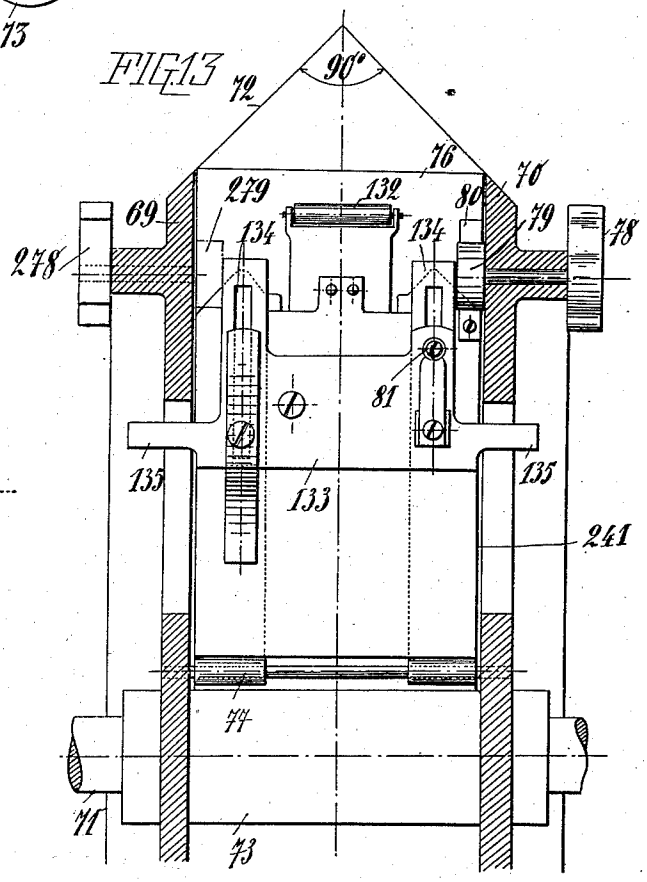
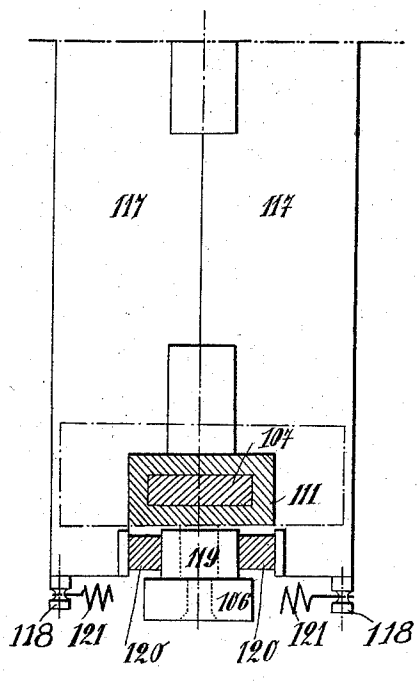


FIG 19



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No. 749,631. PATENTED JAN. 12, 1904.

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PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 11.

FIG. 14.

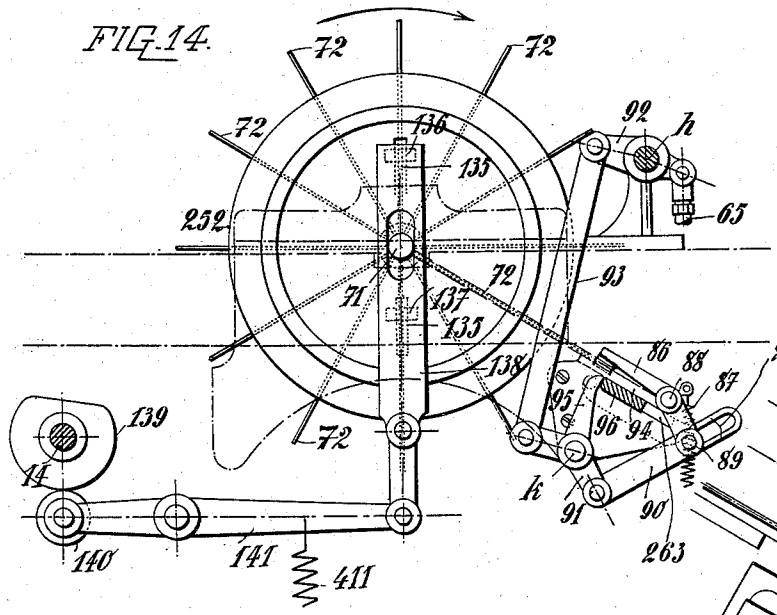
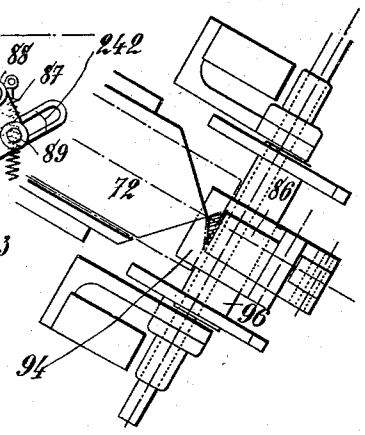


FIG. 15.



WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

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APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 12.

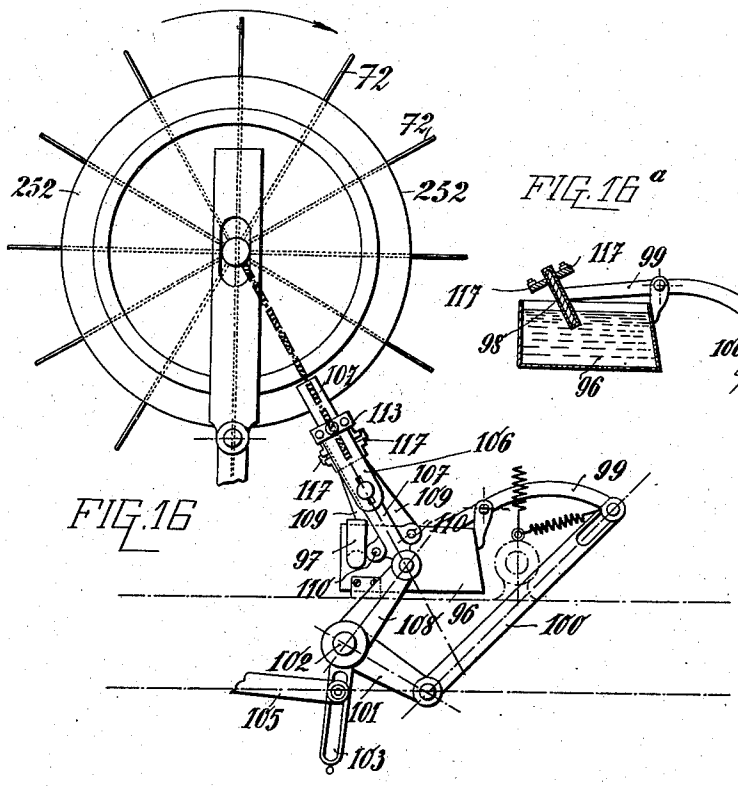


FIG. 16

FIG. 16a

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No. 749,631. PATENTED JAN. 12, 1904.

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PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 13.

FIG 17

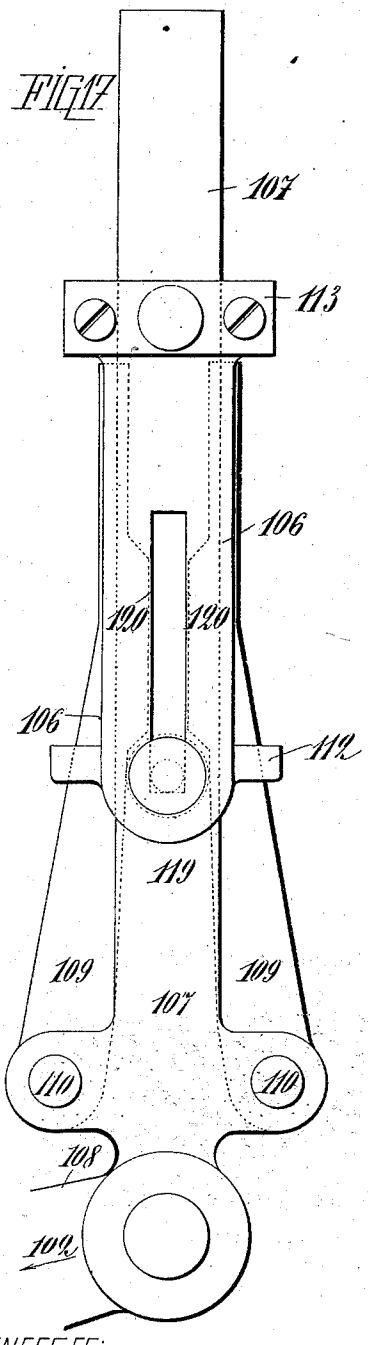
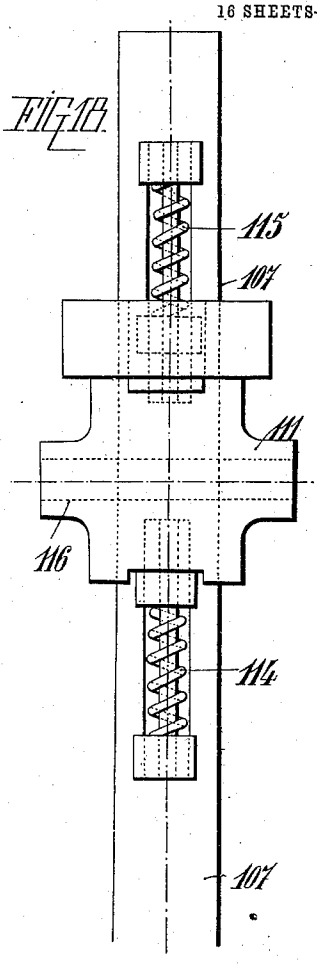


FIG 18



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 14.

FIG. 20 a

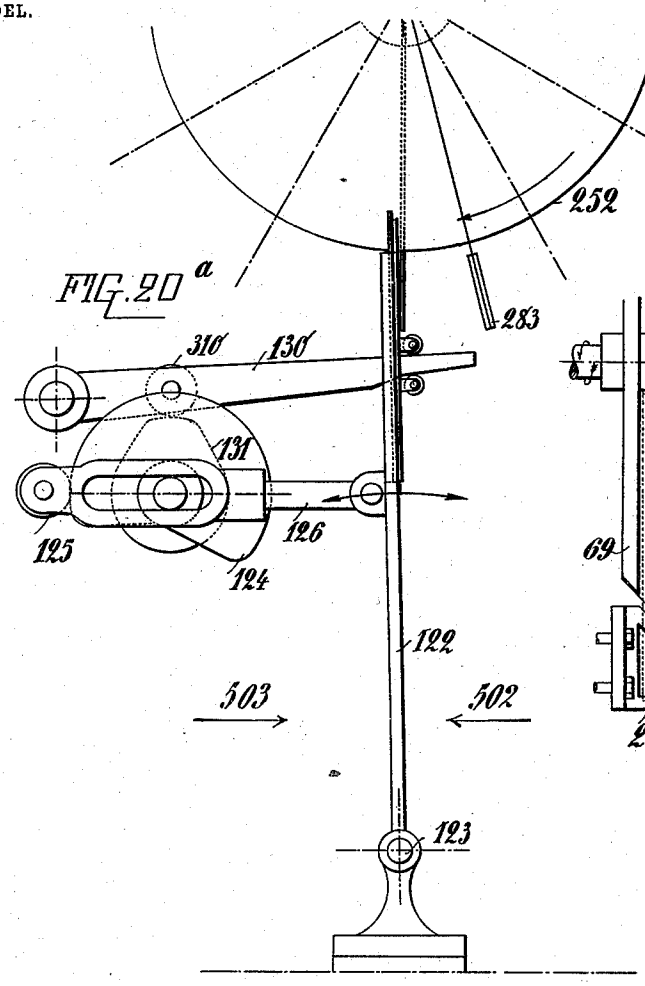


FIG. 20

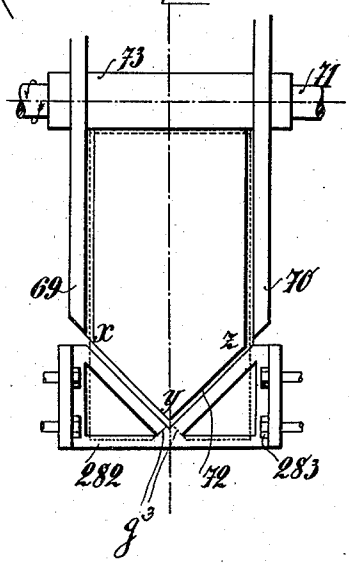
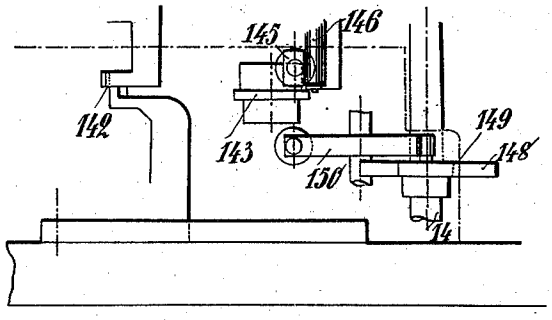


FIG. 24



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No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 15.

FIG. 21

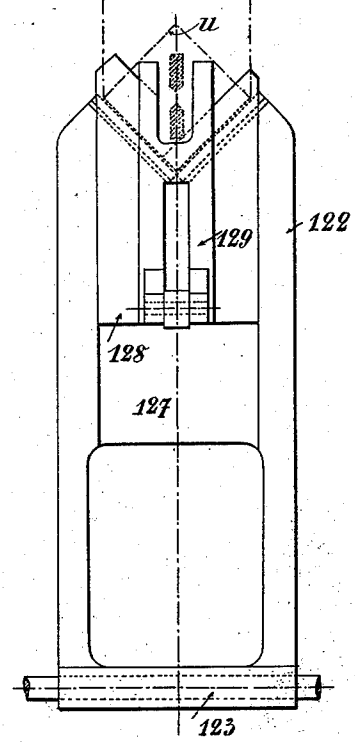


FIG. 22

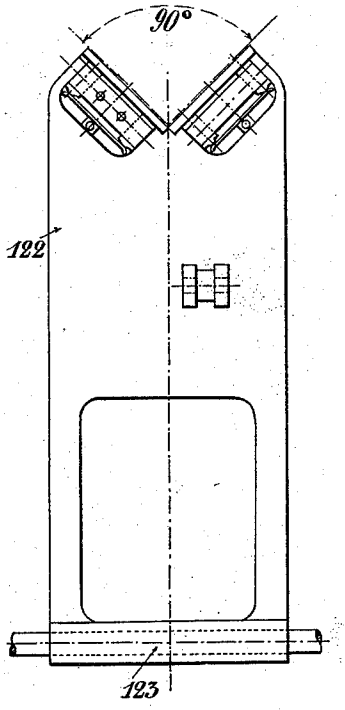
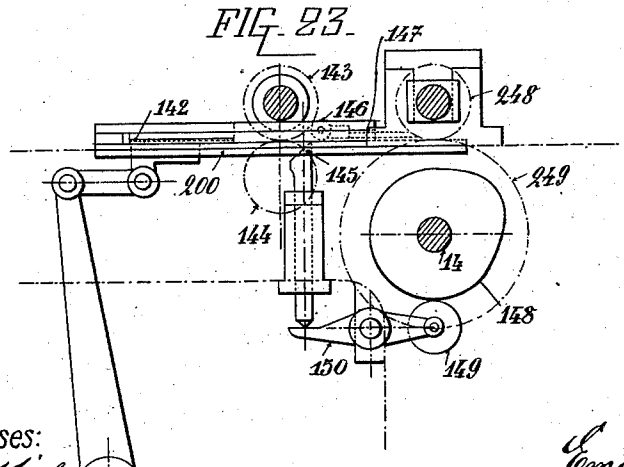


FIG. 23



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. PATENTED JAN. 12, 1904.

E. QUENARD.

PAPER BAG MACHINE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL. 16 SHEETS—SHEET 16.

FIG 25

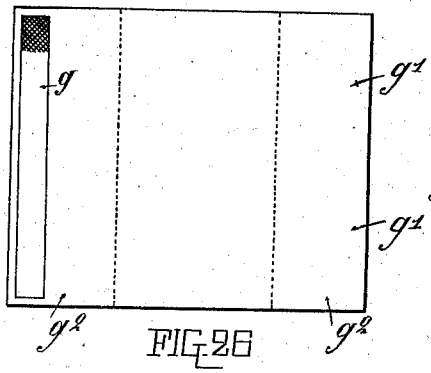


FIG 28

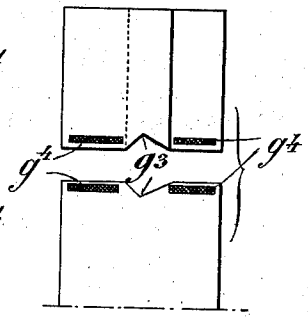


FIG 26

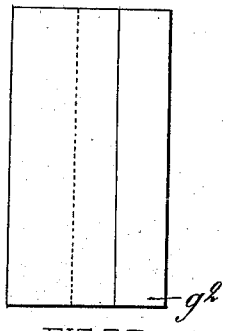


FIG 29

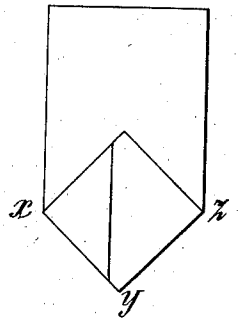


FIG 27

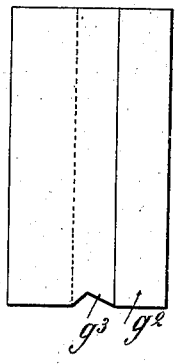


FIG 30

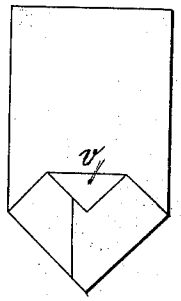
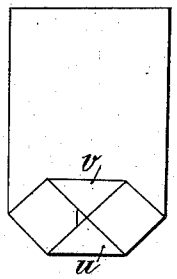


FIG 31



Witnesses:
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Inventor
Emile Quenard
By Goepel & Niles
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,631. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

EMILE QUENARD, OF PARIS, FRANCE, ASSIGNOR TO LA SOCIÉTÉ QUENARD FRÈRES ET FILS, OF PARIS, FRANCE.

PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 749,631, dated January 12, 1904.

Application filed October 7, 1902. Serial No. 126,354. (No model.)

To all whom it may concern:

Be it known that I, EMILE QUENARD, a citizen of the Republic of France, and a resident of Paris, France, have invented a new and useful Improved Machine for the Manufacture of Paper Bags, which is fully set forth in the following specification.

This invention relates to an improved machine for the manufacture of paper bags, and has for its object to provide a machine for manufacturing paper bags in which all the actions of the machine are entirely automatic, excepting the supply of paper sheets which are thereafter to be formed into bags in the same, and in which the paper sheets are placed at one end of the machine and then by successive stages of operation adhesive applied to one side edge, the sheet folded, and the two sides edges joined, one end cut, adhesive applied to one end edge, the end edge folded and pressed, thereby forming the bottom of the bag, and the bag finally conveyed in its finished state to a conveyer, from which it may be either taken to be printed or stored away until desired to be used.

For this purpose the invention consists of a paper-bag machine comprising means for raising each separate sheet of paper to a set of conveying-rollers, means for applying adhesive to one side edge of the sheet of paper, means for folding over the sides of the sheet of paper, so that the side edge to which adhesive has been applied will overlap the other side edge, means for pressing these overlapping side edges to cause the same to adhere to each other, means for conveying the so-formed bag-body to one platen of a rotatable platen-wheel, which at each successive intermittent part of its rotation subjects the bag-body successively to means for causing an incision in one of the end edges of the bag-body, means for applying adhesive to these end edges, means for folding over the corner of this end of the bag-body so as to form the bag-bottom, and, finally, means for withdrawing the bag from the platen of the wheel and pressing the bag-bottom, so as to cause an efficient adhesion of the turned-over corners of the same, after which it is ready to be printed or stored for further use.

The invention consists, further, of certain details of construction and combinations of parts, which will be more fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is an exterior side elevation of my improved paper-bag machine, showing the parts assembled which are necessary for the successive stages of operation for the formation of a paper-bag from a sheet of paper. Fig. 2 is a side elevation of the interior of the frame of the machine. Fig. 3 is a view of the entrance end of the machine, showing details of construction of the table which supports the sheets of paper ready to be passed through the machine. Fig. 4 is a detail view of the machine, showing the paper-sheet-supply table and the operative parts employed to raise each sheet of paper and to apply adhesive to one side edge of the same for joining the side edges, the sheet forming then the body of the bag. Fig. 5 is a vertical transverse section on line 5 5 of Fig. 4, showing the reservoir and operative parts for applying the adhesive to the side edges. Fig. 6 is a detail view of the parts, as seen from line 6 6 of Fig. 1, for folding over the sides of the sheet of paper, so that the side edge to which adhesive has been applied will overlap the other side edge, so as to form the body of the bag. Fig. 7 is a plan view of Fig. 6. Fig. 8 is an elevation, seen from the side *b*, of the feeding-rolls for conveying the bag-body from the folder mechanism shown in Figs. 6 and 7 to a platen-wheel. Fig. 9 is a vertical transverse section on line 9 9 of Fig. 8, showing the feed-roll and mechanism employed for conveying the paper body. Fig. 10 is a detail view in elevation seen from the side *a*, showing the parts used for facilitating the entrance of the bag-body to a platen of the platen-wheel. Fig. 11 is a view in elevation of the driving mechanism of the platen-wheel. Fig. 12 is a detail view of a platen of the platen-wheel, the cheek of the wheel on the side *a* being removed. Fig. 13 is a plan view of a platen, showing also the operative parts which co-

operate to effect the folding in of the first corner of the bag-body. Fig. 14 is an elevation of the cutting mechanism seen from the side *a*, which effects an incision in the end edge of the bag-body after the same has been moved one-twelfth of a revolution by the platen-wheel. Fig. 15 is a plan view of the cutting mechanism shown in Fig. 14. Fig. 16 is an elevation, seen from the side *a*, of the parts used for applying adhesive to the end edges of the bottom of the bag-body after the bag-body has been moved another twelfth of a revolution by the platen-wheel. Fig. 16ª shows a detail view of the reservoir and sponge-covered brush for applying adhesive to the end edges of the bag-body. Fig. 17 is a side elevation of the adhesive-conveyer by means of which adhesive is applied to the end edges of the bag. Fig. 18 is an end elevation of Fig. 17. Fig. 19 is a plan view of Fig. 17. Fig. 20 shows a detail view of the platen for the preliminary folding of the end edges of the bag-body after one twenty-fourth of a revolution of the platen-wheel after having left the adhesive-applying means. Fig. 20ª shows the platen for the final folding of the end edges and one corner. Fig. 21 is a front elevation of the platen shown in Fig. 20ª in the direction of the arrow 502 of Fig. 20ª. Fig. 22 is a rear elevation of the platen shown in Fig. 20ª in the direction of the arrow 503 of Fig. 20ª. Fig. 23 shows an elevation of the parts used for stripping the bag-body from the platen of the platen-wheel, conveying the same to rollers for effecting the folding in of the second corner of the bag and pressing the folded end edges having adhesive applied thereto, so as to cause an effective joining of the same for forming the bottom of the bag. Fig. 24 is a plan view of Fig. 23, and Figs. 25 to 31 show the bag in the various stages of operation through which it passes in my improved paper-bag machine.

Similar characters of reference indicate corresponding parts.

The various stages of operation of my improved machine are so arranged that a sheet of paper is automatically fed in and carried forward between the two cheeks *a* and *b* of my machine and thereafter passes successively through each of the following operations: application of adhesive to one side edge of the sheet of paper; folding and pressing over the side edges of the sheet of paper, so as to form the body of the bag; placing the bag-body on a platen of a platen-wheel, rotating the same, and successively, after one-twelfth of a revolution, cutting the end edge of the bag-body for the more convenient folding of the same; applying adhesive to these end edges after another twelfth of a revolution; subjecting the side edges to a preliminary folding after a twenty-fourth of a revolution to form the bottom of the bag, and to a final folding and turning of one corner of the bottom after another twenty-fourth of a revolution, and, finally, after a quarter of a revolution of the platen-wheel stripping the paper-bag body from the platen of the wheel, then pressing the bottom for causing an effective adhesion of the folded-over side edges and turning of the other corner, and finally delivering the complete bag from the machine.

Referring to the drawings, 1 in Figs. 1, 3, and 4 represents a movable table, on which are arranged a pile of sheets of paper suitably cut to the proper size, and 3 represents an aspirator provided at its lower part with two cupping-holes 230, and to which is given a vertically-reciprocating movement. The aspirator 3 is connected by a caoutchouc or rubber tube 200 with a cylinder of a pump 4, in which a piston 227 is reciprocated by a rod 17, which is connected with a bell-crank lever 18 and slotted rod 229, actuated by an eccentric 19 on shaft 14. (Shown in Fig. 2.) When the piston of the pump 4 descends, a suction action is produced under the cupping-holes 230 of the aspirator 3. The reciprocating movement of the aspirator 3 (shown in Fig. 4) is caused by a cam *c*, keyed to the shaft 12, which cam acts on an antifriction-roller 201, mounted on a rod *d*, which is coupled to a lever *e*, to the other end of which are connected two vertical rods *f*, attached to the aspirator 3. The table 1, (shown in Fig. 3,) locked in its normal position, is under the action of a spring 2, which always tends to raise it. The releasing of the table is effected by the rotation of the cam 5, (shown in Fig. 4,) keyed to the shaft 12. The shaft 12 is rotated by means of the power-shaft 14 (shown in Fig. 2) and intermediate mechanism, comprising the gears 84, mounted on shaft 14, gear 85, (shown in Fig. 1,) meshing therewith, mounted on a transverse shaft 83, (shown in Fig. 2,) which is provided with a bevel-wheel meshing with a bevel-wheel 16 of a longitudinal shaft 13, at the other end of which is arranged the bevel-wheel 15, meshing with the bevel-wheel 30 of the shaft 12. The cam 5 acts on the antifriction-roller 6, mounted on one end of a lever 7, the other end of which exercises a tractive effort upon a slide-bar 8, which is thrust forward by a spring 225 when the high surface of the cam 5 is not in contact with the roller 6 into engagement with a rack formed on a bar 10, extending from the table 1. The end of the slide-bar 8 is provided with teeth which mesh with the teeth of the rack 9. A bar 203 connects the bar 10 with a lever or pedal 11, which when pressed will cause the table 1 to be lowered, although locked, when the table is to be supplied with a fresh pile of sheets of paper to be formed into bags. When the slide-bar 8 is displaced, so as to release the teeth of the same from the teeth of the rack 9, the rod 10 is raised by the action of the spring 2 (shown in Fig. 2) and causes thereby the table 1, with the sheets of paper thereon, to ascend. The

cam *c*, mounted on the shaft 12, which causes the reciprocation of the aspirator 3, is so formed and the suction of the pump so timed that when the table ascends the aspirator descends, and simultaneously with the meeting of the same the suction action in the aspirator causes the uppermost sheet of paper of the pile on the table 1 to be sucked up and held by the aspirator.

A carriage 20 (shown in Figs. 1 and 4) is arranged between the two cheeks *a* and *b* of the guideways of the machine and is connected by a pivot-rod 22 with a connecting-rod 21 of an eccentric 231, which causes the carriage 20 to move under the aspirator when the same has reached its highest position simultaneously with the discontinuance of the suction action and descending action of the pump, whereby a compression action takes place in the aspirator, which causes the sheet of paper to be thrown or dropped on the carriage 20. The carriage 20, continuing its movement toward the right, carries the sheet of paper beneath a feeding device which comprises two rolls 23 and 24. (Shown in Fig. 4.)

The movement of the carriage 20 causes the sheet of paper to pass between two plates which are cut away so as to permit the rollers 23 and 24 to operate on the sheet of paper, so as to permit a disk 25 to deposit adhesive on one longitudinal or side edge *g* of the sheet of paper. (Shown in Fig. 25.) The disk 25 (shown in Figs. 4 and 5) is keyed to the shaft 12 and is provided with a peripheral groove which receives the adhesive by means of a server 27, dipping in the fluid adhesive in the reservoir 26 and transferring it to an intermediate roller or carrier 28, which in turn transfers it to the groove of the disk 25. Intermeshing pinions are keyed on the spindles of the carrier 28 and the server 27 to cause a proper movement of the same. The server 27 is rotated in the reservoir 26, containing the adhesive, by means of a pulley 29, keyed to the spindle *a'* of the server 27 and which is rotated by means of a belt 232 by a pulley 30, keyed to the driving-shaft 12. Thus simultaneously with the feeding forward of the paper sheet between the rolls 23 and 24 adhesive is applied to one side edge *g* of the sheet of paper. (Shown in Fig. 25.)

The sheet of paper is continuously fed forward by the rolls 23 and 24 and emanating from the same is placed under a plate 31, (shown in Fig. 6,) which is slightly narrower than one-half the breadth of the sheet of paper. The two side edges *g* and *g'* or wings of the sheet of paper, which are not covered by the sheet 31, rest on two panels 32, which are situated in a plane somewhat lower than the plane of the plate 31. These folder-panels 32 are caused to describe an arc of a circle around their pivots 37 by means of rollers 33, which are fixed to a plate 251, adapted to reciprocate vertically by means of a rod 36, attached to the plate 251, which rod 36 is moved by a lever 35, provided with a roller 205, which is actuated by a cam 34, keyed to the longitudinal shaft 13. The panels 32 are raised and so moved inwardly as to displace the pivots of the panels 32 and cause the panel 32 shown on the right hand of Fig. 6 to move toward the left hand and cause a corresponding movement of the left-hand panel 32 by means of a notched cam 39 engaging a roller 40, fastened to a lever 41, which is keyed to a shaft 42, journaled in the frame of the machine. On this shaft 42 is also keyed an arm 391, to which is pivoted a rod 392, connected with an elbow-lever 393 pivoted at 394, which lever is connected with the left-hand panels 32, so as to operate the same in conjunction with the right-hand panels. The ends or rollers 38 of folder-panels 32, when thus moved, roll and rest on the two longitudinal side edges of the sheet of paper, the movement of the panels 32 and rollers 33 being so timed that the side edge *g*, covered with adhesive, is below the other side edge *g'*. Thus the two panels 32 by their positions above the plate pass over the plate 31 and completely fold the side edges of the sheet of paper by first raising the wings or side edges of the sheet of paper and then folding them around the plate 31, which acts as a mandrel. At this moment, when the panels 32, with the rollers 38, hold down the side edges or wings of the sheet of paper, the lower one of which is covered with adhesive, a rectangular plate 43 is caused to descend between the rollers 38 of the panels 32 and to press the two side edges tightly together, so as to cause an efficient adhering of the same. The pressure-plate 43 is provided with a vertical spindle 48, having a pin 48', which is engaged by a lever 47, pivoted to or connected with a rod 46', provided with a roller 45 at its end, which is actuated by a cam 46, connected with the shaft 13. The movement of the roller 45 on the cam 46 causes the descending of the pressure-plate 43 at the proper time. The sheet of paper now forms the bag-body and resembles Fig. 26. The bag-body is moved by the plate 31 forwardly and taken therefrom by two rollers 50 and 51 (shown in Figs. 8 and 9) of a carriage 49, which acts similar to the carriage 20 before described, and at one end of its horizontal movement seizes the bag-body and carries it forward toward the right hand during the second movement of the carriage. A lever 52, oscillating about a point 53 and deriving its motion from a lever 54, in mechanical connection with the shaft 13, by means of a pair of bevel-pinions 55 and 56, (shown in Fig. 2,) gives the carriage 49 the horizontally-reciprocating movement. The pulley 57, keyed on the spindle of the lower roller 50, derives its motion from the pulley 59 through a suitable transmission-belt 590. (Shown in Fig. 8.) The rotary motion impart-

ed to the roller 50 is transferred to the roller 51 by means of intermeshing pinions 59 and 60, of which pinion 59 is keyed to the shaft of the roller 50 and pinion 60 is keyed to the shaft of the roller 51.

So far the sheet of paper from the time it was lifted by the aspirator 3 and deposited on the carriage 20 has continuously proceeded through the machine in the same horizontal plane. In order to effect the cutting out, applying adhesive to, and folding of the bottom, and also in order to effect the folding of the first corner, an arrangement is provided by means of which the bag-body is successively subjected to the mechanism which causes the cutting out, applying adhesive to, and folding of the bottom, and folding of the first corner of the bag.

By means of the rollers 59 and 60 the bag-body is moved toward a platen of the platen-wheel 252, (shown in Fig. 12,) which is provided with twelve radial platens 72.

The wheel 252 (shown in Figs. 8, 12, and 13) comprises platens 72, provided with two cheek-pieces 69 and 70, which are keyed onto the shaft 71. The platen 72 is a thin plate of metal fastened to the hub 73 of the wheel 252 and so arranged that between its edges and the cheek-pieces 69 and 70 a sufficient space 241 (shown in Fig. 13) is left so as to permit the bags to slide over the platen, similar to a mandrel. At the radial outward point of the platen 72 an angular part of about ninety degrees extends beyond the cheek-pieces 69 and 70, the apex of which is so arranged as to be exactly in the axis of the path followed by the bag. On one side of the platen shown in Fig. 12 is arranged a plate 74, which is similar to the platen 72, but which is pivotally supported near the hub of the wheel at 75. On the other side of the platen 72 is another plate 76, pivoted at 77 and also similar to the platen 72, but somewhat shorter than the plate 74, as shown in Fig. 12. The object of these plates 74 and 76 is to retain the bag on the platen 72 during the rotation of the wheel. For this purpose each plate 74 is provided with a spring-blade 343, which is engaged by a cam 279 on a spindle passing through the cheek-piece 69. The outer end of the spindle is provided with a lug 278, which engages with an antifriction-roller suitably mounted on the frame of the machine, so as to cause the movement of the lug 278 and cam 279 at the proper time for the opening or closing of the plate 74. Similarly, the plate 76 is provided with a spring-blade 243, adapted to be engaged by a cam 79 on a spindle, to the free end of which a lug 78 is secured. This spindle passes through the opposite cheek-piece 70, as it is preferable that all lugs to be used for actuating the cams 279 engaging the spring-blades of one plate 74 be arranged on the outer side of one of the cheek-pieces 69, while all the lugs to be used for actuating the cam 79 engaging the spring-blades of the other plate 76 be arranged on the outer side of the other of the cheek-pieces 70. The plates 74 and 76 are opened when their spring-blades are not engaged by the cams 279 and 79 by a spring 81, which is attached at one end to the plate 76 and at the other end to the plate 74 of the adjacent platen. The cams 79 and 279 are so formed that the springs 81 open the plates 74 and 76 just when the bag-body is fed forward by the rollers 59 and 60.

To insure the placing of the bag-body on one of the platens 72, a movable shutter 61 (shown in Fig. 10) is mounted on a hinged pin 62, which is supported on the end of a cut-away plate 63, onto which the bag-body passes when leaving the mandrel-plate 31 and fed forward by the rollers 50 and 51. The movable shutter 61 causes the bag to cover the platen 72 of the platen-wheel 252 in a similar manner as the paper bag covered the mandrel-plate 31 before described, when the folding and sticking together action took place. The action of the movable shutter 61 is caused by a cam 64, keyed to the shaft 13, actuating a rod 65, carrying an antifriction-roller 66 and pivoted to a bent lever 67, keyed to the shaft h, the other end of which lever 67 is connected with a coupling-bar 68, pivoted to the movable shutter 61, which may be returned to its vertical or downward position by any suitable spring action, so as to permit the passage of the platens of the platen-wheel. When the bag-body has entered one platen of the platen-wheel as far as the hub 73, and so covers the platen 72, the plate 61 is lowered by a suitable spring, which is not shown in the drawings, and the function of the plate 61 is ended. The cams 79 and 279 when the platen-wheel is rotated press the spring-blades 243 and 343, and so cause the plates 74 and 76 to hold the bag-body securely to the platen. The wheel is rotated by means of a ratchet-wheel, (shown in Fig. 11,) keyed to the spindle 71 and rotated by means of an eccentric 82, mounted on the shaft 83, which is connected with the motor-shaft through two pinions 84 and 85. (Shown in Fig. 1.) Applied to the shaft 71 is a radial lever 82^2, carrying a pawl $82'$, pivoted thereto, as shown in Fig. 11. The pawl 83^3 serves to permit the rotation of the platen-wheel 252 in but one direction. The motion of the shaft 83 causes the intermittent rotation of the shaft 71 and the platen-wheel 252 mounted thereon and is so arranged as to cause the wheel to be moved through one-twelfth of a revolution at a time. During the first one-twelfth of a revolution the plates 74 and 76 are both closed upon the bag-body, which envelops the platen 72, and consequently holds the bag-body tightly to the same.

In order to obtain a perfect folding of the bottom of the bag, it has been found desirable and necessary to cut a notch in the bag-body at its lower part or end edge, which is thereafter to form the bottom, similar to

g^3. (Shown in Fig. 27.) For this purpose the bag-body is so arranged as to extend radially beyond the apex of the panel 72, as shown in Fig. 15. The cutting of the notch in the bag-body is effected by means of a movable knife 86, firmly attached to two levers 87, which knife and levers are securely fastened to the same spindle 88. Between the ends of the levers 87 is arranged a rod 89, which engages with a slot 242, formed in a bar 90, which is connected with the short arm of a bent lever 91. The cam 64 (shown in Fig. 10) actuates a rod 65 and a lever 92 keyed to the shaft *h*, which lever 92 actuates a rod 93, connected therewith and with a bent lever 91, oscillating about a spindle *k*. The knife 86, which is shown in cutting position in Figs. 14 and 15, is lowered upon a piece 94, which is its counter or female part, which is pivoted loosely on the spindle 88 and mounted between two guideways parallel to the radial direction of the platen which carries the bag. This counter-piece 94 is movable in the guideways and is provided with a piece 96, engaged by a lever 95, which is keyed to the spindle *k*. The cam 64 is so formed that when the paper-bag body on the platen of the platen-wheel arrives at the end of its twelfth of a revolution and rests for a time the counter-piece 94, in the same radial direction as the platen 72, will be directly underneath the protruding bag-body, and the knife 86, which was until now open, caused to descend and cut a notch in the bag-body, as shown at g^3 in Fig. 27. The cam 64 continuing to rotate will again raise the knife 86 and withdraw the counter-piece 94 in its guideways 263. The platen-wheel is then caused to rotate through another one-twelfth of a revolution, so that the platen carrying the bag-body arrives at the mechanism for applying the adhesive to the bottom of the bag.

The parts for applying adhesive to the bottom of the bag comprise a reservoir 96, (shown in Figs. 16 and 16^a,) which may be filled from the outside of the machine by means of a funnel 97. A sponge-covered piece 98 is fastened to the end of a short arm of a lever 99, the long arm of which is connected by means of a connecting-rod 100 with a lever 101, which is keyed to the transverse spindle 102, to which is applied a lever 103, which receives oscillatory motion from a cam 104 by means of a roller-rod 105. (Shown in Figs. 1 and 16.) By the movement of the cam 104 the sponge-covered piece 98 is caused to dip into the reservoir 96, whereby the sponge becomes impregnated with the adhesive. On each side of the reservoir 96, in the direction of the platen carrying the bag-body, when at rest after two-twelfths or one-sixth of a revolution from the starting-point, two stationary or fixed pieces 106 are fastened to the frame of the machine. In these stationary pieces 106 two movable or sliding pieces 107 are guided, the lower ends of which are pivoted to a lever 108, which is keyed to the spindle 102. Each of the sliding pieces 107, on each side of the reservoir 96, in moving in the stationary pieces 106 carries two other pieces or cam-rods 109, which are pivoted at 110 and shown in Figs. 17, 18, and 19. On the sliding pieces 107 is arranged a piece or carrier 111, which may be displaced by the sliding pieces 107 in the space between two stops or abutments 112 and 113. The sliding pieces 107 are not fastened in any manner whatever, but slide in the stationary pieces 106, while the carrier 111 is adapted to slide over the sliding piece 107 and is also not fastened. The carrier 111 is so arranged that the sliding pieces 107 can easily glide in the said carrier 111, as shown in Figs. 17, 18, and 19, and which when stopped in its movement, be it by the stop 112 or 113, permits the sliding piece 107 to continue its movement. Between the two stops 112 and 113 the carrier 111 depends for its movement upon the sliding piece 107, because it is maintained between two springs 114 and 115, which are of equal force and one of which is fastened above while the other is fastened below the carrier 111 and seated in the sliding pieces 107. The sliding piece 107 entrains then the carrier 111 until that moment when the carrier 111 touches the stop 113 in ascending and the stop 112 in descending, after which the sliding piece 107 continues to ascend or descend, leaving the carrier 111 to take care of itself. Either of the springs 114 or 115 become depressed or extended, depending on the direction of movement of the carrier 111. The carriers 111 are each provided with a groove or guideway 116, within which two clamping-pieces 117 can slide perpendicularly to the direction of the axis of the stationary piece 106. These two clamping-pieces 117 partake in the ascending or descending motion of the carriers 111, and each carries two fingers or rods 118, to which is connected a spring 121, which forces the clamping-pieces inwardly, so as to press against the backs of the cam rods or levers 109. A roller 119 is mounted on the stationary piece 106 and moves the cam rods or levers 109 apart, depending on the profile of the inner sides of the cam rods or levers 109, and so effects a separation of the clamping-pieces 117 by means of the cam-shaped projections 120, arranged on the cam-rods 109 and shown in Fig. 17. The projection 120 of the levers or cam rods 109 forces at the downward movement of the sliding piece 107 the clamping-pieces 117 apart, so that when the clamping-pieces 117 reach the lower end of their course and the projections 120 have passed the roller 119 of the stationary piece 106 the clamping-pieces 117 close upon the sponge-covered piece 98, clamp the same, whereby the interior sides of the clamping-pieces 117 contact with the adhesive-covered piece 98, and so become

moistened with adhesive. The sliding pieces 107 then rise, and as soon as the projections 120 of the levers 109 meet the roller 119 of the stationary pieces 106 the levers 109 are opened, thereby opening the clamping-pieces 117, and so release the sponge-covered piece 98. By the shape of the projections 120 the levers 109 are kept apart and remain so, while continuing to ascend, until the carrier 111 opposite to the outward end edges of the bag-body on the platen of the platen-wheel has reached the upper end of its stroke. Then when the projections 120 have ceased to be in contact with the roller 119 the clamping-pieces 117 are pressed together by the spring 121, and so deposit the adhesive upon both sides of the end edges of the bag-body similar to the manner shown at g^4 in Fig. 28. When the sliding pieces 107 and carrier 111 descend, the clamping-pieces 117 are moved in the reverse direction by the movement of the parts just described, whereby the clamping-pieces 117 are separated, so as to release the bag-body on the platen, and then descend until they again press against the sponge-covered piece 98, where they are again covered with adhesive.

The bag is now ready to have the bottom folded. The platen-wheel is caused to rotate one-twelfth of a revolution, during which time, about at the end of a twenty-fourth of a revolution from the time adhesive was applied, the bag passes between two blocks 282 and 283, secured on the frame of the machine, each of which has a surface arranged at an angle of forty-five degrees, as shown in Fig. 20, so that both form an angle of ninety degrees, corresponding to the end of the platen of the platen-wheel shown in Fig. 13, the object of which is to cause a preliminary bending back of the paper, as shown at x y z in Fig. 29, of the bag-body protruding from the platen while passing the stationary blocks. The bag-body, with its bottom preliminarily folded, as shown in Fig. 29, reaches the end of its one-twelfth of a revolution and attains a vertical position, where it is met by a final folding device, (shown in Figs. 20ª, 21, and 22,) which comprises an oscillating platen 122, pivoted on the frame of the machine at 123, to which is fastened a rod 126, to which an oscillatory movement (shown by arrows) is imparted by a cam 124, operating on an anti-friction-roller 125, mounted at the end of the rod, as shown in Fig. 20ª. In the oscillating platen 122 is arranged an opening 127, (shown in Fig. 21,) within which a plate 128 can be moved vertically, in which plate 128 a second plate 129 is arranged so as to be movable therein. A lever 130, provided with an anti-friction-roller 310, actuated by a cam 131, raises the plates 128 and 129. The upper end of the oscillating platen 122 is formed with a reëntrant angle of ninety degrees—that is, with an incision in which a right angle will accurately fit—so that the apex, which is ninety degrees, of the platen 72 of the platen-wheel will accurately pass. As soon as the bag arrives in the vertical position at the end of its one-twelfth revolution the lower platen oscillates from right to left, as shown in Fig. 20ª. The oscillating platen 122 is then moved again from left to right, and in this position the lever 130, actuated by the cam 131, raises the plates 128 and 129, which in the ascending movement press the square bottom of the bag-body, whereby the folding of the protruding parts of the bag-body, which was already roughly accomplished at the end of one-half of the twelfth revolution, (fifteen degrees,) between the two blocks 282 and 283 (shown in Fig. 20) is now completed, whereby the square bottom (shown in Fig. 29) is formed. The plate 128 then comes to rest, while the plate 129 rises somewhat higher to a height so as to not quite cover one corner of the square body of the bag, as shown in Fig. 21. In order to fold this corner of the bag, a roller 132 is arranged to roll on the plate 72, as shown most clearly in Fig. 13. This roller is mounted on a movable plate 133, provided with two parallel grooves 134, engaged by ends 532 of stays 531 for guiding the plate 133. This plate 133 is also provided with two protruding fingers 135, which are formed integral with the plate 133 and which move in slots in the cheeks 69 and 70 and extend beyond the same. On each side of the wheel inside the cheeks a and b of the frame of the machine are arranged uprights 138, provided with stops 136 and 137 and shown in Fig. 14. A cam 139, keyed to the shaft 14, acts on an anti-friction-roller 140, mounted on a lever 141, which is coupled to the upright 138. When the depressed part of the cam 139 comes in contact with the roller 140, the piece 138 will, due to the spring 411, descend and carry with it the stops 137 and the fingers 135 of the movable plate 133, which fingers 135 extend out from the cheeks, so as to engage the stops. The roller 132 will also move with the movable plate 133 and meet the apex of the upper corner v of the square bottom of the bag-body and fold the same over on the plate 129, which is cut away, as shown in Fig. 21, at the place where the adhesive has been deposited. In its descent the roller 132 will press on the corner v, and thus cause it to adhere to the bottom of the bag. The uprights 138, engaging the protruding fingers 135 of the diametrically opposite platen of the platen-wheel, will by the descent of the uprights just described, simultaneously with the corner-folding action of the lower platen, set back into position the plate 133 of the diametrically opposite upper panel.

The bottom of the bag with the exception of the first corner is now formed, and the intermittent rotation of the wheel continues in twelfths of a revolution until the platen carrying the bag is horizontal. In this position the

plates 76 and 74 open, and a carriage 200, movable in guideways formed in the frame of the machine and shown in Fig. 23, reciprocates horizontally by parts similar to those described for the carriage 20, draws off the bag from the platen 72 by means of two hooks 142, and carries the bag to the rollers 143 and 144, which convey the bag forwardly. The bag, traveling with the corner *u* foremost through the rollers 143 and 144, passes between a wedge 145 and a roller 146. (Shown in Figs. 23 and 24.) A stop 147 is arranged to hold back the bottom of the bag and limit the amount of material folded over at the second corner. The actuation of the wedge 45 takes place by means of a cam 148, keyed on the shaft 14 and arranged so as to act on a roller 149, which is mounted on one end of a lever 150, the other end of which actuates a rod fastened to the wedge 145, thereby raising the wedge a certain height, so as to raise the corner *u* above the plane of the bag-body. The rollers 143 and 144 move the bag-body forwardly until it meets the roller 146 and continue to move it forwardly, and so cause the corner *u* to be folded over against the adhesive and pressed against the bag-body. The roller 146 at the same time exerts a pressure on the entire bottom of the bag during the forward movement of the same, insuring thereby, together with the pressure obtained by the rollers 248 and 249, an efficient adhesion of the bottom of the bag-body. The finished bag may be then fed to a printing-press or to a stack for storing purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A machine for making paper bags, comprising a supply-table provided with a pile of sheets of paper, a horizontally-movable carriage, means for placing the uppermost sheet of paper of the pile on said carriage, a mandrel-plate of less width than the paper sheet for receiving said sheet, feed-rolls for conveying the sheet from the carriage to and beneath the mandrel-plate, means for applying adhesive to the horizontal side edge of the sheet while passing through the rolls, means for folding the wings, or extending edges, of the sheet over onto the plate, whereby the edge coated with adhesive is placed in contact with the other edge of the sheet, a rectangular plate movable vertically above the mandrel-plate for pressing the two edges of the sheet together, a platen-wheel provided with a plurality of radial platens adapted to rotate intermittently, means for placing the sheet forming the bag-body on one of said platens, means for successively, at the end of each intermittent rotation of the wheel, cutting a notch in the bag-bottom, applying adhesive to the same, folding the bottom and one corner of the same and means for drawing off the bag from the platen of the platen-wheel, and means for simultaneously turning the other corner of the bottom and pressing the same while conveying the bag from the platen of the wheel and discharging the same, substantially as set forth.

2. In a paper-bag machine, a supply-table provided with sheets of paper, a rack connected with said table, a slide-bar provided with teeth engaging the rack, means for intermittently disengaging the rack and toothed bar, and means for raising the table when the toothed bar and rack are disengaged, substantially as set forth.

3. In a paper-bag machine, a frame for the machine, guideways in said frame, a supply-table provided with sheets of paper movable in said guideways, a rack connected with said table, a slide-bar provided with teeth engaging the rack, a spring-actuated rod on said slide-bar, a cam, a lever actuated by said cam and connected with said spring-actuated rod, and springs on said rack connected with the frame of the machine for raising the table when the slide-bar and rack are disengaged, substantially as set forth.

4. In a paper-bag machine, a plate of less width than the sheet of paper to be formed into a bag, pivoted folder-panels at each side of the plate and slightly below the same, a second plate separate from and below said first plate, rollers on said plate at each side of the same for supporting the folder-panels, means for raising said plate with the rollers whereby the folder-panels are caused to describe an arc of a circle around their pivots, and means for moving said folder-panels so as to cause the folding of the wings or extending edges of the sheet of paper over onto the plate, substantially as set forth.

5. In a paper-bag machine, a plate of less width than the sheet of paper to be formed into a bag, a sheet of paper below the same, a second plate below said first plate, rollers on said second plate on each side of the same, pivoted folder-panels on each side of the first plate and slightly below the same, means for raising said plate with the rollers whereby the folder-panels resting thereon are caused to describe an arc of a circle around their pivots, rollers at the ends of said folder-panels, and means for moving said folder-panels so as to cause the folding of the wings or extending sheets of paper over onto the plate and moving them horizontally to and fro on the plate, substantially as set forth.

6. In a paper-bag machine, the combination, of a plate of less width than the sheet of paper to be formed into a bag, a second plate below said first plate, rollers on said plate, pivoted folder-panels slightly below the first plate and supported on the rollers of the second plate, a rod on said second plate, a shaft, a cam on said shaft, a lever actuated by said cam and connected with said rod of the second plate for raising or lowering the same, a second cam on

said shaft, a pivot-rod actuated by said second cam and connected with the folder-panels, and means for rotating said shaft for raising the second plate and actuating the folder-panels for folding over the wings or extending edges of the sheet of paper onto the first plate, substantially as set forth.

7. In a paper-bag machine, a mandrel-plate enveloped by a bag-body, a cut-away plate at the end of said mandrel-plate, means for moving the bag-body along the mandrel-plate onto the cut-away plate, a movable shutter at the free end of the cut-away plate, a platen-wheel provided with a plurality of platens, means for moving the bag-body along the mandrel-plate to the cut-away plate and onto one platen of the wheel, and means for actuating the movable shutter for insuring the bag-body to cover the platen of the wheel, substantially as set forth.

8. In a paper-bag machine, a mandrel-plate, a cut-away plate, a movable shutter hinged at one end of said cut-away plate, a platen-wheel provided with a plurality of platens, means for moving the bag-body along the mandrel and the cut-away plates and onto one platen of the platen-wheel, a shaft, a cam on said shaft, a lever, a rod actuated by said cam and connected with one end of said lever, and a rod connecting the other end of said lever with the movable shutter, substantially as set forth.

9. In a paper-bag machine, a wheel, a shaft for said wheel, two cheek-pieces keyed on said shaft at either side of the wheel, platens secured to the hub of the wheel, and a pivoted plate on each side of each platen of the wheel, substantially as set forth.

10. In a paper-bag machine, a platen-wheel, a plurality of radial platens on said wheel, each of said platens formed square-ended at its outer end, cheeks for said wheel at either side of the same, permitting the bag-body to pass between the cheeks and platen when placing the bag-body on the platen, and means for holding the bag-body on the platen when placed thereon, substantially as set forth.

11. In a paper-bag machine, a platen-wheel provided with a plurality of platens, a cheek at either side of the wheel, a pivoted plate at either side of each platen, a spring connecting the pivoted plates between the two adjacent platens, cams intermittently in contact with said pivoted plates, spindles for the cams passing through the cheeks at either side of the wheel, lugs on said spindles, and means for moving the lugs, substantially as set forth.

12. In a paper-bag machine, a platen-wheel, a cheek on either side of said wheel, radial platens on said wheel, a plate on each side of each platen pivoted near the hub of the wheel, a spring-blade on each plate, a spindle passing through each cheek, a cam on said spindle engaging said spring-blade, means for moving said spindle, and a spring connecting the plates between the adjacent platens for raising the plate from the platen when the cams do not depress the spring-blades, substantially as set forth.

13. In a paper-bag machine, a platen-wheel provided with a plurality of platens, a cheek on either side of said wheel, a pivoted plate at either side of each platen, a spring connecting the pivoted plates between each two adjacent platens, a spring-blade on each pivoted plate, cams adapted to engage with each of said spring-blades, a spindle for each of said cams, the spindle of the cam engaging with the spring-blade of one of said plates of the platens passing through one of said cheeks, while the spindle of the cam engaging with the spring-blade of the plate on the opposite side of the platen passes through the other of said cheeks, and means for moving said spindles, substantially as set forth.

14. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said platen-wheel provided with means for holding the bag-body, and means for cutting a notch in the bag-body at the first period of rest of the intermediate rotation of the platen-wheel, substantially as set forth.

15. In a paper-bag machine, a platen-wheel, means for intermittently rotating said platen-wheel, a platen on said platen-wheel, means on said platen for holding the bag-body, a knife arranged in radial direction with the platen when at the end of its first period of rest of the intermittent rotation of the platen-wheel, and means for actuating said knife for cutting a notch in the protruding end of the bag-body, substantially as set forth.

16. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said wheel, a movable knife, a counterpart for said knife, a plate provided with guideways for said counterpart, means for raising or lowering said knife for cutting a notch in the protruding bag-body, and means for reciprocating said counterpart to permit the passage of the platen-wheel when resuming its motion, substantially as set forth.

17. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said wheel, a spindle, a movable knife pivoted to said spindle, levers on said knife, a slotted bar for the free end of said levers, a counterpart for said movable knife, a plate, guideways in said plate for said counterpart, an elbow-lever connected with said slotted bar and engaging with said counterpart, and means for actuating said elbow-lever for raising and lowering the knife and reciprocating the counterpart in the guideways, substantially as set forth.

18. In a paper-bag machine, means for cutting a notch in the bag-body, comprising a spindle, a movable knife connected with said spindle, a lever for moving said spindle, a slotted bar for the free end of said lever, a

plate provided with guideways, a counterpart for said knife movable in said guideways, an elbow-lever connected with said slotted bar and engaging said counterpart, a shaft, a cam on said shaft, a pivoted lever, a rod actuated by said cam and connected with said lever, and a rod connecting the other end of said pivoted lever with the elbow-lever, substantially as set forth.

19. In a paper-bag machine, means for applying adhesive to the end edges of the bag-body, comprising a reservoir, a stationary guide-piece at each side of the same, a sliding piece movable in each of said stationary pieces, stops on said stationary piece, means for moving said sliding piece in said stationary piece, a carrier movable in consonance with the sliding piece on said stationary piece between the stops, and means on said carrier for receiving and applying adhesive, substantially as set forth.

20. In a paper-bag machine, means for applying adhesive to the end edges of a paper-bag body, comprising a reservoir, a funnel on said reservoir passing outside the frame of the machine, a stationary guide-piece on each side of said reservoir, a sliding piece movable in each of said stationary pieces, stops on said stationary pieces, a carrier movable between the stops on said stationary piece, a spring at each side on said carrier connected with the sliding piece, guideways in said carrier, clamping-pieces movable in said guideways, fingers on said clamping-pieces, a spring connecting said clamping-pieces, a roller on said stationary piece, levers provided with projections pivoted to said sliding pieces and adapted to actuate the clamping-pieces in the carrier depending on the projections of the levers passing over the roller, and means for moving the sliding pieces, substantially as set forth.

21. In a paper-bag machine, the combination, of a platen-wheel, means for intermittently rotating the same, a platen on said platen-wheel enveloped by the bag-body, and means at the second period of rest of the intermittent rotation of the wheel for applying adhesive to the end edges of the bag-body on the platen-wheel, comprising a reservoir, a stationary guide-piece on each side of the reservoir, a sliding piece movable in each of said stationary pieces, means on said sliding pieces for receiving and applying adhesive, and means for moving said sliding pieces in said stationary pieces, substantially as set forth.

22. In a paper-bag machine, means for applying adhesive to the end edges of a paper-bag body, comprising a reservoir, a stationary guide-piece at each side of said reservoir, stops on said stationary guide-piece, a roller at the lower end of said stationary guide-piece, a sliding piece movable in said stationary piece, pivoted levers on said sliding piece, projections on said pivoted levers, a carrier movable on said stationary piece between the stops of the stationary piece and provided with an opening for the passage of the sliding piece, springs in recesses of said sliding piece and connected with either side of said carrier, guideways in said carrier, clamping-pieces movable in said guideways transversely to the direction of movement of the sliding piece, a spring connecting the clamping-pieces for pressing the same against the backs of the pivoted levers when moved with the sliding piece through the carrier, and means for moving the sliding piece with pivoted levers in said stationary guide-piece and carrier for raising or lowering the carrier connected by springs with the sliding piece, and for opening and closing the clamping-pieces at the lower and upper parts of the reciprocation of the carrier when the roller of the stationary piece engages the projections of the pivoted levers, substantially as set forth.

23. In a paper-bag machine, a platen-wheel, means for intermittently rotating said platen-wheel, a platen on said platen-wheel, means radially in line with said platen of the wheel enveloped by a bag-body at the second period of rest of its intermittent rotation for applying adhesive to the end edges of the bag-body, comprising a reservoir, a sponge-covered piece, means for inserting said sponge-covered piece in the reservoir, a stationary guide-piece at each side of said reservoir, stops in said stationary piece, a carrier movable on said stationary piece between the stops of the stationary piece and provided with an opening, guideways in said carrier transversely to the stationary guide-piece, clamping-pieces movable in the guideways of said carrier, means for simultaneously moving the clamping-pieces in the guideways to and fro from each other and reciprocating the carrier for lowering the clamping-pieces and at the same time move them from each other for moving the clamping-pieces toward each other at the lower end of the reciprocation of the carrier, for clamping the adhesive-covered sponge-piece, moving the clamping-pieces from each other on the return stroke and finally moving them toward each other and clamping them on the bag-body, substantially as set forth.

24. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said platen-wheel formed square-ended at its outer end, means on said platen for holding the bag-body, and stationary blocks and having an incision corresponding to the angle of the platen for a preliminary folding of the part of the bag-body protruding from the platen of the platen-wheel, substantially as set forth.

25. In a paper-bag machine, the combination, of a platen-wheel, a platen on said wheel, means for holding the bag-body to the platen, means for folding over the protruding parts of

the bag-body so as to form the bottom of the bag, and means for folding one corner of the bottom of the bag, substantially as set forth.

26. In a paper-bag machine, a platen-wheel, a platen on said wheel formed square-ended at its outer end, means for intermittently rotating said platen-wheel, a lower platen the upper end of which is provided with an incision corresponding to the square outer end of the platen of the platen-wheel, means for oscillating said lower platen, a plate movable in said lower platen provided with an incision corresponding to the square outer end of the platen-wheel, and means for moving said plate when the lower platen is at one end of its oscillation for turning the protruding parts of the bag-body for forming the bottom of the bag, substantially as set forth.

27. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said wheel formed square-ended at its outer end and provided with means for holding the paper-bag body on the same, and means for forming the bottom of the bag, comprising a lower platen pivoted to the frame of the machine, means for oscillating said lower platen, a plate in said lower platen, a second plate movable in said first plate, and means for raising said plates for folding the bottom of the bag, substantially as set forth.

28. In a paper-bag machine, a platen-wheel, means for intermittently rotating said platen-wheel, a platen on said wheel formed square-ended at its outer end, and means for folding the bottom of the bag-body at a period of rest of the intermittent rotation of the wheel, comprising a pivoted lower platen, a plate movable in said lower platen formed at its outer end with an incision corresponding to the angle of the platen of the platen-wheel, means for oscillating the lower platen for turning the protruding edges of the bag-body for forming the bottom of the bag, a second plate movable in said first plate for pressing the formed bottom of the bag and fork-shaped so as to prevent the second plate from coming in contact with the adhesive applied to the end edges of the bag-body, and means for moving said plates in the lower platen, substantially as set forth.

29. In a paper-bag machine, means for forming the bottom of the bag, a platen-wheel, a platen on said wheel, a cheek at either side of said platen-wheel, slots in said cheeks, a plate movable on the platen, a roller on said plate, fingers on said plate adapted to move in the slots of the cheeks, and means for moving said plate and roller for turning the corner of the bottom of the bag when the platen is opposite the means for forming the bottom of the bag, substantially as set forth.

30. In a paper-bag machine, means for forming the bottom of the bag, a platen-wheel, a platen on said wheel, a shaft for the wheel, a cheek keyed to the shaft at either side of the wheel, slots in said cheeks, a plate movable on the platen, a rack on said platen, fingers on said plate adapted to move in the slots of the cheeks, uprights on each side of the wheel, slots in said uprights whereby the same are guided by the shaft of the wheel, stops on said uprights, means for moving said plate and roller for turning the corner of the bottom of the bag when the platen is opposite the means for forming the bottom of the bag, and means for moving said uprights whereby the stops engaging with the fingers of the movable plates of the diametrically opposite platens simultaneously lower one plate for turning the corner of the bag-bottom and raise the other preparatory for the next actuation, substantially as set forth.

31. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said wheel and means for stripping said bag-body from the platen at a period of rest of the intermittent rotation of the wheel, comprising a carriage movable in guideways in the frame of the machine, hooks on said carriage, means for moving the carriage toward the platen of the wheel so that the hooks can engage with the bag-body on the platen, and means for moving said carriage, hooks and bag-body held thereby, away from the platen, substantially as set forth.

32. In a paper-bag machine, a platen-wheel, means for intermittently rotating said wheel, a platen on said wheel, and means for stripping the bag-body from the platen at a period of rest of the intermittent rotation of the wheel, comprising a carriage movable in guideways in the frame of the machine, hooks on said carriage for seizing the paper bag for placing it on the platen, means for turning the other corner of the bag-bottom of which one corner is already turned, and means for limiting the forward movement of the bag-body to said last-named means, substantially as set forth.

33. In a paper-bag machine, the combination, of pressure-rolls, a carriage, means for turning the other corner of the bag-bottom of which one corner is already turned, and means for moving the carriage for feeding the paper-bag bottom foremost into the pressure-rolls, substantially as set forth.

34. In a paper-bag machine, means for folding the second corner of the formed bottom of the bag, comprising means for moving the bag horizontally between the frame of the machine, a wedge, a roller above and in proximity to the same, and means for actuating said wedge whereby the second corner of the bottom of the bag is turned and in its continuing movement forced over by contact with the roller, substantially as set forth.

35. In a paper-bag machine, the combination, of pressure-rolls and means for folding the second corner of the bottom of the paper

bag, comprising a wedge, a roller in proximity to said wedge, a shaft, a cam on said shaft, a lever actuated by said cam and connected with said wedge for moving the same upwardly against the roller, and means for rotating the pressure-rollers for pressing the bottom of the bag, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EMILE QUENARD.

Witnesses:
EMILE LUDRET,
EDWARD P. MACLEAN.