

No. 864,731.

PATENTED AUG. 27, 1907.

J. N. HAHN.

MACHINE FOR MAKING BOTTLE WRAPPERS.

APPLICATION FILED JULY 29, 1905.

2 SHEETS—SHEET 2.

Fig. 6

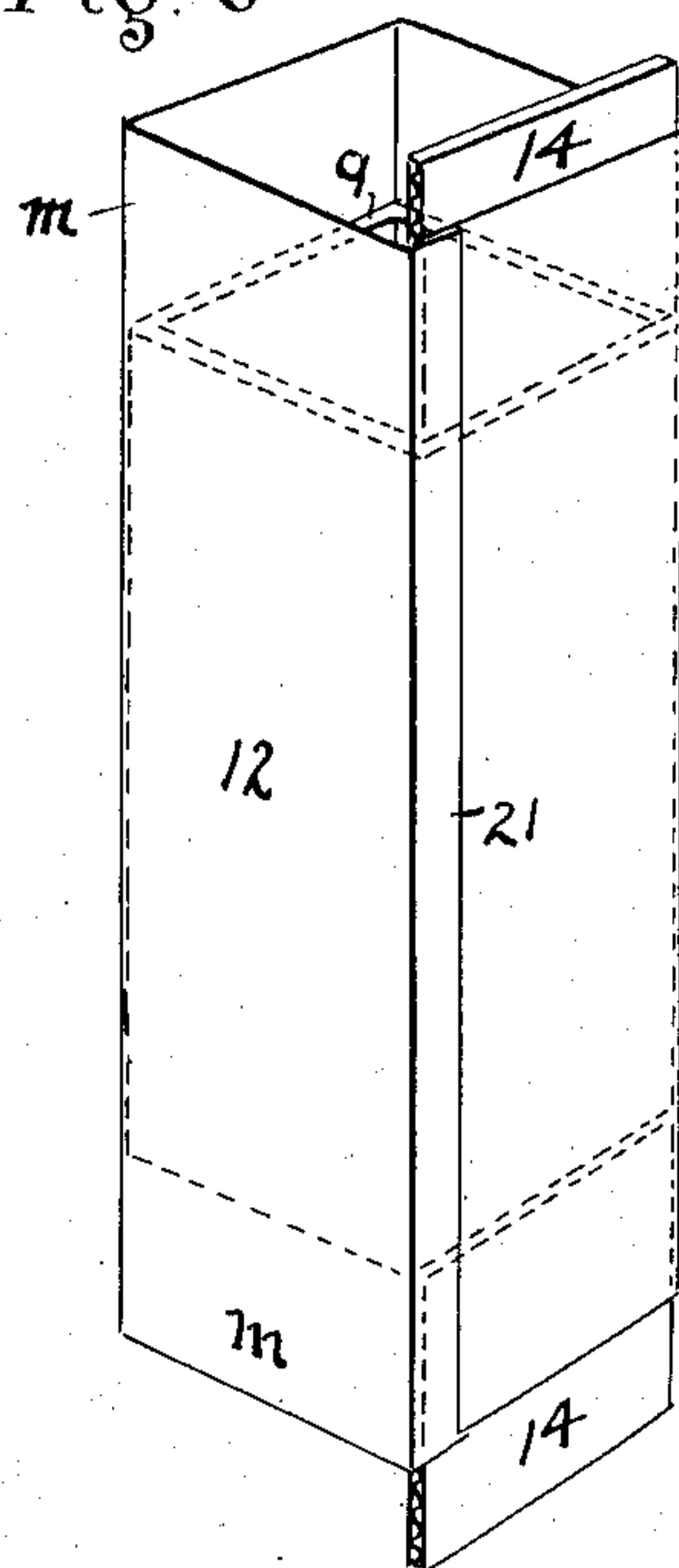


Fig. 4.

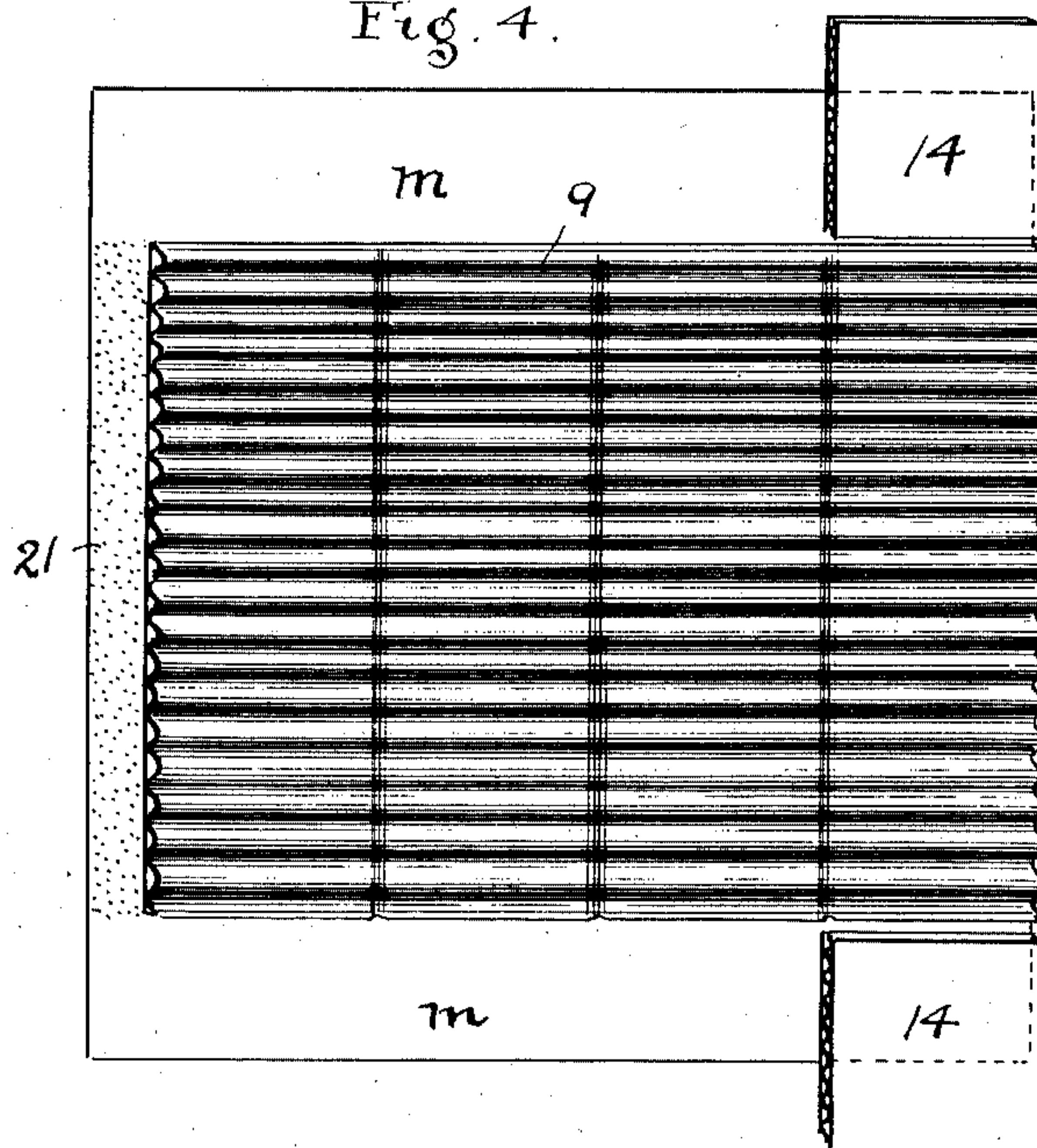


Fig. 2.

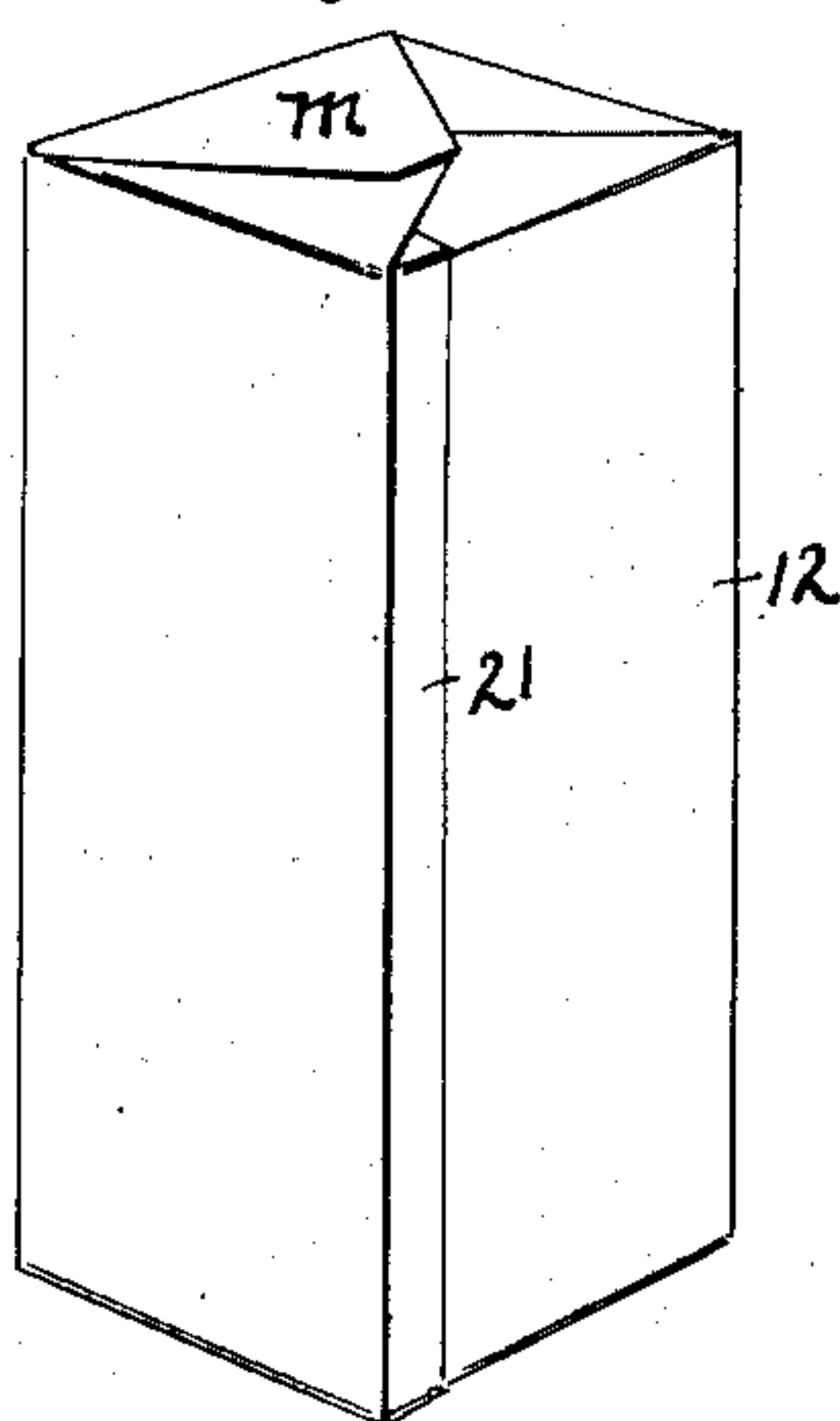
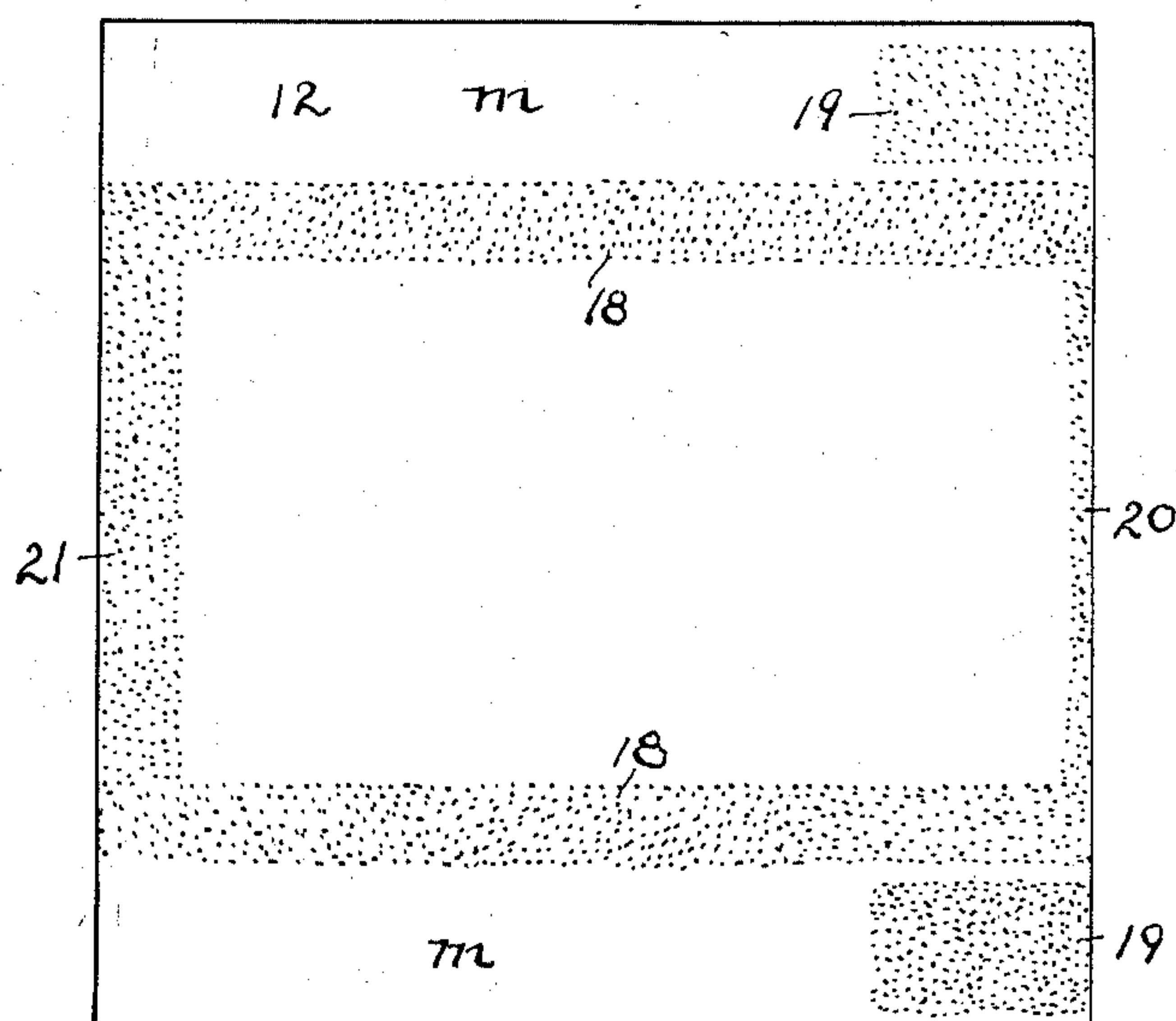


Fig. 5.



ATTEST.

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MACHINE FOR MAKING BOTTLE-WRAPPERS.

No. 864,731.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed July 29, 1905. Serial No. 271,790.

To all whom it may concern:

Be it known that I, JOHN N. HAHN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Machines for Making Bottle-Wrappers, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

10 My invention relates to a machine for making bottle wrappers, and the invention consists in a machine adapted to make and complete the wrappers in a continuous operation, substantially as described and particularly as pointed out in the claims.

15 In the accompanying drawings Figure 1 is a plan of my machine more or less diagrammatic in its outlines, and Fig. 2 is a longitudinal sectional elevation of the machine. Fig. 3 is a plan view of the paster or pasting device. Fig. 4 is a plan view of a finished wrapper 20 and as made by the machine. Fig. 5 shows the outer paper covering or envelop without the corrugated board or body and pasted as it comes through the machine. Fig. 6 shows the wrapper as partially closed for use, the same being folded and pasted along its side 25 edges but with the ends open, and Fig. 7 shows the sides and ends closed as when it contains a bottle or other article. Fig. 8 is a cross section of the hopper.

The commercial article is shown in Fig. 4, in which form it is adapted to be folded into a rectangular box 30 like wrapper or parcel of tubular shape, by moistening the free pasted edge thereof like an envelop, and pasting it upon the back of the opposite edge of the wrapper. Then if desired the tube may be flattened down on the line of its transverse corner creases and in this 35 form it would be in very excellent shape for shipping if it were preferred in this way. However, the flat open form in Fig. 4 is the most convenient for packing, and less room is occupied than with a flattened folded tube. Now, referring to the drawings, it will be seen 40 that it contains, first, an endless carrier C adapted to travel over a roller 2 at its initial end and roller 3 at its delivery end from this point on the stock passes between the upper series of rolls 4 and lower series 5, and plates 6 and 7 are provided in the spaces between said 45 rollers which bridge said space and form a close passage way in which the pasted cover is adhered to the corrugated board. Between the rollers 2 and 3 there is a long table or equivalent support 8 over which the carrier moves, and D is a hopper or receptacle adapted to 50 deliver the corrugated blanks 9, which constitute the body of the wrapper to the carrier. However, any suitable means may be employed for automatically delivering the said corrugated board or pieces from said hopper or other device upon the carrier, but in this 55 instance I employ a simple construction which is always sure to operate and which takes only the lower of the

series of said boards in the hopper and carriers and repeats this action at intervals while the carrier is in operation. To this end I provide the carrier with transverse engaging strips or pieces 10, which has less 60 thickness than the boards so that they will pass under the superposed boards while the lower one is being reached thereby. A few lugs across the face of the carrier instead of the plates or strips 10 might suffice, and any suitable means other than what is shown may be 65 employed for this purpose, as, for example, a mechanism which will automatically place the boards in proper position upon the carrier at suitable intervals.

The boards or body parts 9 of the wrapper are made of suitable corrugated paper, pasteboard, carboard or the 70 like, and are preferably of a single thickness of paper cut to size and adapted to run with the corrugations in the direction of travel, and in this manner they are borne along by the carrier to the double set of rollers above described. 75

As already set forth, the invention is designed to produce a wrapper for bottles and other articles made up as shown in Figs. 4 to 7 inclusive, and comprising the said corrugated body or boards 9, an outer sheet or envelop 12, and preferably corrugated end flaps 14. These 80 several parts are united as seen in Fig. 4 preparatory to folding as in Figs. 6 and 7, and as an initial requirement to getting these parts together as in Fig. 4, it is necessary to produce or provide the envelop blank 12. Said blank is cut by a roller 15, or its equivalent from the continuous sheet of paper proceeding from the roll of paper 85 also marked 16 for identification. Any suitable kind of paper may be used to form the envelop or covering 12, and in its transit to the pasting and rolling mechanism it is shown in this instance as passing between two 90 sets of printing rollers E and E' and G and G', and ink distributors 17 and 18, respectively. In this manner I am enabled to print the cover in at least two different colors, and I might by continuing the rolls print in several colors as well. From the said printing rolls the 95 paper passes over a rotating paster H, which has a suitable paste receptacle h and is adapted to turn continually and constructed to paste upon lines indicated particularly in Fig. 5. In said figure there are shown two parallel pasting lines 18 adapted to adhere the cover 100 or envelop to the board 9, two outer patches of paste 19 to attach the end flaps 14, a cross strip 20 to paste or secure the edge of the paper on board 9 between said flaps, and the envelop paste line 21, which is not designed to be used until the box is made for use, as shown 105 in Fig. 6, and in which case this edge of the paper is lapped over upon the edge 21 thereof so as to make a single tube, Fig. 6. This leaves the end flaps 14 and certain portions m of unpasted paper at the said ends in position to fold over said flaps when they are turned 110 down to closing position. The roller paster H is therefore provided with a longitudinal strip or portion 22 to

paste the strips 20 and 21, and disks 23 to make the continuous paste lines 18, and segments 24 adapted to paste the corner 19, Fig. 5. The strip 22 is supposed to be wide enough to apply paste upon both strips 20 and 21, the plan being to sever the paper transversely on this pasting line, thus leaving a portion of pasted surface with each cover or envelop.

Now, having pasted the continuous sheet of paper 16, said paper is passed between rollers 3 and 4 and 4 and 5 successively, and plates 6 and 7 are placed between these rollers to bring the said sheet flat down upon the corresponding corrugated board 9 practically from end to end thereof, and as the said parts pass through and between the said rollers and plates the pasted sheet becomes adhered to the said board. Among the lower rollers I locate a creasing roller N, which has creasing blades *n* spaced apart equal to the width of the sides of the wrapper or package. These creases become the breaking lines for the corrugations of the board, and are directly in the corners thereof when the board is bent to form the box. This also makes all the sides uniform and a perfectly square box in cross section. Of course boxes of any size large or small may be made by this operation, and the creaser may be exchanged for another wherein the blades are nearer together or farther apart than in this case.

Now, having creased the board and the pasting of the paper upon the back of the board being completed the product, which is the continuous sheet and the boards adhered thereto, is passed through beneath the severing roll 15 and the paper is cut into lengths as much longer than the board as pasted by the blade 26 thereon. Otherwise the sheet of paper is supposed to have the requisite width to provide folding ends *m* as shown when the paper has been severed and cut into suitable lengths for the covering. This being done the wrapper is commercially finished and is delivered over the inclined board 27 at the tail of the machine to be carried away as may be found most convenient. The real feed of endless sheet 16 from the roll is by the pull of the several rolls 3, 4, and 5 and so on, and power may be applied through roll 2 or 4 as may be found convenient.

The end flaps 14 are contained in suitable hoppers *d* at the sides of hopper D for the body boards, and separate endless carriers 30 are provided therefor at the sides of the main carrier C. These several carriers or conveyers may be of any suitable construction and in this instance employ sprocket chains and wheels to drive the same, separate cross strips 31 on the carriers 30 reach the lower pieces 14 and convey them along in the right relation to the board 9 on carrier C to be pasted upon cover *m* without changing position. In the feed of cover and these parts it is necessary to see that the right relations are maintained so as to always bring pieces 14 to the places pasted therefor on the cover.

The paste used may be of any suitable kind, and the several rollers for pressing the parts together are at least as long as the full width of the wrapper, including the end flaps.

What I claim is:—

1. A machine for making bottle wrappers with corrugated board and paper covers, comprising an endless carrier to convey said board and compression rollers between

which said carrier passes, means to feed an endless sheet of paper between said rollers over said carrier, and a pasting device in the line of said sheet of paper comprising a shaft, a pair of disks fixed on said shaft, a cross strip connecting said disks and pasting segments outside said disks on said shaft.

2. In a machine for making bottle wrappers, an endless carrier for a succession of boards of a size to constitute the body of the wrapper, means to supply an endless sheet of paper having greater width than said boards and with a margin along both edges thereof, and rolls at one end of said carrier between which the carrier and paper are adapted to pass one upon the other, in combination with disks to paste the said paper on its under side continuously in strips near its edges and a cross strip connecting said disks, and means to sever the product into given sizes between the edges of said boards.

3. In a machine to make a bottle wrapper which consists of separate cover body and end pieces, means to feed an endless sheet of paper to the machine to form the wrapper covers, means to paste one side of said sheet, means to carry pieces of corrugated board to form the body of the cover, means to carry the separate pieces to form the ends of the wrapper, means to press said several parts together and means to sever the said sheet into suitable lengths.

4. In a machine for making bottle wrappers, means to supply the machine with wrapping paper and a device to paste said paper, in combination with a carrier to convey boards to form the body of the wrapper and means at each side of said carrier to convey the pieces to form the ends of the wrapper, and mechanism in which said paper boards and end pieces are pressed together and constitute a finished wrapper.

5. In a machine to make bottle wrappers of several pieces, means to supply a continuous sheet of paper and to paste the same on one side, in combination with a carrier to feed separate pieces of board to the machine to form the bodies of the wrapper, means at the sides of said carrier to convey the ends of the wrapper, a creaser for the said boards and a transverse cutter for the paper.

6. In a machine to make bottle wrappers, an endless carrier for the body board of the wrapper and means at the sides thereof to convey the end pieces of the wrapper, in combination with means to supply pasted paper covers for said boards and end pieces.

7. In a machine to make bottle wrappers, an endless carrier for the board which constitutes the body of the wrapper provided with transverse strips to engage the said bodies, in combination with a hopper to supply the said boards open across its bottom for the boards to drop bodily upon the said carrier, receptacles at the sides of said hopper adapted to supply end pieces for the wrapper and carriers for the said end pieces.

8. In a machine to make bottle wrappers, an endless carrier constructed to convey the boards which constitute the body of the wrapper and means at the sides of said carrier to convey the pieces which form the ends of the wrapper, in combination with a hopper to supply said boards located over the said carrier, and a receptacle at the side of said hopper to supply the end piece for the wrapper upon the carriers for the same.

9. In a machine to make bottle wrappers, an endless carrier constructed to convey the boards which constitute the body of the wrapper and means at the sides of said carrier to convey the pieces which form the ends of the wrapper, in combination with a hopper to supply said boards located over the said carrier, and a receptacle at the side of said hopper to supply the end piece for the wrapper upon the carriers for the same.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN N. HAIN.

Witnesses:

R. B. MOSER,
C. A. SELL.