

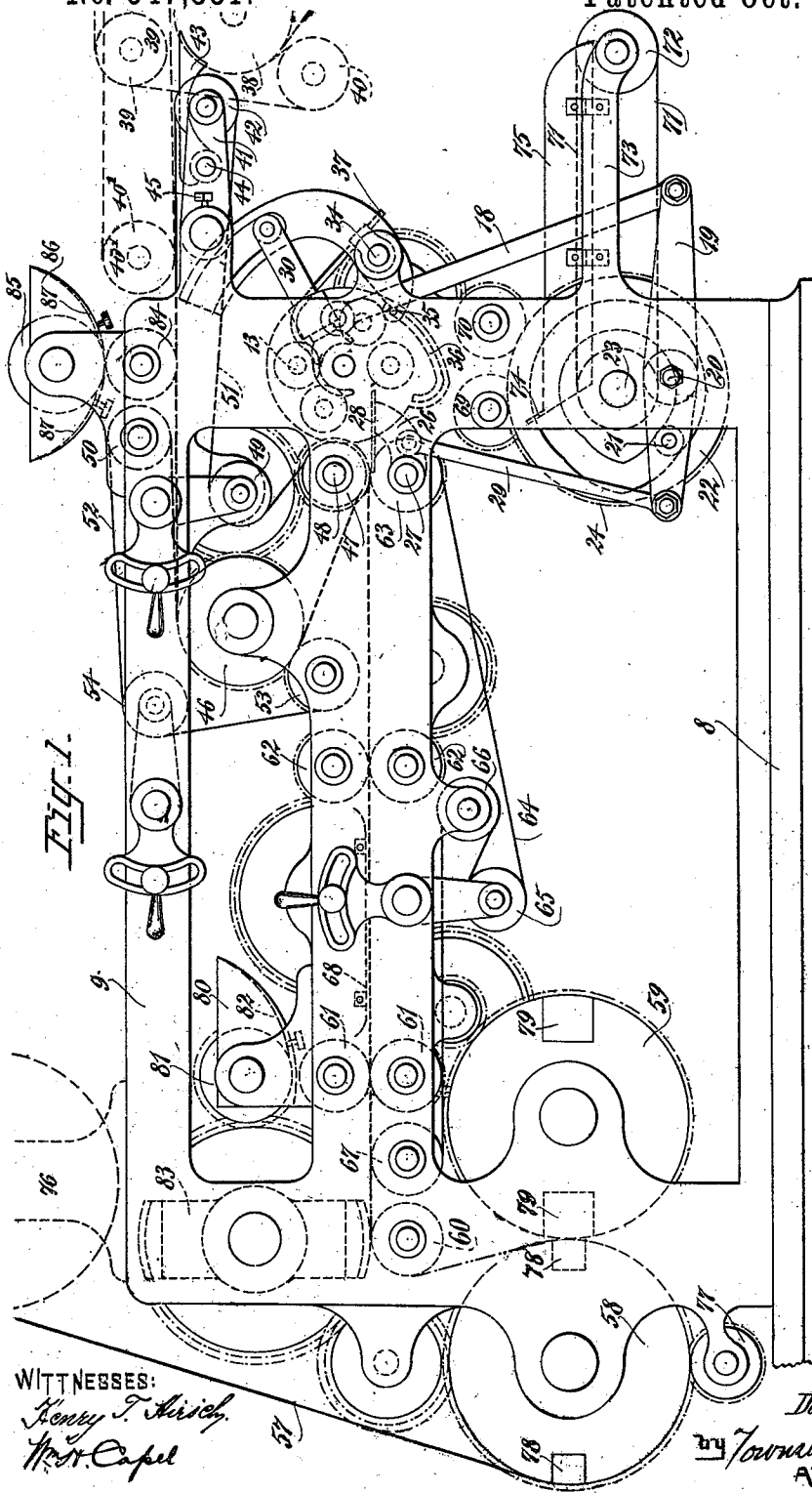
(No Model.)

4 Sheets—Sheet 1.

D. WRIGLEY.
NEWSPAPER WRAPPING MACHINE.

No. 547,531.

Patented Oct. 8, 1895.



WITNESSES:

Henry T. Hirsch
Wm. Capel

INVENTOR:

Daniel Wrigley.

by Townsend & Secker
ATTORNEYS.

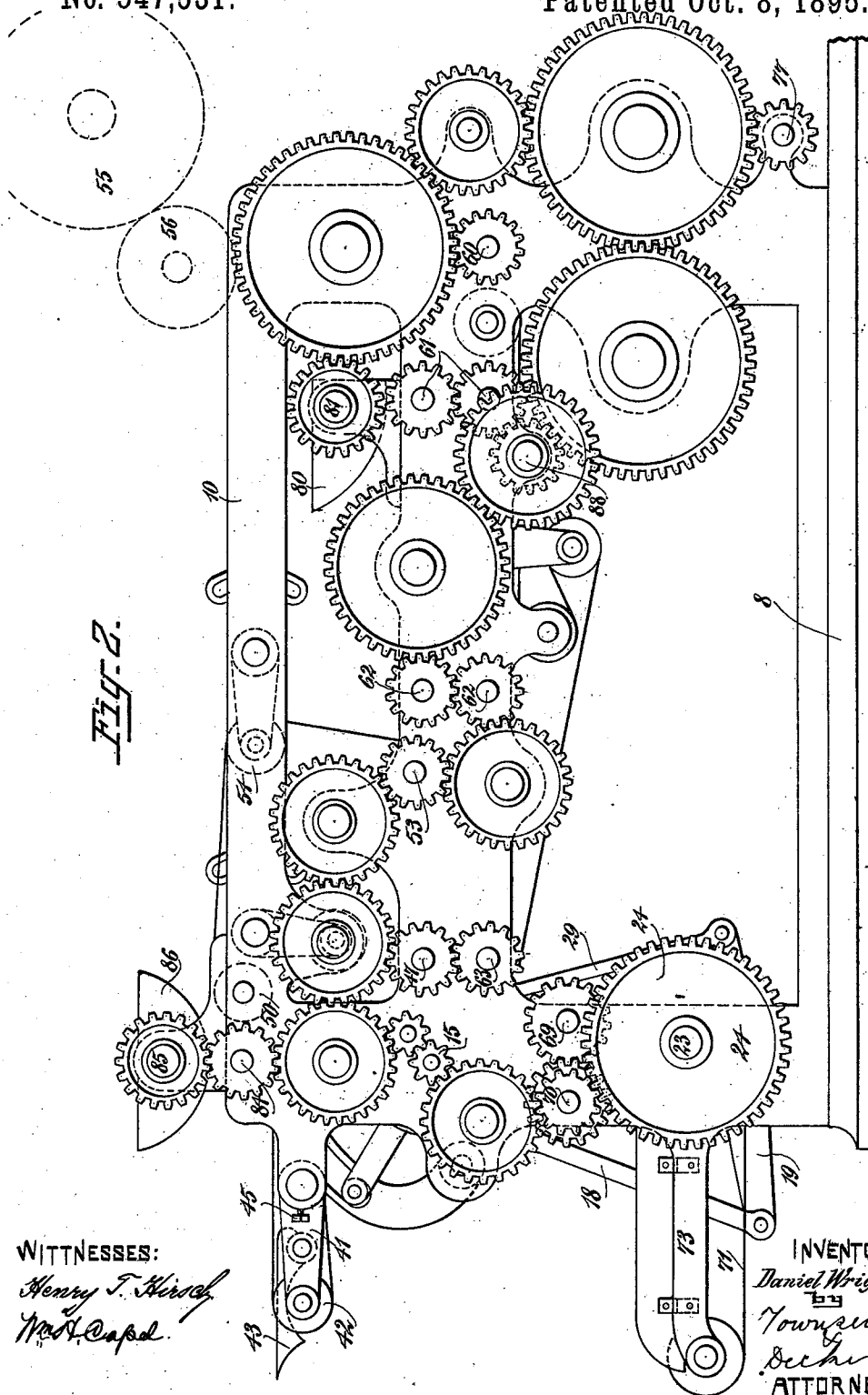
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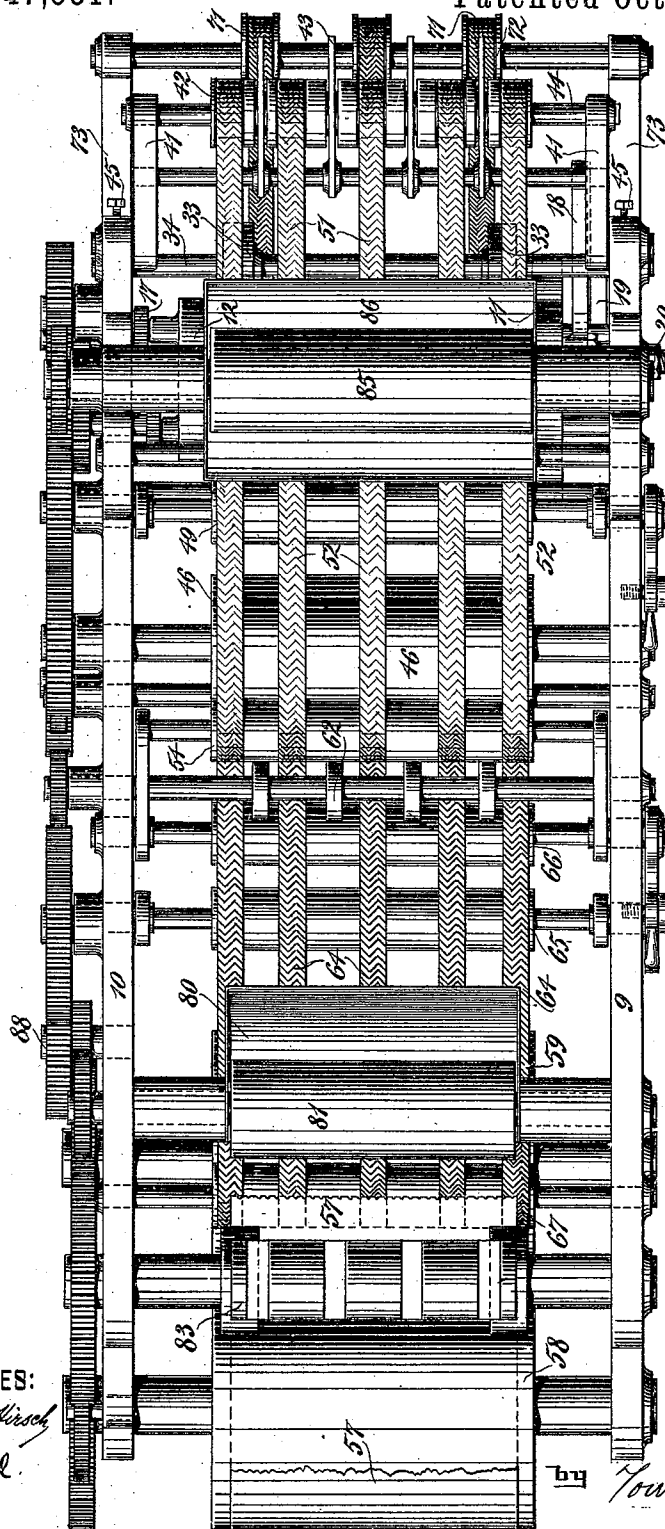
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Fig. 5.



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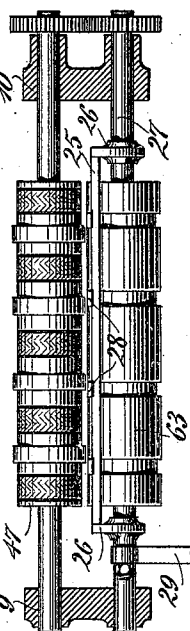


Fig. 7.

INVENTOR:

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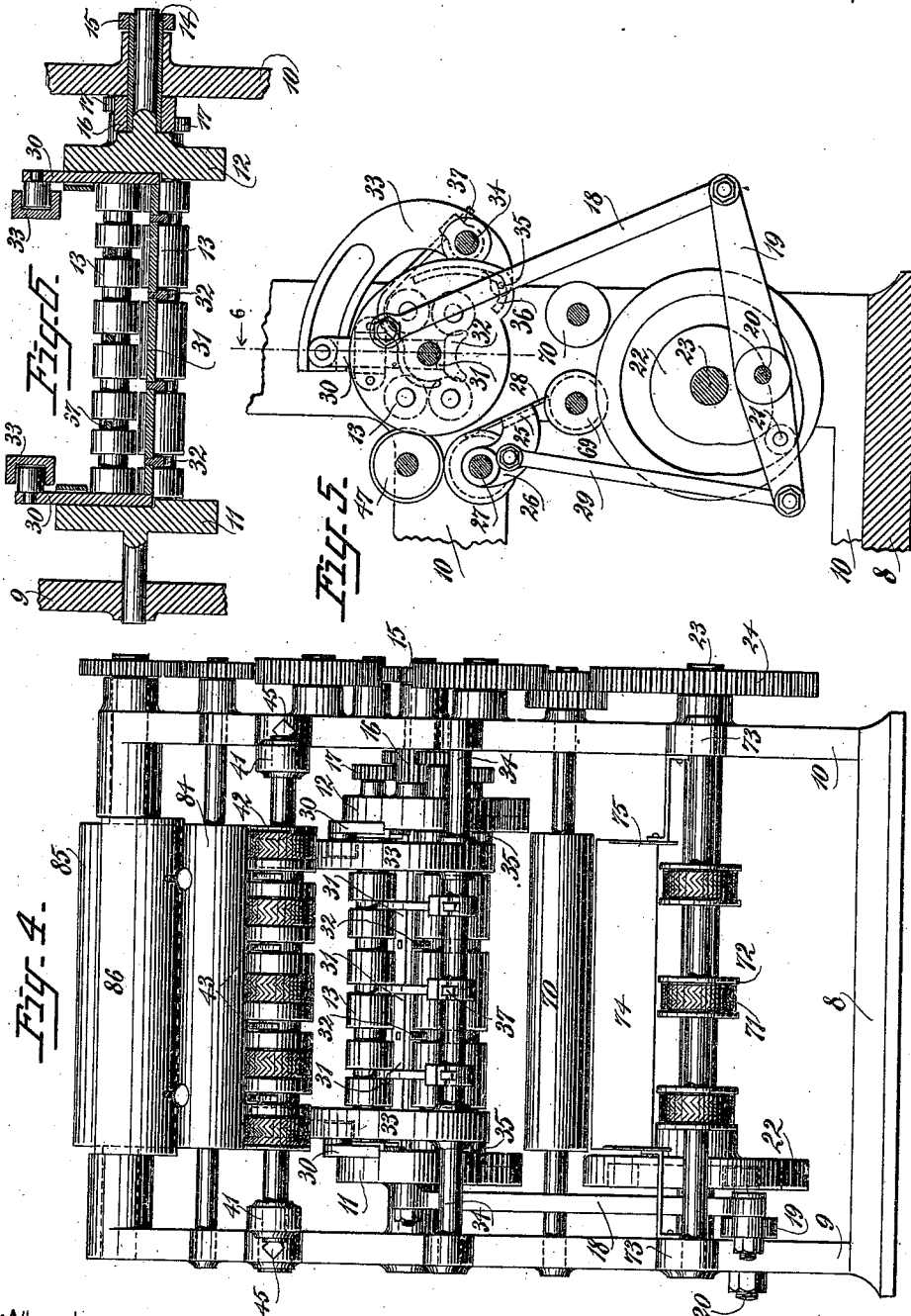
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Henry T. Hirsch
W. H. Capel

INVENTOR:

Daniel Wrigley

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UNITED STATES PATENT OFFICE.

DANIEL WRIGLEY, OF NEW YORK, N. Y.

NEWSPAPER-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 547,531, dated October 8, 1895.

Application filed February 25, 1895. Serial No. 539,709. (No model.)

To all whom it may concern:

Be it known that I, DANIEL WRIGLEY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Improved Newspaper-Wrapping Machine, of which the following is a specification.

My invention relates to machines for wrapping newspapers and periodicals for the mail as rapidly as they are delivered from the press or at an equal speed as they are fed to it by hand.

It relates particularly, however, to a machine for wrapping newspapers passed to it in the usual folded form directly from a modern press.

It also relates particularly to that class of such wrapping-machines in which the paper and wrapper are fed together into a coreless wrapping-chamber, from which the wrapped paper is laterally discharged.

The object of my invention is to improve upon the machines of this class by so constructing and combining the necessary elements entering into their construction that they will be simplified and rendered more rapid and certain in this action.

My invention therefore consists in a wrapping-machine provided with an oscillating wrapping-chamber having wrapping-rollers mounted concentric therewith and having an opening through which the wrapper and paper are received and the wrapped paper discharged.

It also consists in a wrapping-chamber for newspaper-wrapping machines provided with rollers mounted concentric therewith and having an opening in its side through which the paper and wrapper enter and from which the wrapped paper emerges, said chamber being constructed and mounted to oscillate between a position for receiving the wrapper and a position for discharging the wrapped paper.

It also consists in the combination, with an oscillating wrapping-chamber, of an ejector acting to guide the paper and wrapper in the wrapping operation and to expel the wrapped paper as said chamber oscillates to the discharge position.

My invention further consists in a special

construction and combination of parts hereinafter specified, by which the wrapping-machine is adapted to receive a folded paper directly from the discharging mechanism of a press or folder.

The invention further consists in the construction, combination, and arrangement of parts, as hereinafter described, and set forth in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 represents in elevation the operator's side of my improved newspaper-wrapping machine. Fig. 2 represents the reverse or gear side of said machine. Fig. 3 is a plan thereof. Fig. 4 is an elevation of the newspaper-receiving end of said machine. Fig. 5 is an end view of the wrapping-chamber and its operating mechanism, the same being shown in the position assumed by it upon the discharge of a wrapped paper. Fig. 6 is a sectional view of said chamber, taken in the plane represented by line 6 6, Fig. 5. Fig. 7 is an elevation of the feeding-rolls and rocking guide.

This machine was designed for use in connection with my improved addressing-machine, which forms the subject of an application filed of even date herewith, Serial No. 539,710, and therefore its base (indicated by 8) is shown in Figs. 1 and 2 as broken away, since it is intended that both machines shall be mounted upon the same base.

9 and 10 indicate the side frames of the machine, upon and between which the various parts thereof are mounted.

The principal and essential feature of the machine is the wrapping-chamber. This chamber in its preferred form, as illustrated, consists of the heads 11 and 12, in which are journaled the wrapping-rollers 13 as the principal elements thereof. With these co-operate suitable guides, as hereinafter described. The head 11 is journaled in a boss upon the frame 9, while the head 12 is journaled in a sleeve 14, which in turn is journaled in a boss upon the frame 10. This sleeve carries at its outer end gear 15, which forms a member of the driving-train of gears, while upon its inner end it carries a broad gear 16, with which mesh pinions 17, mounted upon the ends of the journals to rollers 13. These pinions 17, as shown, are staggered in their engagement

with the broad gear 16, so as not to interfere with one another. The wrapping-chamber thus mounted is capable of oscillation. To give it such a motion, I connect to the head 11 a link 18, which in turn is connected to one end of a lever 19, pivoted upon the frame 10, as at 20. Upon the lever 19 is mounted by means of a stud-bearing a roller 21, which operates in the raceway of a box-cam 22, fixed upon the shaft 23. This cam receives its rotation through gear 24, forming a member of the driving-train gears. Through this mechanism the wrapping-chamber is oscillated to and from the receiving and discharging positions, the former of which is indicated in Fig. 1, while the latter is indicated in Fig. 5. As a consequence of this oscillating capability of the wrapping-chamber, it is preferable that it be provided with but one opening, which shall serve the purpose of a receiving-opening and a discharge-opening.

Co-operating with the wrapping-chamber is a rocking guide, which consists of a bar 25, mounted upon arms 26, free to oscillate upon shaft 27. Across the bar 25 are placed and secured guide-plates 28. For the purpose of rocking this guide a link, as 29, is connected to one of the arms 26 and to that end of lever 19 which is opposite to the end connected with link 18. Thus it will be seen that as lever 19 is rocked to oscillate the wrapping-chamber it will also throw the rocking guide from the position shown in Fig. 1 to that shown in Fig. 5.

To facilitate the discharge of the wrapped paper from the wrapping-chamber, I provide an ejector, which shall reciprocate to and from the discharge-opening as said chamber is oscillated to and from the discharging position. This ejector may be made and mounted in various ways; but the way illustrated is the one preferred, wherein slides, as 30, are mounted in ways formed in the heads 11 and 12 and have extending from one to the other, at their lower ends, a plate, as 31, to which are connected guide-plates 32, which also serve as the surface for engaging the wrapped newspaper in discharging it. Any suitable mechanism for reciprocating this ejector may be employed. The preferred form, however, is illustrated as consisting of cam-levers 33, mounted upon rod 34, rigidly fixed in the frames 9 and 10. In the raceway of these cam-levers operate rollers mounted upon studs in the outer ends of the slides 30. To provide for rocking the levers 33, I place upon the short arms thereof pins, as indicated at 35, which project into raceways 36, formed in cam projections upon the heads 11 and 12. By this construction as the wrapping-chamber oscillates the plunger is carried with it and as the short arms of levers 33 are forced away from said chamber the long arms are forced toward it and the ejector is obliged to travel toward the opening in said chamber. Co-operating with the guiding-surfaces 32 of the ejector in its position of rest and with the

wrapping-rollers are guide-rods 37, which are rigidly mounted upon rod 34 and are curved, as shown in Figs. 1 and 5, so as not to be affected by the oscillations of the wrapping-chamber. For the passage of plates 32 and for the reception of the guides 37 suitable grooves are formed in the rollers 13, as indicated in Fig. 4.

This wrapping-machine is intended for co-operation with such presses as deliver the paper folded ready for wrapping or for co-operation with folding-machines. In Fig. 1 I have shown it adapted to operate in connection with one of the modern presses, the delivery-rolls of which are indicated in their usual position by circles 38, 39, and 40. With such a press it is only necessary in setting up my machine in connection therewith to shift the position of roller 40 to that indicated in dotted lines at 40'. For co-operation with the delivery-tape of the press thus placed my machine is provided with an adjustable frame consisting of the arms 41, pivoted to the frame of the machine and carrying between their outer ends tape-carrying roll 42, which is grooved for the passage of fingers 43, mounted upon a rod 44, fixed in the arms 41. These arms extend into slight grooves in the surface of roller 38 or between the several pulleys which go to make up this roller, as the case may be. This adjustable frame by means of set-screws 45 may be tilted into the required position to correspond to the height of the press. The lower receiving tapes 51 pass around this roller 42, back over roller 46, then down and forward over the paper-feeding roller 47, journaled upon shaft 48, then up over the tension-roller 49, and forward to the said roller 42. These tapes co-operate with those of the press which pass about roller 40' and carry the paper to be wrapped toward the wrapping-chamber. In order to direct it downward to the chamber, the upper paper-carrying tapes 52 are mounted as shown. Starting from roller 50, they extend back and downwardly around roller 46, along with the lower tapes, then around roller 53, and up around tension-roller 54, and to said roller 50. We have now traced the paper to such a position that its next move will bring it upon the wrapper. I will now describe the path of the wrapper to this point.

When this wrapping-machine is used in connection with the addressing-machine, it is geared thereto, as indicated by circles 55 and 56 in Fig. 2, and the wrapping-paper 57 descends from the addressing-machine, as indicated in Fig. 1, to and through the perforating-rolls 58 59, then up over directing-roll 60, and through the advancing-rolls 61 and breaking-rolls 62 to the feeding-rolls 63 and 47. Said advancing and breaking rolls may be constructed of disks spaced apart upon the shaft, as shown in Fig. 3, or they may be rolls simply grooved for the free passage of the tapes. Co-operating with these rolls, through which the wrapper passes, are the wrapper-carrying

tapes 64, which may be described as starting from roller 63, passing around tension-roller 65, then around roller 66, backward to roller 67, then forward to said roller 63, in this last stretch passing between the pulleys forming the advancing-rolls and the breaking-rolls.

If desired, to insure the wrapper against curling up in its passage from rollers 61 to 62 a guide-plate, as 68, may be mounted above the tapes between the frames 9 and 10 in the position indicated in Fig. 1. The rollers 61 rotate at a certain speed and assist in drawing the wrapper into the machine and advancing it to rollers 62, which rollers rotate at a greater speed than rollers 61, and act thereby to break each wrapper from the web as soon as its advanced end passes between rollers 62. The wrapper is then hurried forward, and as it approaches the feeding-rollers 47 63 the paper is delivered onto it from between tapes 51 and 52. They are then passed together, by rollers 47 and 63, over plates 28 into the wrapping-chamber, about the interior of which they are rolled by the action of the rolls 13, and when one has been completely rolled within the other, for which the operation of the machine is timed, the wrapping-chamber is oscillated, the rocking guide depressed, the ejector advanced, and the wrapped paper discharged downward between the exit-rollers 69 and 70 onto the discharge-tapes 71, which pass over suitable pulleys mounted upon shaft 23 and corresponding pulleys 72, mounted upon a shaft journaled in brackets 73, extending from the frames 9 and 10. Guide-plates 74 and 75 are suitably mounted about these tapes to direct the papers as they issue from the machine.

When this machine is not used in connection with my addressing-machine, the roll of wrapping-paper may be mounted upon the frames 9 and 10 in any suitable manner, as indicated at 76 in Fig. 1. The wrapping-paper would then also pass as above described.

A small roller, as 77, co-operates with the perforating-roll 58 to feed the paper forward to the perforating mechanisms 78 79. The perforating-rolls are preferably made large enough so that their circumference shall be double the length of a wrapper.

The pasting mechanism which I prefer to use in connection with this wrapping-machine consists of a paste trough or reservoir 80, in which is journaled a distributing-roller 81, and which is provided with a suitable adjustable gage-plate 82 in the usual way for regulating the amount of paste which shall be carried out on the surface of said roller. The paste is delivered from this roller to the end of each wrapper by means of a paste-distributor 83 in the form of a broken cylinder, as indicated in Fig. 1, the periphery of which is provided with a series of grooves, as shown in Fig. 3, for the purpose of leaving places upon a wrapper unprovided with paste. Through these pasteless spaces roll the members of the paper-ad-

vancing roller 61, the paper-breaking roller 62, and the roller 47.

The tension-rollers 49, 54, and 65 are provided with suitable adjusting-sectors, as indicated in Fig. 1, for retaining said rollers in the positions desired.

To facilitate the handling of the folded papers, particularly in the rolling-up action, I provide a moistening apparatus consisting of a roller 84, journaled in the frame of the machine above the tape 51, as indicated in Fig. 1. Co-operating with this roller, which I preferably cover with some porous material, as cloth, is a roller 85, journaled in brackets rising from the frame of the machine and turning through an aperture in the bottom of the water trough or fountain 86, which, like the paste-trough, is provided with suitable gage-plates 87, which may be regulated by means of tension-screws, as shown. With a construction of this sort I am enabled to supply water to a moistening-roll located below the fountain, which is a great advantage in a machine of this sort, as it would complicate the mechanism materially to attempt to distribute the water from the top of roller 85, as has been the custom in most moistening apparatus.

In Fig. 2 it will be observed that upon the stud-shaft 88 are mounted two pinions, one of which is of greater diameter than the other, and these pinions serve to multiply the speed between the advancing-rolls 61 and the breaking-rolls 62 and feeding-rolls 47 and 63. It will be noticed, also, that since the wrapper-carrying tape receives its motion from roller 63 the portion thereof extending between rollers 61 and 62 travels at a greater speed than the wrapper-web, but at the same speed as each wrapper does when severed or broken from said web by the action of rollers 62. This increase in speed enables the wrapping operation to take place and the wrapping-chamber to return to its receiving position while the next wrapper is being advanced to the feeding-rolls. In this way the machine will operate to wrap papers and discharge them as rapidly as said papers and wrappers can be fed to it.

In brief the operation of the machine is as follows: The wrapping-paper passes through the perforating-rolls, is perforated, its rearward end pasted by the operation of the paste-distributor 83 as said end passes over directing-roll 60, is then advanced between rolls 61 to rolls 62, which as soon as they engage it act to break the wrapper from the web, which is then rapidly advanced toward the feeding-rollers, and as it approaches them the paper which has been delivered from the press over fingers 43 and carried by tape 51 under the moistening-roller 84 and directed by tapes 51 and 52 around the roller 46 is delivered upon the wrapper, and both together are fed over the plates 28 into the interior of the wrapping-chamber, whose rollers 13 roll them one within the other, they being

guided in this operation by the plates 32 of the ejector and the guides 37. As soon as the rolling operation is completed the lever 19 is rocked by the cam 22, which causes the chamber to oscillate into the discharge position and the plates 28 to drop, so as to direct the paper to the rolls 69 and 70, and the chamber in its oscillation causes the rocking of levers 33 and the advance of the ejector to the position indicated in Fig. 5. The wrapped paper as it passes through rolls 69 and 70 falls upon tapes 71 and is carried over roll 72 into a basket or any suitable receptacle. It will be noticed that as the chamber is oscillated, the pinions 17 roll upon the gears 16 in the direction of their rotation, and therefore the rolls 13 remain stationary with respect to the heads of the chamber and to the paper held between them. This greatly facilitates the discharging of the paper.

Many of the parts of my machine may obviously be changed in form and location, and it may be advisable to duplicate some of them or omit others; but such changes so long as they do not affect the principle of the machine and the effective working thereof, as above described, do not depart from my invention.

What I claim as my invention is—

1. In a wrapping machine, an oscillating wrapping chamber provided with a single lateral receiving and discharge opening and having rollers concentrically mounted with respect to said chamber, in combination with guides co-operating with said rollers and an ejector reciprocating laterally through said chamber to and from said opening.
2. In a wrapping machine, an oscillating wrapping chamber provided with rollers mounted concentric therewith and having a single opening acting in one position of the chamber as the receiving opening and in another position of the chamber as the discharge opening.
3. In a wrapping machine, an oscillating wrapping chamber provided with rollers mounted about it for rolling up a paper and wrapper, and means for stopping the rotation of said rollers as the chamber turns to the discharge position.
4. In a wrapping machine, an oscillating wrapping chamber provided with a lateral opening in combination with an ejector reciprocating to and from said opening as the chamber oscillates to and from the discharge position.
5. In a wrapping machine, an oscillating wrapping chamber in combination with an ejector acting as a guide during the wrapping operation, and means for reciprocating it to and from the exit of the chamber as said chamber oscillates to and from the discharge position.
6. In a wrapping machine, the combination with an oscillating wrapping chamber provided with means for rolling up the paper and wrapper, of rigidly mounted guides as-

sisting in the wrapping operation, and an ejector also acting as a guide during said operation.

7. In a wrapping machine, an oscillating wrapping chamber having heads journaled in bearings upon the frame of the machine and wrapping rollers journaled in bearings in said heads, of an ejector located in one side of the chamber, and means for reciprocating it as the chamber oscillates.

8. In a wrapping machine, a wrapping chamber with heads journaled in the frame of the machine and wrapping rollers extending from one head to the other and provided with pinions, a gear upon the frame of the machine with which said pinions engage, and means connected to the chamber for oscillating it to discharge the wrapped paper.

9. In a wrapping machine, the combination with mechanism for delivering the wrapped paper, of a wrapping chamber provided with a single opening, and a rocking guide serving to direct the paper and wrapper into said opening and to direct the wrapped paper to the delivering mechanism.

10. The combination with the oscillating wrapping chamber journaled in the frame of the machine, of the ejector mounted in ways in the heads of the chamber, cams formed upon said heads, and levers engaging said cams and the ejector for reciprocating it.

11. The combination with the wrapping chamber journaled in the frame of the machine, of a cam wheel mounted upon said frame, a lever rocked by said cam, and a rod connected to said lever and to said chamber for oscillating it.

12. The combination with the wrapping chamber journaled in the frame of the machine and the rocking guide at the opening in said chamber, of a rocking lever mounted upon said frame and connected to the chamber and to the guide.

13. The combination with the delivery mechanism of a printing press or folder provided with an extended tape-carrying roll, of the adjustable receiving mechanism of a wrapping machine consisting of arms pivoted to the frame of said machine and supporting at their outer ends a tape-carrying roll, a rod connecting said arms, and fingers mounted upon said rod and passing between the members of the latter tape-carrying roll into co-operation with the said delivery mechanism to guide the paper therefrom to the said receiving mechanism.

14. In a wrapping machine, the combination with the wrapping chamber, of a pair of feeding rolls at the entrance thereto, the wrapper-carrying tapes passing around one of said rolls, the lower paper-carrying tapes passing around the other of said rolls, and the upper paper-carrying tapes co-operating with the lower ones to deliver the paper upon the wrapper as the latter approaches the feeding rolls.

15. In a wrapping machine, the combination

with advancing and breaking rolls for wrapping paper, consisting of disks spaced apart upon their shafts, of a wrapper directing roll, and a paste-applying device co-operating with
5 said directing roll and consisting of a rotary broken cylinder having two diametrically opposite pasting surfaces transversely grooved to provide for pasting only the ends of the wrappers and for omitting paste from those

portions of the wrapper which come in contact with said advancing and breaking rolls. 10

Signed at New York, in the county of New York and State of New York, this 23d day of February, A. D. 1895.

DANIEL WRIGLEY.

Witnesses:

WM. H. CAPEL,
HENRY T. HIRSCH.