

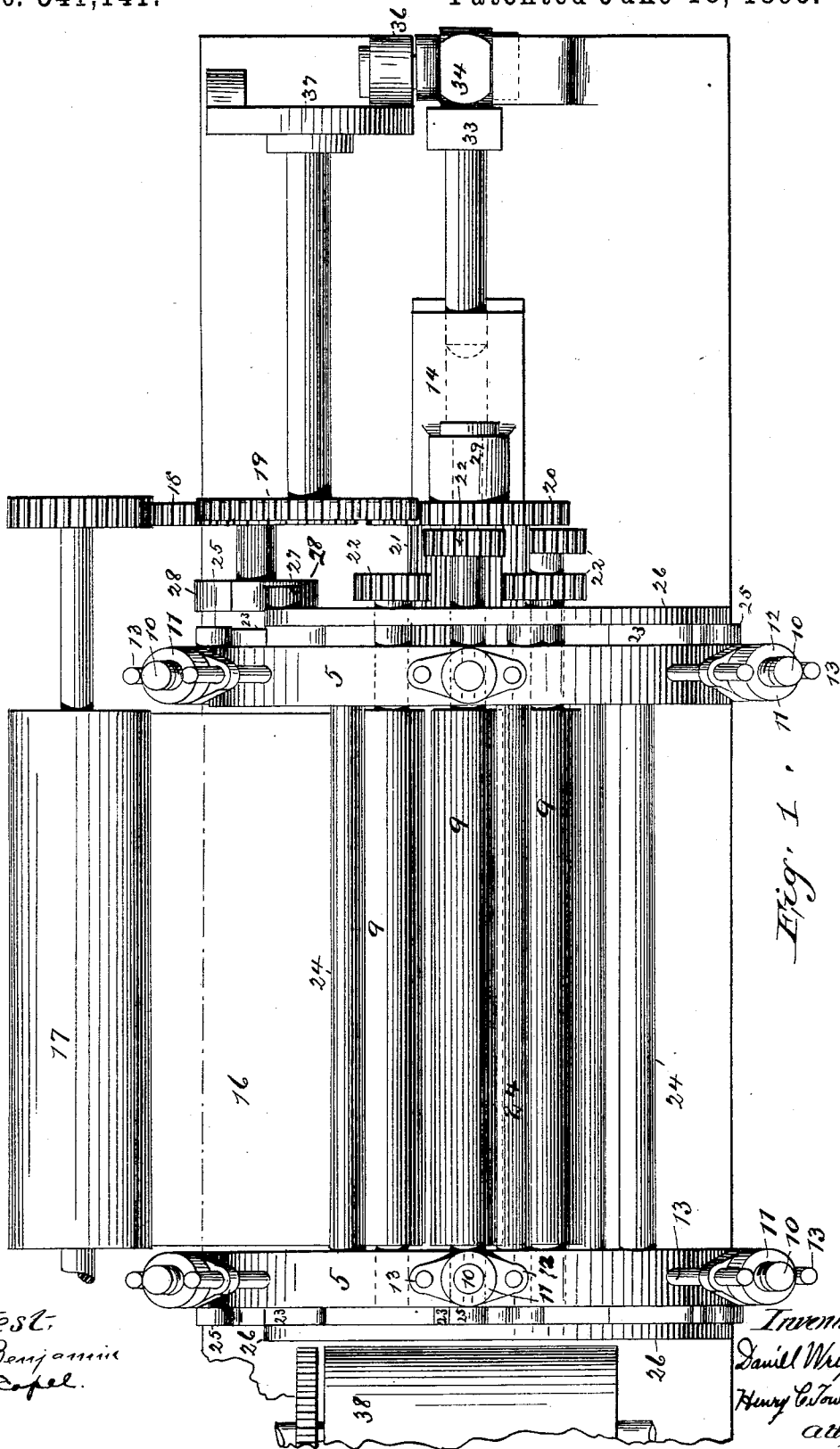
(No Model.)

4 Sheets—Sheet 1.

D. WRIGLEY.
ROTARY WRAPPING MACHINE.

No. 541,141.

Patented June 18, 1895.



(No Model.)

4 Sheets—Sheet 2.

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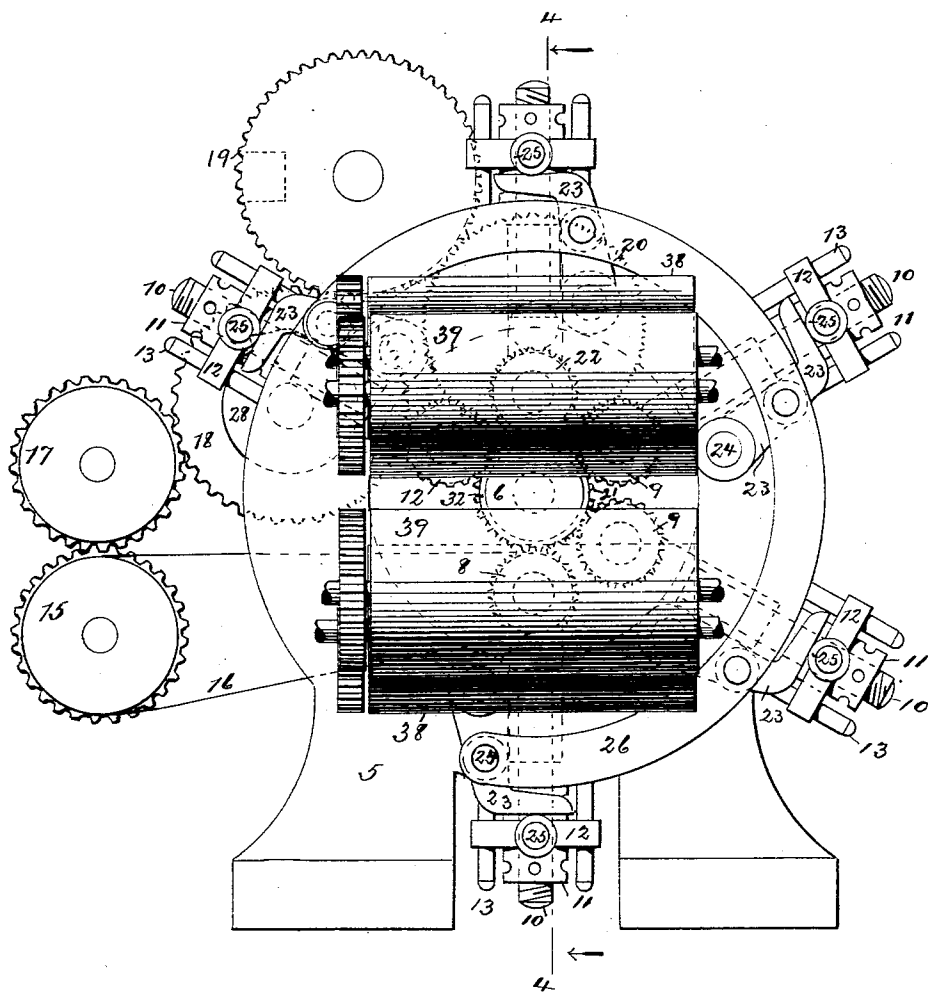


Fig. 2.

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4 Sheets—Sheet 3.

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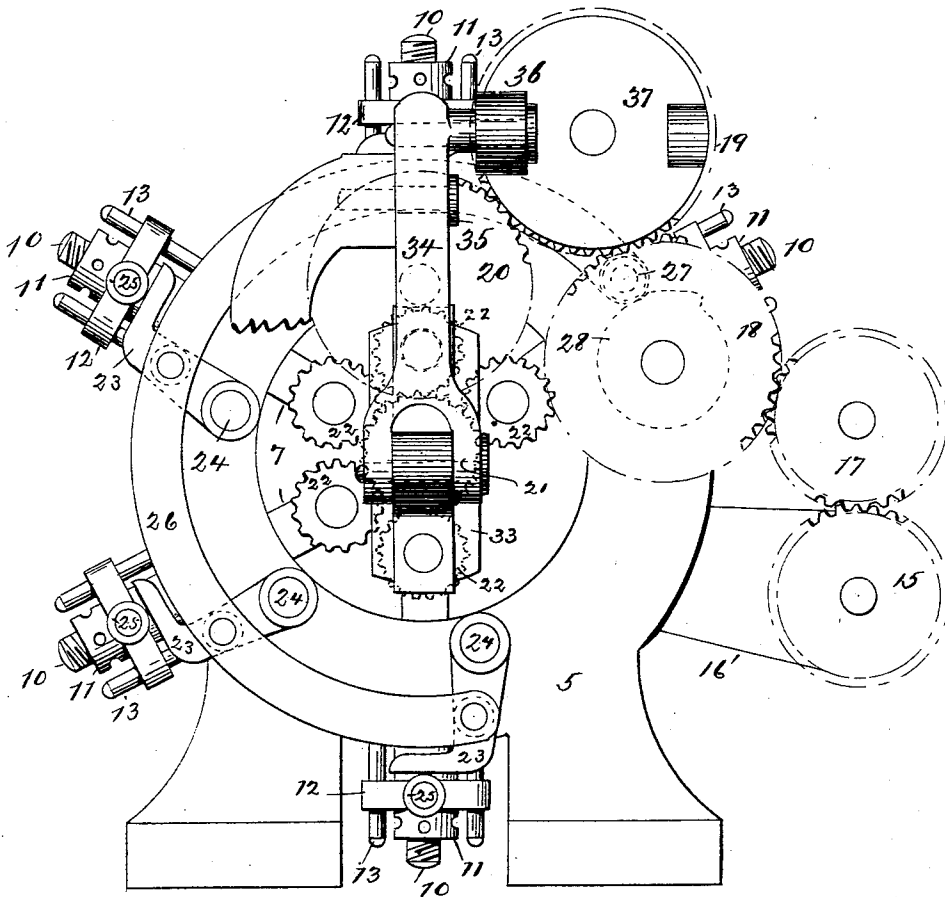


Fig. 3.

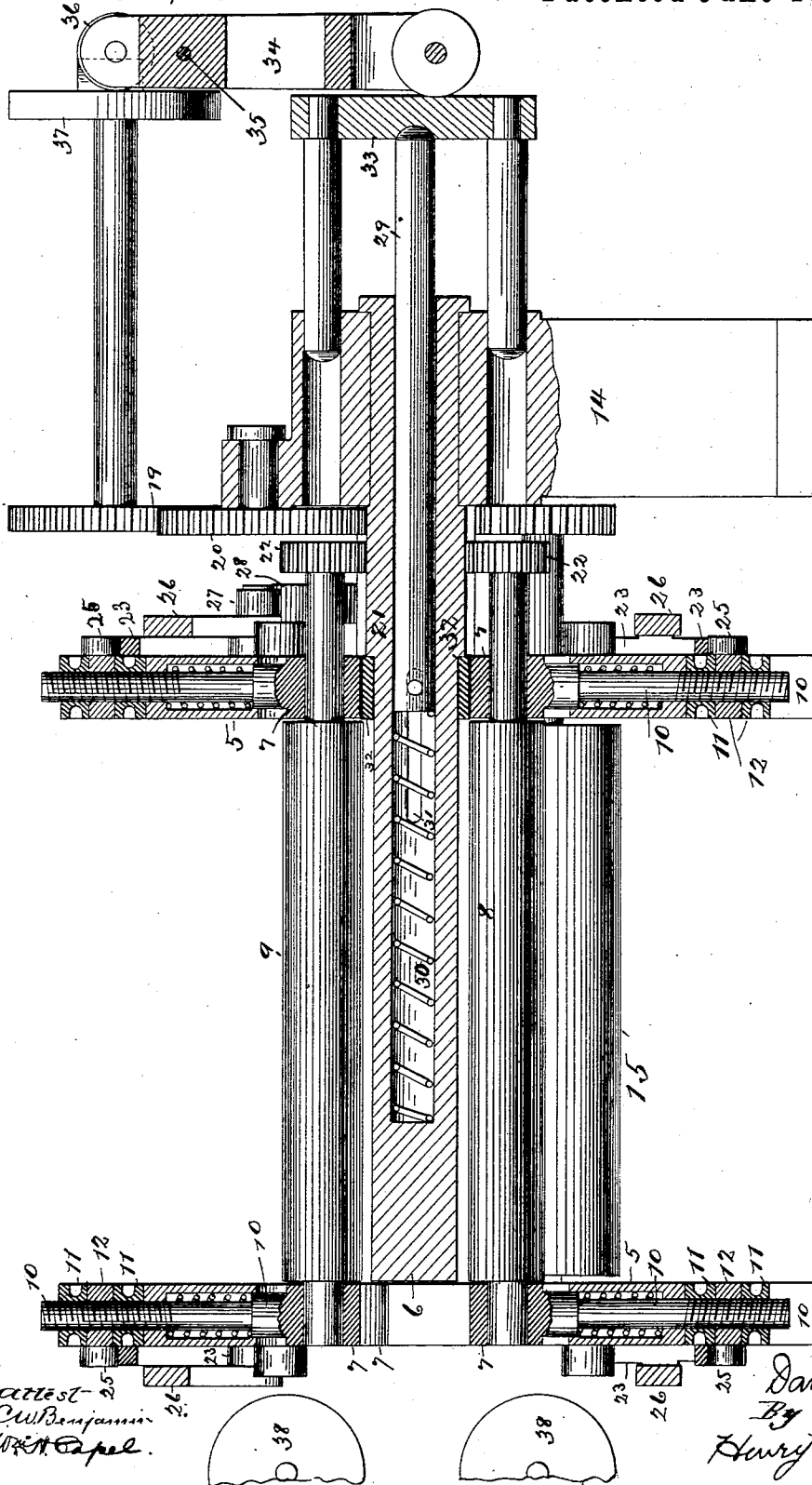
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D. WRIGLEY.
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UNITED STATES PATENT OFFICE.

DANIEL WRIGLEY, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, THEODORE H. MEAD, AND CHARLES W. CARPENTER, OF SAME PLACE.

ROTARY WRAPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 541,141, dated June 18, 1895.

Application filed October 2, 1893. Serial No. 486,963. (No model.)

To all whom it may concern:

Be it known that I, DANIEL WRIGLEY, a subject of the Queen of Great Britain, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Rotary Wrapping-Machine, of which the following is a specification.

My invention relates to machines for wrapping newspapers, pamphlets and the like and includes simply the mechanism for wrapping and discharging the thing wrapped.

The machine is designed to be attached to any folder whether said folder is or is not directly connected to a printing press. Its purpose is to receive the thing to be wrapped in the form ready for rolling and wrapping and along with it the pasted wrapper, to wrap the one within the other and in the act of discharging them from the machine to press the two down flat in a manner to insure the close adherence of the pasted edge.

My machine is best adapted for attachment to those printing presses with which folding and pasting attachments are already combined.

My invention does not extend to the folder nor to the paster but simply deals with the folded paper as it is usually delivered from a modern press and with the pasted wrapper both of which are fed together directly into my machine by hand or otherwise.

My invention consists in the combination and arrangement of parts as hereinafter described and pointed out in the claims.

In describing the invention reference is made to the accompanying drawings which form a part of this specification, and in which—

Figure 1 represents a plan view of my rotary wrapping-machine. Fig. 2 represents an end view looking at the delivery end. Fig. 3 represents a view of the opposite end, and Fig. 4 is a vertical section taken in the plane represented by the line 4 4 in Fig. 2.

The supports for some of the parts are not shown, it being understood that in adapting the machine to different presses the framework thereof will furnish supports for the said parts and the usual mechanical expedi-

ents will be resorted to in making such adaptation.

The parts directly involved in the wrapping operation are supported upon or in close proximity to the end brackets 5, which are provided with suitable foot pieces for attaching them to the press. These brackets are each provided with a central opening through the center of which passes the wrapping cylinder 6, and around which, within said opening, are located the bearings 7, for the journals of the nipping rollers, the first of which rollers is indicated by 8, and the remaining ones by 9. These bearings are spring seated in the rims of the brackets 5. Each bearing is provided with a shank 10, seated in a socket in the rim of bracket 5. A portion of said shank is reduced and screw-threaded and extends through a reduced portion of the socket out beyond the periphery of said rim. Upon the protruding ends are placed jam-nuts 11 for regulating the distance of the nipping roller from the wrapping cylinder and for securing to said shank the abutment 12.

Each abutment has at its ends perforations through which pass the steady pins 13. Said pins are secured in the rim of bracket 5. The function of the abutment will be disclosed farther on.

About each shank 10, within its socket is a spring which serves to cushion the pressure of the nipping roller and to return the same to place after the ejection of each wrapped paper. Instead of the spiral springs thus used, I may employ other sorts of springs. For instance, plate springs may be attached to the inner surface of the rim of bracket 5, and press upon the bearings 7.

The wrapping cylinder is supported at one end only and there by a broad bearing as indicated at 14.

At 15, is represented one of the feeding rollers, around which and the first nipping roller 8, passes a feeding web 16. Above roller 15, and geared thereto is roller 17, which is geared to the cam operating gear 18. With the gear 18, also meshes the upper cam operating gear 19, and with this gear meshes an idle gear 20, which transmits motion to the pinion 21, on the wrapping cylinder. With this pinion 21,

mesh the pinions 22, which are mounted on the ends of the nipping rollers.

The construction for the ejection of the wrapped papers is as follows: Upon each bracket 5, near each nipping roller is located a lifting lever 23. Rods 24, pass through bearings in both brackets and on their ends are keyed these lifting levers. The outer ends of said lifting levers are bent at an angle to the main portion of the levers and bear against anti-friction rollers 25, mounted upon the abutments 12. The five levers 23, at each end of the machine are coupled together by a circular rod 26, to which they are pivoted. This provides for the simultaneous action of all the lifting levers. The pivot joining one of these levers to the rod 26, is extended through said rod and provided with an anti-friction roller 27, in the path of the projection on the cam wheel 28, which is attached to gear 18. As this projection strikes said roller, the lifting levers are all forced over and their bent ends pressing against the abutments 12, cause all the nipping rollers to move outward from the wrapping cylinder. This leaves the wrapped paper free to be forced off the end of the cylinder 6, by the action of the ejector.

The ejector is axially disposed with respect to the wrapping cylinder and is constructed and operated as follows: The wrapping cylinder is bored from the journaled end and in said bore is seated a push rod 29, against a spring 30. Through the inner end of the push rod is passed a pin which projects through slots 31, in the cylinder 6. The ends of this pin pass also through the ejector ring 32, which encircles the cylinder 6, at the gear end. From this it will be seen that the main parts constituting the ejector, namely, the push-rod and ring, are, with respect to cylinder 6, concentrically or coaxially arranged to have their axes in common, constituting, as expressed above, an axial disposition of the ejector with respect to said cylinder. The push rod 29, projects beyond the wrapping cylinder and has a bearing for the projecting end in a block 33, which is retained in place by two pins secured therein and seated to slide in ways formed in the bearing 14, of the wrapping cylinder. Against this block 33, rests an anti-friction roller in the forked end of the ejecting lever 34. This lever is pivoted at 35, to any convenient supporting means upon the press or upon the end bracket 5, but preferably to the press. Upon the upper end of the ejection lever is mounted a roller 36, in the path of the projection upon the cam wheel 37 which is operated by the gear 19.

The delivery rollers which receive the wrapped paper as it is ejected from the cylinder 6, are mounted at the end of the machine. The two inner ones 38, are arranged as close to the wrapping machine as possible so as to receive the wrapped paper immediately upon its leaving the wrapping cylinder. The outer rollers 39, are placed close to the inner ones and are spaced apart the re-

quired distance to completely flatten the paper as it passes between them.

The operation of the machine is as follows: The paper and the pasted wrapper are received between the receiving rollers 15 and 17, the wrapper lying under the paper, and by the web 16, they are carried forward to the wrapping cylinder, and are set at a distance apart but little less than the diameter of the wrapper paper, so as to receive the paper readily from the wrapping cylinder between which and the nipping roller 8, they are caught and carried around the cylinder being held there against by the succeeding nipping rollers 9. The wrapping cylinder is calculated to make about two and one half turns for each paper which is sufficient to wrap any paper now printed. As it completes this number of turns the pasted edge of the wrapper reaches the nipping roller 8, or the one diametrically opposite to it according to the size of paper to be wrapped and consequently the length of the wrapper. As said cylinder completes each two and one half turns the projection on cam wheel 28, strikes the roller 27, and forces the circular rod 26, to the right, as seen in Fig. 1, which carries all the lifting levers 23, with it and they in turn by bearing against the rollers 25, on the abutments 12, retract the nipping rollers. This leaves the wrapped paper resting freely around the cylinder 6. The gearing is so proportioned and timed that as soon as the nipping rollers have been retracted the projection upon the cam wheel 37, will strike the roller 36, on lever 34, and force the friction roller in the lower end of said lever against the block 33, which in turn forces the push rod 29, forward causing the ejecting ring 32, to slide the paper along the cylinder 6, until it is caught between the delivery rollers and thrown out of the machine. The pasted end of the wrapper having been brought to the upper or lower side of the wrapping cylinder, as stated above, it will be on one of the flattened faces of the wrapped paper as said paper passes between the delivery rollers and the adherence thereof will be positively insured. The wrapping cylinder is in continuous rotation and the instant one wrapped paper is ejected from it another begins to wrap about it, the nipping rollers having been returned to place by the springs about the shanks of their bearings. The distance of said rollers from the wrapping cylinder being regulable by means of the nuts 11, the machine is adapted to wrap papers and pamphlets of various thicknesses.

Motion may be transmitted to the wrapping mechanism and also to the delivery rollers from any suitable or convenient part of the press. The delivery rollers may also be made adjustable so as to vary the distance between the members of each pair, and instead of these delivery rollers for flattening the wrapped papers any suitable flattening mechanism may be employed.

Various changes may be made in the details of construction and in the arrangement of parts without departing from the spirit of my invention.

5 What I claim as my invention is—

1. In a rotary wrapping machine, the combination with the wrapping cylinder, of nipping rollers each mounted in independently spring-seated bearings, and means for intermittently retracting said rollers from the wrapping cylinder.

2. The combination with the wrapping cylinder, of the nipping rollers, spring seated bearings for said rollers, adjustment devices connected to said bearings, and automatically operated retracting means for said nipping rollers.

3. In a rotary wrapping machine, the combination with the wrapping cylinder, and means for wrapping the paper and wrapper about it of the ejecting ring thereon, a push rod spring seated within said cylinder and connected to said ring, and means for intermittently forcing said rod forward against the action of the spring to remove the paper from the cylinder.

4. In a rotary wrapping machine, the combination with the wrapping cylinder, of an ejector connected therewith, consisting of a ring upon the cylinder and a push rod connected to the ring and spring-seated within the cylinder, a pivoted lever operating upon said rod, and a cam wheel for moving said lever.

5. In a rotary wrapping machine, the combination with a wrapping cylinder provided with a gear upon one end thereof and with an ejector axially disposed with respect thereto and having the operating rod projecting from the end of the cylinder, of nipping rollers arranged about said cylinder, and each provided with a pinion meshing with the gear upon the cylinder, and means for automatically retracting said rollers in a direction substantially radial to the cylinder during the operation of said ejector.

6. In a rotary wrapping machine, the combination with a wrapping cylinder, of nipping rollers, bearings therefor provided with shanks spring-seated in suitable supports, an abutment secured to each shank, a series of connected levers bearing against said abutments, and means for operating the levers simultaneously for retracting said rollers.

7. The combination with the bracket 5, each provided with a central opening, and the wrapping cylinder projecting through said openings, of the nipping rollers, the bearings of which are located in said openings, shanks for said bearings spring seated in the rims of said brackets, adjustment means for said rollers, and retracting mechanism for moving the rollers away from the said cylinder.

8. The combination with the brackets 5, provided with central openings, of the wrap-

ping cylinder journaled at one end and projecting through said openings, the nipping rollers located around said cylinder, bearings for said rollers having their shank spring seated in the rims of said brackets, and retracting mechanism for moving the rollers away from the said cylinder.

9. In a rotary wrapping machine, the combination with a wrapping cylinder, of a series of nipping rollers arranged about the same, spring seated bearings for said rollers arranged radially in respect to said cylinder, a series of levers engaging with projections upon said bearings, and means for intermittently and automatically operating said levers simultaneously.

10. In a rotary wrapping machine, the combination with the wrapping cylinder supported at one end and free at the other, and nipping rollers co-operating therewith, of an ejector moved instantaneously for a short distance along said cylinder, for forcing the wrapped paper off the free end thereof, means for successively retracting the nipping rollers and advancing the ejector, a pair of rollers for receiving said paper when advanced by the ejector, and another pair of rollers set closer together for flattening said paper and pressing down the pasted edge as they deliver it.

11. In a rotary wrapping machine, the combination with the wrapping cylinder, of nipping rollers, independent spring bearings for said rollers, means for adjusting the rollers relatively to the cylinder and means for intermittently retracting said rollers from the cylinder.

12. In a rotary wrapping machine, the combination with the wrapping cylinder, of a gear rotating with and concentric with said cylinder, nipping rollers arranged about said cylinder and each provided with a pinion meshing with said gear, means for delivering the wrapped paper, and means for automatically retracting said rollers in a direction substantially radial to the cylinder for the delivery of the wrapped paper.

13. The combination with a rotary wrapping machine having means for rolling a paper and wrapper into tubular form and securing the wrapper and means for delivering the wrapped paper longitudinally, of a pair of rollers receiving said paper from the wrapping machine and advancing it longitudinally, said rollers being set at a distance apart but slightly less than the diameter of the wrapped paper and another pair of rollers set closer together for flattening said paper.

Signed at New York, in the county of New York and State of New York, this 27th day of September, A. D. 1893.

DANIEL WRIGLEY.

Witnesses:

WM. H. CAPEL,
THOS. F. CONREY.