

No. 804,306.

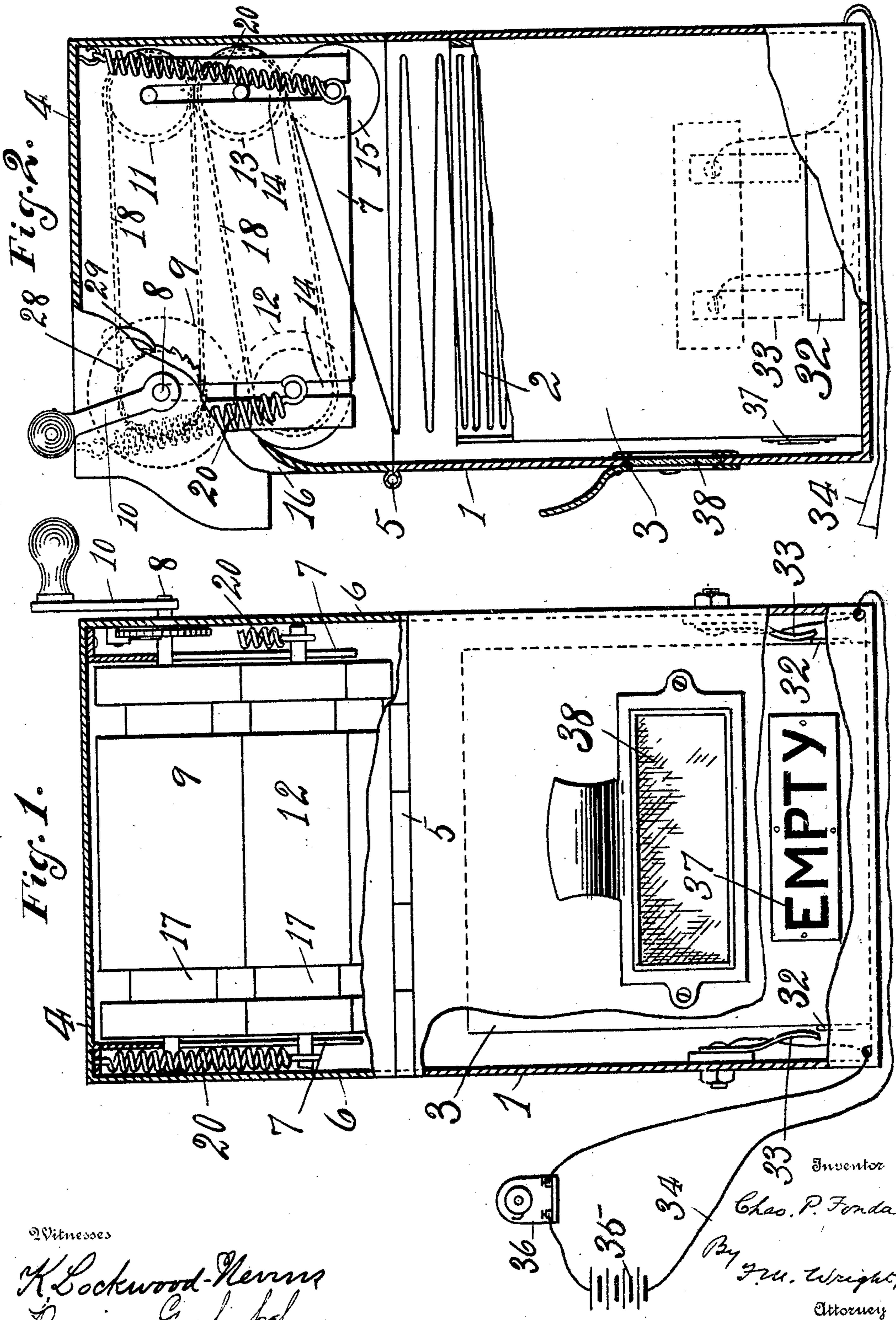
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C. P. FONDA.

MAGAZINE AND DELIVERY MECHANISM FOR PAPER.

APPLICATION FILED MAY 18, 1904.

2 SHEETS—SHEET 1.



2 Witnesses

H. Lockwood-Henry  
Bruce Gorfinkel

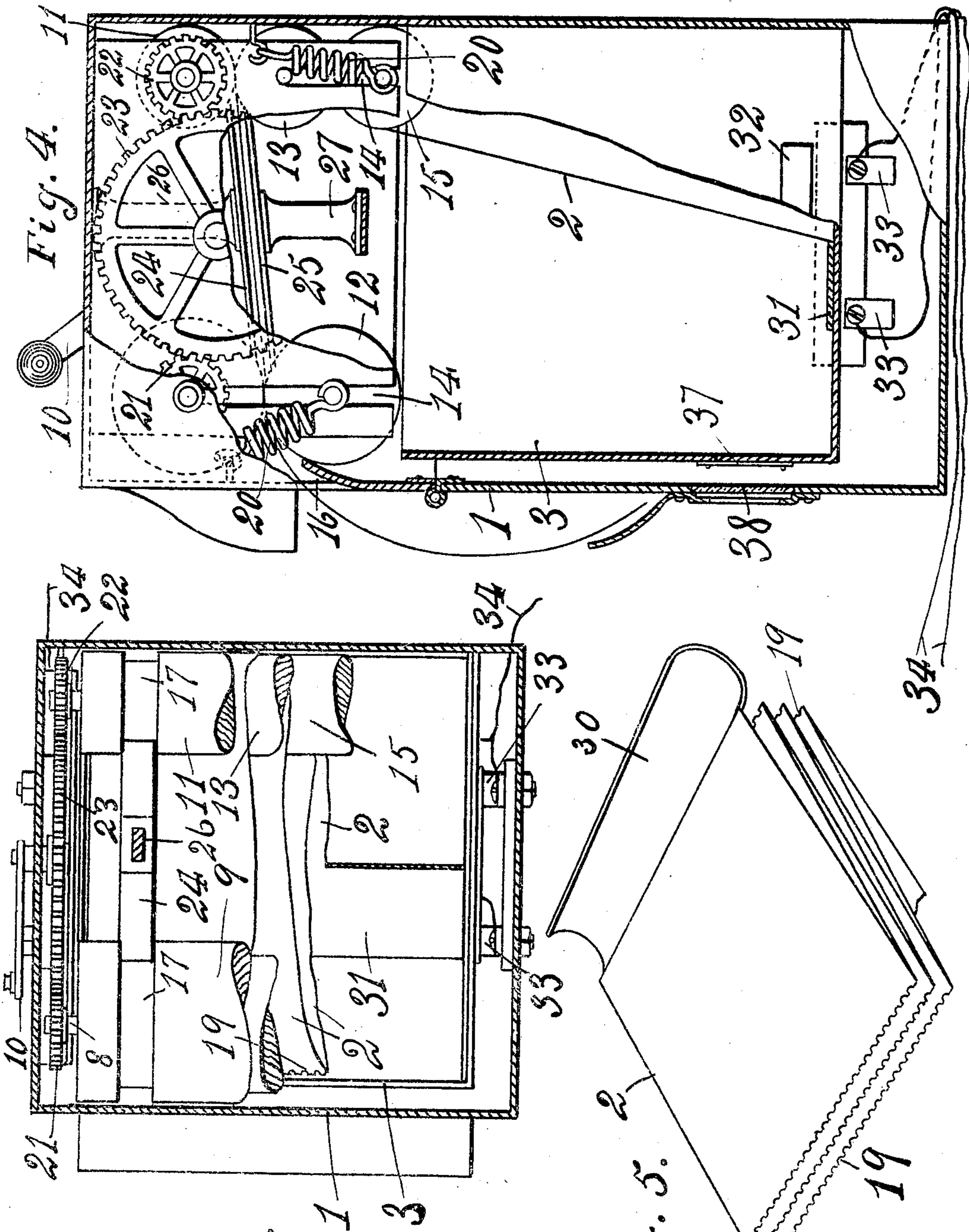
Inventor  
Chas. P. Fonda  
By Geo. Wright,  
Attorney

C. P. FONDA.

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Witnesses  
*K. Lockwood Nevins*  
*Bruce C. Spink*

Inventor  
*Chas. P. Fonda*  
 By *J. W. Wright,*  
 Attorney

# UNITED STATES PATENT OFFICE.

CHARLES P. FONDA, OF SAN FRANCISCO, CALIFORNIA.

## MAGAZINE AND DELIVERY MECHANISM FOR PAPER.

No. 804,306.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed May 18, 1904. Serial No. 208,527.

*To all whom it may concern:*

Be it known that I, CHARLES P. FONDA, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Magazine and Delivery Mechanism for Paper, of which the following is a specification.

My invention relates to an improved form of paper-package and delivery-box therefor, the object of my invention being to provide a delivery-box and paper-package by means of which a large quantity of paper can be stored at one time and from which the paper can be delivered at will and which shall contain means for operating a signal to indicate when the delivery-box is empty.

A further object of my invention is to provide a form of paper-package which can be used only with my improved delivery-box, my improved strip of paper, thereby insuring the sale of the paper to the holders of the box.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the apparatus broken away at the top and bottom. Fig. 2 is a side elevation also broken away in parts. Fig. 3 is a plan view broken away, showing a modified construction. Fig. 4 is a side elevation thereof broken away, also showing the position of the carton when the paper is exhausted. Fig. 5 is a perspective view of the upper portion of the strip of paper.

My improved paper-package and delivery-box are intended to be used in conjunction with improved mechanism for delivering and severing the paper, and I show the same therewith; but such mechanism forms no part of my present invention, which is confined to the novel form of paper package and box.

Referring to the drawings, 1 represents a magazine, casing, or box which is of considerable depth in proportion to its horizontal dimensions, allowing a large supply of paper 2 to be placed therein. Said paper so supplied is in a continuous strip and is folded in zigzag form or in alternate folds or plaits, either unperforated or perforated, and in the latter case either at the creases of the folds or intermediate thereof, or is made of sections joined together. It is preferably supplied in cartons 3 of a size slightly less

than the magazine, so as to be conveniently inclosed therein. The top of the carton is removed when it is placed in the magazine or box.

4 represents the lid of the box, which is hinged to the box preferably at the front, as shown at 5, and having depending sides 6 registering with the sides of the magazine or box when the lid is closed. Within said lid is secured the delivery mechanism for the paper. Within the sides 6 are secured side plates 7, which serve as supports for the shaft 8 of a roller 9, said shaft at one end extending through a side 6 and having attached thereto a crank-handle 10, by means of which the roller can be turned. A second upper roller 11 in the rear of the first roller has its bearings in said side plates 7. In addition to the upper rollers there are lower rollers 12 and 13, which bear against the upper rollers 9 and 11, having their shafts in slots 14 in the side plates 7. There is a third rear roller 15 underneath the roller 13, the function of which is to control the introduction of the paper to the feeding-rollers. Springs 20, attached to the shafts of the rollers 12 and 15 and to the top of the lid, continually press said lower rollers against the upper rollers. The paper is fed between the rear pair of upper and lower rollers 11 and 13 and passes thence between the front pair of rollers 9 and 12 and thence through a slot 16 in the front of the box.

Means are provided for severing the paper as it is fed. For this purpose the front portion of the paper so being fed is caused to travel faster than the rear portion thereof. This is done by causing the surfaces of the front pair of the rollers which are in contact with the paper to travel faster than those of the rear pair. The rear pair of rollers may be driven from the front pair in many ways. In the modification shown in Figs. 1 and 2 the rollers are formed with grooves 17, and around said rollers in said grooves travel endless bands 18, preferably of rubber. Thus the rear upper roller 11 is driven from the front upper roller 9. The lower rollers 12 13 are rotated by pressure of their surfaces against the upper rollers 9 11.

The endless bands serve as guides to feed the advancing edge of the paper between the front rollers. It is preferable that the diameters of the grooved portions of the rollers be the same both for the front and rear rollers to avoid the front portion of the band travel-

ing faster than the rear portion, which would cause stretching thereof or slipping of the bands over the grooves. While the grooved portions of the rollers, however, travel at the same rate, the front rollers, except such grooved portions, are of larger diameter than the rear rollers, so that the surface velocity thereof is greater, and consequently the front portion of the paper travels faster than the rear portion. This difference in velocities is such that the paper is severed at a point intermediate between the rollers. The paper is preferably perforated transversely, as shown at 19, so that the separation is rendered more easy and certain.

In the modification shown in Fig. 4 the upper rollers are provided with gear-wheels 21 22, which mesh with an intermediate gear-wheel 23. These gear-wheels are shown as of the same diameter, and the front roller is of larger diameter than the rear roller. In this modification the crank-handle 10 is shown as attached to the shaft of the intermediate gear-wheel, although it may be indifferently attached to the shaft of either of the gear-wheels. It is obvious that sprocket-wheels and a chain or pulleys and a band might be substituted for these gear-wheels. The same effect may be produced by making the two rollers of the same diameter and the front gear-wheel smaller than the rear gear-wheel. In this modification, since there are no longer any bands serving to guide the paper between the front rollers, special guides are provided for this purpose, consisting of two pairs of upper and lower strips 24 25, the upper guide-strips 24 being attached by arms 26 to the under side of the lid and the lower guide-strips 25 being attached to a cross-bar 27. In this case also it is preferable to provide grooves in the rollers, the points of the guides entering said grooves, and so insuring the guidance of the paper between the rollers. In order to prevent the crank-handle being turned the wrong way, which would cause the paper to move out of engagement with the rollers, it is provided with a ratchet-wheel 28, engaged by a pawl 29. This apparatus is so constructed as to admit of no paper being used in connection therewith except such as is especially prepared for delivery thereby. The object is to enable the magazine to be supplied by a manufacturer to persons using the same, so that paper can afterward be supplied by the same manufacturer and by no other persons which can be used with the magazine. For this purpose the strip of paper 2 is provided at its ends with terminals 30 31, the lower terminal 31 being connected to the carton and the upper terminal 30 being specially constructed to admit of insertion between the rollers, while ordinary paper cannot be so inserted. Thus the upper terminal is composed of two pieces of paper attached to the strip of paper 2 and pasted to each other around a curved surface

or roller, so that thereafter they have a permanently-curved form. This terminal 30 has a curvature in an arc not greater than a semi-circle, thus permitting it to be inserted between two rollers which are close together. When the magazine is opened, so that the lowest rear roller 15 is uppermost, the curved terminal 30 is inserted with the concave side down between the roller 15 and the middle roller 13 of the three, and the handle is turned to advance the paper between said rollers. Said terminal will then follow the contour of the middle roller 13 and will enter between said roller 13 and the roller 11 and will be passed along between the rubber bands. It will then be severed from the strip of paper 2 by the same instrumentality as the parts of the strip are severed from each other; but any other paper which is so inserted between the rollers would bend away from the roller 13 by reason of the intermediate roller 13 being the driving-roller and imparting motion to the roller 15 only through the medium of the paper which passes between the two rollers. Thus such paper would bend around the roller 15 and would pass upward (when the lid is open) instead of downward, the direction which it would have to take to pass between the two feed-rollers 11 and 13. It will also be observed that these three rollers 11, 13, and 15 are placed close to the side of the lid of the magazine, so that it is impossible to force paper not specially prepared therefor down between the roller 15 and the side of the magazine and between the two feed-rollers 11 and 13. It will be observed that this form of paper strip can be used with no other magazine for the delivery of paper except such as that here described, nor could this magazine be used with ordinary paper.

I also provide means for indicating when the paper has been exhausted. For this purpose the lower terminal 31 of the strip is made of thicker paper than the main body of the strip and is attached to the carton, so that as the terminal 31 rises the carton rises therewith. The carton has secured on its sides metal contact-plates 32, which when the carton rises close an electrical circuit between spring-contacts 33, of which I provide a pair at each side of the magazine. These spring-contacts are in branches from a circuit 34, leading through a battery 35 and an annunciator 36, so that the circuit is closed by either contact-plate contacting with the electrical contacts. By this means a signal is sent to a distant point that the magazine is empty. A visible signal is also provided by means of the word "Empty," which is printed in front of the carton-box, as shown at 37, rising to the level of a glass plate 38 in the front side of the magazine.

I claim—

1. A continuous strip of paper folded in alternately-directed folds or plaits, and pro-

vided with a terminal of greater thickness than the main portion and curved in an arc not greater than a semicircle whereby, on being placed upon the periphery of one of a pair of rollers, and moved around the same, it will automatically direct the entrance of the strip between said rollers, substantially as described.

2. In an apparatus of the character described, the combination with a box, of a carton in the box, a strip of paper in the carton, the lower end attached to the carton, means for drawing off the paper at the upper end whereby the carton is ultimately raised in the box, a signal, and means whereby the rise of the carton in the box actuates said signal, substantially as described.

3. In an apparatus of the character described, the combination with a box, of a carton in the box, a strip of paper in the carton, means for drawing off the paper at the upper end whereby, the carton is ultimately raised in the box, an electrical annunciator, and means whereby the rise of the carton in the box actuates said annunciator, substantially as described.

4. In an apparatus of the character described, the combination with a box, of a carton in the box, a strip of paper in the carton, the lower end attached to the carton, means for drawing off the paper at the upper end, whereby, on the turning of the rollers, the

carton is ultimately raised in the box, a visible signal, and means whereby the rise of the carton in the box actuates said signal, substantially as described. 35

5. A box, feed-rollers therein, a removable carton in said box open at the side only next to said feed-rollers, and a zigzag-folded strip of paper in said carton, the folds or layers of said paper being parallel to said open side, substantially as described. 40

6. A box, feed-rollers at the top thereof, an open-topped removable carton at the bottom of the box, and a zigzag-folded strip of paper in said carton, the end of said strip extending through said open top between said feed-rollers, substantially as described. 45

7. A box, feed-rollers at the top thereof, an open-topped removable carton at the bottom of the box, and a zigzag-folded strip of paper in said carton, the upper end of said strip extending through said open top between said feed-rollers, and the lower end being attached to said carton, substantially as described. 50 55

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHAS. P. FONDA.

Witnesses:

FRANCIS M. WRIGHT,  
BESSIE GORFINKEL.