

(No Model.)

J. F. McLAUGHLIN.

CARRIER FOR ELECTRO PNEUMATIC DISPATCH TUBE SYSTEMS.

No. 359,456.

Patented Mar. 15, 1887.

Fig. 1.

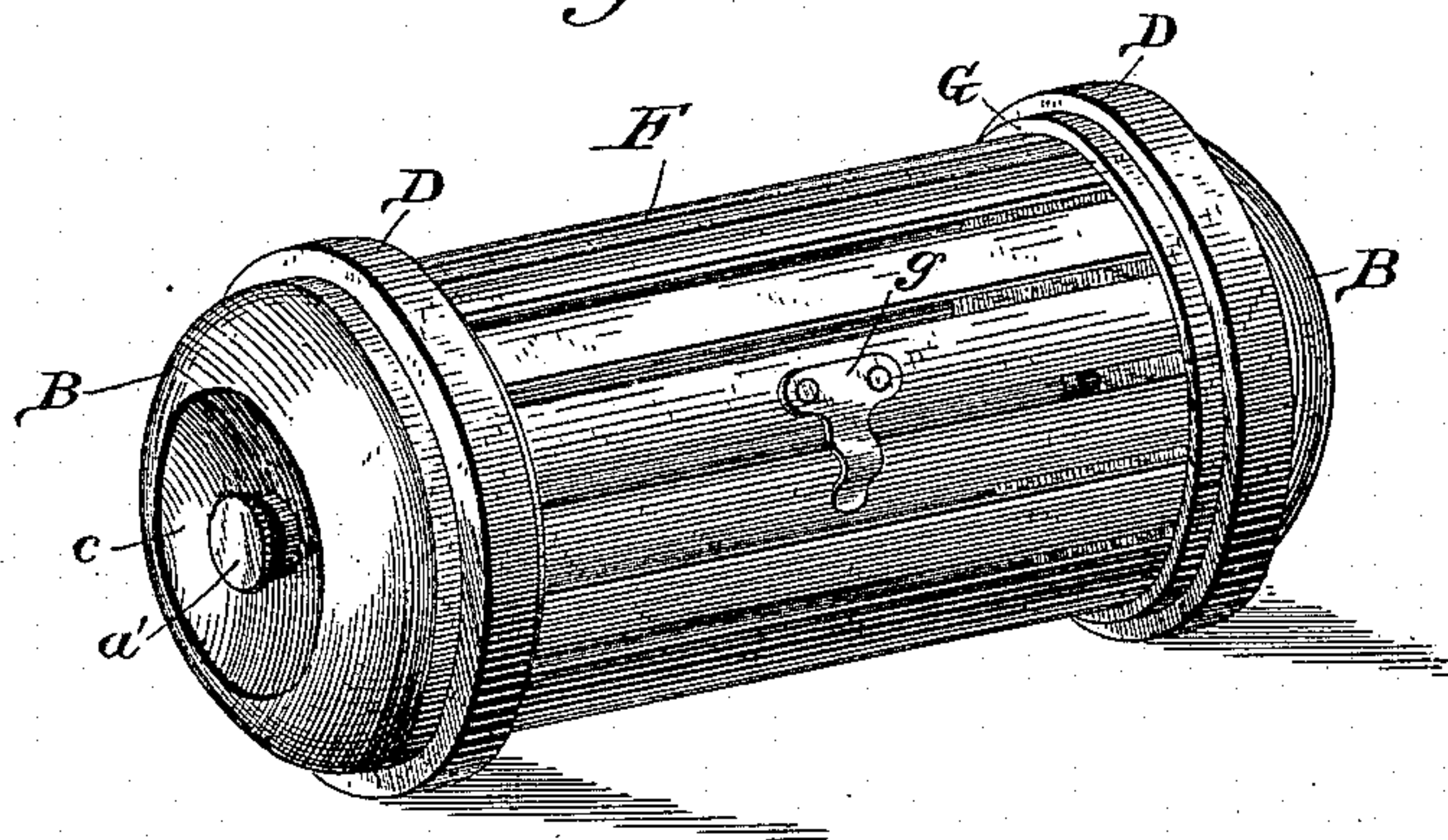


Fig. 2.

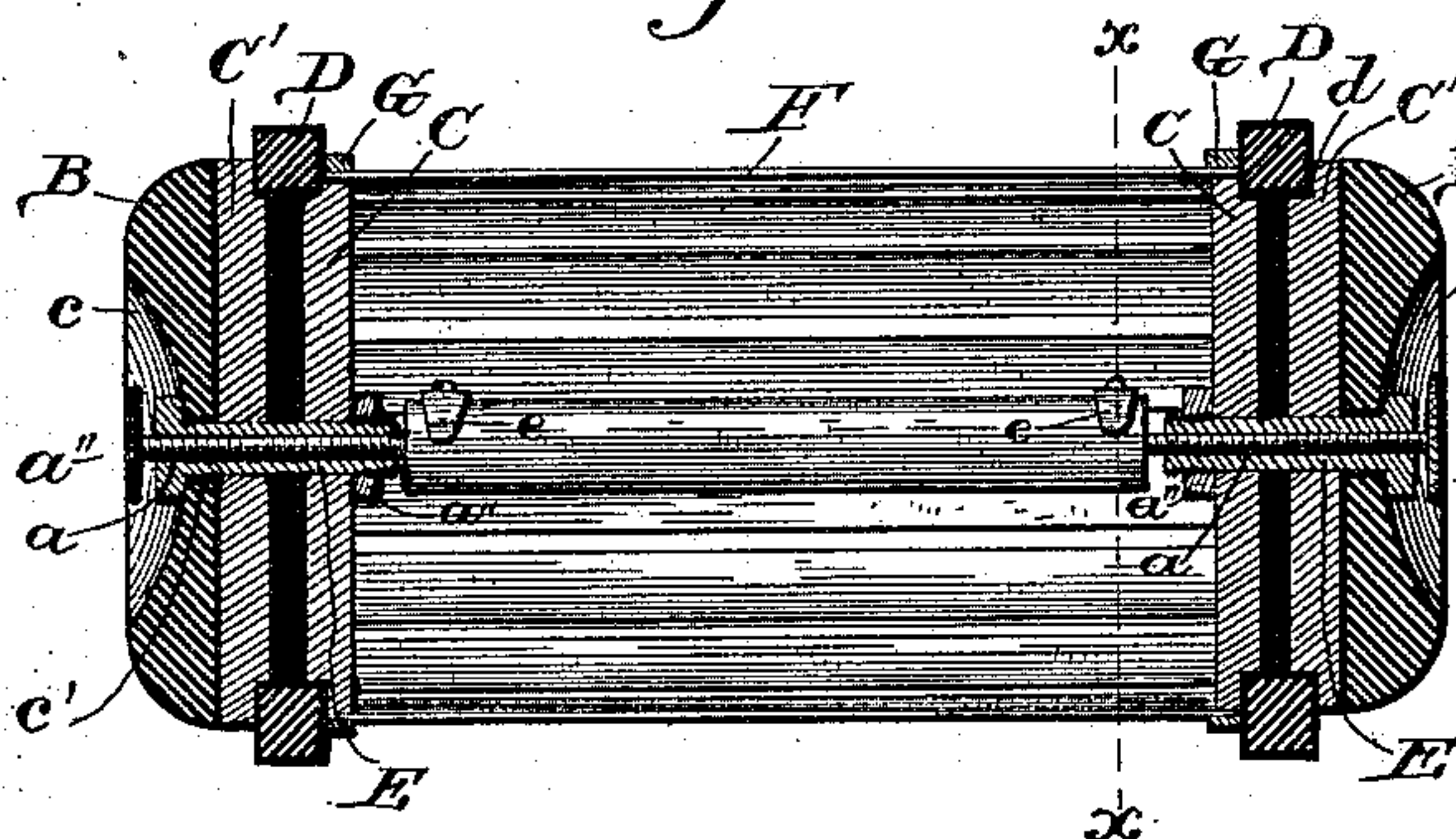


Fig. 3.

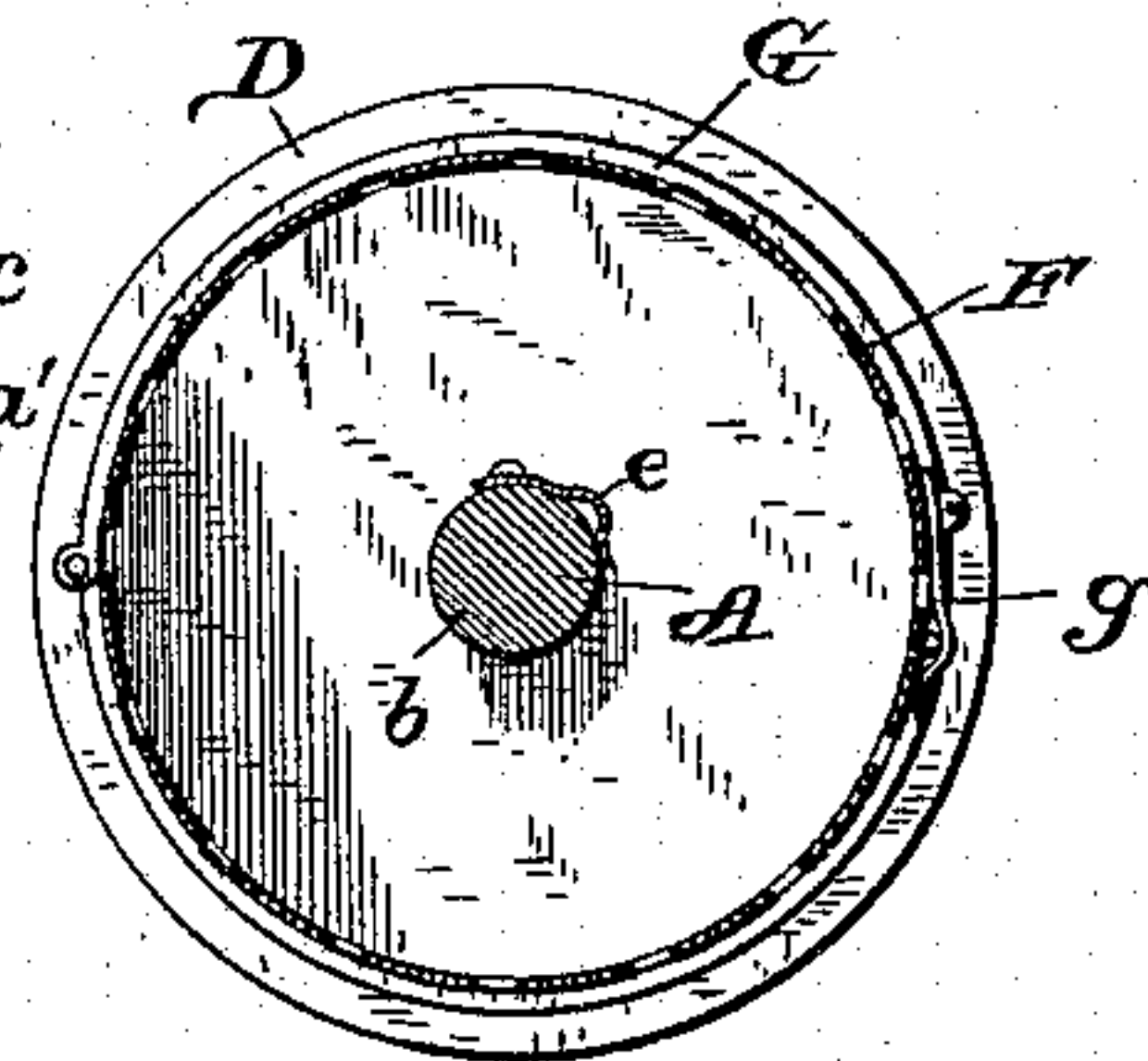


Fig. 4.

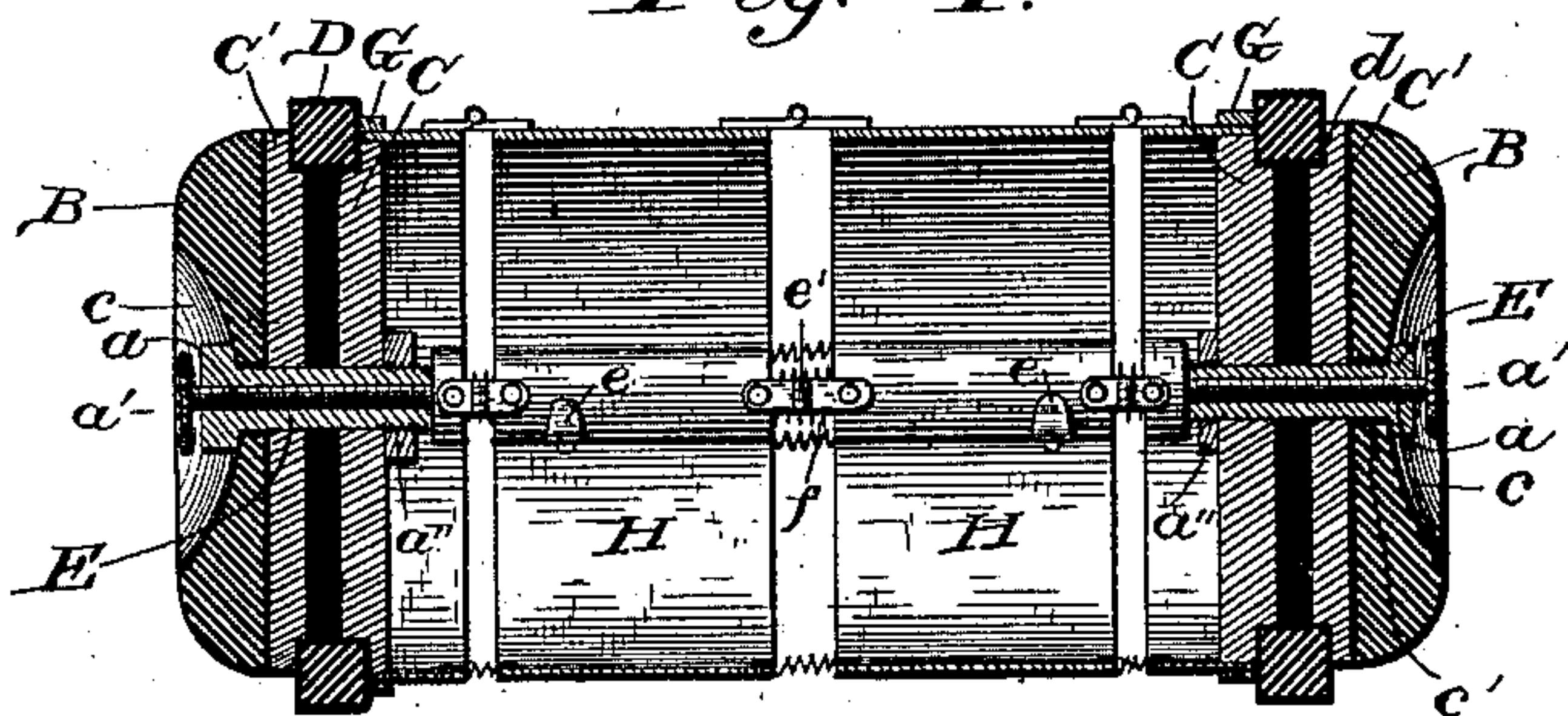
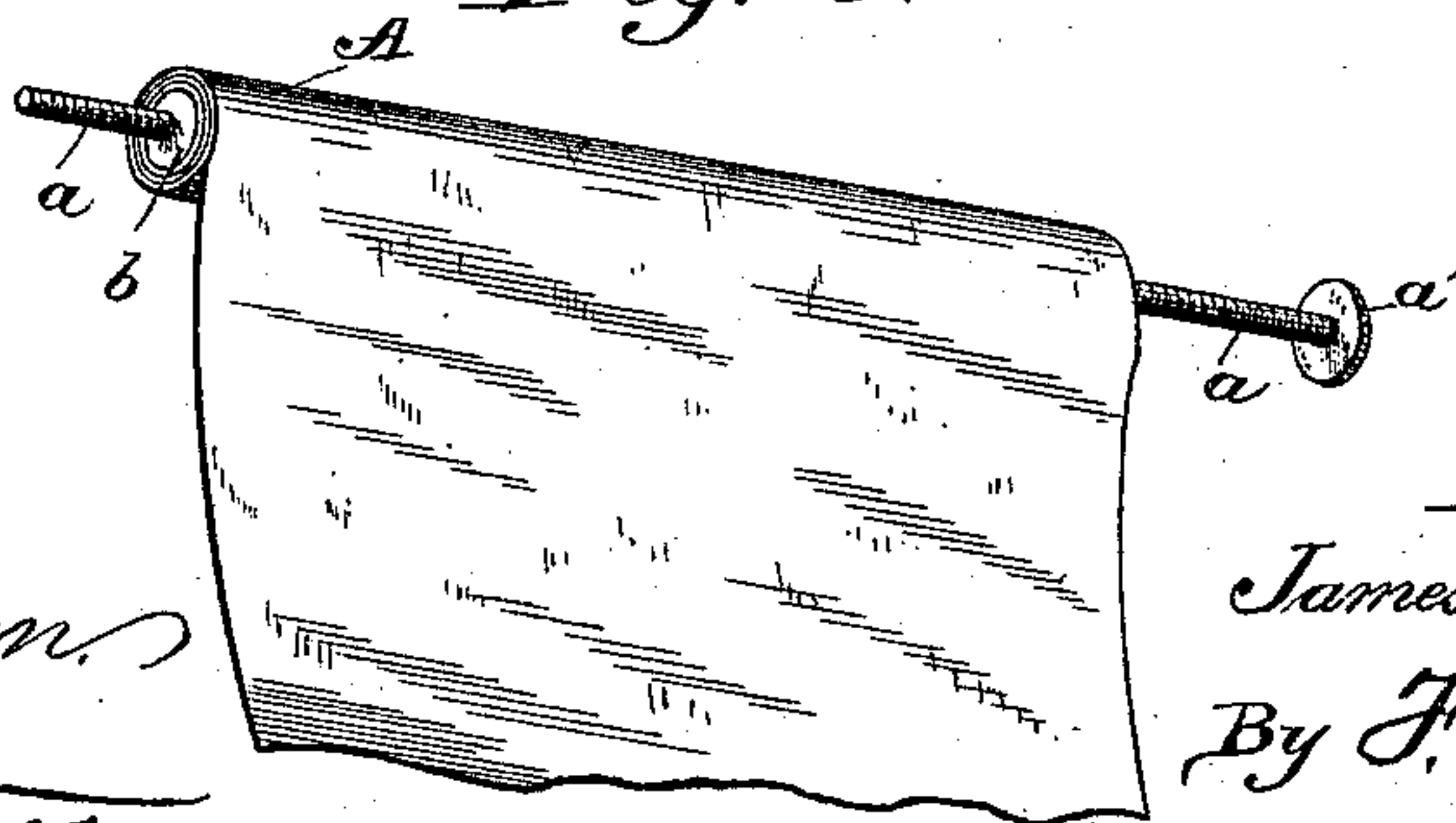


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CARRIER FOR ELECTRO-PNEUMATIC-DISPATCH-TUBE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 359,456, dated March 15, 1887.

Application filed December 31, 1886. Serial No. 223,114. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McLAUGHLIN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Carriers for Electro-Pneumatic-Dispatch-Tube Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a new and improved carrier for pneumatic-tube-dispatch systems, but is more particularly designed for use in conjunction with the electro-pneumatic-tube system described and claimed in my pending application, Serial No. 218,339, filed November 8, 1886.

The object of my invention is to provide a flexible carrier which will readily accommodate itself to the contour and direction of the pneumatic tube, whereby it is enabled to turn sharp corners or curves therein, and is at the same time simple in its construction, durable in use, and of such arrangement as to receive and concentrate the full force of the motive power therefor, as will be more fully explained hereinafter.

My invention consists in certain details of construction, arrangement, and combination of parts, which will be more fully explained, and the specific points of novelty in which will be designated in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of my invention complete. Fig. 2 is a central longitudinal section through same, showing spring-clips for securing the inner edge or end of a sheet of paper, which can be rolled around the central shaft. Fig. 3 is a transverse sectional view on line *x x* of Fig. 2. Fig. 4 is a central longitudinal section showing a different manner of constructing the flexible sides of carrier. Fig. 5 is a detail perspective view of central shaft removed, with paper partly rolled thereupon.

Like letters of reference mark similar parts in all the figures of the drawings.

Referring to drawings by letter, A represents the central removable shaft, consisting

of the two end sections, *a a*, and the central section, *b*, the sections *a a* being screw-threaded, as shown, and provided with nuts *a' a'*, and the inner ends of said sections having each a conical point (not shown) which fits in a corresponding conical recess in each end of the section *b*.

B B designate two circular rubber end pieces or heads, having the concave central circular depressions, *c c*, and provided each with a central perforation, *c'*, through which passes one of the sections *a a* of shaft A.

C C' are four perforated metal disks of the same diameter as the heads B B, and are each provided with a peripheral rectangular groove, *d*, as shown. These disks are placed in pairs at each end of the carrier, with the grooves *d d* adjacent to each other, and are held apart by the rubber ring D, which is of sufficient diameter to fit snugly within the sized tubes of the desired system, and is secured within the grooves *d d*, thereby holding the disks apart and serving as a cushion therefor.

E E are two spools or thimbles which pass through the central perforations of heads B B and disks C C' and serve to hold these parts firmly together. The under side of the outer heads of each of said spools is formed curved, to conform to the curvature of the central concave circular depressions, *c c*, and the distance from the outer heads to the inner removable screw-threaded heads, *a'' a''*, of the spools E E is approximate to the central thickness of heads B B, disks C C', and the ring D.

The central section, *b*, of shaft A is a metal roll of the desired dimensions to permit paper to be rolled and secured thereupon, as shown in Figs. 2 and 5.

e e are two small spring-catches, of any suitable construction, riveted upon the periphery of section *b*, which serve to secure the inner edge or end of the paper, the other outer or free end of which may be fastened by a rubber band or other convenient means, if desirable, when rolled. This section *b* is hinged or rendered longitudinally and vertically flexible by the small pivoted plates *f f*, the said plates being in turn centrally hinged to allow of a vertical flexibility of said shaft.

e' e' are corresponding spiral springs placed opposite to the plates *f f*, so as to co-operate

therewith and return the shaft to its normal position after being displaced.

F F designate the ribs or sides of said carrier, which consist of a series of steel rods or flat bars of great elasticity and retractibility, which are riveted at each end to an external hinged metallic ring, G, which in turn is divided into two semicircular rings, as shown, one half being rigidly fastened to the disks C C, as shown in Fig. 3. Thus one half of rings G G being free and hinged to the other rigid half, it will be readily understood that the carrier can be opened, shut, and fastened at will, the spring-catch *g*, or other suitable fastening device, being secured centrally on one side of the bars F F of the door.

Referring to Fig. 4, the sides of the carrier consist of any suitable number of semicircular convex metallic sections H H, hinged on top, as shown, and provided with corresponding spiral springs on the bottom to co-operate with the upper hinged plates. Thus it will be obvious that flexible sections H H can be substituted for the steel bars F F without departing from the spirit of my invention.

The operation of this invention, when used in connection with my new and improved pending system, is as follows: The operator at any station end, being desirous of conveying a parcel or package to the exchange or other initial station, first marks on the outside the number or letter of the station to which it is to be forwarded. He then opens the door, inserts the desired package in the interior of the receptacle, fastens the said door, and thrusts the carrier in the end of the tube, which action operates automatically the electro-mechanical signaling apparatus, (described in my other application,) and thereby notifies operator at exchange that the carrier is ready. The operator at exchange adjusts the valve of this particular tube to suction power, which transmits the carrier to exchange. Then, if it is destined to any other initial station, it is transferred at exchange to that particular branch.

Should it be desired to send a roll of paper or letter, the edge of same adjacent to section *b* is first secured under clips *c c*, then rolled around said section, and transmitted in the same manner as before described.

When desirable to remove section *b* to give more space within, this can be easily accomplished by loosening either one of the sections *a a*, which serve as bearings for shaft *b*.

It will be obvious that the solid metal roll *b* may be converted into a hollow metal cylinder without departing from the spirit of my invention, and that the metallic sides may be ar-

ranged universally jointed or flexible by any equivalent means to that shown and described.

By means of the circular depressions *c c* in the heads B B the outer ends of the screw-threaded sections *a a* are protected and kept from projecting beyond the plane of the heads B B.

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

1. In a carrier for pneumatic-dispatch-tube systems, the combination of the elastic heads or packing with the central flexible shaft, for the purpose set forth.

2. A carrier for pneumatic-dispatch-tube systems having flexible sides and a removable central flexible shaft, as specified.

3. A carrier for pneumatic-dispatch-tube systems having flexible sides, a removable central flexible shaft, and elastic adjustable heads or packing, substantially as set forth.

4. In a carrier for pneumatic-dispatch-tube systems, an exterior head or packing consisting of a perforated rubber disk provided with a concave external depression, for the purpose set forth.

5. In a carrier for pneumatic-dispatch-tube systems, the elastic adjustable head or packing consisting of a rubber exterior disk having central external concave depression, the disks C C', the thimbles E E, and cushion-ring D, in combination with the flexible metallic sides of said carrier, as described.

6. A carrier for pneumatic-dispatch-tube systems having removable central flexible shaft journaled and supported by the screw-threaded end sections, *a a*, the flexible external ribs or sides, F F, the heads B B, provided with depressions *c c*, the thimbles E E, disks C C', and cushion-ring D, all arranged to operate as set forth.

7. The combination of a flexible carrier for pneumatic-dispatch-tube systems having flexible metallic sides provided with hinged joints and co-operating retracting-springs, whereby the device is enabled to turn corners and curves during its course through tubes, with the central removable hinged flexible shaft supported in adjustable bearings, and the elastic heads or packing, arranged and constructed as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. McLAUGHLIN.

Witnesses:

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