

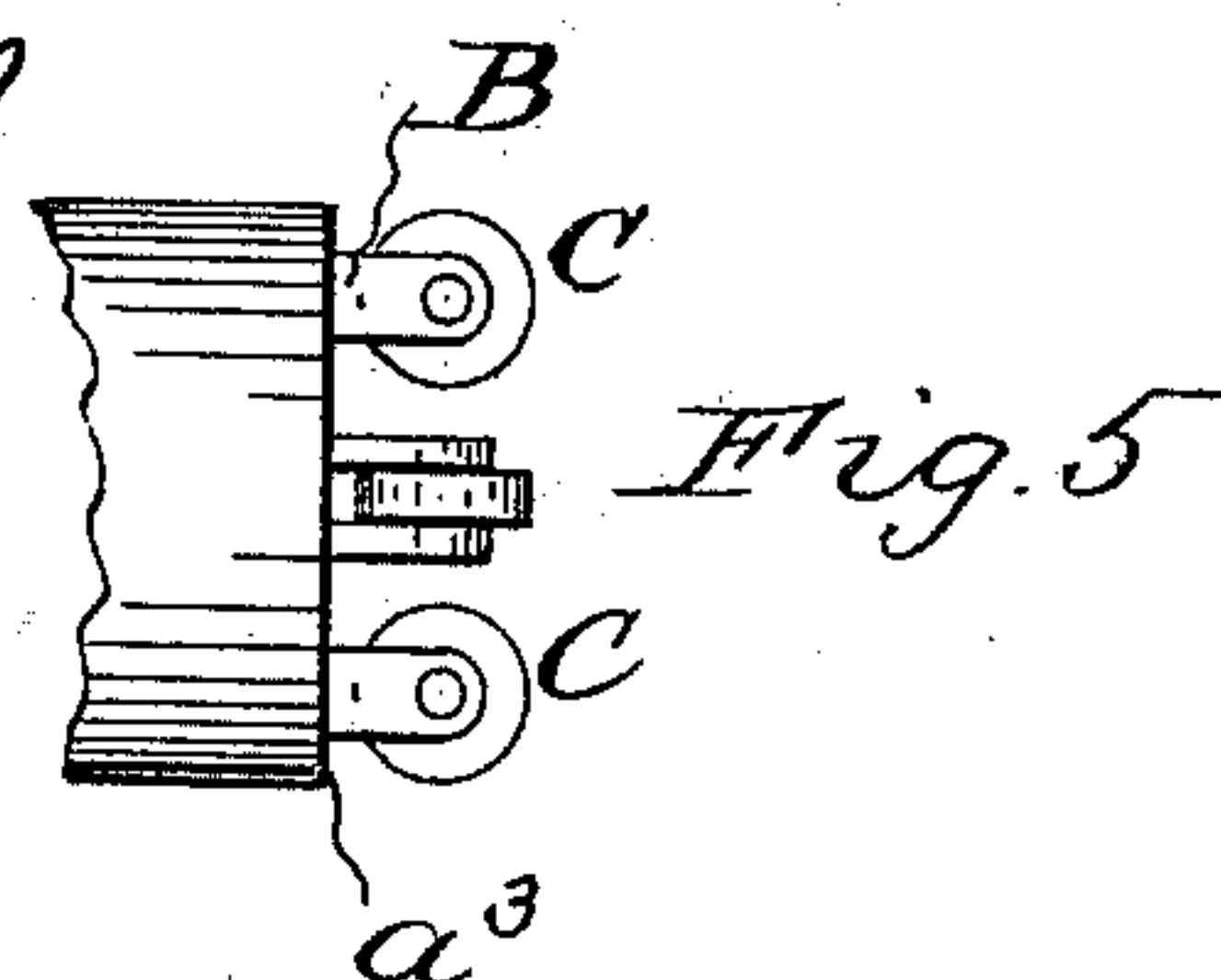
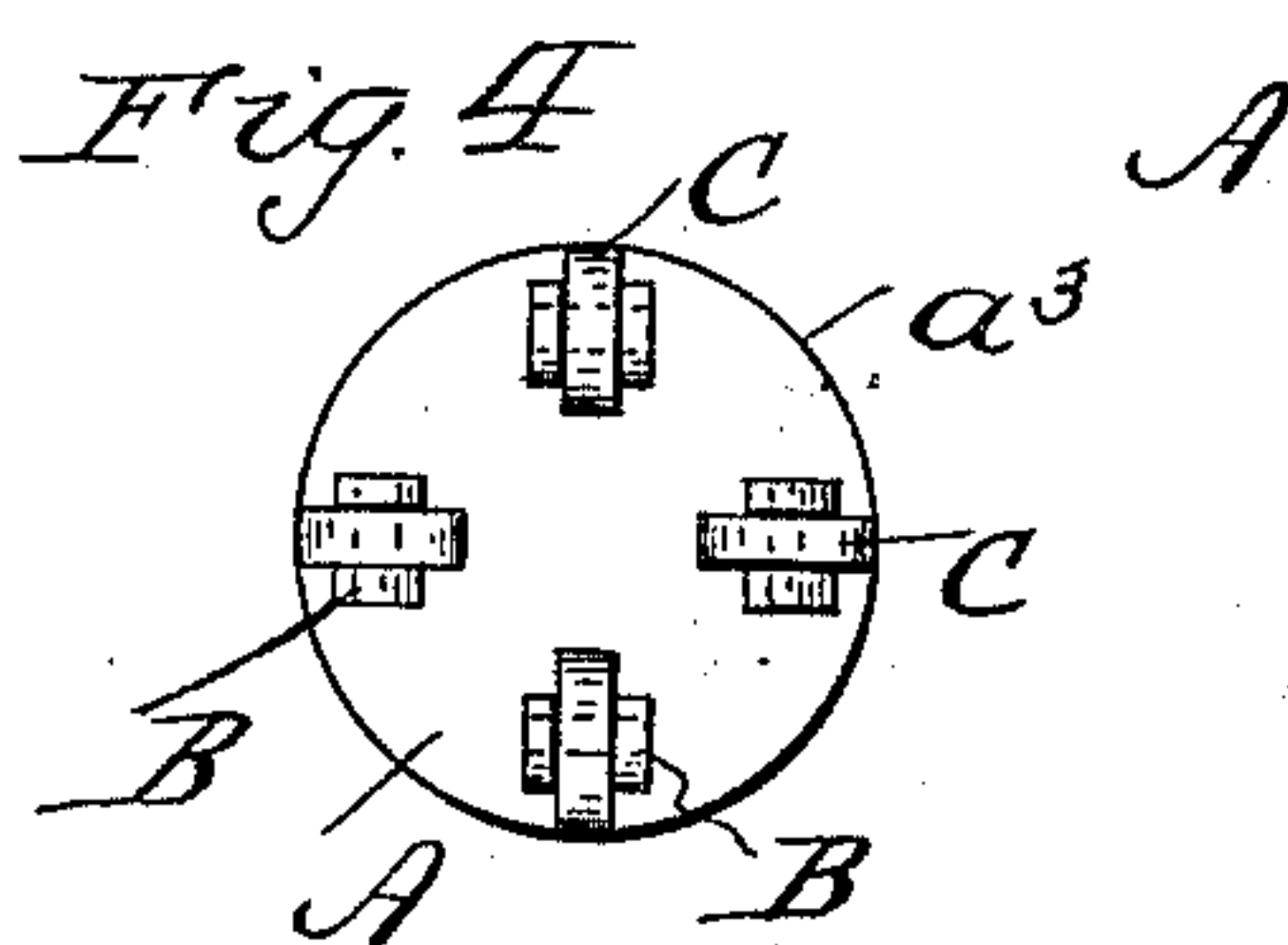
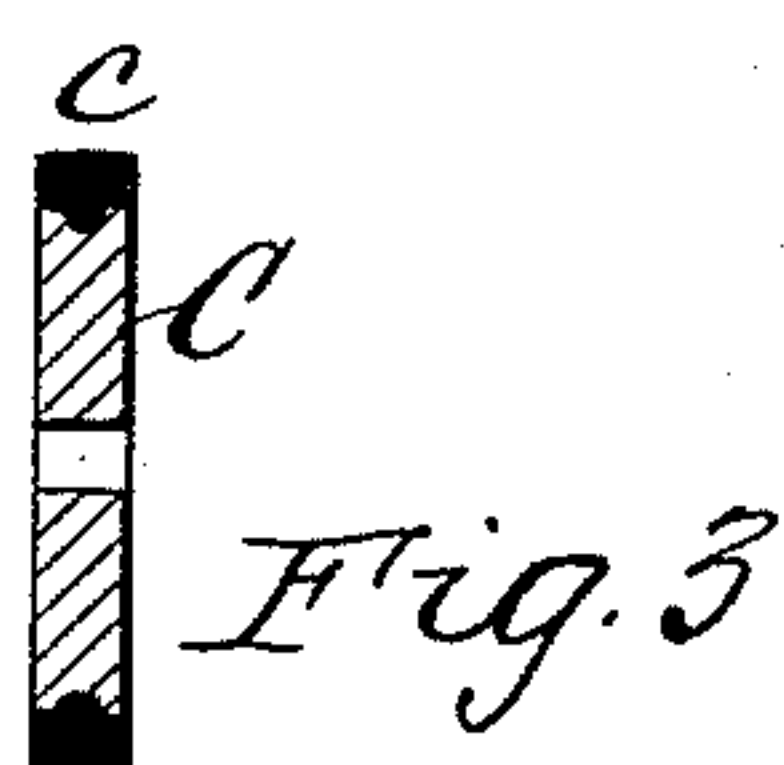
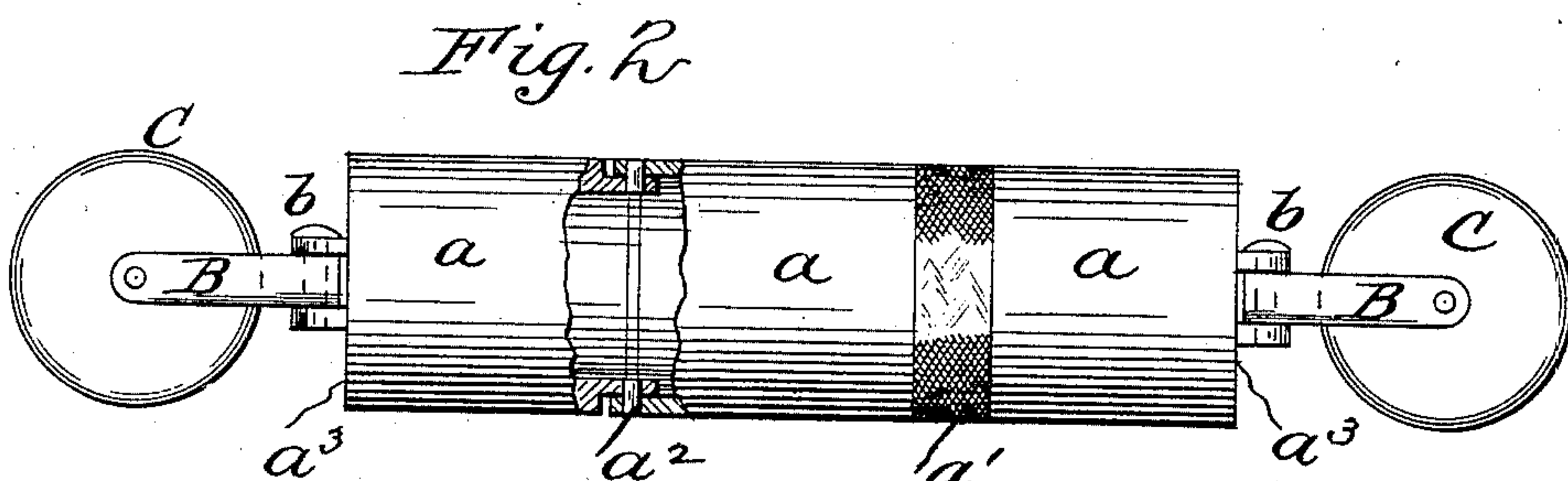
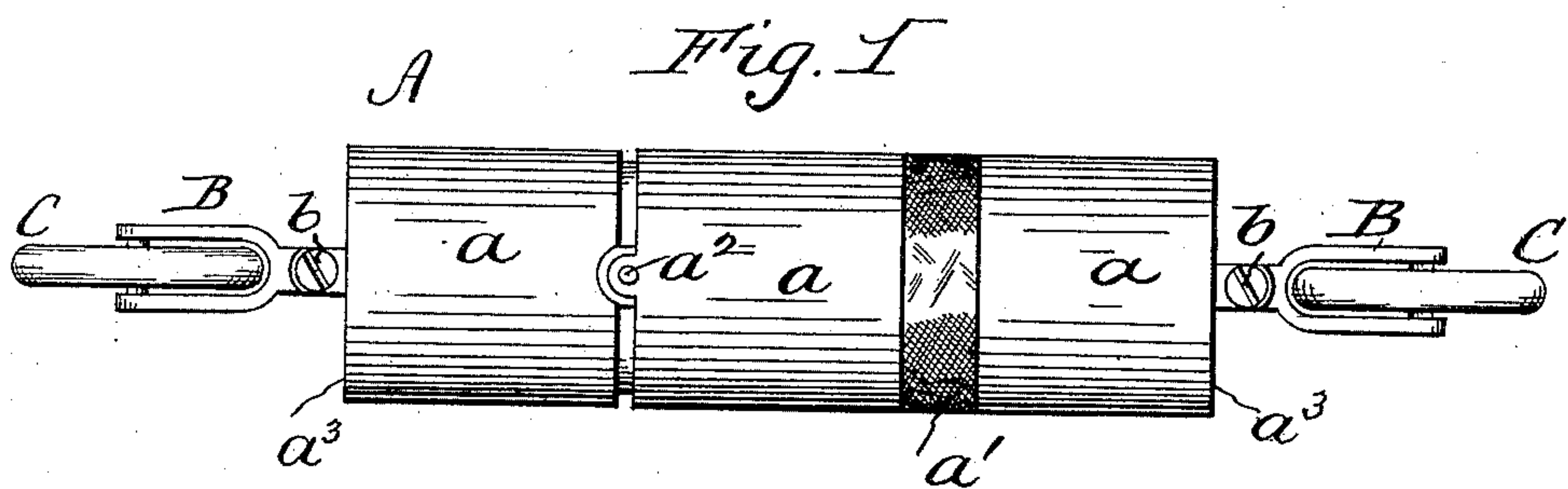
(No Model.)

S. F. LEAKE.

CARRIER FOR PNEUMATIC DISPATCH TUBES.

No. 431,900.

Patented July 8, 1890.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

SAMUEL F. LEAKE, OF PHILADELPHIA, PENNSYLVANIA.

## CARRIER FOR PNEUMATIC DISPATCH-TUBES.

SPECIFICATION forming part of Letters Patent No. 431,900, dated July 8, 1890.

Application filed October 26, 1889. Serial No. 328,243. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL F. LEAKE, 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 Pneumatic Dispatch-Tube Systems, of which the following is a specification.

My invention has relation to carriers for pneumatic dispatch-tubes of the form composed of sections flexibly united or jointed together to form a single tubular or cylindrical casing or carrier, which approximately fits or conforms to the interior or bore of the dispatch-tube; and it has for one of its objects wheel or roller supports for each end of the carrier, which roller or wheel supports are located beyond the ends of the carrier, and are so arranged that their peripheries conform to or contact with the bore of the dispatch-tube and to form end guides for the carrier ends to prevent them buckling upon their joints or connections when traveling through the curved portions of the dispatch-tube and to admit of obtaining speed for the carrier with a minimum vacuum or air-pressure power.

My invention consists of the combinations, constructions, and arrangements of parts, as hereinafter described in the specification, and pointed out in the claims, having reference particularly to the accompanying drawings, wherein—

Figure 1 is a plan view of a carrier embodying my improvements; Fig. 2, a side elevation, partly sectional; Fig. 3, a cross-section of a wheel for a carrier having a rubber tire; and Figs. 4 and 5 a view of one end of a carrier and a side elevation of part of the same, respectively, showing a modification of arrangement of wheels for the carrier.

A represents the carrier, preferably of a cylindrical form, which may be of any suitable or desired length, either in one piece or in sections jointed or otherwise connected together, so that each section will yield independently of the other. When in one piece, the carrier A may be provided with either the usual outside leather flanges or it may have suitable outside anti-friction walls, and when in sections, as indicated at *a*, they may be connected by suitable flexible or hinged joints, as shown at *a' a'*, respectively, in a manner

fully shown, described, and claimed in another pending application filed by me of an even date herewith, Serial No. 328,244. 55

The object of making the carrier in sections is that a longer and a more capacious carrier can be used to conform to and travel through the curves of the tube without undue friction than is the case where the carrier is made of a single section or piece. The ends *a*<sup>3</sup> of the carrier are preferably provided with yoke or other suitably-shaped bearings B, pivoted or hinged to the carrier ends *a*<sup>3</sup>, as indicated at *b*. In these yokes are mounted wheels or rollers C for travel on suitably formed and arranged tracks in the dispatch-tube, as fully shown, described, and claimed in still another pending application filed by me of an even date herewith, Serial No. 328,245; or said wheel may be arranged to travel on the walls of the tube, and in any case they support the ends of the carrier. The diameter of the wheels C is preferably approximately the same as the outside diameter of the carrier, so that the carrier fills up the space of the dispatch-tube in order to be subject to the full force of the vacuum or air pressure therein, so that the carrier will travel at the greatest possible speed that the vacuum or air-pressure used admits of. The rollers or wheels C, being at or beyond the ends of the carrier, they support each end of the carrier, and also its entire length, more or less, so that undue bearing-contact, and consequent friction due to the whole weight of the carrier pressing directly against the tube as the carrier travels through the tube, is avoided, and less power, therefore, is required to propel the carrier at a given speed through the tube. 85

To avoid noise and friction of the movement of the wheels C on the tracks in the tube or against the wall of the tube, the wheels are provided with rubber or other like tires, as indicated at *c*, Fig. 3. A single large wheel C may be used, as shown in Figs. 1 and 2, or a number of small wheels may be substituted for the single wheel, as indicated in Figs. 4 and 5. In the latter case the bearings B for the wheels are not jointed to the carrier ends *a*<sup>3</sup>, as such jointing is then not necessary. The wheels C, whether a single wheel or a number of wheels, have their peripheries con- 95 100



forming to the bore of the tube to contact therewith, so that they form guide-wheels for the end sections of the carrier to prevent them buckling upon their jointed or flexible connections in passing into, traveling through, and coming out of the curved portions of the tube, and in turn avoid all strain or friction between the carrier and the tube incident to such buckling.

From the foregoing it will be noted that the carrier is preferably of a cylindrical closed form, as contradistinguished from an open carrier or a number of open or car-like carriers coupled together, that the single wheel bearings B are hinged or pivoted to the ends of the carrier and serve to guide it through the various curved parts of the system, that there is less friction between the traveling carrier and the tube, that the sections of the carrier as well as end wheel or wheels yield readily to the curves in the tube, and hence sharper or quicker curves can be used, that as the carrier is made up of jointed sections a long carrier can be used to transmit an increased bulk or volume of matter, that as the entire weight of the carrier is more or less supported upon the wheels C there is less friction between the carrier and its tube and the carrier travels at an increase of speed with a given power, and that in conjunction with this last-named advantage as the carrier fits the tube snugly the full force of the vacuum or air-pressure is exerted against its ends to further admit of increasing the rate of speed of the carrier with the given power.

I am aware that trains of cars or separate carriers coupled together are not new; but

these differ from my sectional carrier in that it has but a single apartment from end to end, while on a train of carriers each carrier is separate from the other, or requires to be separately opened to insert matter into the same and withdraw it therefrom.

What I claim is—

1. A pneumatic dispatch-carrier having single end wheels C, having bearings B, pivoted or hinged to the carrier ends for supporting said ends and the length of the carrier, substantially as set forth.

2. A pneumatic dispatch-carrier having jointed end bearings B and wheels C, mounted on said bearings beyond the ends of the carrier for supporting said ends and the length of the carrier, substantially as set forth.

3. A closed cylindrical or tubular pneumatic dispatch-tube carrier composed of jointed or yielding sections of substantially the same diameter as the bore of the dispatch-tube, and having end supporting-wheels C, located beyond the ends of the carrier, and said wheels having their peripheries conforming to the bore of the dispatch-tube, substantially as set forth.

4. A pneumatic dispatch-carrier having wheels C, with rubber tires, located beyond and having jointed bearings with the ends of the carrier, substantially as set forth.

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

SAMUEL F. LEAKE.

Witnesses:

S. J. VAN STAVOREN,  
CHAS. F. VAN HORNE.