No. 617,417. Patented Jan. 10, 1899.

A. J. GILLESPIE.

PNEUMATIC DESPATCH APPARATUS.

(Application filed May 9, 1895.)

(No Model.) 3 Sheets—Sheet 1.

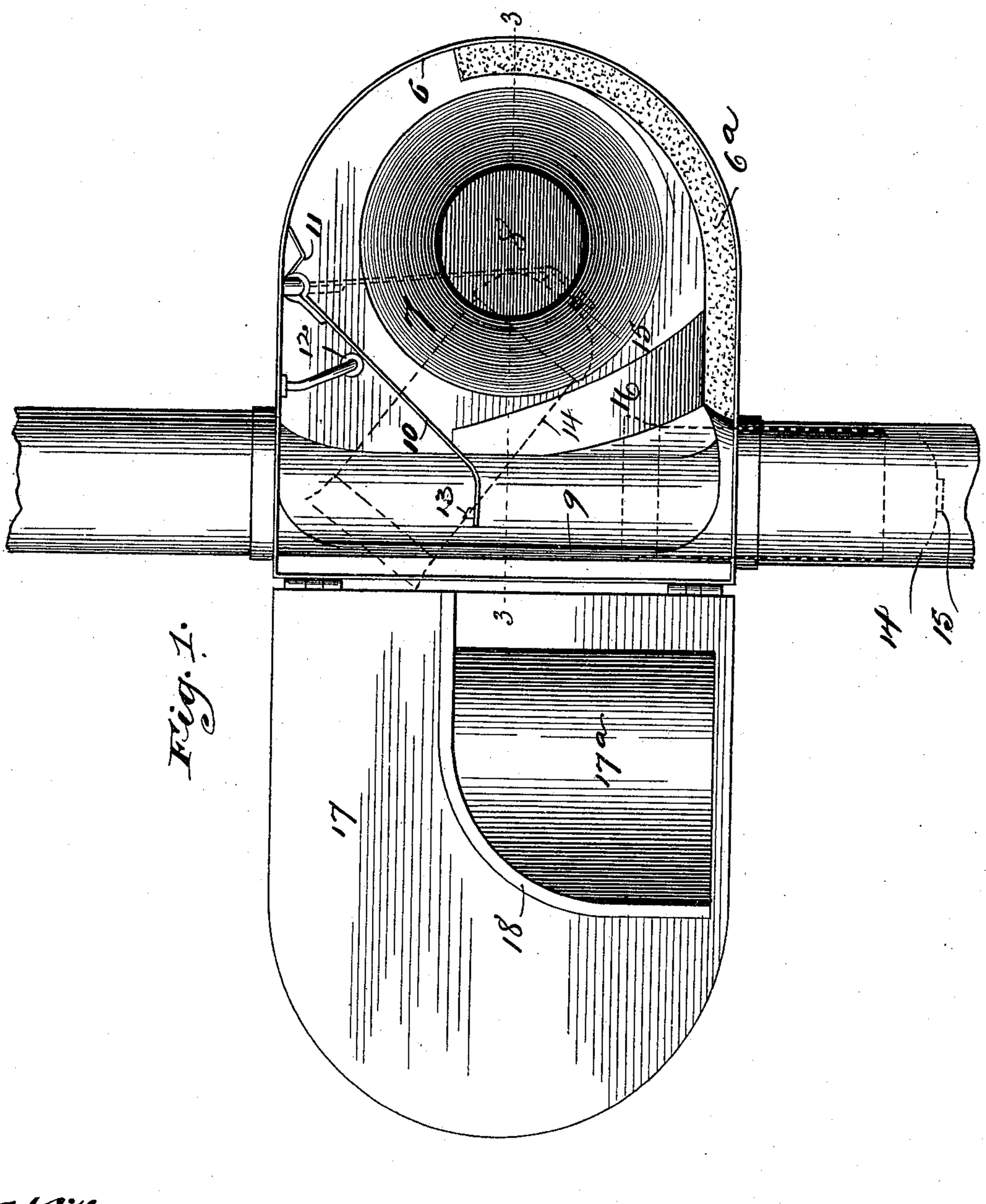


Fig. 1.

Witnesses,
L. D. Mann,
Frederick f. Goodwin

Inventor,
Alfred J. Gillespie
By Offield, Towle & Linthicum,
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 617,417. Patented Jan. 10, 1899.

A. J. GILLESPIE.

PNEUMATIC DESPATCH APPARATUS.

(Application filed May 9, 1895.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

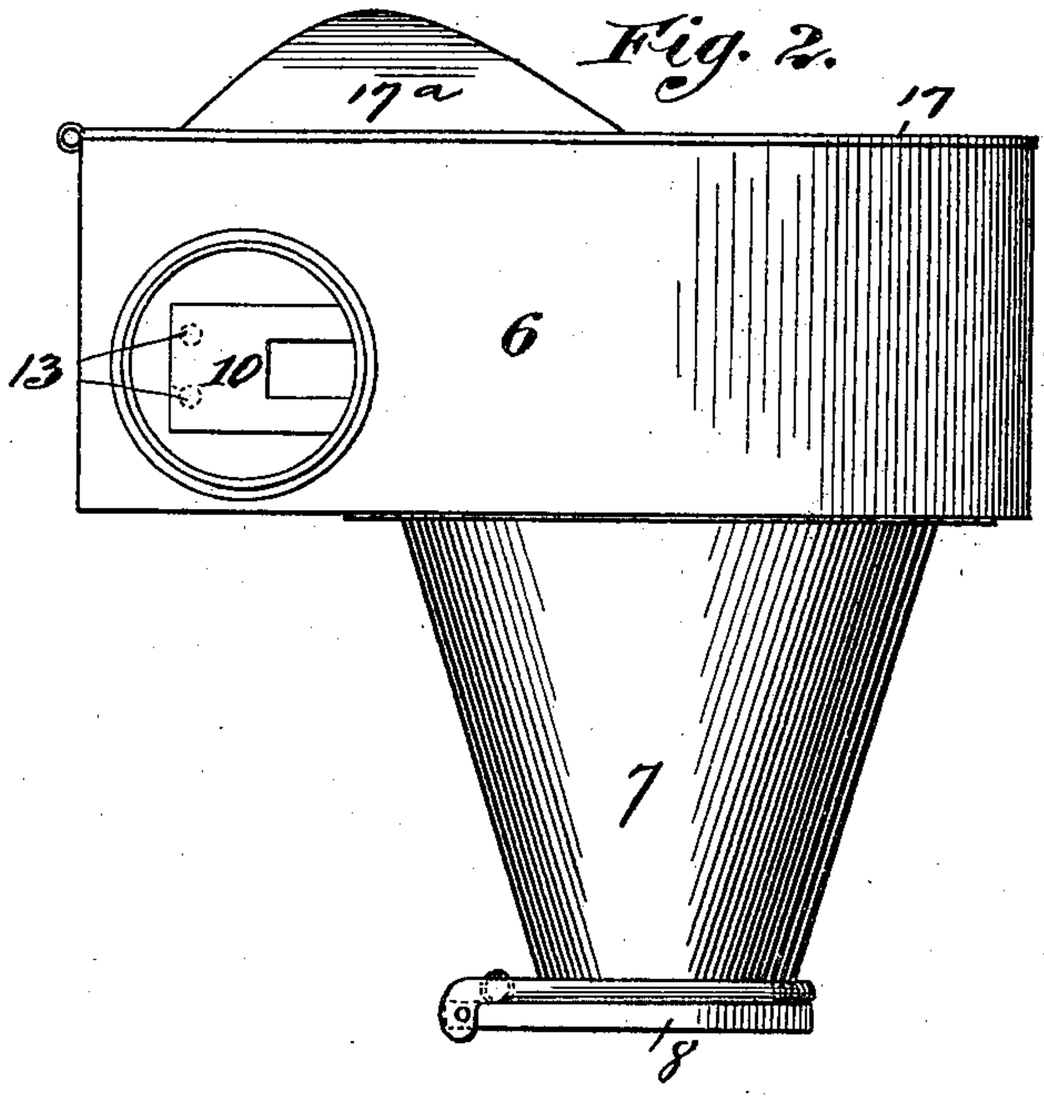
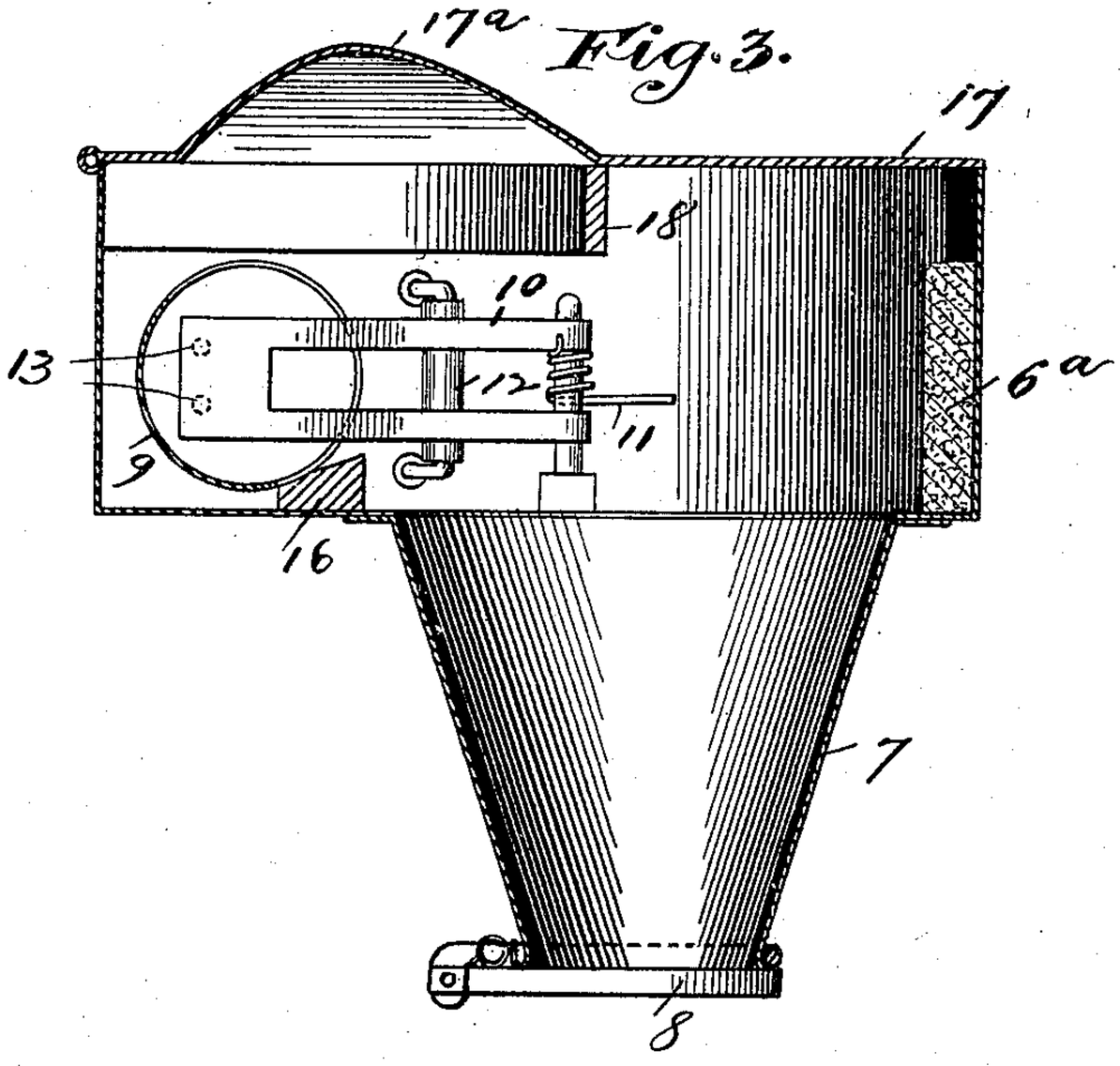


Fig. 3.



Witnesses,
F. E. Mann
Frederick F. Goodwin

Inventor,
Alfred J. Gillespie
By Offield Towle Graham & Offield
Att'ys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 617,417. Patented Jan. 10, 1899.

A. J. GILLESPIE.

PNEUMATIC DESPATCH APPARATUS.

(Application filed May 9, 1895.)

(No Model.) 3 Sheets—Sheet 3.

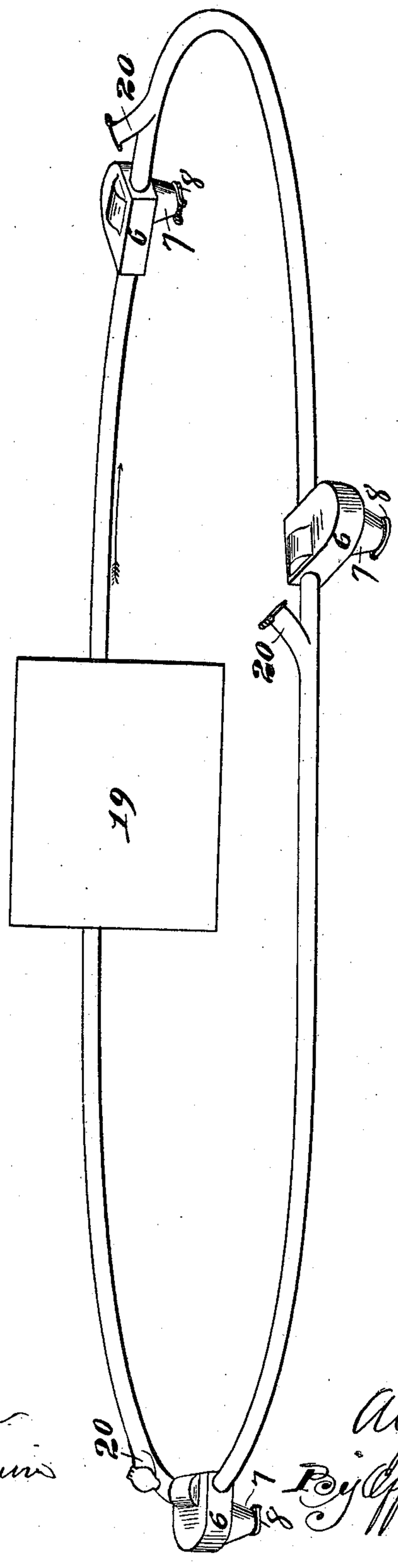


Fig. 4.

Witnesses,
D. S. Mann
Frederick F. Goodwin

Inventor,
Alfred J. Gillespie
By Offield, Towle & Linthicum
Atty's.

THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALFRED J. GILLESPIE, OF ATLANTIC, IOWA, ASSIGNOR TO THE BOSTEDO PACKAGE AND CASH CARRIER COMPANY, OF CHICAGO, ILLINOIS.

PNEUMATIC-DESPATCH APPARATUS.

SPECIFICATION forming part of Letters Patent No. 617,417, dated January 10, 1899.

Application filed May 9, 1895. Serial No. 548,687. (No model.)

To all whom it may concern:

Be it known that I, ALFRED J. GILLESPIE, of Atlantic, Iowa, have invented certain new and useful Improvements in Pneumatic-Despatch Apparatus, of which the following is a specification.

The subject-matter of my present invention is an improvement on the pneumatic-despatch apparatus for which Letters Patent No. 533,191 were granted to me January 29, 1895.

My improvement consists mainly in dispensing with the pivoted or drop section of the main tube and its attendant mechanism. To accomplish this, I provide an aperture in the side of the despatch-tube, through which the carrier is drawn laterally into a switch-box having a downward discharge-opening, and this switch-box preferably has its lower portion funnel-shaped or converged toward the discharge-opening.

In my present improvement I employ a series of carriers having graduated disks on their ends for the purpose of operating the switch mechanism, and the switches or trips swing around a vertical axis and are provided with projections forming a recess between them, which projections are so spaced as to adapt each switch-arm to its appropriate carrier, so that when the carrier designated for a particular station reaches the switch-arm at that station its disk will engage the projections on the switch-arm and the carrier will be deflected laterally through the opening in the side of the tube and discharge from the switch-box.

In the accompanying drawings, Figure 1 is a plan view showing a section of the main tube at a station, the lid of the switch-box being open to show the interior mechanism. Fig. 2 is an elevation of the switch-box with the lid closed, and Fig. 3 is a section on the line 3 3 of Fig. 1, with the lid of the switch-box closed. Fig. 4 is a diagrammatic view showing the manner of arranging a series of these carriers with reference to the cashier's station.

In carrying out my invention I may employ a single despatch-tube arranged so as to serve a number of stations in a store and including in its circuit the cashier's station. At each station will be arranged a switch-box, and adjacent to each station there may be provided a short service-pipe, the end of which is normally covered by a hinged flap and lifted by the salesman when forwarding a carrier. Such an arrangement is diagrammatically illustrated in Fig. 4.

The main body 6 of the switch-box is constructed in a form which from a top view would be represented by the letter U having its prongs united by a straight line. In vertical depth the main body is a little more than the diameter of the tube, and the bottom of the box 7 is in the form of a funnel, with the smaller end downward and having an opening approximately the size of the tube, and is provided with a valve 8 to close the opening and allow the exit of the carrier when switched out of the tube. A short section of tube 9 is passed through the vertical walls of the box, parallel and near to the straight wall of the box and close to the bottom of the body proper and the upper or large end of the funnel. This tube-section has an opening in the side farthest from the straight wall, comprising fully half its circumference, to allow the free exit of the carrier and embracing in length that portion of the tube contained within the box. The remaining portion of the tube is adjusted so that it affords a safe track for passing carriers and at the same time offers little resistance to one being switched out.

A switch-arm 10 is hinged to one of the walls of the box, through which the tube passes and through which the current enters, and about, say, two inches from the nearest portion of the tube, and said arm has a lateral motion. The arm is held by a light spring 11 against a stop 12, so that its free end lies across the path of the carriers, the main body of the arm maintaining a position of about forty-five degrees from the approaching carriers. This switch-arm has at its free end, on the side in contact with the air-current, a recess formed by a pair of tripping projections 13, and the carriers 14 each have a disk, as 15, on their front ends, as described in the patent before alluded to, so that by this arrangement a carrier having a disk of a given

size in attempting to pass engages the tripping projections, and by the lateral pivoted motion of the arm its front end is pulled in a circular path out of the tube. The rear end of the carrier by its momentum continues with the current, and the carrier would thus be lodged against the wall of the box. To obviate this, a curved cushion 16 is provided, which begins near the center of the box-bottom and passing along and near the tube rises to the upper portion of the box. The effect of this is to more gradually check the carrier and also to elevate its rear end. The hinged lid or cover 17 of the box is enlarged vertically, as at 17ª, and is provided with a depending flange 18, which forms a guide, and the latter coöperates with the curved cushion on the box-bottom to turn the carrier into an oblique position with reference to the tube, and by the time the momentum of the carrier is fully checked its front end is above the funnel-shaped bottom and it immediately drops into the funnel and is discharged. The upcurved cushion 16 also serves a further important function in that it deflects the end of the carrier being discharged into such a position that a second carrier following in contact with the one being switched out may pass without interference.

I have called the part 16 a "cushion" because it is preferably made of some soft material, such as leather, which will not dent or mar the carrier. The depending flange 18 is arranged at the base of the enlargement 17ª of the lid, and its function is to engage the rear end of the carrier as the latter is tipped into an oblique position by riding upon the deflecting-cushion 16. In order to prevent injury to the carriers or switch-boxes, the inner vertical wall of the body portion 6 of the box may be provided with a protecting-cushion 6ª.

It will be observed that the carriers shown have their rear ends formed alike, and therefore they may all pass the switch-arms and reach the cashier's station if they be put into the tube with the disks directed rearwardly instead of forwardly. In this case a single tube may be used for sending the carriers to the cashier's station (indicated at 19, Fig. 4) and returning them to the several stations. The salesmen's despatch-tubes are indicated at 20, and the arrow, Fig. 4, shows the direction of the current and also the direction of movement of the carriers. When the cashier deposits the carriers in the tube, they will of course be put in with their disk ends in front and will switch out at their appropriate stations.

By means or this improvement I am enabled to dispense with the drop-sections in the main tube, while providing a safe track for such carriers as are desired to pass the several stations and practical means for switching out such as are designed for particular stations.

Of course it will be understood that the switch-arm normally projects into and across the path of the moving carriers and that each switch-arm will be moved out of the way by all of the carriers when they are placed in the tube in the reverse position or with their disks in the rear and that such switch-arm will also be moved by each of the carriers when passing through the tube with their disks in front save the one having a disk of the appropriate size to engage the tripping projections.

The apparatus herein shown has no moving parts save the switch-arm and is therefore less likely to get out of order and will be more durable than the apparatus described in my former patent. Certainty of operation is also secured by reducing the number of moving parts to the minimum.

I claim—

1. In a pneumatic-despatch apparatus, a tube or way having lateral openings for the discharge of the carriers, of a series of carriers having graduated disks on their ends, a series of switch-arms pivoted respectively adjacent to the lateral openings and having tripping projections normally in the path of the carriers, said tripping projections being graduated to correspond with the respective disks, switch-boxes attached to the sides of the tube about the discharge-openings therein, said switch-boxes having funnel-shaped bottoms and the switch-arms being adapted to swing laterally over said funnel-shaped portions when engaged by the carriers, substantially as described.

2. In a pneumatic-despatch apparatus, the combination with the tube or way having lateral discharge-openings, of switch-boxes arranged to inclose said openings and provided with discharge-apertures located at one side of the discharge-openings, inclined ribs on the bottom walls of the switch-boxes and pivoted switches adapted to engage the front end of the carriers whereby to deflect them laterally over the discharge-apertures, substantially as described.

3. In a pneumatic-despatch apparatus, the combination with a main tube or way having a lateral opening extending through at least half the diameter of the tube, the remaining portion of the tube being adapted to serve as a track and guide for the carrier, a switch-box inclosing the tube over the discharge-aperture at one side of the vertical plane of the tube, a hinged lid or cover for the switch-box, said lid or cover having a vertical enlargement and a depending flange surrounding said vertical enlarged chamber, substantially as described.

ALFRED J. GILLESPIE.

Witnesses:
H. V. McGREGOR,
J. E. GILLESPIE.