

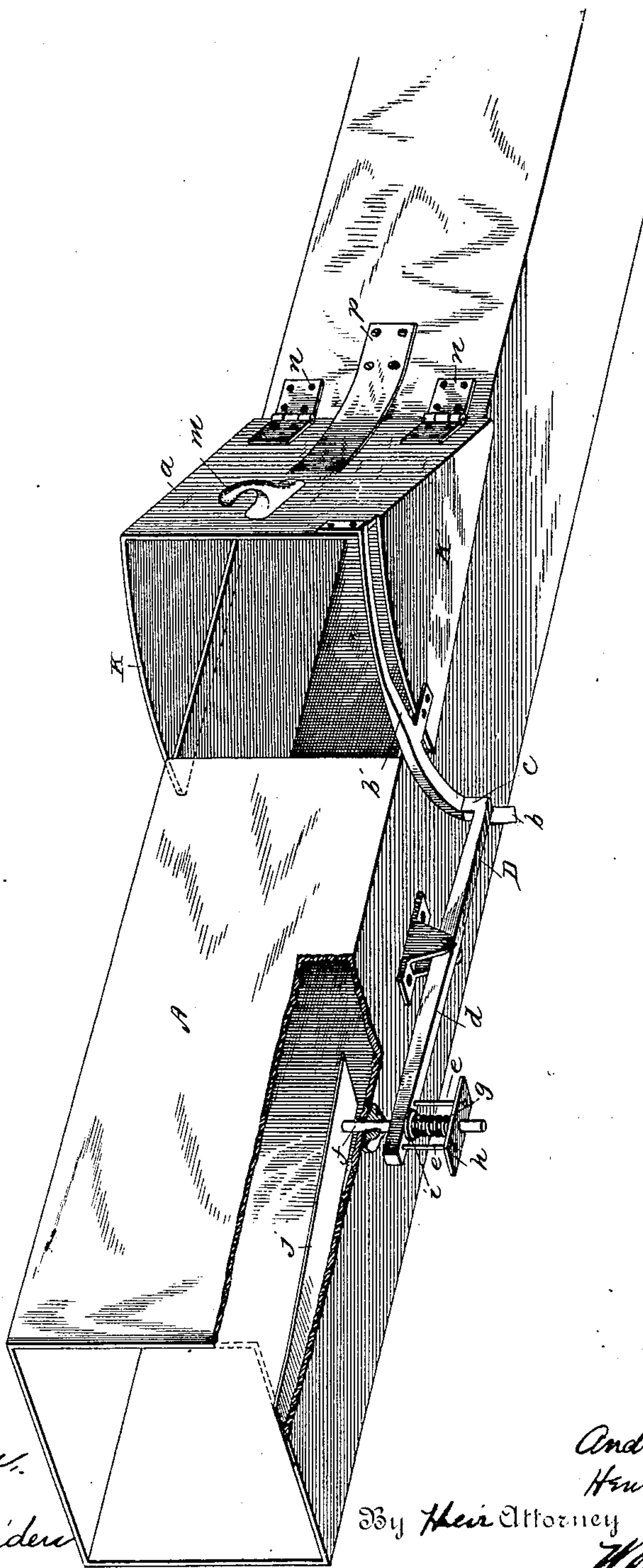
(No Model.)

A. BRYSON, Jr., & H. S. MUDGE.

SENDING DEVICE FOR PNEUMATIC DISPATCH.

No. 370,044.

Patented Sept. 20, 1887.



Witnesses
Wm. Speiden
Albert Speiden

Inventors
Andrew Bryson Jr
Henry S. Mudge
By their Attorney
Woodbury Lowery

UNITED STATES PATENT OFFICE.

ANDREW BRYSON, JR., AND HENRY S. MUDGE, OF BROOKLYN, NEW YORK.

SENDING DEVICE FOR PNEUMATIC DISPATCH.

SPECIFICATION forming part of Letters Patent No. 370,044, dated September 20, 1887.

Application filed April 1, 1887. Serial No. 233,267. (No model.)

To all whom it may concern:

Be it known that we, ANDREW BRYSON, Jr., and HENRY S. MUDGE, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sending Devices for Pneumatic Dispatch, of which the following is a sufficient description, reference being had to the accompanying drawing.

The object of our invention is to provide means whereby a carrier may be introduced immediately into a pneumatic tube without bifurcation of the tube or side-station branches, and whereby a passing carrier is held up until the carrier at the way-station has been introduced into the tube.

Our invention consists of a gate, forming part of the walls of the tube itself and opening immediately into the tube, connected with mechanism which, when the gate is opened for the introduction of a carrier, operates a block within the tube to arrest the progress of any approaching carrier until the first carrier shall have been introduced and the gate closed. This is done by means of an arc of a graduated thickness, forming an inclined plane attached to the gate, which, as the gate is opened, gradually depresses one arm of a lever, the other arm of which in rising lifts a block lying in the path of the approaching carrier within the tube and stops its passage until the closing of the gate, and consequent return of the lever to its first position allows the block in the tube to return to its normal condition against the bottom of the tube, releasing the passing carrier, which rides over the block without further impediment.

In the accompanying drawing, which illustrates our invention, the figure is a view in perspective of gate, block, and tube.

A is a pneumatic tube having a gate or door, *a*, hinged at *n*, and opening immediately into the tube, of whose walls it forms a part.

k k' are top and bottom plates secured to the gate and serving as guides for the introduction of the carrier. When the gate is closed, guides *k k'* lie above and below the tube, and are of the same length as the gate.

Fastened to the bottom of guide *k'*, when the latter is movable, as here shown, is an arc,

b, passing under tube A, having a graduated thickness, which gives an inclined under surface at *b'*. This lower face bears against a lug, *c*, on one arm of a lever, D, the other arm of which, *d*, supports a standard, *f*, which in turn abuts against one end of a plate, *j*, lying within the tube, in the path of a carrier, and secured at its other end to the bottom of the tube. Standard *f* passes through a slot in the bottom of tube A, in arm *d*, and in plate *h*, and is carried by a collar, *i*, resting on spring *g*, which is supported on plate *h*, suspended from arm *d* of lever D by rods *ee*. The collar *i* on the standard limits its upward movement and permits its withdrawal from engagement with block *j* by the downward motion of lever-arm *d*. The adjustment of plate *j* and lever-arm *d* is substantially similar to that described in our Patent No. 357,174, of February 8, 1887, with the exception that the normal position of the block *j* is out of the way of the carrier. Standard *f* is normally kept out of engagement with block *j* by the depression of lever-arm *d*, caused either by its own weight, by a small spring acting on the arm, or by a guide placed under lug *c*, parallel to arc *b*, forming a slot in which lug *c* may travel.

m is a handle for opening the door, and *p* a spring attached either to the gate or to the tube and working freely against the other to assist in closing the door, with the closing of which the carrier, which has been placed on guide-plate *k'*, is pushed into the tube. In this the spring is assisted by the suction through the door, caused by the current of air through the tube, which also tends to draw in the carrier.

The operation of our invention is as follows: The gate being closed, arm *d* of lever D is down and standard *f* drawn out of engagement with block *j*, which lies in its normal position snug to the bottom of the tube, or flush with the same in a recess made for the purpose. On opening gate *a* to introduce the carrier, the first effect, while the thin part of arc *b* is passing over lug *c*, is to allow the entrance into the tube of the external air, thus reducing the atmospheric pressure back of the gate, and consequently reducing the speed of any approaching carrier before raising block *j*, which is the next step. This comes about by the farther

opening of the gate, which brings the inclined face *b'* of arc *b* to bear against lug *c*, depressing it and causing arm *d* and standard *f* to rise until the latter, abutting against plate *j*, lifts its free end and blocks the passage of any approaching carrier. Should a carrier happen to be on the block at the moment of the rising of arm *d*, spring *g* is compressed against collar *i*, and the standard itself is not lifted, while the upward movement of arm *d* is unimpeded. The gate being open, the carrier is now introduced into the tube by placing it upon guide *k'*, and the gate is closed by the exterior pressure of the air, assisted by spring *p*. Arc *b* retracing its course, the movement of lug *c* of lever *D* is reversed, arm *d* lowered, and standard *f* withdrawn, allowing the block to return to its first position.

We have shown guides *k k'* as fastened to the gate and moving with it. Both guides may, however, be permanently secured to the tube and project therefrom, the gate opening between them; or the upper guide may be fastened to the tube and the lower one to the gate, or the reverse. Where the lower plate, *k*, moves with the gate it is of the same length as the gate, and arc *b* may be riveted or otherwise fastened to it, or the plate itself may be made with a raised rib of a suitable shape. Where plates *k k'* are permanently attached to the tube, and gate *a* moves between them, they do not extend the same length as in the first case, and arc *b*, attached to the gate, moves without reference to the bottom plate. To prevent the sagging of arc *b*, when not otherwise supported, it may have suitable guides attached to the bottom of the tube.

We do not confine ourselves to any particular shape of pneumatic tube, as our gate may be adapted to any tube by taking a section of sufficient length and height to admit the carrier and using it for the gate in a round or oval pipe—a half-section; neither do we limit ourselves to any specified position for the gate, as it may be located in the top, bottom, or sides of the tube. The position of the block and lever may also be varied in the same way without departing from the spirit of our invention.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a pneumatic tube, of a gate thereto, consisting of a section of the walls of the tube, a block within the tube, and connecting mechanism, whereby a carrier may be immediately introduced into a pneumatic tube without bifurcation of the same.

2. The combination, with a pneumatic tube, of a gate located in the side of the tube, hinged to the same and being a section of its walls, and a laterally-projecting guide-plate for the support and introduction of a carrier, substantially as hereinbefore set forth.

3. The combination, with a pneumatic tube, of a gate hinged to the same and consisting of a section of its walls, and an upper and lower laterally-projecting guide-plate for the support and introduction of the carrier, substantially as and for the purpose hereinbefore set forth.

4. The combination, with a pneumatic tube, of a gate hinged to the same and consisting of a section of the walls of the tube, and laterally-projecting guide-plates for the support and introduction of the carrier, attached to and movable with the door, substantially as hereinbefore set forth.

5. The combination, with a pneumatic tube, of a gate thereto, consisting of a section of the walls of the tube, a block in the tube operated by a lever, and mechanism attached to the door controlling the movement of the lever, whereby when the gate is open the block is set and when closed released, substantially as hereinbefore set forth.

6. The combination, with block *j* and lever *D*, of gate *a* and arc *b*, or its equivalent, secured thereto, substantially as hereinbefore set forth.

7. The combination of gate *a*, spring *p*, guides *k k'*, arc *b*, and lever *D* with block *j*, substantially as and for the purpose hereinbefore set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ANDREW BRYSON, JR.
HENRY S. MUDGE.

Witnesses:

GEORGE RICE,
JOSEPH STRACHAN.