

(No Model.)

J. L. GIVEN.

PNEUMATIC CASH CARRIER APPARATUS.

No. 397,354.

Patented Feb. 5, 1889.

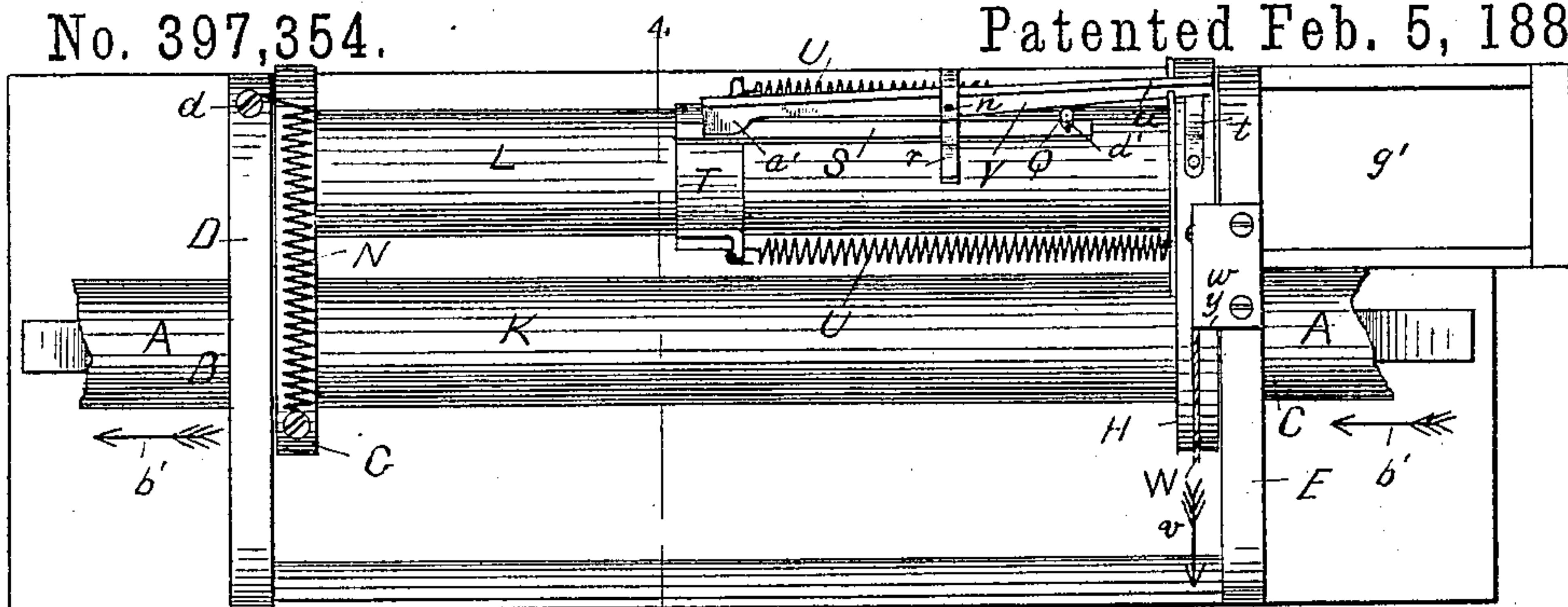


Fig. 1.

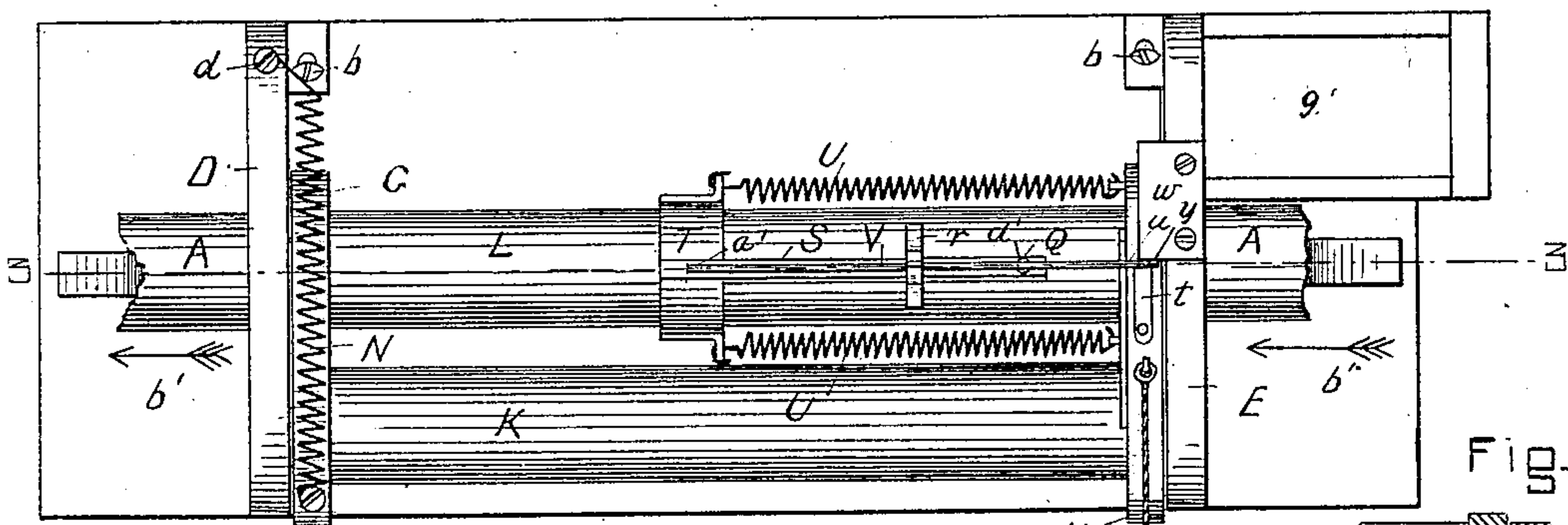


Fig. 2.

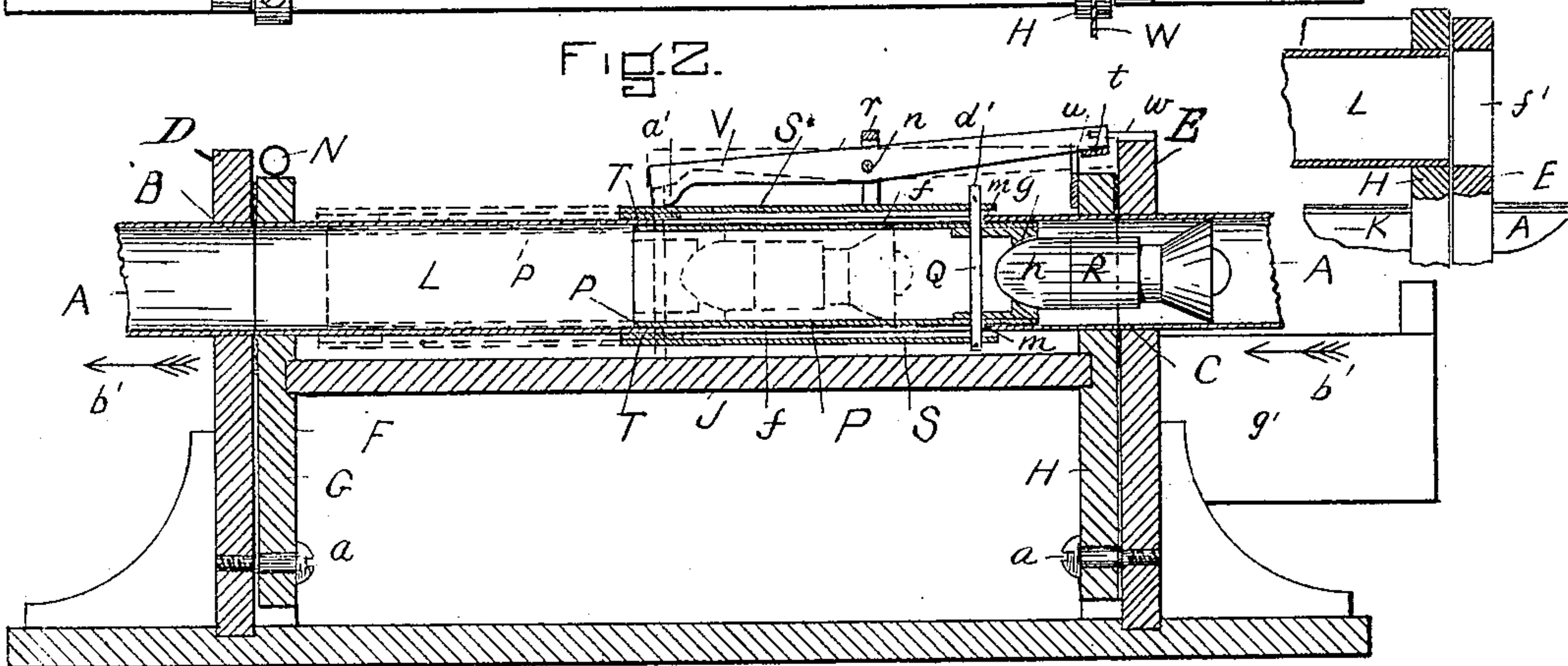


Fig. 3.

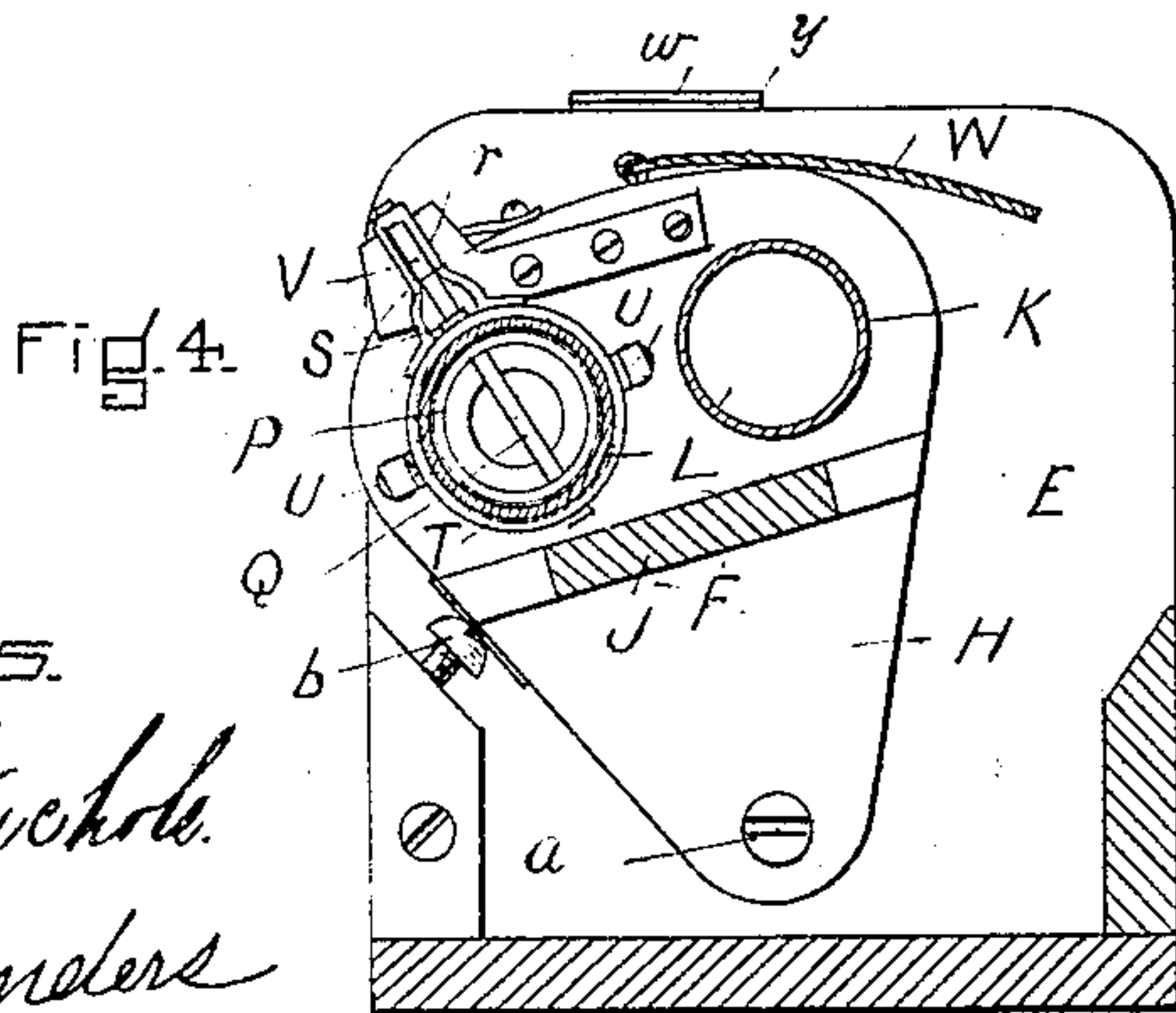


Fig. 4.

WITNESSES.

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PNEUMATIC CASH-CARRIER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 397,354, dated February 5, 1889.

Application filed November 7, 1888. Serial No. 290,238. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. GIVEN, of Melrose, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic Cash-Carrier Apparatus, of which the following is a full, clear, and exact description.

This invention consists of the combination, with a pneumatic tube for the transmission therethrough of a carrier or other article, of intermediate sectional tubes arranged on a suitable frame or support, which is adapted to move transversely back and forth for each of said intermediate sectional tubes to be placed in line with the pneumatic or main tube, as desired, one of said intermediate sectional tubes having an internal slide arranged to move back and forth therein, and adapted to receive the carrier or other article, said frame being arranged to be locked and secured in place when said slide sectional tube is in line with the pneumatic or main tube, and said slide when moved along its sectional tube being adapted to release said tube-carrying frame from its locked position, so that said slide sectional tube will be then moved out of line and the other sectional tube in line with the pneumatic or main tube for the discharge of the carrier from said slide sectional tube, and for the other sectional tube to make the pneumatic or main tube then continuous at such point or place, substantially as herein-after fully described.

In the accompanying sheet of drawings is illustrated the present invention, Figure 1 representing in plan view a portion of a pneumatic tube with this invention applied thereto; Fig. 2, a plan view of the same with parts moved into other positions; Fig. 3, a longitudinal vertical section on line 3 3, Fig. 2; Fig. 4, a cross-section on line 4 4, Fig. 1. Fig. 5 is a detail horizontal section.

In the drawings, A represents a portion of a pneumatic tube for the transmission therethrough in the direction of the arrows of a cash-carrier or other article having the present invention applied thereto, and it being located at the sales-counter or single station and the tube leading there to and from in any suitable and desirable manner. The pneumatic tube A at such station has a portion cut out or removed or discontinued, the two ends B C of

the tube being a short distance from each other, and they are secured, respectively, in uprights or standards D E. Between these two standards is a frame, F, pivoted at *a* by its end pieces, G H, which are connected together by a horizontal bar, J, the frame carrying two short tubes, K L, of the same diameter as the main tube, secured in and extending to the outside of each end piece, the tubes being parallel with each other and in a line concentric with the frame-pivots, and in such relation to the main tube that as the frame is swung between the two standards it will bring either one or the other of the two short tubes coincident with and in longitudinal line between the ends B C of the main tube, as desired. Fig. 1 shows this frame F, with its intermediate or sectional tubes, in its normal position, and in this view the tube K is in line with the main tube, and it then forms practically a continuation of the main tube, the frame resting by its end pieces D E against screw-pins *b*, screwing into the standards, the screwing in or out of which adjusts such bearing or rest, so that the sectional tube K, when the frame is at such rest, will be in exact line with the main tube. It is held to such bearing by the tension of a spiral spring, N, secured by one end to the end piece, and by its other end to the upright at *d*, which returns it to such position when not otherwise acted upon.

Within the sectional tube L is a slide, P, made in the present instance of a tube form, its external diameter fitting closely the internal diameter of the sectional tube, but so it can freely slide back and forth therein and yet maintain a close fit within the tube to substantially prevent air from passing between the two.

Q is a cross-pin, secured to and extending diametrically across the slide and projecting through longitudinal slots *f f*—one on each side of the sectional tube diametrically opposite to each other—the slide being of a length to extend beyond and fully cover the slots *f* when in its normal position, to prevent air from entering into or escaping from the sectional tube L at such slots.

The slide P is open from end to end for air to freely pass through it in the operation of the air-exhausting apparatus, in order not to

interfere with the exhausting of air from the whole length of the tube in the transmission of the carrier or other article there-through. Its right hand or lower end is shaped to form an internal seat, *g*, circular in cross-section, and which is adapted to receive the end *h* of the carrier *R*, as shown in Fig. 3.

Secured to each end of the cross-pin *Q*, on the outside of and extending along the sectional tube *L*, is a bar or rod, *S*, the other end of which is rigidly secured to a loose sleeve, *T*, surrounding the tube and adapted to freely slide forward and backward thereon. Secured to this sleeve—one on each side and between the rods *S*—are spiral springs *U*, their other ends being secured to the end piece *H*, which springs act to hold the slide in its normal position and to return it to such position when moved along the tube, unless otherwise acted upon, and when in such position the slide rests by its cross-pin *Q* against the ends *m* of the slots *f*.

Pivoted at *n* to a bracket, *r*, secured to the outside of the tube *L* over or in line with one of the connecting-rods *S*, is an arm or lever or latch, *V*, having a flat spring, *t*, bearing by its free end against the under side of its end *u*, secured to the end piece, *H*, which holds such end by its tension up in the position shown in Figs. 1 and 3.

Taking hold of the cord or wire *W*, secured to the end piece *H* and pulling upon it in the direction of the arrow *v*, Fig. 1, the frame *F*, with its intermediate and sectional tubes, will swing upon its pivots *a* from the position shown in Fig. 1 into the position shown in Figs. 2 and 3, and as it is moved into such position the end *u* of the latch passes under a plate, *w*, secured to the upright *E*, which plate is in position for such end as it moves thereunder to be pressed down against its spring *t*, and when the frame moves into the position shown in Figs. 2 and 3 the end *u* of the latch will have passed from under and beyond the edge *y* of the plate, and, being then free to rise, it is forced upward by the reaction of its spring *t* and abuts against plate-edge *y*, locking the frame and preventing it from swinging back into the position shown in Fig. 1. When the frame is swung over into the position shown in Figs. 2 and 3, the other sectional tube or slide-tube, *L*, is in line with the main tube, and the stop-plate *w* and latch *V* are so adjusted in relation to the frame and each other that the latch *V* will be locked by the plate *w* when the slide-tube is exactly coincident with the main tube.

The pin *Q* extends beyond the side of its sectional tube a short distance, so that with the slide-tube in line with the main tube and locked, as described, if the slide be then moved up into the position shown in dotted lines, Fig. 3, the end *d'* of the pin will strike against the under inclined face of the latch end *a'*, and, raising the same, depress its other end, so that it will be free to pass under the plate *w*, leaving the frame-spring *N* free to act

to return the frame and sectional tubes to their positions shown in Fig. 1, the slide-tube out of and the other sectional tube in line with the main tube.

The operation is substantially as follows: The intermediate or sectional tubes and their supporting-frame are connected with the main tube at any point or place along its line where it is desired to transmit a carrier or other article—such as the sales-counter or single station—the main tube extending from the cashier's desk or central station to such station, and from thence to the air-exhausting apparatus, the air being exhausted through the tube in the direction of the arrows *b' b'*. The frame *F*, with its intermediate or sectional tubes, when in its normal position at the single station is as shown in Fig. 1—that is, with the sectional tube *K* in line with the main tube—in which position it remains until the cashier or person at the cashier's desk or central station desires to transmit a carrier or other article to the station, when, with the air-exhausting apparatus in operation, he pulls upon the cord or wire *W*, connecting his desk with the frame at such station, in any suitable manner, which swings the frame with its sectional tubes into the position shown in Figs. 2 and 3, the latch *V* then locking with the plate *w* and holding it in such position. A carrier or the article desired to be transmitted is placed by the cashier in the end of the main tube *A* at his desk, which, by the exhaustion of the air from the tube in front of it, is forced along the main tube until it arrives at the slide *P*, making by its end, *h*, a close union with the seat *g* of the slide, closing the slide to the passage of air through it, which then moves with the carrier along the sectional tube *L* into the position shown in dotted lines, Fig. 3, the end, *d'*, of the cross-pin *Q* of the slide abutting or striking against the under side of the end *a'*, of the latch *V*, forcing it to swing on its pivot and releasing its other end, *u*, from the plate *w*, as shown in dotted lines, Fig. 3, when the spring *N* acts upon the frame to return it and its tubes to their normal positions, the tube *L*, with the slide *P*, and carrier in it, out of line with the main tube into line with an opening, *f'*, (see Fig. 5,) in the standard *E*, so that then, the sectional tube *L* being out of line with the main tube, the carrier is relieved of the air-pressure upon it, when the springs *U*, attached to the slide-sleeve *T*, will act to return the slide to its normal position and force or throw the carrier out of the tube *L* through the standard-opening *f'* into a receptacle, *g'*, in proper position therefor. When the salesman wishes to return the carrier or other article to the cashier's desk or central station, he places the same in the open end of another pneumatic tube leading thereto in connection with the air-exhausting apparatus, which returns the carrier in the usual manner. There can be as many of these separate intermediate sectional tubes arranged in con-

nection with the main tube as desired, according to the number of single stations, and the cashier will have as many strings or wires W at his desk as there are stations—one to
 5 each station—so that when desirous of transmitting a carrier to any particular station in the series he will pull the wire for such station, which will put the slide-tube P at such
 10 station in line with the main tube, ready for the reception of the carrier and its delivery at such station, as has been described, and which, after being delivered, leaves the sectional tube K in connection and coincident with the main tube, so that, if desirous, a carrier
 15 can be transmitted past the station to any desired station beyond.

The arrangement of the intermediate sectional tubes in a horizontal position is very desirable, because they can be placed under
 20 the sales counter or table at the single station, and thus be out of the way, leaving the counter free for the goods, &c., the main tube leading there to and from in any suitable and desirable manner. The slide P can be of
 25 any suitable form other than tubular, it only being essential it should have a proper seat to receive the carrier, and of a length and width to insure its free and easy guidance and movement in the tube and cover up the slots
 30 when in its normal position.

The carrier-seat of the slide can be of any suitable shape in cross-section, but obviously must be of a shape for the end of the carrier to fit the same closely; but with the end of the
 35 carrier flat it need only bear against the end of the slide covering the opening.

The intermediate or sectional tubes can be arranged in a vertical position, if desired, and if so the slide can be adapted to return to its
 40 seat by gravity, dispensing with its springs; but it is preferable to have them horizontal, for the reasons stated. The spiral springs are of sufficient power to return the slide, with the carrier, to its normal position when
 45 the air-pressure ceases, but not sufficient to prevent the air-pressure moving it, with the carrier, back, as described. Only one spring and one slot in the tube need be used; but it is preferable to have both springs and slots.

50 The standard E can be cut away opposite the end of the intermediate tube when in its position to discharge the carrier in lieu of making an opening through it, as is obvious.

Having thus described my invention, what
 55 I claim is—

1. The combination, with a pneumatic tube for the transmission therethrough of a carrier or other article, of intermediate sectional tubes suitably supported and arranged to be
 60 moved transversely back and forth for each of said intermediate tubes to be placed in or out of line with the main tube, one of said intermediate tubes being arranged to be locked or held in position when in line with the main
 65 tube, and having a slide arranged to move

therein and to be moved as the carrier makes connection therewith in its transmission through the tube to release or unlock said intermediate slide-tube for its return to its normal position, for the purpose specified. 70

2. The combination, with a pneumatic tube for the transmission therethrough of a carrier or other article, of intermediate sectional tubes suitably supported and arranged to be
 75 moved transversely back and forth for each of said intermediate tubes to be placed in or out of line with the main tube, one of said intermediate tubes being arranged to be locked or held in position by a latch when in line with the main tube, and having a slide arranged to move therein and to be moved as
 80 the carrier makes connection therewith in its transmission through the tube to unfasten said latch for said intermediate slide-tube to return to its normal position, for the purpose specified. 85

3. The combination, with a pneumatic tube for the transmission therethrough of a carrier or other article, of intermediate sectional tubes, one provided with a slide arranged to
 90 move back and forth therein and adapted to receive the carrier, said intermediate tubes being carried by a frame or support arranged to move transversely back and forth for each of said intermediate tubes to be placed in or
 95 out of line with the main tube, said intermediate slide-tube being provided with a latch or locking device arranged to engage with the frame or support when in line with the main tube and in position to be operated by the
 100 slide when moved into proper position therefor as the carrier makes connection therewith to release or unlock said locking device, for the purpose specified.

4. The combination, with a pneumatic tube
 105 for the transmission therethrough of a carrier or other article, of intermediate sectional tubes secured in a frame pivoted to a suitable support provided with a spring and arranged to be moved transversely back and
 110 forth to place either one or the other of said intermediate tubes in or out of line with and between the two contiguous ends of the main tube, one of said intermediate tubes having a pivoted spring-latch or locking device arranged to engage with a stop or shoulder on
 115 said support when said intermediate tube is in line with the main tube, and said intermediate tube having an internal slide with which the carrier engages in its transmission through
 120 the tube to be moved therewith, and provided with a pin or projection to operate said latch, for the purpose specified.

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

JOHN L. GIVEN.

Witnesses:

EDWIN W. BROWN,
 CARRIE E. NICHOLS.