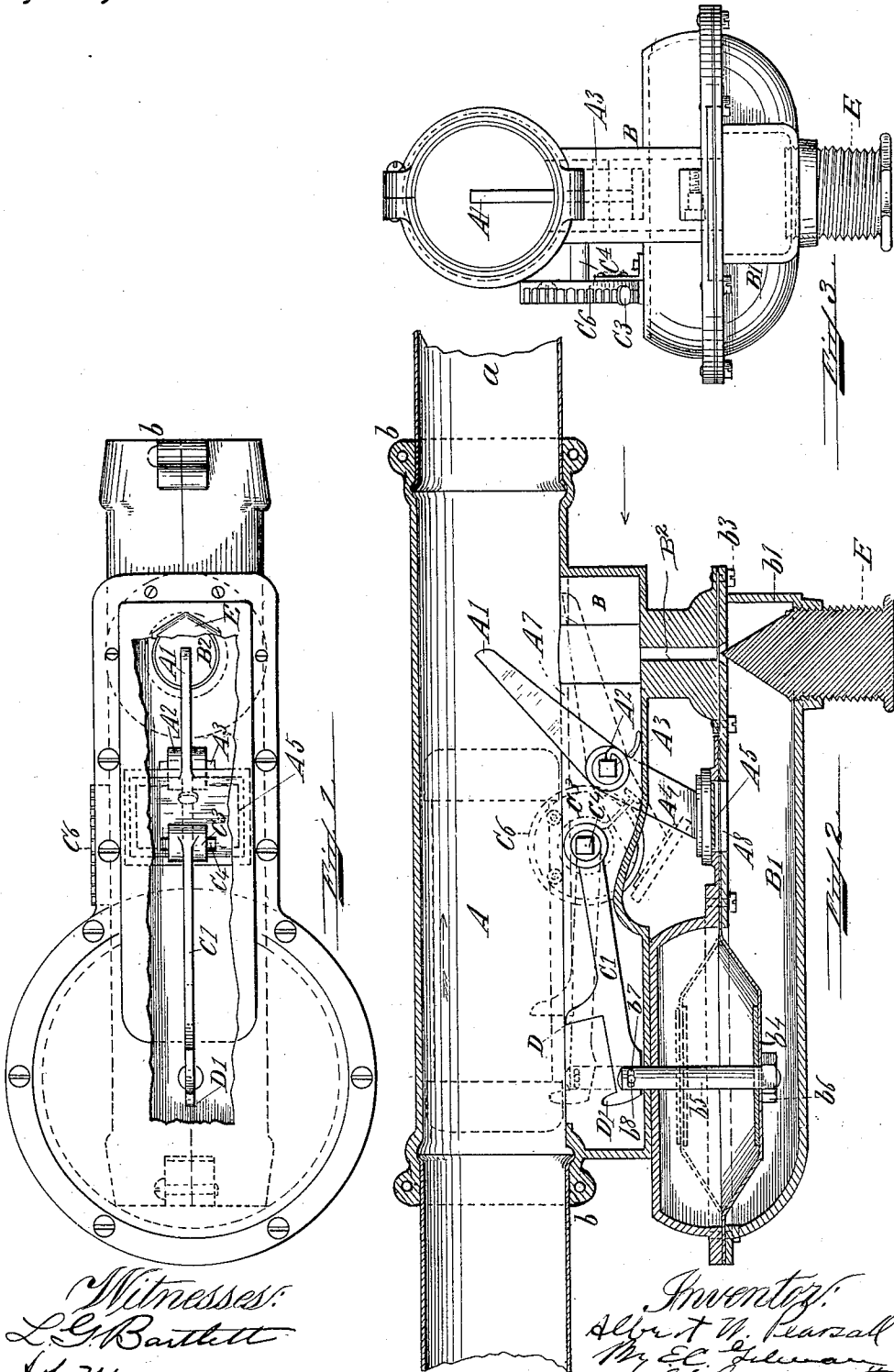


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 AUTOMATIC CARRIER SEPARATOR AND DESPATCHER FOR PNEUMATIC DESPATCH TUBE
 APPARATUS.

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Patented June 24, 1913.

1,065,548.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT W. PEARSALL, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO LAMSON COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

AUTOMATIC CARRIER SEPARATOR AND DESPATCHER FOR PNEUMATIC-DESPATCH-TUBE APPARATUS.

1,065,548.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed October 1, 1906. Serial No. 337,018.

To all whom it may concern:

Be it known that I, ALBERT W. PEARSALL, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Automatic Carrier Separators and Despatchers for Pneumatic-Despatch-Tube Apparatus, of which the following is a specification.

My invention relates to automatic carrier separator and despatcher for pneumatic tube apparatus.

The object of my invention is to separate and space carriers which are closely following one another in order that they may act independently on switching means in said apparatus thereby permitting the reliable and positive operation of said switching means.

The device as herewith shown is installed in a transmission tube of a pneumatic despatch system immediately preceding the automatic switching mechanism located therein.

In the accompanying drawings which illustrate a construction embodying my invention:—Figure 1 is a bottom plan view of the device with parts broken away. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is an end elevation of Fig. 2 looking in direction indicated by the arrow.

Like letters of reference refer to like parts throughout the several views.

a represents a pneumatic transmission tube. *b* is a two-piece casing surrounding said transmission tube and carrying the lower casing *b*¹ attached thereto by means of screws *b*³. Attached to the shaft *A*³ which is pivoted within chamber B of the upper casing *b* is a trip *A*¹ projecting through opening *A*⁷ in the transmission tube into the path of travel of the carriers. The yoke *A*⁴ is fixed to the shaft *A*³ and spanning the casing *b*, and carries on the lower end thereof the valve *A*⁵ controlling the port *A*⁸ communicating with the diaphragm chamber *B*¹ in the lower casing *b*¹. Fixed at one end to the shaft *A*³ and at the other end to the casing *b* is a helical spring *A*² mounted around the shaft *A*³ and adapted to hold the valve *A*⁵ in a closed position over the port *A*⁸. The diaphragm *b*⁴ is mounted in the chamber *b*¹ and is attached to the shaft *b*⁵ by means of the nut *b*⁶. The upper end of this shaft *b*⁵ projects into the chamber B in the upper casing *b* and carries the slot *b*⁷

in which is movably mounted a pin *b*⁸ attached to the check lever *C*¹. The check lever *C*¹ at a fixed end is pivoted within the upper chamber B of the upper casing *b* on shaft *C*⁴ and carries the projections D and D¹ which are adapted upon upward movement of the shaft *b*⁵ to project into the path of travel of the carriers in the transmission tube *a*. An extension of the shaft *C*⁴ outside of the casing *b* carries the helical spring *C*³ which is fixed at one end of said shaft, the other end of said spring *C*³ being adapted to engage with the rack *C*⁶ for the purpose of adjusting the tension of this spring. The passage *B*² places the transmission tube *a* in communication with the diaphragm chamber *B*¹, and an adjustable screw *E* is threaded into the lower casing *b*¹ for the purpose of restricting the passage *B*² to regulate the passage of air therethrough.

The operation is as follows: The carrier A, as shown in dotted lines Fig. 2, and traveling in the direction indicated by the arrow, strikes the trip *A*¹ depressing it and causing the valve *A*⁵ to be lifted from its seat admitting atmospheric pressure into the diaphragm chamber *B*¹, thereby short-circuiting or relieving the vacuum maintained in the chamber *B*¹ through the medium of passage *B*², causing the diaphragm *b*⁴ to be moved upward and through the medium of the shaft *b*⁵ raising one end of lever *C*¹ and projections D and D¹ into the transmission tube immediately in the path of the following carrier thereby checking the same. The upward or arresting position of the diaphragm and lever *C*¹ is shown in dotted lines Fig. 2. Immediately after the passage of the carrier A the trip *A*¹ is released and the valve *A*⁵ is closed through the medium of helical spring *A*², and a vacuum is reestablished in the chamber *B*¹, the air being exhausted through the passage *B*² drawing the diaphragm *b*⁴ downward and carrying with it through the medium of shaft *b*⁵ the lever *C*¹, removing the projections D¹ and D from in front of the carrier which has been checked allowing the carrier to continue through the tube. The screw *E* may be screwed in or out thereby throttling or graduating the air passage *B*², thus regulating the vacuum operating upon the diaphragm *b*⁴ and permitting the adjustment of the check lever *C*¹ in combina-

tion with the tension of the spring C³ to the length of the transmission tube or the working vacuum carried within the system.

Having thus described the nature of my invention and set forth a construction embodying the same, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a pneumatic despatch tube apparatus of the vacuum type, a transit tube for the transmission of carriers, a pivoted check lever, a spring tending to press said lever into the transit tube to engage approaching carriers, a casing provided with upper and lower chambers communicating through a restricted passage, said upper chamber opening into the transit tube so that air may be exhausted through said restricted passage from the lower chamber and said lower chamber having an opening to the outside air, a valve normally closing the opening of the lower chamber to the outside air, means actuated by a carrier passing through the transit tube for opening said valve to admit outside air into the lower chamber, a diaphragm in said lower chamber having on one side the opening to the outside air and the restricted passage, said diaphragm being connected with said check lever so that a depression of the diaphragm through the exhaustion of the air in the lower chamber will hold the check lever withdrawn from the transit tube against the action of its spring and so that the elevation of the diaphragm through the admission of outside air into the lower chamber will permit the check lever to be projected by its spring into the transit tube in the path of an approaching carrier.

2. In a pneumatic despatch tube apparatus of the vacuum type, a transit tube for the transmission of carriers, a casing provided with upper and lower chambers communi-

cating through a restricted passage, said upper chamber opening into the transit tube so that air may be exhausted through said restricted passage from the lower chamber and said lower chamber having an opening to the outside air, an adjustable screw for regulating the opening through the restricted passage connecting the two chambers, a diaphragm extending across the lower chamber having on one side the restricted passage and the opening to the outside air, a spring-pressed valve normally closing the opening of the lower chamber to the outside air so that the exhaustion of air from the lower chamber through the restricted passage will depress the diaphragm, a trip on said valve to be actuated by a carrier passing through the transit tube for opening the valve to admit outside air to the lower chamber to destroy the partial vacuum therein and thereby raise the diaphragm, a check lever pivoted in the upper chamber of the casing, a spring tending to press said check lever into the transit tube into the path of an approaching carrier, and a shaft connecting the free end of the check lever with said diaphragm so that when the latter is depressed the check lever will be held withdrawn from the transit tube against the action of said spring and so that when the diaphragm is elevated the check lever will be projected by the spring into the transit tube into the path of an approaching carrier.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this fifth day of September A. D. 1906.

ALBERT W. PEARSALL.

Witnesses:

A. R. LARRABEE,
A. L. MESSER.