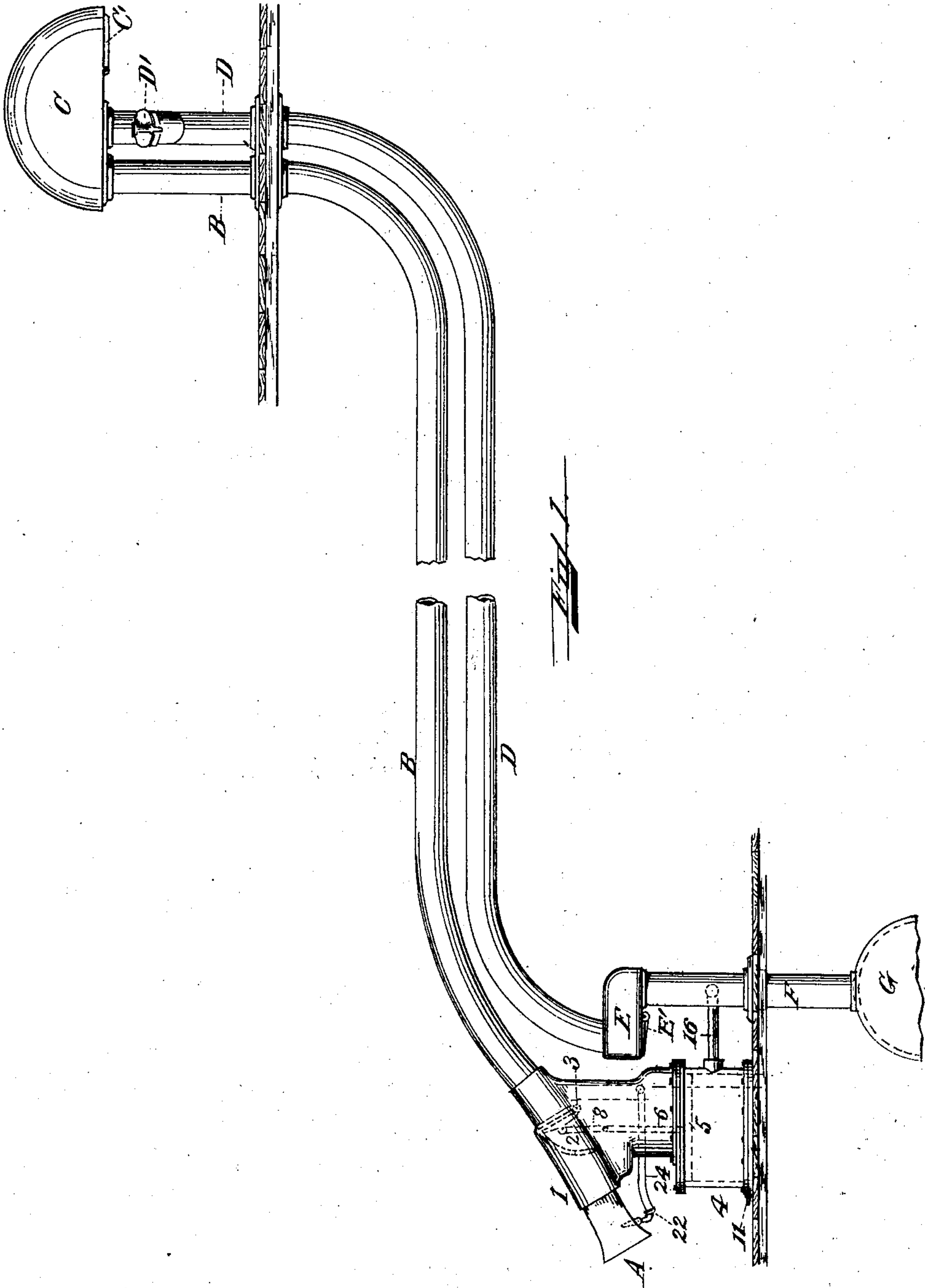


L. G. BARTLETT.
PNEUMATIC DESPATCH TUBE APPARATUS.
APPLICATION FILED SEPT. 20, 1907.

919,304.

Patented Apr. 27, 1909.
3 SHEETS—SHEET 1.



Witnesses:
A. L. Messer
H. E. Remick

Louis G. Bartlett
By J. S. Kunk
Att'y

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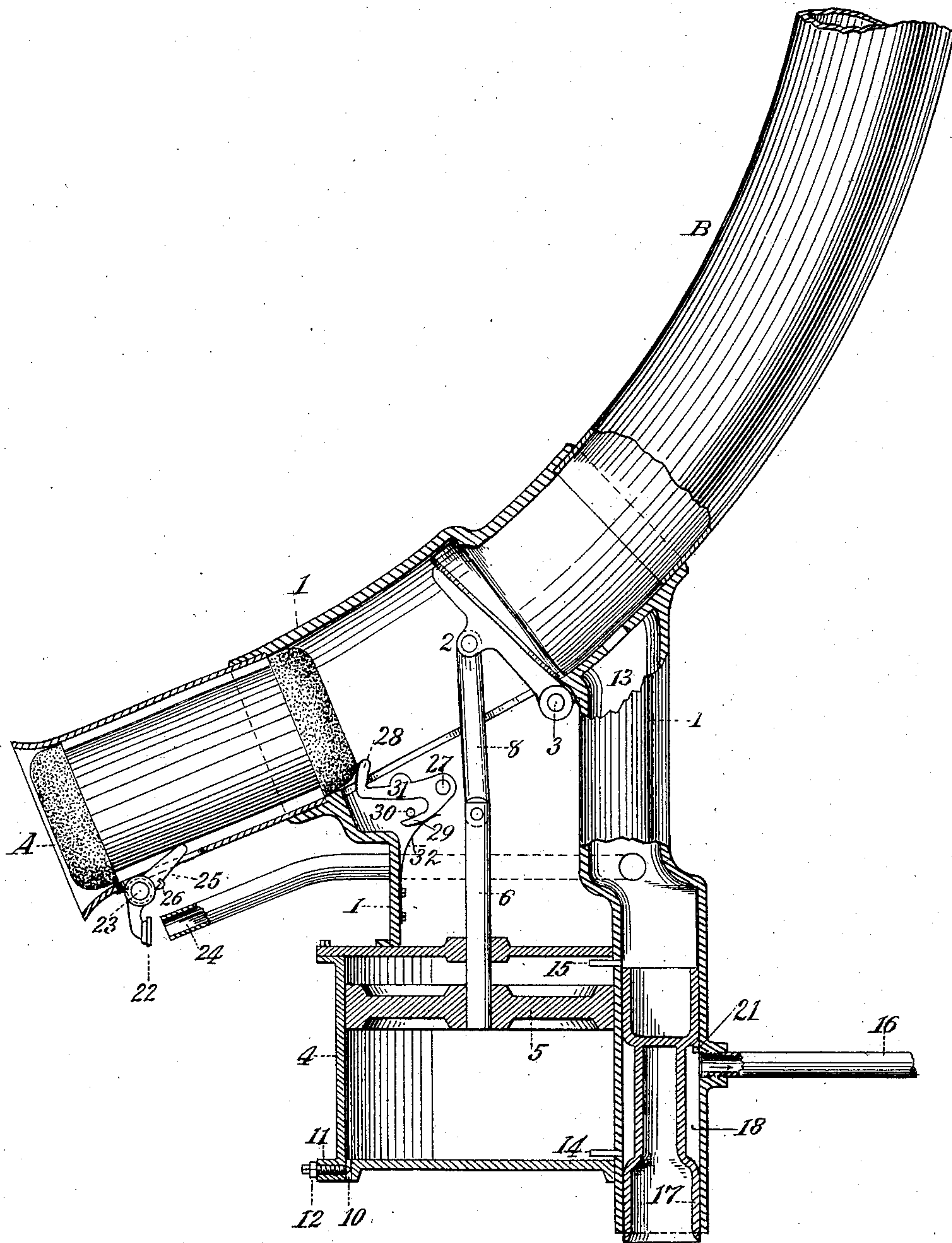


Fig. 2.

Witnesses:
A. L. Messer
W. E. Remick

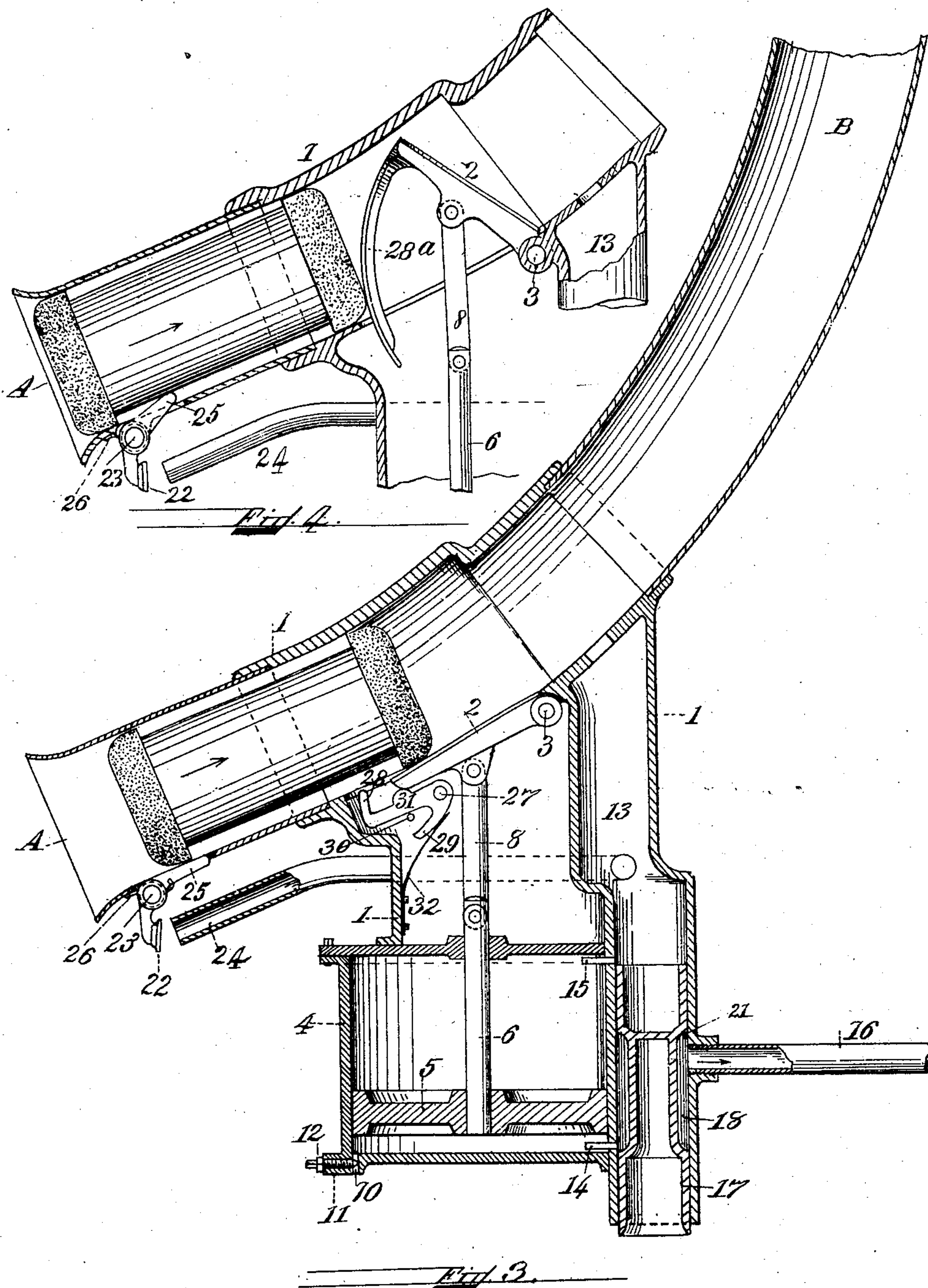
Inventor:
Louis G. Bartlett
By J. S. Bush
att

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3 SHEETS—SHEET 3.



Witnesses:
A. L. Masser
H. E. Remick

Inventor:
Louis G. Bartlett
By J. H. Knapp
Att'y

UNITED STATES PATENT OFFICE.

LOUIS G. BARTLETT, OF SOMERVILLE, MASSACHUSETTS.

PNEUMATIC-DESPATCH-TUBE APPARATUS.

No. 919,304.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed September 20, 1907. Serial No. 393,788.

To all whom it may concern:

Be it known that I, LOUIS G. BARTLETT, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic-Despatch-Tube Apparatus, of which the following is a specification.

My invention relates to improvements in pneumatic despatch tube apparatus and particularly to that class wherein a valve controlling the flow of air for driving carriers is located in the transmission tube in the path of travel of carriers.

The object of this device is to prevent the carrier, which is inserted into the bell-mouth for despatch, from wedging the air-valve which valve as soon as partially unseated, causes a rush of air through said bell-mouth which tends to drive the carrier in behind the valve preventing the further opening of the same and also the transmission of the carrier.

In the accompanying drawings in which are illustrated forms of construction embodying my invention:—Figure 1 is a diagrammatic view of a pneumatic tube system embodying the device. Fig. 2 is an enlarged sectional elevation of the bell-mouth showing air-valve partially unseated and carrier held in check. Fig. 3 is a similar view to Fig. 2 showing air-valve fully open with carrier released for transmission. Fig. 4 is a modification of the device holding carrier in check with air-valve partially unseated.

Like characters of reference refer to like parts throughout the several figures.

Referring to Fig. 1, A is a bell-mouth at the cashier's or central station connected by a transmission tube B with the terminal C controlled by the ordinary delivery valve C' at the clerks or sub-station. D is a tube for the return of carriers from the sub-station to the central station and connects the terminal C with the terminal E at the central station controlled by the ordinary delivery valve E'. D' is a despatching inlet for the insertion of carriers into the tube D. F is a vacuum or supply pipe connecting the terminal E with the vacuum drum G and adapted to exhaust the air from the tubes B and D. 1 is a casing in which is mounted one end of the transmission tube B and the bell-mouth or air-inlet A adapted to communicate with said tube B. 2 is a normally closed air-valve pivoted at 3 within the casing 1 and adapted to control the admission of air into bell-

mouth A and tube B. Mounted in the lower part of the casing 1 is a cylinder 4 in which is mounted a piston 5 carrying a piston rod 6 adapted to operate the valve 2 through link 8. The lower part of the cylinder 4 beneath the piston 5 communicates with the atmosphere through a port 10 controlled by an adjustable timing screw 11 held in adjustment by a check-nut 12. At one side of cylinder 4 is a valve chamber 13 having mounted therein a spool valve 17 having an outer peripheral chamber 18, said chamber being in continuous communication with the pipe 16 which connects one side of the valve chamber 13 with the suction tube F. The chamber 13 above the valve 17 communicates with the vacuum in tube B and beneath said valve 17 is open to the atmosphere. Connecting the valve chamber 13 with the lower part of the cylinder 4 below the piston 5 is a port 14 and connecting the upper part of the cylinder above the piston 5 with the valve chamber 13 is a port 15. The peripheral chamber 18 is adapted to communicate with either port 14 or port 15 independently thereby permitting a vacuum in the cylinder 4 either above or below the piston 5. The movement of the valve 17 downward is limited by a stop 21. A pilot valve 22 is pivoted at 23 to the bell-mouth A and adapted to be operated by a trip 25 projecting into the bell-mouth to admit air through pipe 24 into the chamber 13. 26 is a spring normally holding valve 22 closed. 31 is a check lever pivoted at 27 to casing 1 and carrying on its outer end a stop 28 normally projecting into the path of carriers inserted into bell-mouth A. A spring 32 is adapted to apply tension to arm 29 to hold said lever 31 in normal position against a stop 30.

In the modification Fig. 4, 28^a is a check or guard attached to the valve 2 and is adapted to straddle the rod 6 when valve 2 is open. This form may be used in place of the check lever 31 to hold the carrier until the valve 2 is fully open.

In despatching a carrier from the central station to the sub-station, the operator inserts a carrier into the bell-mouth A (see Figs. 2 and 4) which strikes the trip 25 opening the pilot valve 22 causing an inrush of air through pipe 24 breaking the vacuum in the chamber 13 above the spool valve 17 which causes said valve to drop by gravity, until the port 15 is in communication with the

chamber 13 allowing the air to enter above the piston 5 and the vacuum beneath the piston through chamber 18 and port 14 causes the piston 5 to be drawn down opening valve 2. In the meantime the stop 28 engages and holds the carrier in check until the valve 2 when almost entirely opened has engaged the lever 31 withdrawing the stop 28 permitting the carrier to be driven through the transmission tube B by the air entering the bell-mouth A (see Fig. 3). The trip 25 being released immediately after the passage of the carrier closes the valve 22 when the partial vacuum in the tube B acting through chamber 13 causes the spool valve to rise placing the port 15 in communication with chamber and closing port 14. The vacuum now acting through port 15 raises the piston 5 gradually closing valve 2 and by the time the carrier has discharged at the sub-station the valve 2 will be entirely closed cutting off the admission of air to the bell-mouth A. The closing of valve 2 is timed by the air entering the restricted port 10 beneath piston 5. In the meantime the lever 31 has been released and resumes normal position by action of spring 31.

In the modification (Fig. 4) the carrier is held in check by the guard 28^a until the valve 2 has fully opened when the carrier is released and enters the tube B. In despatching a carrier from the sub-station to the central station the opening of inlet valve D' breaks the vacuum in the tube B and chamber 13 dropping spool valve 17, the operation of the remaining mechanism opening air-valve 2, being identical with that heretofore described.

Having thus described 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, a tube for the transmission of carriers, a valve located in said tube and adapted to open to permit the passage of a carrier, and mechanism normally adapted to prevent the contact of a carrier with said valve and arranged to be operated by said valve to permit the passage of the carrier when said valve is fully opened.

2. In a pneumatic despatch tube apparatus, a tube for the transmission of carriers, an air valve located in said tube and adapted to open to permit the passage of carriers and admit air for driving said carriers, means normally adapted to hold carriers out of contact with said valve and to be automatically operated to release and permit the passage of said carriers when said valve has moved out of the path thereof.

3. In a pneumatic despatch tube apparatus, a tube for the transmission of carriers, a normally closed valve located in said tube and adapted to be opened to permit the passage of a carrier and admit air to said tube for driving said carrier, and means normally holding said carrier in check and adapted to be operated by said valve to release and permit the passage of said carrier when said valve is moved out of the path of travel thereof.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this eighteenth day of September A. D. 1907.

LOUIS G. BARTLETT.

Witnesses:

A. L. MESSER,
N. E. REMICK.