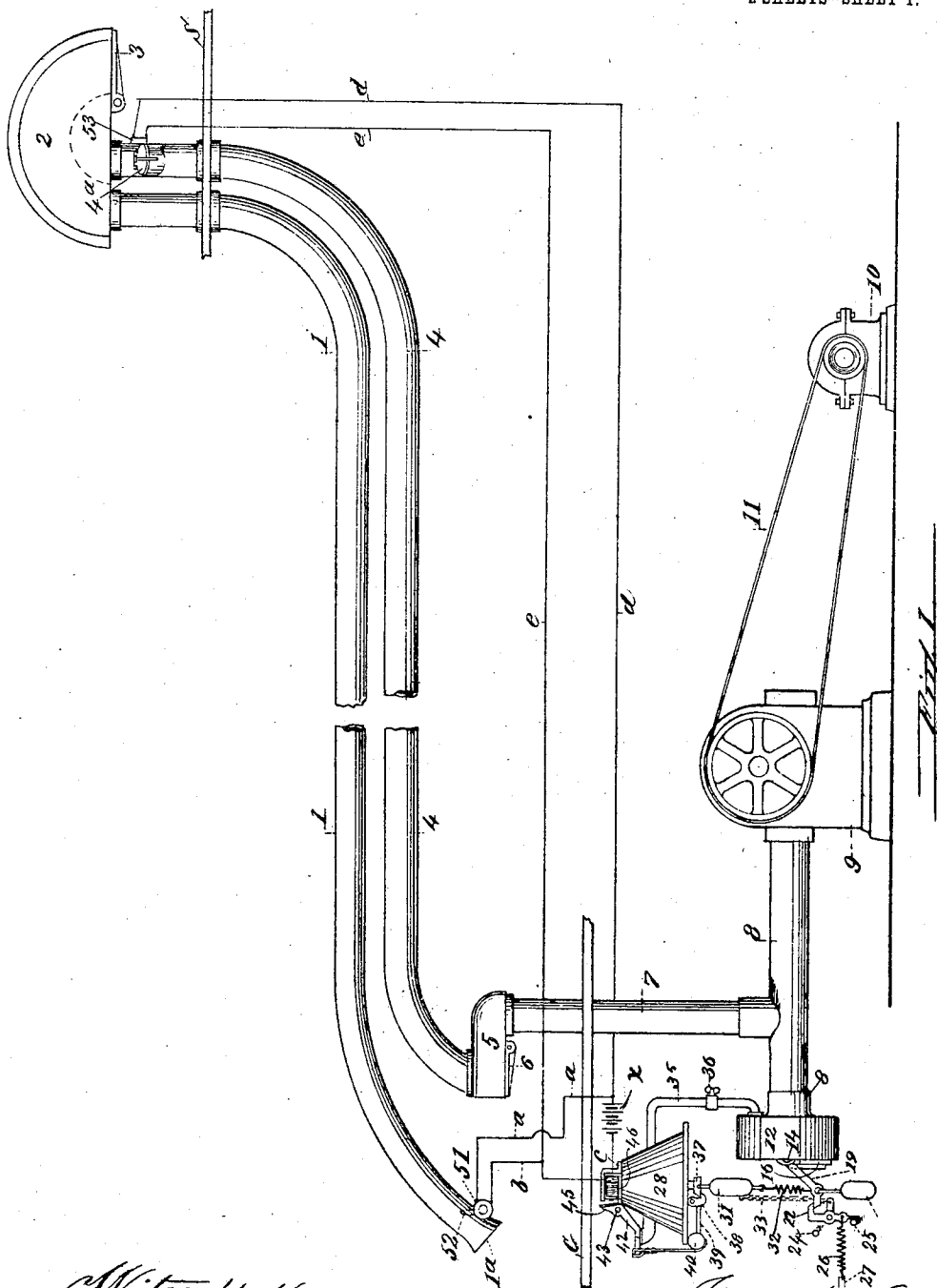


J. G. MACLAREN.
PNEUMATIC DESPATCH TUBE APPARATUS.
APPLICATION FILED NOV. 12, 1908.

968,581.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.



Witnesses:
A. L. Mearns
L. G. Bantlett

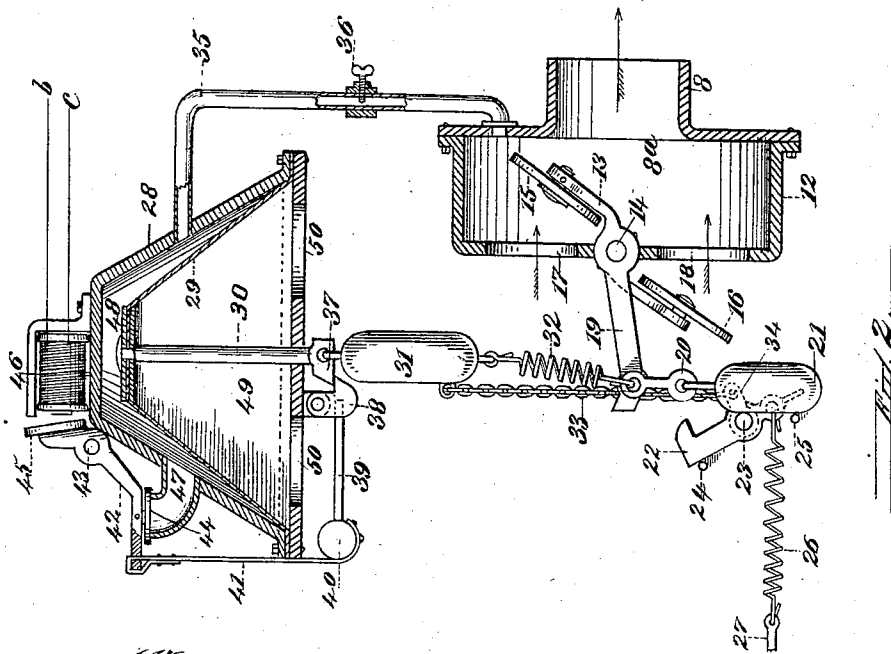
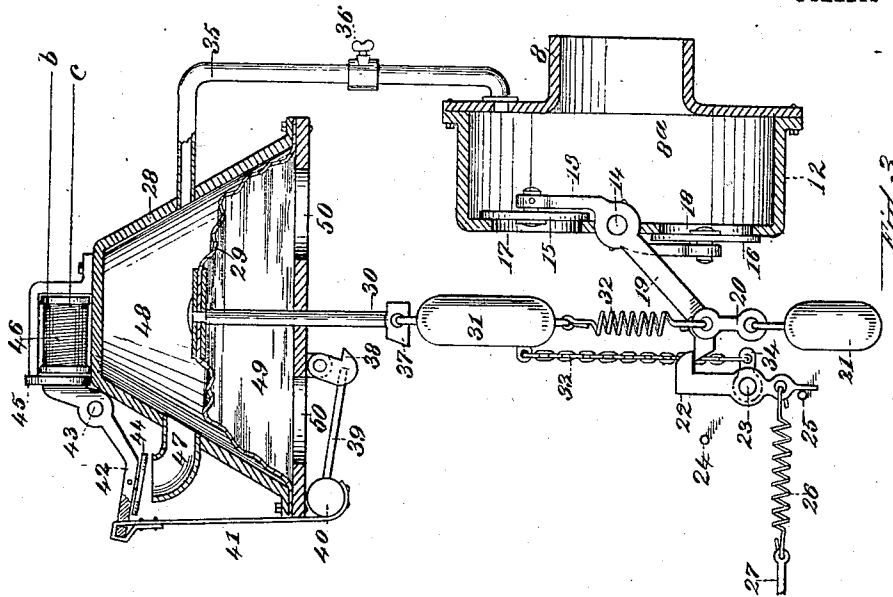
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2 SHEETS-SHEET 2.



Witnesses:
A. L. Messer
L. G. Bartlett

Inventor:
James G. McLaren
By J. H. Rush
Att'y

UNITED STATES PATENT OFFICE.

JAMES G. MACLAREN, OF HARRISON, NEW YORK, ASSIGNOR TO LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PNEUMATIC-DESPATCH-TUBE APPARATUS.

968,581.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed November 12, 1908. Serial No. 462,188.

To all whom it may concern:

Be it known that I, JAMES G. MACLAREN, of Harrison, in the county of Westchester and State of New York, 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 the blower or pump connected therewith operates normally unloaded, the current of air being switched through the transmission tubes upon the despatching of a carrier and being timed to short circuit to the blower upon the delivery of carriers.

In the accompanying drawings is illustrated a form of construction embodying my invention in which;

Figure 1, is a diagram of pneumatic tube system with the device in operative connection therewith. Fig. 2 is an enlarged sectional elevation showing the normal position of the controlling mechanism with the air short circuited to the blower. Fig. 3 is a similar view to Fig. 2 showing the position of the parts when a carrier is in transit and the air current is switched through the transmission tube.

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

Referring to Fig. 1, 1 is a tube for the transmission of carriers connecting the central station C with the terminal 2 controlled by the usual delivery valve 3 at the sub-station S. 4 is return transmission tube connecting terminal 2 at the sub-station with the terminal 5 controlled by the usual delivery valve 6 at the central station C. 7 is an air tube connecting the terminal 5 with the air conduit 8 which is connected at one end with the blower or exhaustor 9 driven at a constant speed by an electric motor 10 through belt 11. The opposite end of the conduit 8 is connected with casing 12 having chamber 8^a therein adapted to communicate with the atmosphere through ports or air inlets 17 and 18 which are controlled by balance valves 15 and 16 respectively pivoted at 14 to said casing 12. 35 is a passage connecting the chamber 8^a with the chamber 48 located above the diaphragm 29 mounted in the casing 28, said passage being regulated by an adjustable timing valve 36 and adapt-

ed to normally exhaust the air above diaphragm 29. 47 is an air inlet to the chamber 48 and is normally closed by the valve 44 secured to one end of the bell crank lever 42 pivoted at 43 to the upper part of the casing 28. 45 is an armature secured to the opposite end of said lever 42 and adapted to be operated by the electromagnet 46 suitably mounted on the top of said casing to open the valve 44. 38 is a latch pivoted to the bottom of casing 28 and having the arm 39 fixed thereto carrying the weight 40 connected with lever 42 by means of the strap 41. This latch 38 is normally adapted to retain the catch 37 on the lower part of the diaphragm stem 30. The chamber 49 beneath diaphragm 29 is open to the atmosphere through ports 50. 31 is a weight hung from the catch 37 and connected by means of the spring 32 with the arm 19 which is connected to operate valves 15 and 16. 21 is a similar weight suspended by a link 20 from the outer end of said arm 19. The outer end of the arm 19 is adapted to engage the latch 22 pivoted at 23 and normally held in the position shown in Fig. 3 against the suitable stop 25 by means of the spring 26 fixed at one end to the eye 27. 34 is a finger secured to the latch 22 and connected with the weight 31 by a chain 33 which permits an extended movement of said weight before operating the latch 22. The magnet 46 is in circuit with the switch 51 located at the bell mouth 1^a through wires *c*, battery *x* and wires *a* and *b*. Said magnet is also in circuit with the normally open switch 53 located at sub-station S through wire *c* battery 8 wire *d* and wire *e*. 52 is a trip projecting into the bell-mouth 1^a and adapted to be operated by the insertion of a carrier to close the switch 51. The switch 53 is closed by the opening of the carrier inlet 4^a at sub-station S.

The operation is as follows: The blower or exhaustor 9 is driven at a constant speed and the air is normally short circuited to the blower through inlets 17 and 18 and conduit 8 allowing the same to operate unloaded, see Fig. 2. In despatching a carrier from the central station C to the sub-station S the carrier is inserted in the bell-mouth 1^a where it engages a trip 52 closing switch 51 and through the circuit heretofore described energizes the magnet 46 which attracts

armature 45 opening valve 44 admitting sufficient air through inlet 47 to destroy the vacuum in chamber 48. Simultaneous with the opening of the valve 44 the strap 41 lifts weight 40 throwing latch 38 out of engagement with catch 37, when the weights 31 and 21 operate through arm 19 to close the valves 15 and 16. The outer end of arm 19 now engages and is retained by latch 22 holding valves 15 and 16 closed and cutting off the flow of air therethrough. The air current is now switched through tubes 1, 4, and 7 and the air entering the bell-mouth 1^a drives the carrier toward the sub-station S. Immediately upon passing the trip 52 the same is released opening switch 51 and de-energizing magnet 46 when the weight 40 operates to close the valve 44. The air in chamber 48 is now gradually exhausted through passage 35 being timed by valve 36 causing the diaphragm 29 to gradually lift the weight 31, see Fig. 3, expanding the spring 32 so that by the time said diaphragm has reached the position shown in Fig. 2 and the slack in chain 33 has been taken up, latch 22 is tripped releasing the arm 19 which together with weight 21 is lifted by spring 32 opening valves 15 and 16 and short circuiting the current of air to blower 9. This operation is regulated and timed by valve 36 so that the valves 15 and 16 will open when the carrier has delivered at the sub-station S. In despatching a carrier from sub-station S to the central station C the operator opens the inlet 4^a and inserts a carrier into the tube 4 closing the valve 4^a. The opening of the valve 4^a momentarily closes the circuit and energizes the magnet 46 which operates in the manner heretofore described to destroy the vacuum in the chamber 48 and release the weight 31 thereby closing valves 15 and 16 and switching the flow of air through bell-mouth 1^a and tubes 1, 4 and 7 causing the carrier to be driven through tube 4 toward sub-station C. By the time the carrier has delivered from terminal 5 at central station C the vacuum has operated to raise diaphragm 29 and trip latch 22 opening the valves 15 and 16, short circuiting the flow

of air to the blower thereby relieving the load upon the same.

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 blower or pump, means for driving said blower or pump, a connection between said blower or pump and said transmission tube provided with an air inlet, a valve balanced against atmospheric pressure and controlling said inlet and normally open, means tending to move said valve to its closed position, means for locking said valve in its open position, and means adapted to be operated upon the despatching of the carrier to release said locking means to permit the closure of said valve to create a current of air in said transmission tube for driving carriers.

2. In a pneumatic despatch tube apparatus, a tube for the transmission of carriers, a blower or pump, means for driving said blower or pump, a connection between said blower or pump and said transmission tube provided with an air inlet, a valve balanced against atmospheric pressure and controlling said inlet and normally open, means tending to move said valve to its closed position, means for locking said valve in its open position, means adapted to be operated upon the despatching of the carrier to release said locking means to permit the closure of said valve to create a current of air in said transmission tube for driving carriers, and means for timing the opening of said valve whereby said flow of air is short circuited to the atmosphere.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this seventh day of November A. D. 1908.

JAMES G. MACLAREN.

Witnesses:

ELSIE MACLAREN,
ARTHUR C. MÜHLHAHN.