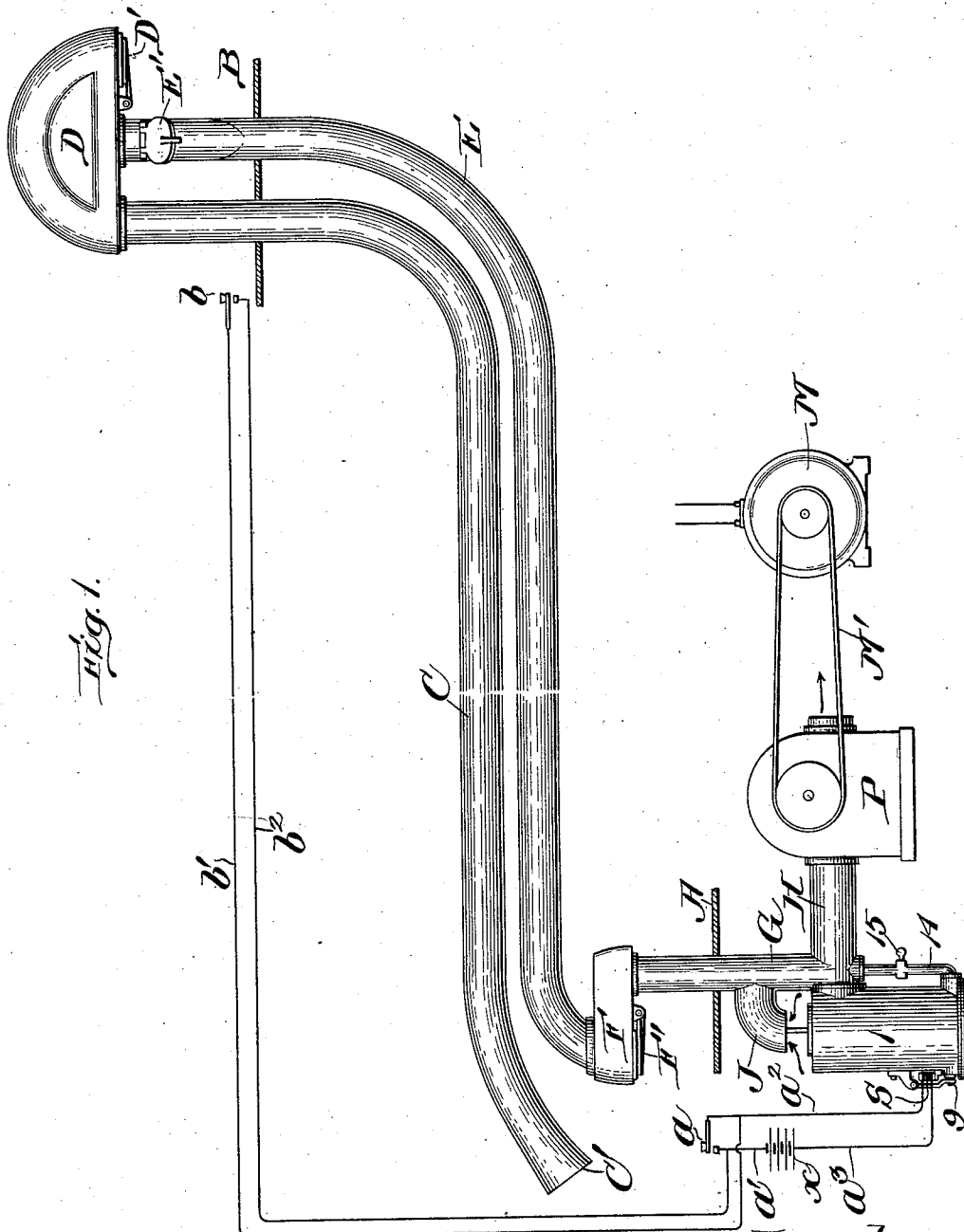


J. G. MACLAREN.
 BLOWER UNLOADING DEVICE.
 APPLICATION FILED JAN. 13, 1908.

Patented Dec. 24, 1912.

2 SHEETS—SHEET 1.

1,047,959.



Witnesses:

L. G. Bartlett
 A. L. Messer

Inventor:

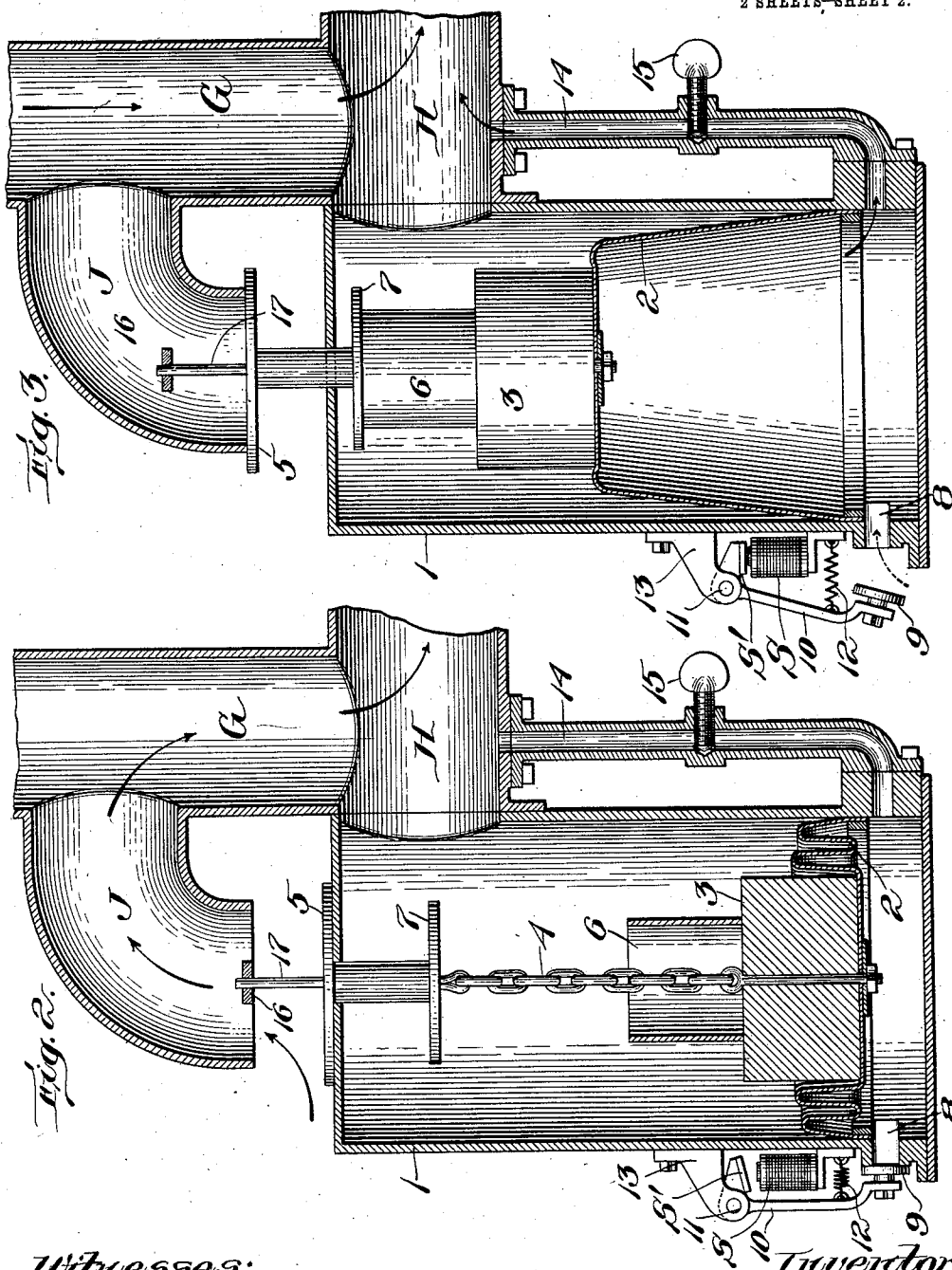
James G. McLaren
 by J. R. [Signature]
 Atty.

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Inventor:

James G. McLaren
 by J. S. Rush
 Atty.

UNITED STATES PATENT OFFICE.

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

BLOWER-UNLOADING DEVICE.

1,047,959.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed January 13, 1908. Serial No. 410,572.

To all whom it may concern:

Be it known that I, JAMES G. MACLAREN, of Weehawken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Blower-Unloading Devices, of which the following is a specification.

My invention relates to improvements in blower unloading devices and is particularly adapted for use in connection with pneumatic despatch tube systems.

The object of this invention is to control a blower driven at a constant speed and normally communicating with the atmosphere to throw the same into communication with the load and to automatically relieve the blower to the atmosphere when the load is removed.

Numerous other features of this invention are hereinafter described and particularly pointed out in the claims.

In the accompanying drawings illustrating a form of construction embodying my invention,—Figure 1 is a diagrammatic view of the device in operating connection with a pneumatic despatch tube system. Fig. 2 is an enlarged sectional elevation of a portion of the device showing the operating mechanism in normal position permitting the blower to run free. Fig. 3 is a similar view to Fig. 2 showing the mechanism in operating position switching the load upon the blower.

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

Referring to Fig. 1, C represents a tube for the transmission of carriers connecting the station A with the ordinary discharge terminal D controlled by the usual valve D' at station B. E is a transmission tube for the return of carriers and connects the terminal D with the terminal F controlled by the usual valve F' at station A. G is a tube connecting the terminal F with the conduit or air supply pipe H which pipe is connected at one end with the cylinder 1 and at the opposite end with the vacuum connection of a blower P. M is an electric motor adapted to drive the blower P at a constant speed through a belt M'. J is a branch tube or air inlet connecting with tube G adjacent conduit H. Secured near the lower head of cylinder 1 is a diaphragm 2, to which diaphragm is centrally secured a weight 3 which in turn is connected by a chain 4

with a valve 5 reciprocally mounted in the upper head of cylinder 1. 6 is a tubular member mounted on the upper end of weight 3 and adapted, when weight 3 is lifted by diaphragm 2, to engage the collar 7 attached to valve 5 to lift said valve and close the end of tube J. 8 is a port or air inlet communicating with the lower part of cylinder 1 beneath diaphragm 2 and normally closed by a valve 9 mounted on one end of bell-crank lever 10 pivoted at 11 to the support 13 on cylinder 1. 12 is a spring connected with the lever 10 and adapted to hold the valve 9 normally closed. S is a solenoid magnet adapted to be energized to operate armature S' on lever 10 to open valve 9. The normally open switches a and b located at stations A and B respectively are in circuit with and adapted to energize the magnet S. The circuit controlled by switch a is as follows:—from battery X through wire a', switch a, wire a'', magnet S, and back to battery X through wire a'''. Switch B is in multiple with circuit of switch a through wires b' and b''. 14 is a by-pass connecting the conduit H with the lower part of cylinder 1 and regulated by a timing valve 15 and adapted to normally balance the vacuum on the upper and lower sides of diaphragm 2. 16 is a wind gate or air resistance mounted on the stem 17 carried on valve 5.

The operation is as follows:—To despatch a carrier from station A to station B, with the parts in normal position and the blower taking air through tubes J, G and conduit H as shown by arrows Figs. 1 and 2, the operator closes the switch a and inserts the carrier into the bellmouth C'. The closing of the switch a energizes the magnet S and through armature S' and lever 10 opens the valve 9 admitting air and destroying the vacuum in the cylinder 1 beneath the diaphragm 2. The vacuum in cylinder 1 above diaphragm 2 being maintained sufficiently by the action of resistance 16, the air entering the cylinder 1 beneath the diaphragm 2 moves said diaphragm upward together with weight 3 until the tubular member 6 engages the collar 7 and moves valve 5 to a seat over the mouth of tube J and cutting off the flow of air through said tube. (See Fig. 3.) The air now enters the bellmouth C' and drives the carrier through tube C toward station B. The operator now re-

leases the switch *a* breaking the circuit, de-energizing the magnet *S* and permitting the valve 9 to be closed by spring 12 cutting off the admission of air beneath the diaphragm

2. The air is now gradually exhausted from beneath diaphragm 2 allowing said diaphragm and weight 3 to gradually descend until, when the slack in chain 4 is taken up, the valve 5 is pulled from its seat and the air current short-circuited through tube *J* unloading the blower *P*. In the meantime the carrier has delivered at station *B* and the interval between the loading and unloading of the blower *P* necessary for the proper transmission and delivery of the carrier is timed by the valve 15. In despatching a carrier from station *B* to station *A* the operator inserts the carrier into the inlet *E'* and closes the switch *b* energizing the magnet *S* admitting air to the cylinder 1 causing the valve 5 to close the opening of tube *J*. The inlet *E'* is now closed and the air entering the bellmouth *C'* drives the carrier through tube *E* to station *A* the valve 5 opening and switching the air-current as heretofore described when the carrier has delivered at station *A*.

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 an apparatus of the character described, a tube for the transmission of carriers, a blower or pump adapted to be operated at a constant speed, a connection between said tube and said blower or pump and provided with an air-inlet, a valve adapted to control said air inlet and normally permitting the passage of air through said inlet to said blower, a cylinder connected with said connection, a piston having a vacuum above and below maintained by said pump and mounted in said cylinder and connected with said valve and adapted to hold said valve normally open, the said cylinder having a port adapted to admit air to said cylinder beneath said piston, a valve normally closing said port, and means located along said transit tube and adapted to operate and open said valve and destroy the vacuum beneath said piston whereby said air-inlet valve is closed and a current of air is established through said connection and said transit tube to permit the transmission of carriers.

2. In an apparatus of the character described, a tube for the transmission of carriers, a blower or pump adapted to be oper-

ated at a constant speed, a connection between said tube and said blower or pump and provided with an air-inlet, a valve adapted to control said air-inlet and normally permitting the passage of air through said inlet to said blower, a cylinder connected with said connection, a piston having a vacuum above and below maintained by said pump and mounted in said cylinder and connected with said valve and adapted to hold said valve normally open, the said cylinder having a port adapted to admit air to said cylinder beneath said piston, a valve normally closing said port, means located along said transit tube and adapted to operate and open said valve and destroy the vacuum beneath said piston whereby said air-inlet valve is closed and a current of air is established through said connection and said transit tube to permit the transmission of carriers, and means normally urging the opening of said air inlet valve and short circuiting the current of air to said blower.

3. In an apparatus of the character described, a tube for the transmission of carriers, a blower or pump adapted to be operated at a constant speed, a connection between said tube and said blower or pump and provided with an air-inlet, a valve adapted to control said air-inlet and normally permitting the passage of air through said inlet to said blower, a cylinder connected with said connection, a piston having a vacuum above and below maintained by said pump and mounted in said cylinder and connected with said valve and adapted to hold said valve normally open, the said cylinder having a port adapted to admit air to said cylinder beneath said piston, a valve normally closing said port, means located along said transit tube and adapted to operate and open said valve and destroy the vacuum beneath said piston whereby said air inlet valve is closed and a current of air is established through said connection and said transit tube to permit the transmission of carriers, means normally urging the opening of said air inlet valve and short circuiting the current of air to said blower, and means for timing the opening of said air-inlet valve.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 31st day of December A. D. 1907.

J. G. MACLAREN.

Witnesses:

WM. HEPPERLE,
ELSIE MACLAREN.