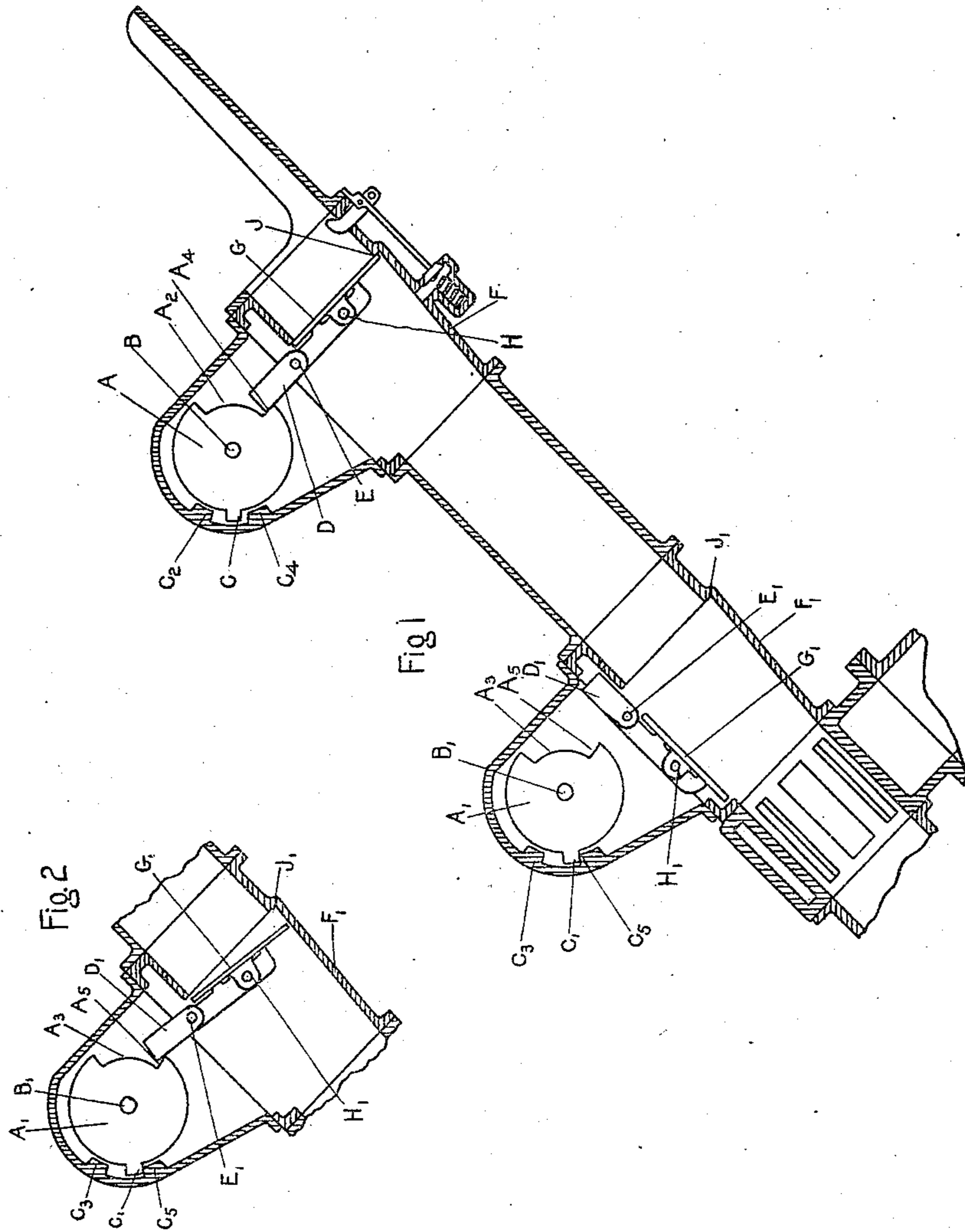


C. F. STODDARD.
PNEUMATIC DESPATCH TUBE APPARATUS.
APPLICATION FILED JULY 25, 1908.

944,469.

Patented Dec. 28, 1909.



WITNESSES

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CHARLES F. STODDARD, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN PNEUMATIC SERVICE COMPANY, OF DOVER, DELAWARE, A CORPORATION OF DELAWARE.

PNEUMATIC-DESPATCH-TUBE APPARATUS.

944,469.

Specification of Letters Patent.

Patented Dec. 28, 1909.

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To all whom it may concern:

Be it known that I, CHARLES F. STODDARD, of Dorchester, Boston, in the county of Suffolk 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 apparatus and especially to a sending terminal by means of which carriers are inserted into the tube.

In sending terminals such as described in my Patent No. 742,513 issued Oct. 27, 1903 the gates or valves which act as a lock and keeps the pressure in the tube from escaping when a carrier is inserted are constructed to open by the weight of a carrier and are counter-balanced in such a way as to close by themselves after a carrier has passed from under them. In closing these valves attain considerable momentum and are liable to "banging" against their seats. This "banging" is the cause of noise and also wear on the face of the valve and its seat.

The principal object of my invention is a means of stopping this "banging" and I accomplish it by transferring, as it were, the momentum or the valve just before it reaches its seat to a secondary moving member. Thereby arresting the motion of the valve just before it reaches its seat and causing it to close gently.

In the accompanying drawings which illustrate a construction embodying my invention, Figure 1 is a longitudinal section of a complete transmitting terminal showing the "inertia stops" in two different positions. Fig. 2 is a longitudinal section of the lower valve and casing showing the valve in a third and intermediate position.

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

The operation of the transmitting terminal of the type here shown is fully described in Patent No. 742,513 and as my present invention is applicable to any type of transmitter equipped with self-closing valves I will only explain the action of the valves and inertia stops.

The "inertia stops" A A' swing very freely on the shafts B B', their motion being limited by the lugs C C', engaging

either the shoulders C² C⁴ or C³ C⁵. The centers of gravity of the "inertia stops" A A' are very slightly to the rear of their centers, so that the slight excess of weight on this side tends to keep them in the position shown in Fig. 2 with the lug C' resting against the shoulder C⁵. Part of the forward sides of the "inertia stops" A A' are cut away as shown at A² A³ in such a way as to form respectively the shoulders A⁴ A⁵ which are engaged by the counter-balance arms D D'. The shafts E E' are secured in the valve casings F F' and upon them swing freely the counter-balanced arms D D' to which are fastened the valves G G' by means of the pins H H'. The valves G G' close against their seats J J'. The valves and counter-balanced arms are constructed so that their centers of gravity are slightly to the rear of the shafts E E' so that they tend to assume the position of valve G, Fig. 1. The over-balancing of the valves G G' and the counter-balanced arms D D' is slightly greater than that of the "inertia stops" A A' so that when the moving members come to rest they will be in the position of the set shown in Fig. 1 in which the valve G is closed.

The operation is as follows: Normally the parts are in the positions shown in Fig. 1, valve G with the lug C raised slightly off the shoulder C⁴. When a carrier opens a valve to pass under it, the parts assume the positions shown in Fig. 1, valve G' the "inertia stop" A' swinging around so that the lug C' rests on the shoulder C⁵. After the carrier passes from under the valve the valve starts to swing closed but when it reaches the position shown in Fig. 2 the counter-balanced arm D' engages the shoulder A⁵ of the "inertia stop" A' imparting to the "inertia stop" A' its momentum and thereby swinging the "inertia stop" A' around on the shaft B' so that the lug C' moves in the direction of the shoulder C³ and if enough motion is imparted to the "inertia stop" A' the lug C' will engage the shoulder C³ and its motion will be stopped and it will swing back toward its first position. After the shoulder A⁵ is struck by the counter-balance arm D', and moved away, the valve G' closes gently by its own weight. The "inertia stop" then swings back and in the case of the lower valve "bounces" once

or twice on the counter-balanced arm and then comes to rest in the position shown in the upper valve Fig. 1. In the case of the upper valve when the valve G closes the pressure immediately piles up behind it and keeps the valve from moving open when struck by the rebound of the "inertia stop" and there is no "bouncing."

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 pneumatic despatch tube apparatus, a transmission tube, a sender communicating with said transmission tube, a valve operating to close said sender to the atmosphere, and an inertia stop mounted to oscillate independently of said valve and operating to engage said valve to check the movement of the same.

2. In pneumatic despatch tube apparatus, a transmission tube, a sender communicating with said transmission tube, a valve operating to close said sender to the atmosphere, an inertia stop mounted to oscillate independently of said valve and operating to engage said valve to check the movement

of the same, and means for limiting the oscillations of said inertia stop.

3. In pneumatic despatch tube apparatus, a transmission tube, a sender communicating with said transmission tube, a valve operating to close said sender to the atmosphere, and an eccentrically weighted inertia stop mounted to oscillate independently of said valve and operating to engage said valve to check the movement of the same.

4. In pneumatic despatch tube apparatus, a transmission tube, a sender communicating with said transmission tube, a valve operating to close said sender to the atmosphere, an eccentrically weighted inertia stop mounted to oscillate independently of said valve and operating to engage said valve to check the movement of the same, and means for limiting the oscillations of said inertia stop.

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

CHARLES F. STODDARD.

Witnesses:

A. PARLETT LLOYD,
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