No. 742,390. PATENTED OCT. 27, 1903.

C. H. BURTON.

PNEUMATIC CARRIER.

APPLICATION FILED NOV. 7, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

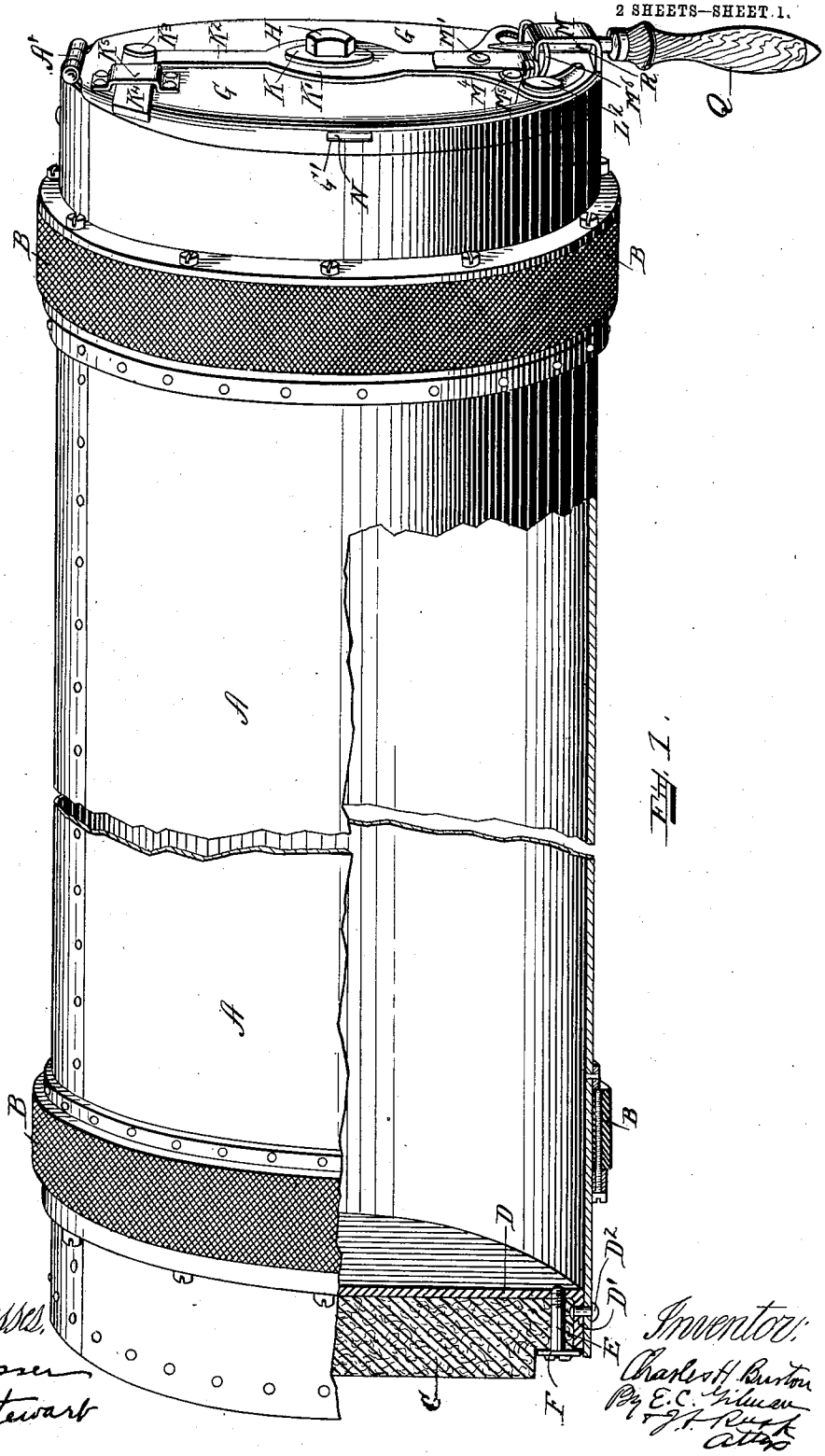

Fig. 1.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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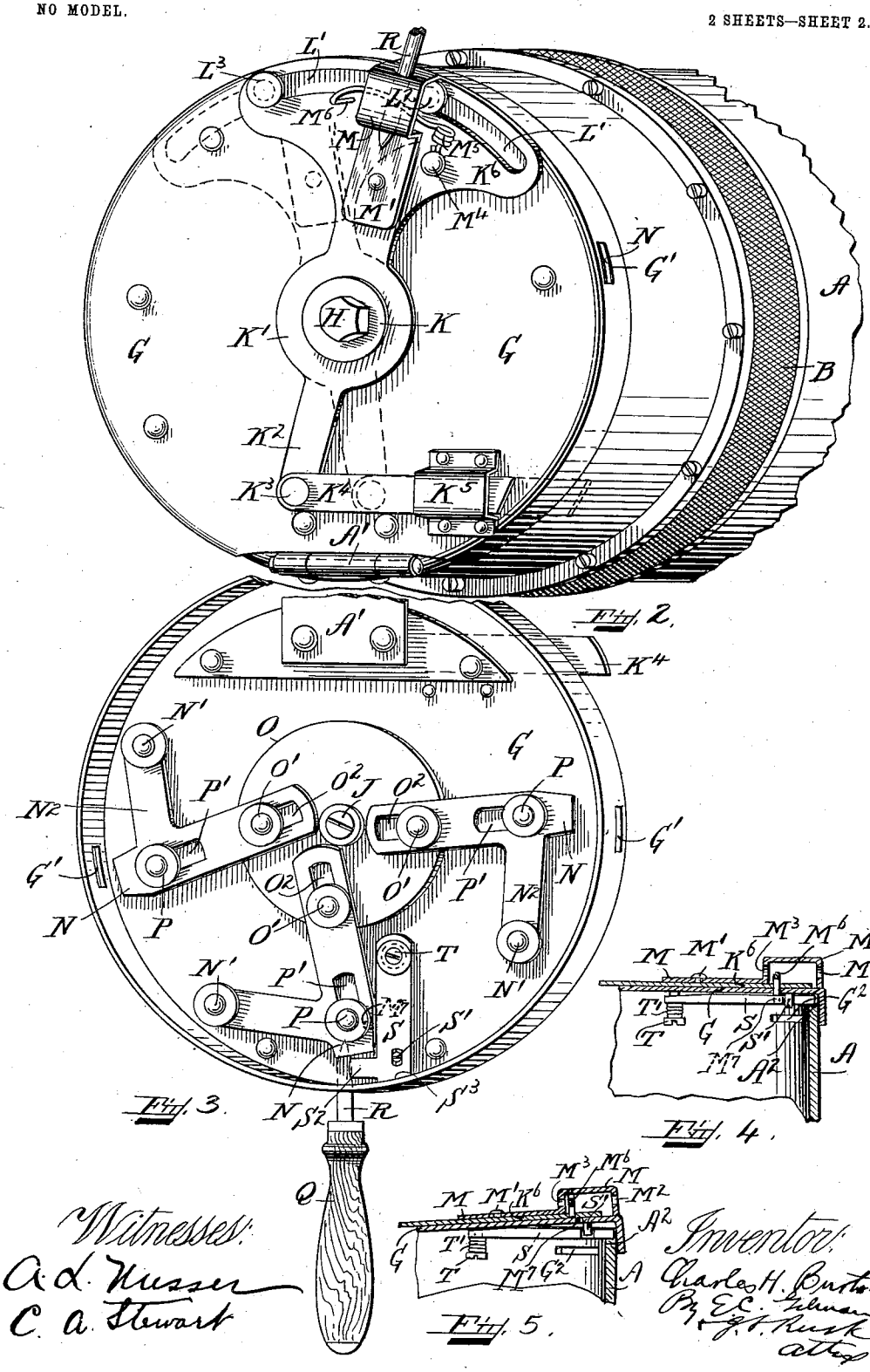

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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No. 742,390. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

CHARLES H. BURTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO AMERICAN PNEUMATIC SERVICE COMPANY, OF DOVER, DELAWARE, A CORPORATION OF DELAWARE.

PNEUMATIC CARRIER.

SPECIFICATION forming part of Letters Patent No. 742,390, dated October 27, 1903.

Application filed November 7, 1902. Serial No. 130,367. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BURTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic Carriers, of which the following is a specification.

My invention relates to new and useful improvements in carriers for pneumatic-despatch-tube systems, and especially to means for preventing the operation of the locking mechanism excepting when the cap is in proper locking position on the shell, and also relates to means whereby the carrier cannot be inserted into the tube until the cap is locked to the shell of the carrier.

My invention further relates to means for preventing the movement of the locking mechanism after the cap is locked to the carrier for transmission in the pneumatic tube.

My invention consists of certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a side elevation in perspective and partly in section of a pneumatic carrier embodying my invention, part of the carrier-shell being broken away, as shown. Fig. 2 is a perspective view showing the rear end of the carrier with the exterior mechanism for operating the locking mechanism. Fig. 3 is an elevation of the inside of the cap, showing the locking mechanism. Fig. 4 is a detail view in section with the cover closed and hereinafter described. Fig. 5 is a detail view in section showing the cover-closing and hereinafter described.

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

A represents the shell of the carrier, to which is hinged at A′ the cap G at the rear end, and on the front end is a buffer-head C, of any suitable elastic material, located within the receptacle D, which is secured to the shell A by rivets D^2 passing through said shell and the flange D′ of said receptacle. The outer end of said buffer-head C is cut away to receive the ring F, which is secured in place by the bolts E, secured at their inner ends to the receptacle D, as shown in Fig. 1, thus holding the buffer-head securely in place. Between the front and rear end of the carrier are located the usual contact-rings B, of any desired material. The shaft J, which passes through the cap G, has on its exterior the nut H, and between said nut and the outside of the shell G is located the metallic washer K, resting on the circular disk K′, having an arm K^2, to which is pivoted at K^3 the finger K^4, guided in its movements by the guide K^5, secured to the outside of the cap G. From said disk K′ extends diametrically opposite to the arm K^2 the plate K^6, forming the segment of a circle, and in the outer end of said plate K^6 are cut the slots L′, in which are located the studs L^2L^3, fixed fast to the cap G, and by means of said studs the to-and-fro movement of the plate K^6 is controlled. This plate K^6, with the disk K′ and arm K^2, forms a lever mounted concentrically on the cap G of the carrier, and by means of said lever the locking mechanism is operated either to lock the cap or unlock it to or from the shell of the carrier. Located within the cap G is the disk O on the shaft J and movable therewith, and extending from said disk O are fixed studs O′, located in the slots O^2 of the bolts N. In the forward ends of the bolts N are slots P′, in which are located the fixed studs P, extending from the inside of the cap, and by means of said studs O′ and P and the slots P′ and O^2 the to-and-fro movements of the bolts N are limited. The bolts N are provided with the arm N^2, pivoted on the fixed stud N′, extending from the inside of the cap, and said bolts move on said stud N′ as a center. For preventing the operation of the locking mechanism when the cap is unlocked or when not in its proper locking position on the shell of the carrier there is provided the finger S, mounted on the stud T, provided with the spring T′, which when the cover is open tends to throw the front end of said finger out into position in front of one of the bolts N, as shown in Fig. 3, whereby any attempted movement of the plate K^6 and its coöperating parts is prevent-

ed, as the bolt will strike against the projection S^2 and hold it against movement, whereby all the other bolts will be held against movement, as they all move as one by the movement of the disk O, and if one is locked the operation of the others is prevented. The up-and-down movement of the finger S is guided by the studs S′, extending inwardly from the inside of the cap. When the cap is open and the parts are in the position just described, and shown in full lines, Fig. 3, on the inside of the cap, and in dotted lines, Fig. 2, on the outside of the cap, the finger K^4 extends beyond the periphery of the shell G, and thus prevents the insertion of the carrier into the tube when the cap and shell are locked together. When the carrier is ready to be inserted for transit, the cap G is shut down, and the end S of the finger S^2 passes into the recess S^4, Fig. 5, on the shell of the carrier and strikes against the end of said recess, thereby moving the finger S^2 inwardly, Fig. 4, toward the inner face of the cap. When this is taking place, the operator inserts the pin R, having the handle Q, through the openings M^2 M^3 of the guide M, extending from the front portion of said plate K^6 and secured at its rear end by the bolt M′. The parts are then in the position shown in dotted lines, Fig. 2, and the operator pushes the handle Q^2 to the right, (looking at Fig. 2,) when the parts come into the position shown in full lines of said figure, the movement of the parts being limited by the studs L^2 L^3 in the slot L′. This movement of the parts withdraws the finger K^4 to within the periphery of the cap G, so that the carrier will not be prevented from insertion into the transit-tube. At the same time the bolts N will pass through the openings G^2 in the shell of the carrier into the openings G′ of the cap, and thereby lock the cap to the shell of the carrier, after which the pin R is withdrawn and the end M^6 of the spring M^5, secured by the bolt M^4 to the plate K^6, will pass down through said plate K^6 and the cap G through the opening M^7 in said cap and to one side of the finger S, dotted lines, Fig. 4, the hole M^7 being under the bolt N and to one side of the finger S, as shown in dotted lines, Fig. 3. By this arrangement the locking mechanism is securely locked against movement by the end M^6 of the spring M^5 after the pin R is removed and the carrier is ready for insertion into the tube. By means of this spring M^5 when the cap is locked to the shell of the carrier the plate K^6 is held against movement during transit of the carrier in the tube and the locking mechanism cannot be operated to unlock the cap. When the carrier reaches the opposite end of the line, the pin R is again inserted by the operator into the guide M and passes through the opening M^2 and under the spring M^5, lifting said spring, and out through the opening M^3, thereby unlocking the plate K^6 from its locked position to the cap G and allowing the movement of the plate K^6 to the left (looking at Fig. 2) and unlocking the cap, so that the contents can be removed.

As shown in Fig. 1, the cap is closed down onto the shell of the carrier and by moving the handle Q to the left the bolts may be operated to extend out through the openings G′ of the cap and lock said cap and the finger K^4 be withdrawn to within the periphery of the cap, or if the carrier has just been returned from the opposite end of the line and the bolts withdrawn the handle Q can be raised, so as to open the cap, as this figure represents either the position of the parts when the cap is about to be locked to the shell of the carrier or the position of the parts when the locking mechanism has been withdrawn and the cap is about to be opened.

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 carrier, a cap, locking mechanism for securing the cap to the shell of the carrier, means pivoted in the center of the cap and located on the exterior thereof for operating said locking mechanism to lock and unlock the cap, means arranged to engage with said locking mechanism and normally hold said locking mechanism against movement, means with which said holding means engages for releasing said locking mechanism upon the movement of said cap into locking position whereby said locking mechanism may be operated to lock the cap to the carrier, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

2. In a pneumatic-despatch-tube carrier, a cap, locking mechanism for securing the cap to the shell of the carrier, means pivoted in the center of the cap and located on the exterior thereof for operating said locking mechanism to lock and unlock the cap, means arranged to engage with said locking mechanism and normally hold said locking mechanism against movement, means with which said holding means engages for releasing said locking mechanism upon the movement of said cap into locking position whereby said locking mechanism may be operated to lock the cap to the carrier, yielding means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said yielding means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

3. In a pneumatic-despatch-tube carrier, a cap, locking mechanism for securing the cap

to the shell of the carrier, means pivoted in the center of the cap and located on the exterior thereof for operating said locking mechanism to lock and unlock the cap, a lock arranged to engage with said locking mechanism and normally hold said locking mechanism against movement, means with which said lock engages for releasing said locking mechanism upon the movement of said cap into locking position whereby said locking mechanism may be operated to lock the cap to the carrier, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

4. In a pneumatic-despatch-tube carrier, a cap, locking mechanism for securing said cap to the shell of the carrier, means pivoted in the center of the cap and located on the exterior thereof for operating said locking mechanism, means on said cap coöperating with said locking mechanism and arranged to project beyond the shell of the carrier and thereby prevent the insertion of the carrier into the despatch-tube until the cap is locked to the carrier, a lock arranged to engage with said locking mechanism and normally hold said locking mechanism and projecting means against movement, means on the shell of the carrier with which said catch engages upon the movement of the cap into locking position to release said locking mechanism from said lock whereby said locking mechanism may be operated and said projecting means may be withdrawn from beyond the shell of the carrier to permit the insertion of the carrier into the despatch-tube, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

5. In combination with a carrier-shell, a cap for closing the open end thereof, bolts for securing the cap to the shell, a lever pivoted in the center of said cap for operating said bolts, a lock arranged to normally prevent the motion of said bolts to lock the cap, means as the shell of the carrier for removing the lock and allowing the bolts to operate, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

6. In combination with a carrier-shell, a cap for closing the open end thereof, bolts for securing the cap to the shell, a lever pivoted in the center of said cap for operating said bolts, a lock arranged to normally prevent the motion of said bolts to lock the cap, means as the shell of the carrier for removing the lock and allowing the bolts to operate, means coöperating with said lever for preventing the insertion of the carrier until the cap is locked to the carrier, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

7. In a pneumatic-despatch-tube carrier, a cap, locking mechanism for securing the cap to the shell of the carrier, means pivoted on the exterior of said cap for operating said locking mechanism to lock and unlock said cap, means arranged to engage with said locking mechanism and normally hold the same against movement, means with which said holding means engages for releasing said locking mechanism upon the movement of said cap into locking position whereby said locking mechanism may be operated to lock the cap to the carrier, means for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said locking means for unlocking the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

8. In a pneumatic-despatch-tube carrier, a cap, locking mechanism for securing the cap to the shell of the carrier, means pivoted on the exterior of said cap for operating said locking mechanism to lock and unlock said cap, means arranged to engage with said locking mechanism and normally hold the same against movement, means as the shell of the carrier with which said holding means engages for releasing said locking mechanism upon the movement of said cap into locking position whereby said locking mechanism may be operated to lock the cap to the carrier, yielding means as a spring for locking said operating means of the said locking mechanism against movement when the cap is locked to the carrier, and a removable device adapted to engage said yielding means and unlock the operating mechanism whereby the same may be operated to unlock the cap from the shell of the carrier.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of November, A. D. 1902.

CHARLES H. BURTON.

Witnesses:
A. L. NUSSER,
C. A. STEWART.