April 14, 1942. R. C. RICHEY 2,279,953

TOBACCO PIPE CHARGER

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Fig. 1.

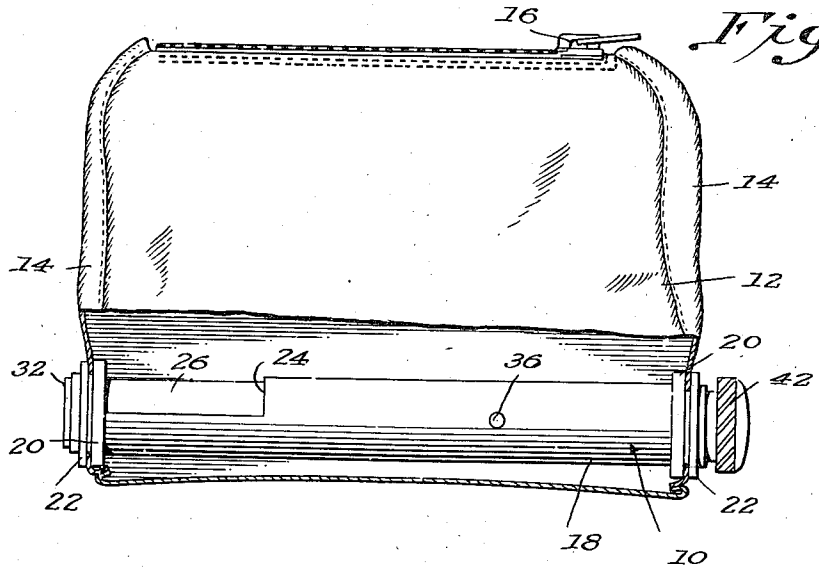


Fig. 3.

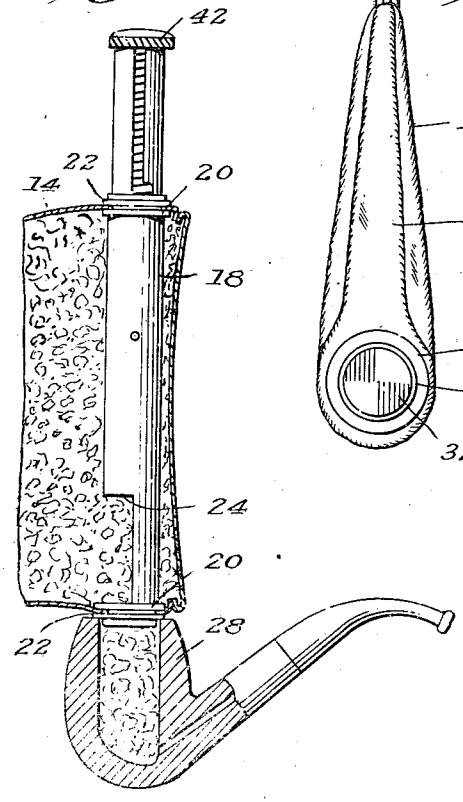
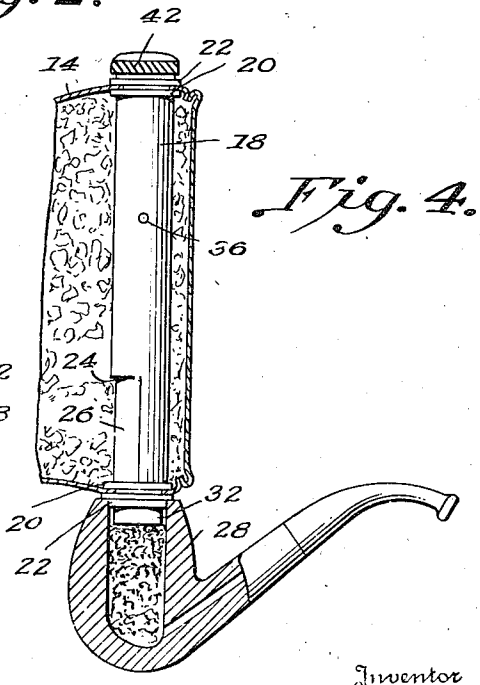


Fig. 2.

Fig. 4.



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Fig. 5.

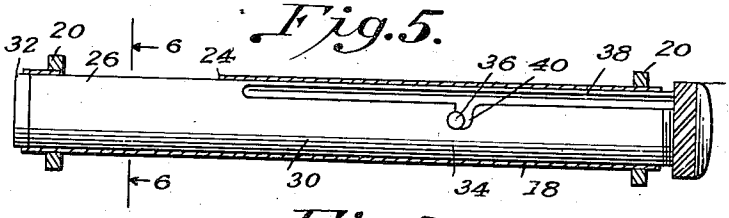


Fig. 6.

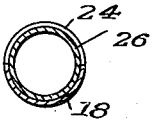


Fig. 7.

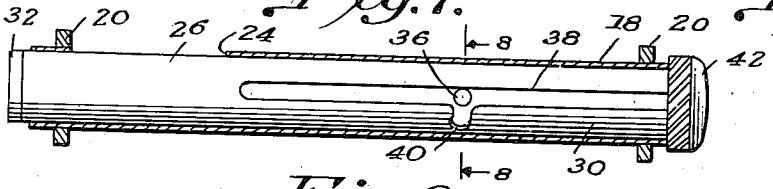


Fig. 8.

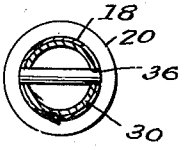


Fig. 9.

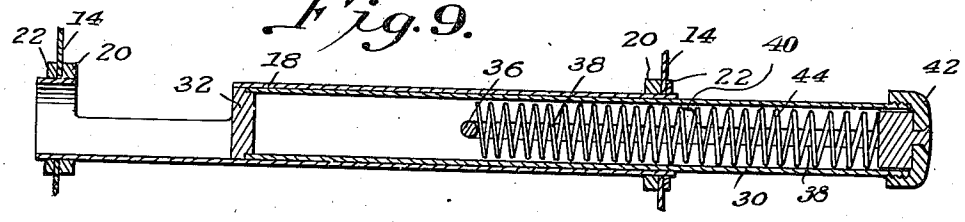


Fig. 10.

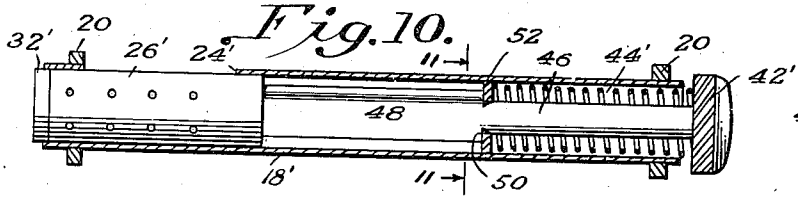


Fig. 11.

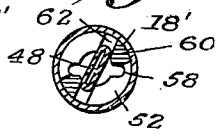


Fig. 12.

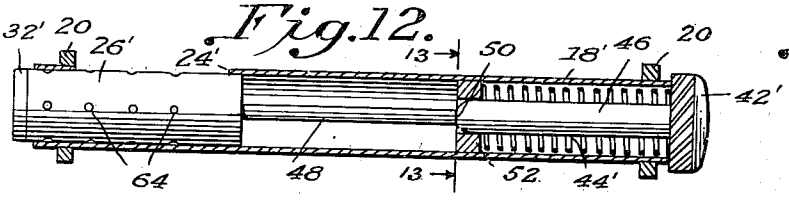


Fig. 13.

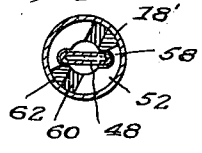


Fig. 14.

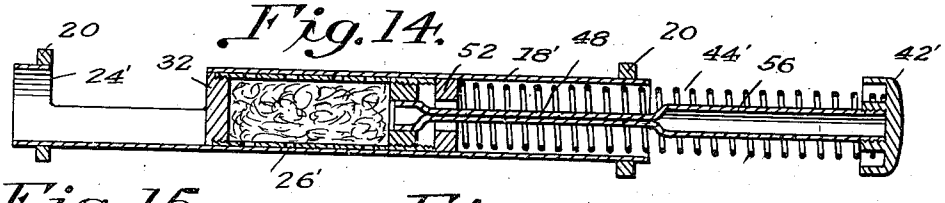


Fig. 15.

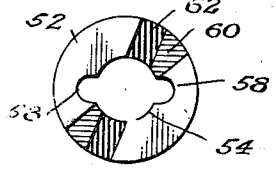
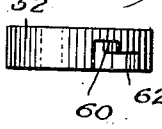


Fig. 16.



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UNITED STATES PATENT OFFICE

2,279,953

TOBACCO PIPE CHARGER

Robert C. Richey, Springfield, Ohio

Application December 11, 1939, Serial No. 308,710

9 Claims. (Cl. 131—3)

This invention relates to tobacco pipe chargers and its main object is the provision of a device for filling pipes with tobacco from a tobacco pouch or other receptacle.

Tobacco pipe chargers have been known heretofore, but in the main they have been bulky constructions which were difficult to manipulate even with full use of both hands. It is, therefore, a primary object of this invention to provide a compact device which may be carried on the user's person with no more difficulty than an ordinary tobacco pouch, and one which can be manipulated with great ease.

These objects are attained by the provision of a pipe charging mechanism which is adapted to be associated with a tobacco pouch of ordinary size and construction, and by the further provision of a spring-released operating mechanism which renders its manipulation with one hand possible.

Other objects and advantages of the invention will become apparent as the description thereof is read with reference to the embodiment thereof illustrated in the drawings forming a part of this disclosure, in which drawings like reference numerals indicate like parts, and in which:

Figure 1 illustrates a tobacco pouch having the pipe charger fixed therein, part of the pouch having been broken away to show the charger therein;

Figure 2 is a view of the pouch of Figure 1, looking toward the discharge end of the charger;

Figure 3 shows the charger in operative relation with a pipe during the step of filling tobacco into the pipe, the charging plunger being in elevated position;

Figure 4 is a view similar to Figure 3, but shows the charging plunger depressed to a position effective to compress the tobacco within the pipe;

Figure 5 is a longitudinal view of the charger partly in section and partly in full line, showing the same in latched position;

Figure 6 is a cross-sectional view on line 6—6 of Figure 5;

Figure 7 is a longitudinal view similar to that shown in Figure 5, but shows the charger after having been turned to an unlatched position;

Figure 8 is a cross-sectional view on line 8—8 of Figure 7;

Figure 9 is a longitudinal sectional view of the charger in its released position;

Figure 10 is a longitudinal view of a modified construction, partly in section and partly in full line, showing the charger in latched position;

Figure 11 is a cross-sectional view on line 11—11 of Figure 10;

Figure 12 is a longitudinal view similar to that shown in Figure 10, but shows the charger after having been turned to an unlatched position;

Figure 13 is a cross-sectional view on line 13—13 of Figure 12;

Figure 14 is a longitudinal sectional view of the modified construction showing the charger in its released position;

Figure 15 is a plan view of a latch nut forming a part of the charger illustrated in Figures 10–14; and

Figure 16 is an elevational view of the latch nut shown in Figure 15.

In Figures 1–4 of the drawings, is illustrated the manner in which the pipe charger may be fixed to a tobacco pouch adapted to be carried in a coat pocket. It is obvious, of course, that the charger may be positioned at the bottom of a rigid tobacco can or humidor adapted for desk or table use. Figures 5–9 of the drawings illustrate one embodiment of the invention, while Figures 10–16 illustrate a second embodiment of the invention.

The charger generally indicated at 10, is shown in Figures 1–4 as being fixed in the bottom of a flexible tobacco pouch 12 which includes two end walls 14 and a suitable closure 16 for the open top thereof. The charger 10 consists of an outer tube 18 which houses the charger operating mechanism.

Near each end of the tube 18 and spaced from the ends thereof are fixed collars or abutments 20. In placing the charger within a tobacco pouch, the end walls 14 of the pouch 12 for example, are cut away near the bottom thereof to provide openings of a diameter not substantially larger than the outer diameter of the tube 18. The ends of the tube 18 are passed through the pouch openings so that the pouch side walls 14 lie in contact with the collars or abutments 20. A second end collar 22 is then passed over each end of the tube 18 and pressed inwardly toward the collars 20 until the material of the pouch at the passages through the end walls thereof is securely held between each set of collars 20 and 22. The collars 22 may be suitably secured in pouch gripping position in any well-known manner.

The tube 18 in the first embodiment of the invention includes a passage 24 through the wall thereof near one end for the purpose of permitting the passage of tobacco from the tobacco container into the tube 18. The invention in-

cludes a piston member 26 which is slidably mounted within the tube 18 across the area of the passage 24. The piston 26, is moved to open position under the influence of a spring member, to facilitate pipe charging operations.

A pipe 28 may be suitably charged by bringing the discharge end of the tube 18 into cooperative relation with the mouth of the pipe as shown in Figure 3. Upon establishing the charging relationship, the piston 26 is released so as to open the passage 24 and permit tobacco from the container 12 to pass into the pipe 28. After a quantity of tobacco has been charged into the pipe, the piston 28 is manually moved to its passage closing position during which operation the tobacco within the pipe is compacted by the projecting outer end of the piston 26.

In the form of the invention illustrated in Figures 5–9 the charger comprises an open-ended outer tube 18 adapted to be fixed in a tobacco container with its ends extending therefrom as shown in Figures 1–4. The tube 18 is shown as being provided with the tobacco passage 24 through the wall of the tube near the discharge end thereof for the purpose of permitting the flow of tobacco from the container to which the charger is affixed through the passage 24 and the outer end of the tube. Housed within the tube 18, and adapted for sliding movement therein is an inner tube 30 which has a cross-section substantially as great as the internal cross-section of the outer tube 18. The inner tube 30 is provided with a piston or plunger portion 26 formed as a part thereof. The piston or plunger portion 26 has affixed to its outer end a charging or tamping cap 32 which projects beyond the outer end of the tube 18 when said tubes 18 and 30 are in normally inoperative position. The charging cap 32 is preferably formed of steel, and has relatively sharp peripheral edges. The plunger 26 of the inner tube 30 is adapted to close the outer end of the tube 18 and it is also adapted to close the discharge passage 24 in the wall of the outer tube when the parts are in normally inoperative position. The passage 24 is closed by the piston portion 26 by virtue of the fact that the body of the piston portion 26 extends from the end of the tube 30 to a point therein which lies beyond the inner edge of the passage 24.

The tube 30 includes an operating portion 34 which extends to the open end of the outer tube opposite the discharge end. By means of the operating portion 34, the charging plunger 26 may be reciprocated manually. The outer tube 18 has associated therewith a pin 36 which extends across the interior thereof at substantially the diameter of the tube. The operating portion 34 of the inner tube 30 has provided therein a pair of diametrically opposed slots 38 which are adapted to embrace the pin 36. Opposite walls of the two slots have formed therein a bayonet catch 40 which is adapted to cooperate with the pin 36 for latching the inner tube 30 in its position closing the tobacco passage 24. An operating knob 42, which is of a diameter slightly larger than the diameter of the outer tube 18, is attached, preferably by screw threads, to the free end of the operating portion 34 of the inner tube 30. By means of the knob 42, the inner tube 30 may be rotated in a counter-clockwise direction through a small angular distance to disengage the bayonet catch 40 from contact with the pin 36 and to bring the slots 38 into aligned relationship with the pin 36. In this position, it is evident, the inner tube 30 may be moved longitudinally within the outer tube 18 through a distance corresponding to the distance between the location of the pin 36 and the inner end of the slots 38.

In order to adapt the charger to quick and convenient manipulation, there is provided within the inner tube 34, a spring member 44 which has one end thereof in abutment with the pin 36 and the other end thereof in abutment with the manipulating cap 42. The spring member 44 is biased to urge the inner tube 30 to the position permitting discharge of tobacco through the passage 24. The spring member 44 is of sufficient strength to project the inner tube 30 to discharge position upon rotation of the operating knob 42 through a sufficient angular distance to disengage the bayonet latch 40 from contact with the pin 36. The plunger 26 is moved toward the discharge end of the tube and into tobacco ejecting position by manual reciprocation of the inner tube 30 against the tension of the spring member 44.

The charger can be very readily disassembled by removing the manipulating cap 42 which permits the tube 30 to slide freely out of the discharge end of the tube 18. This function is accomplished by virtue of the fact that the slots 38 extend through the peripheral edge of the operating portion 34 of the inner tube. The removal of the inner tube may become desirable on occasion for the purpose of cleaning or the like.

The modified form of the invention embodies all of the features and advantages of the first form of the invention, but differs therefrom in the change of structural details illustrated in Figures 10–16 of the drawings. In the modified form of the invention there is provided an outer tube 18′ having therein a tobacco passage 24′ leading through the wall thereof near the discharge end of the tube. In this form of the invention, however, the tobacco ejecting plunger or piston 26′ has connected thereto an operating rod 46 which is of sufficient length to extend beyond the end of the outer tube 18′ which is remote from the end adapted to discharge the tobacco. The free end of the rod 46 has attached thereto an operating knob 42′ which differs from that in the first form of the invention only in the means which adapts its screw threads to contact the threads on the free end of the rod 46.

The rod 46 may be conveniently formed of cylindrical stock which is, however, flattened throughout the intermediate portion 48 thereof to provide a latching mechanism. By flattening the inner end 48 there is provided a pair of shoulders 50 at the junction of the flattened area 48 with the cylindrical area. The shoulders 50 are adapted to contact the inner face of a latch nut 52 which is fixed interiorly of the outer tube 18′. The latch nut 52 has provided therein a passage 54 which is of sufficient circumference to permit the free passage therethrough of the cylindrical end 56 constituting the outer end of the operating rod 46. The passage 54 is, however, of such diameter that the shoulders 50 extend beyond the circumference thereof excepting at that portion 58 which constitutes diametrically opposed extensions of the passage. The inner face of the latch nut 52 is provided with stepped surfaces 60 and 62. These surfaces constitute latch and guide means which serve to limit the angular movement of the operating rod 46 and to guide

the rod to latched or unlatched position. When the shoulders 50 of the rod 46 abut the stepped surface 62, the same will be held in latched position, which will hold the plunger 26' in tobacco passage closing position. If through manipulation of the operating knob 42', the operating rod 46 is moved through an angular distance sufficiently to bring the shoudlers 50 into registration with the passage extensions 58 formed through the latch nut 52, the operating rod 46 may move outwardly under the influence of the spring means 44 which surrounds the operating rod 46 and abuts at its inner end against the latch nut 52 and at its outer end against the operating knob 42'. The plunger 46 is limited in its movement in this direction by contact with the latch nut 52.

In the second form of the invention the charger may be disassembled by removing the operating knob 42' and by sliding the operating rod 46 through the latch nut 52 toward the direction of and through the discharge end of the outer tube.

The invention also contemplates provision for placing a humidifying agent within the plunger 26', which plunger is preferably of hollow construction to adapt it to this purpose. In order to permit escape of humidifying vapors from a humidifying substance carried within the plunger 26', there is provided in the wall of the plunger, a plurality of small passages 64 which register with the tobacco passage 24' in the outer tube 18'. A humidifying substance may be placed within the plunger 26' by removal of the charging cap 32' which may be screw threaded into the outer end of the plunger member 26', or by disengaging the plunger 26' from the operating rod 46, as in the modified form of the invention.

A further feature of the invention lies in the construction which permits the charging end of the plungers 26 and 26', or at least the charging caps 32 and 32' thereof to extend well into the bowl of a pipe being charged. This insures adequate tamping of the charge of tobacco within the bowl and insures against the overflow and waste of tobacco. The whole charger may be constructed of suitable sheet metal stock, and the same is preferably plated with an attractive and non-corrosive coating, such as chromium.

Various modifications may be made in the details of construction without departing from the spirit of the invention, and the practice of the invention shall, therefore, be not limited other than by the limitations imposed thereon by the terms of the subjoined claims.

I claim:

1. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to close one open end thereof while closing said passage therein, an operating means extending from the other end of said tube and being operatively connected to said plunger whereby the same may be reciprocated, means for latching said plunger in passage-closing position, and a spring within said tube for urging the plunger to passage opening position upon the release of said latch means, said latching means, spring, and the portion of said operating means within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

2. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to extend from one open end of said tube while closing said passage therein, operating means extending from the other end of said tube and being operatively connected to said plunger whereby the same may be reciprocated, means for latching said plunger in passage closing position, and a spring within said tube for urging said plunger to passage opening position upon the release of said latching means, said latching means, spring, and the portion of said operating means within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

3. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to extend from one open end of said tube while closing said passage therein, the extending end of said plunger having a sharp-edged steel cap on the face thereof, an operating means extending from the other end of said tube and being operatively connected to said plunger whereby the same may be reciprocated, means for latching said plunger in passage closing position, and a spring within said tube for urging the plunger to passage opening position upon the release of said latching means, said latching means, spring, and the portion of said operating means within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

4. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a hollow slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to close one open end thereof while closing said passage therein, means for placing a humidifying agent within said hollow plunger, perforations in the wall of said plunger to permit escape of humidifying vapors, an operating means extending from the other end of said tube and being operatively connected to said plunger whereby the same may be reciprocated, means for latching said plunger in passage closing position, and a spring within said tube for urging said plunger to passage opening position upon the release of said latching means, said latching means, spring, and the portion of said operating means within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

5. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter the tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to close one open end thereof while closing said passage therein, an operating means connected to said plunger and extending to the other end of said tube whereby the plunger may be reciprocated, an operating knob removably attached to said operating means adapted to abut the adjacent end of said tube thereby preventing withdrawal of said plunger from the opposite end of said tube, means for latching said plunger in passage closing position, and a spring within said tube for urging said plunger to passage opening position upon the release of said latching means, said latching means, spring, and the portion of said operating means within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

6. A pipe charger comprising an open ended outer tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, an inner tube slidably mounted in said open ended outer tube and having a cross-section substantially as great as the internal cross-section of said outer tube, a plunger portion formed in said inner tube having a closed outer end adapted to close one open end of said outer tube and a body portion adapted to extend over the passage in said outer tube to close the same, an operating portion of said inner tube extending to the other open end of said outer tube whereby said plunger may be reciprocated manually, means for latching said inner tube in passage closing position, and a spring within said inner tube for urging said plunger to passage opening position upon the release of said latching means.

7. A pipe charger comprising an open ended outer tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, an inner tube slidably mounted in said open ended outer tube and having a cross-section substantially as great as the internal cross-section of said outer tube, a plunger portion formed in said inner tube having a closed outer end adapted to close one open end of said outer tube and a body portion adapted to extend over the passage in said outer tube to close the same, an operating portion of said inner tube extending to the other open end of said outer tube whereupon said plunger may be reciprocated manually, a pin carried by said outer tube and disposed to extend across the interior thereof, a pair of slots extending through the operating portion of the said inner tube adapted to embrace said pins, a bayonet slot formed in the edges of said pin engaging slots adapted to cooperate with said pin for latching said inner tube in passage closing position, an operating knob on the free end of the operating portion of said inner tube, and a spring within said inner tube with its ends abutting said pin and said operating knob for urging said plunger to passage opening position upon the release of said latching means.

8. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to close one open end thereof while closing said passage therein, an operating rod connected to said plunger and extending from the other end of said tube whereby the plunger may be reciprocated, means within said tube for latching said plunger in passage closing position, and a coil spring within said tube and surrounding said rod for urging said plunger to passage opening position upon the release of said latching means, said latching means, spring, and the portion of said operating rod within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

9. A pipe charger comprising an open ended tube adapted to be fixed in a tobacco container with its ends extending therefrom, a passage through the wall of said tube near one end thereof through which tobacco may enter said tube, a slidably mounted plunger within said tube having a cross-section substantially as great as the internal cross-section of said tube and being of sufficient length to close one open end thereof while closing said passage therein, an operating rod connected to said plunger and extending from the other end of said tube whereby the plunger may be reciprocated, an abutment having an operating rod passage therethrough fixed within said tube, a latch formed on one side of said abutment for holding said rod and latching said plunger in passage closing position, an operating knob on said rod, a coil spring within said tube with its ends against said abutment and said knob and surrounding said rod for urging said plunger to passage opening position upon the release of said latching means, said abutment, spring, and the portion of said operating rod within said tube being enclosed by said tube which together with said plunger effectively encase said parts against contact with tobacco being charged.

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