

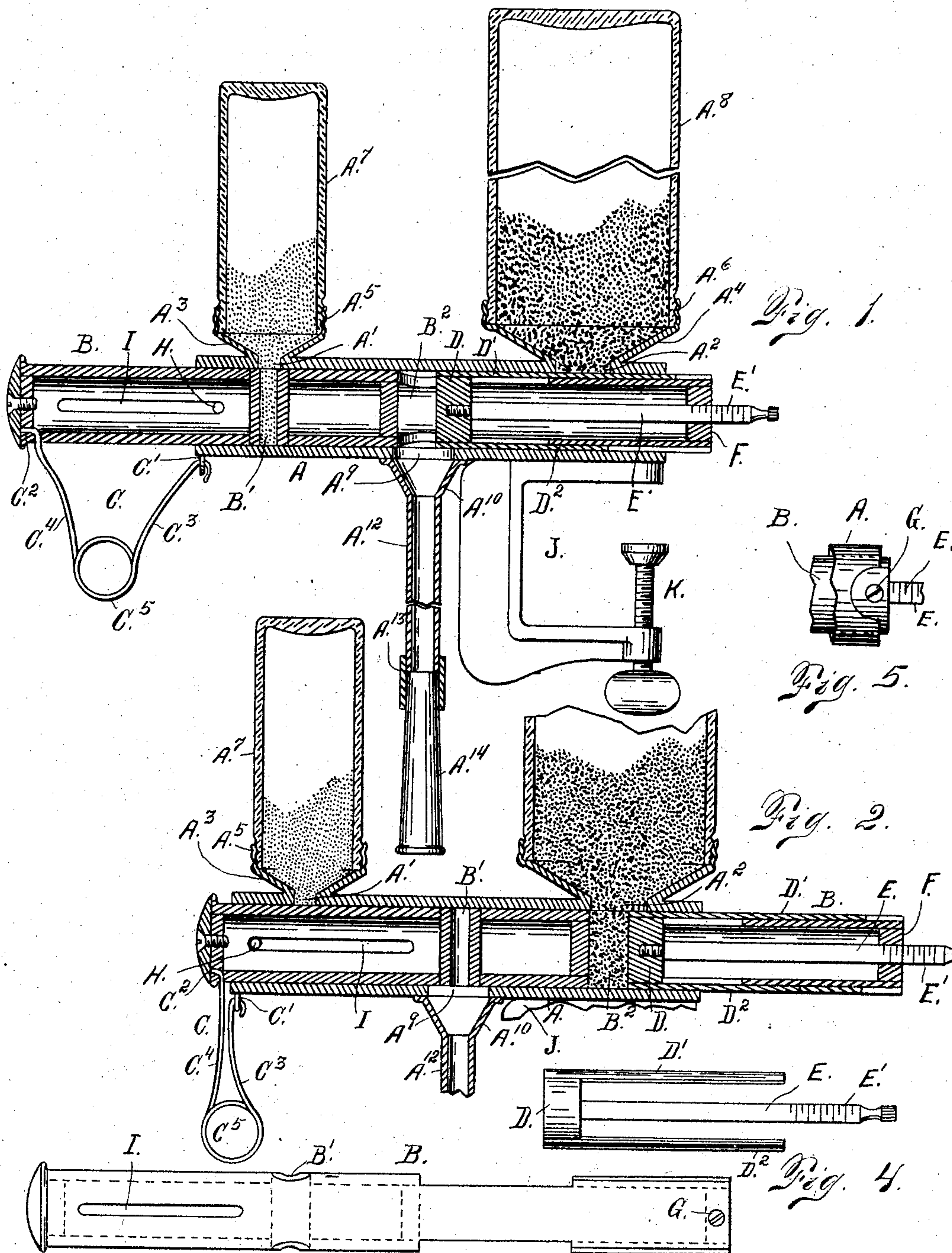
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POWDER MEASURE.

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Witnesses
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Fig. 3.

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UNITED STATES PATENT OFFICE.

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POWDER-MEASURE.

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To all whom it may concern:

Be it known that we, AXEL W. PETERSON and GEORGE C. SCHOYEN, citizens of the United States of America, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Powder-Measures; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in powder-measures, and while the device is capable of general use for filling shells the construction shown and hereinafter described in detail is especially adapted for filling rifle-shells where two kinds of powder are used—namely, the white or smokeless powder and the black powder. The white or smokeless portion of the charge is comparatively small and is put into the shell first in order to avoid the corrosion incident to the use of black powder at the priming extremity of the shell when it is desired to refill the latter. It is well known that in target practice the shell employed is refilled indefinitely, while the bullets are inserted from the muzzle extremity of the gun in order that they may be rifled during their passage downward to a position in front of the shell for the purpose of obtaining greater accuracy in target-work.

The object of our invention is to provide a device of the class stated in which accurate results may be obtained through the instrumentality of mechanism of comparatively simple and economical construction; and to this end the invention consists of a suitable casing upon which are mounted two powder-holders having openings in the bottom. This casing is also provided with an outlet-opening located below and intermediate the powder-holders.

In the said casing is located a spring-held reciprocal plunger provided with a powder-receptacle normally occupying a position directly beneath one of the powder-holders and another powder-receptacle normally registering with the casing-outlet and brought into

position beneath the other powder-holder when the plunger is actuated to bring the first-named powder-receptacle into register with the outlet in the casing, whereby the contents of the first-named receptacle are allowed to escape into the shell held beneath the said outlet, with which a tube of suitable length is connected. As soon as the plunger is released its spring returns it to its normal position, whereby the powder in the second receptacle is allowed to escape from the casing. It will be understood from what has already been stated that the first-named receptacle is for the white or smokeless powder and the second receptacle for the black powder. As only a small proportion of the charge is required to be smokeless powder, the first receptacle is much smaller than the second receptacle, since the latter must contain the major portion of the charge. The powder-holders are also of different sizes, the larger holder being for the black powder. The plunger is also provided with an adjustable device whereby the size of the receptacle for the black powder may be regulated at will, depending on the size of the shell to be supplied.

Having briefly outlined our improved construction, as well as the function it is intended to perform, we will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a central vertical section of our improved device, showing the reciprocal plunger in its normal position. Fig. 2 is a similar view showing the plunger in the actuated position, or in the opposite extreme position from that shown in Fig. 1. Fig. 3 is a detail view of the plunger detached. Fig. 4 is a detail view of the adjustable plug or piston for controlling the size of the black-powder receptacle of the plunger. Fig. 5 is a fragmentary view illustrating the rear extremity of the device in elevation.

The same reference characters indicate the same parts in all the views.

Let A designate a tubular casing considered in its entirety. The top of this casing is provided with two openings A' and A², forming the outlet for small hoppers A³ and A⁴, which

are threaded, as shown at A⁵ and A⁶, to receive powder-holders A⁷ and A⁸, respectively. These holders are preferably composed of glass and are threaded to screw into their respective hoppers. They are of course open at their lower extremities and, as shown in the drawings, are closed at their upper extremities, being inverted cylindrical powder-holders. These holders are suitably separated on the casing. The lower part of the casing is provided with an outlet-opening A⁹, which is surrounded by a funnel-shaped mouth A¹⁰, with which is connected a depending tube A¹², to whose lower extremity is attached an enlarged tubular part A¹³, into which may be inserted the open extremity of the shell A¹⁴ during the filling operation. Mounted in the tubular casing A is the reciprocal plunger B, provided with two powder-receptacles B¹ and B². The powder-receptacle B¹ is the smaller of the two and normally occupies a position in register with the opening A⁹ of the casing. The normal position of the plunger is considered the position shown in Fig. 1, in which the plunger is retained by the spring C, one extremity of which is hooked into an eye C¹ of the casing, while the other extremity engages a recess C², formed in the plunger. The two arms C³ and C⁴ of the spring are connected by a coil C⁵, and when the plunger is in its normal position the spring is under sufficient tension to retain it securely in the said position until actuated by positive pressure. When the plunger is in the normal position, the powder-receptacle B² thereof registers with the outlet-opening A⁹ of the casing. Now if it is desired to fill the shell A¹⁴ the plunger would be pushed in the casing to the position indicated in Fig. 2, bringing the powder-receptacle B¹ into register with the casing-opening A⁹ and allowing the white powder from the holder A⁷ to drop through the tube A¹² into the shell. When the plunger is in the position shown in Fig. 2, the receptacle B² will be made to register with the opening A² of the casing, whereby the black powder fills the receptacle B². Then as the plunger is released from pressure the spring C returns it to its normal position, and the black powder will pass through the tube A¹² into the shell, making the complete charge.

The size of the receptacle B² is regulated by an adjustable plug D, which is slidable within the hollow portion of the plunger, whereby the said receptacle may be of greater or less size, as may be desired, depending on the quantity of black powder which it is desired to place in the shell. The plug D is provided with elongated segments D¹ and D², occupying slots formed in the top and bottom of the plunger, respectively. The said slots are closed by and form guides for these segments during the adjustment of the plug D. To this plug is attached a stem E, graduated, as shown at E¹, and slidable in an opening formed in a

plug F, which closes the rear extremity of the plunger or the extremity farther to the right, referring to Figs. 1, 2, and 3. The plug D is locked in any desired position of adjustment by a screw G, which is threaded in an opening formed in the casing, whereby its inner extremity is adapted to engage a flattened side of the stem, which is also graduated to indicate the quantity of powder the receptacle B² will hold when the plug is in any desired position. The threaded opening for the screw G is formed in the plug F of the plunger, as well as the outer wall thereof, the casing being cut away, as shown in Fig. 5, to permit the insertion and removal of the screw G.

From the foregoing description the use and operation of our improved powder-measure will be readily understood. The casing is provided with a stop-pin H, which engages slots I, formed in the opposite sides of the plunger. When the plunger is in its normal position, or that shown in Fig. 1, the pin engages the plunger at the rear extremity of the slots I, while when the plunger is actuated or moved to the position shown in Fig. 2 of the drawings the pin engages the forward extremity of the slot. It will thus be understood that the pin H, which engages registering openings in the casing, forms a stop when the latter is in either extreme position.

Assuming that the mechanism is in the position shown in Fig. 1 and that each of the holders A⁷ and A⁸ contains a quantity of powder, that in the holder A⁷ being white or smokeless powder and that in the holder A⁸ black powder, the operation of the device is as follows: On the foregoing assumption the powder-receptacle B¹ is filled, while the receptacle B² is empty. The user then forces the plunger rearwardly to its limit of movement, whereby the powder-receptacle B¹ is made to register with the outlet A⁹ of the casing, allowing the contents of the said receptacle to pass through the said opening and finally into the shell A¹⁴. In the mean time the receptacle B² has been brought into register with the opening A² in the casing, whereby the black powder fills the said receptacle B². Then as the plunger is released the spring C returns it to its forward limit of movement, whereby the filled receptacle B² is made to register with the opening A⁹, and the charge of black powder passes downwardly into the shell. It will thus be seen that it is impossible to make a mistake in the use of our improved device, since it is only necessary to move the plunger rearwardly until it is stopped by the pin H in order to provide the shell with the necessary quantity of smokeless powder, while as soon as the plunger is released the spring C automatically returns it to its other limit of movement, whereby the charge of black powder passes into the shell which is held beneath the tube A¹².

The bottom of the casing A is provided near its rear extremity with a clamping device, comprising a bracket J and a thumb-screw K threaded therein, whereby the device is adapted to be secured to a bench or other suitable stationary structure. (Not shown.)

Attention is called to the fact that our improved device may be used for loading cartridges with powder and shot. For instance, one of the receptacles, as B', may be used for the powder, and the other receptacle, as B², may be used for the shot. In this case the powder would be contained in the holder A⁷ and the shot in the holder A⁸.

Having thus described our invention, what we claim is—

1. In a powder-measure, the combination of a casing provided with an opening, a powder-holder communicating with said opening, a plunger located in the casing and normally closing the powder-opening therein, the plunger being provided with a powder-receptacle normally out of register with the powder-opening in the casing but registering with an outlet-opening in the casing, the plunger being spring-held in the normal position, a plug adjustably mounted in the casing to regulate the size of the said receptacle, the said plug having elongated segments closing slots formed in the top and bottom of the casing, the arrangement being such that as the plunger is actuated, the powder-receptacle therein is brought into register with the powder-opening of the casing whereby the receptacle is filled with powder, and as the plunger is released, the spring returns it to its normal position whereby the contents of the powder-receptacle are allowed to escape, substantially as described.

2. The combination of a suitable casing provided with two powder-inlet openings, powder-holders connected with the casing and in communication with said openings, the casing being also provided with an escape-opening located intermediate the powder-openings, a spring-held plunger reciprocally mounted in the casing and having two separated powder-receptacles, the first being normally in communication with one of the powder-holders and the second being normally in register with the escape-opening of the casing, the arrangement of the various openings in the casing and the two powder-receptacles being such that the plunger may be actuated to bring the first powder-receptacle into register with the escape-opening, the second powder-receptacle being at the same time brought into communication with the other powder-holder whereby it is filled during the escape of the powder from the first-named receptacle, and when the plunger is released and returned to its normal position, the powder in the second receptacle will pass through the escape-opening of the casing, substantially as described.

3. The combination of a casing provided

with openings and having powder-holders in communication with said openings, a plunger reciprocally mounted in the casing and having two separated powder-receptacles of unequal size, the casing being also provided with an outlet-opening, a spring connected with the casing and plunger and arranged to hold the plunger in position to cause the smaller powder-receptacle to register with one of the powder-inlet openings of the casing, while the larger powder-receptacle is in register with the outlet-opening of the casing, the movement of the plunger being controlled whereby as it is pushed rearwardly to its limit of movement, the smaller powder-receptacle is brought into register with the outlet of the casing, while the larger powder-receptacle is brought into communication with the other powder-holder.

4. The combination with a casing provided with two separated powder-inlets, and a plunger reciprocally mounted in the casing and provided with two powder-receptacles, a spring for holding the plunger in position to cause one powder-receptacle to register with one powder-inlet of the casing, the latter being provided with a powder-outlet located between the powder-inlets and equally distant from each, the distance between the two powder-receptacles of the plunger being equal to the distance between the casing-outlet and each casing-inlet, and a suitable stop for limiting the reciprocal movement of the plunger in both directions.

5. The combination of a casing provided with two powder-inlets at the top, an intermediately-located powder-outlet at the bottom, and a plunger reciprocally mounted in the casing and normally spring-held at its forward limit of movement, the casing having a stop for limiting the movement of the plunger in both directions, the plunger being provided with two powder-receptacles, the first being normally in register with one of the powder-inlets and the second being normally in register with the powder-outlet, and the distance between the two powder-receptacles being equal to the distance between the powder-outlet and each powder-inlet.

6. The combination in a powder-measure, of a casing provided with two separated powder-inlets at the top of the casing, and a powder-outlet at the bottom of the casing equally distant from the two powder-inlets, a plunger reciprocally mounted in the casing and having a stop for limiting its movement in both directions, a spring connected with the casing and with the plunger for holding the latter normally at its forward limit of movement, the plunger being provided with two powder-receptacles of unequal size, the smaller receptacle being normally in register with one of the powder-inlets and the larger receptacle being normally in register with the powder-outlet, the distance between the two powder-

receptacles being the same as the distance between the powder-outlet and the two powder-inlets, and a plug adjustably mounted in the plunger to control the size of the larger powder-receptacle.

7. The combination of a casing provided with two powder-inlets and a powder-outlet intermediately located, a plunger reciprocally mounted in the casing and provided with two powder-receptacles, the distance between which is equal to the distance between the outlet and the two inlets, a spring for normally holding one powder-receptacle in register

with one of the powder-inlets, a plug adjustably mounted in the casing to control the size of one of the powder-receptacles, and a graduated stem connected with said plug and protruding from the casing, and means for holding the plug in the adjusted position.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:

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