

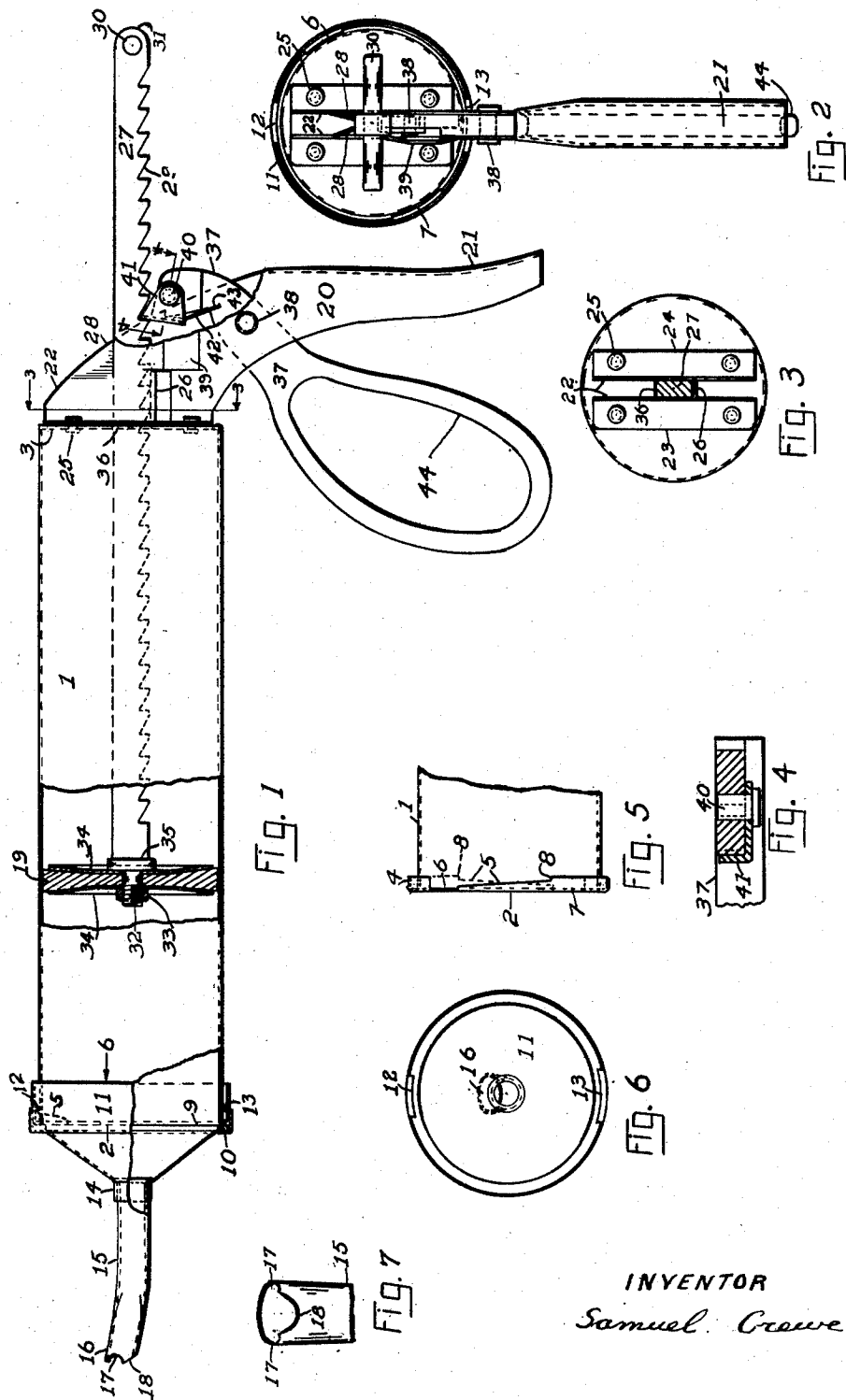
May 5, 1925.

1,536,477

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GUN FOR CALKING OR SIMILAR OPERATIONS

Filed Oct. 11, 1922



INVENTOR
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Patented May 5, 1925.

1,536,477

UNITED STATES PATENT OFFICE.

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GUN FOR CALKING OR SIMILAR OPERATIONS.

Application filed October 11, 1922. Serial No. 593,817.

To all whom it may concern:

Be it known that I, SAMUEL CREWE, a citizen of the United States, residing at East Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Guns for Calking or Similar Operations, of which the following is a specification:

My invention relates to guns for calking or similar operations which eject material periodically and forcefully.

The main object of my invention is a simple, inexpensive, and efficient calking gun which can be operated by one hand, which has the operating mechanism and the holding means on one end of the gun and arranged for most convenient adaptation to this hand for efficient operation with the ejecting end of the gun pointing away from the operator, which is provided with means which can be quickly attached to or removed from or reversed on the container and which is provided with means to spread the ejected material evenly and to selectively confine such spread to desired directions, which has a simple, inexpensive, and efficient piston which operates effectively as a pump or as a force piston, which has means for ejecting material either periodically or continuously, and which has means for loading the container either directly or by means of the piston. Other objects will appear during the description of the apparatus shown in the accompanying drawing.

With the above and other objects in view, I illustrate my invention in the accompanying drawings, but it is understood that such illustration is susceptible to modifications.

In the drawings, Fig. 1 is a side view of an assembled calking gun partly in section embodying the features of my invention; Fig. 2 is an end view of Fig. 1; Fig. 3 is a section in line 3—3, of Fig. 1; Fig. 4 is an enlarged section taken on line 4—4 on Fig. 1; Fig. 5 is a side view of container showing the manner of securing the cap thereon; Fig. 6 is an end view at 6 of the cap showing lugs formed thereon for locking the cap on the container; and Fig. 7 is an enlarged perspective view of the end of the feed pipe.

Referring to the drawing, in which similar characters designate similar parts throughout the views

The tubular container 1, constructed of sheet steel or other suitable material, is open

at the front end 2 and is closed at the rear end 3.

The front end of the container is formed with an outwardly extending annular flange 4 which is turned back and portions thereof are cut away, circumferentially, at an angle to form the two wedge portions 5, the low ends of which are slotted at 6 and 7 and the high ends of which provide the shoulders 8. In the present instance, the container is provided with two of these wedge portions on opposite sides of the container, both of these wedge portions are alike and only one is shown in full lines in the drawing.

The washer 9 of leather or other similar material is fitted within the angular shoulder 10 in the outlet cap 11 and abuts the flanged end of the container to provide a fluid tight joint therebetween.

The outlet cap fits over the open front end of the container and is constructed of sheet steel, or any other suitable material, and is provided with two inwardly projecting lugs 12 and 13, which are formed therein and provided with shoulders to engage the wedge portions 5. These lugs are alike so that they will fit into the slots 6 and 7 respectively. This construction allows the cap to be placed on the container in different ways, rotatively, to permit the end of the outlet pipe 15 to reach diverse surfaces to be operated upon without necessitating the manipulation of the gun into different positions and consequent inefficient operation and tendency to tire the operator.

When placing the cap on the container, the lugs are passed through the slots 6 and 7 and the cap is rotated thereby causing the shoulders on the lugs to engage the wedge portions 5 of the flange and firmly lock the cap to the container. The washer 9 prevents leakage at the joint between the cap and the front end of the container.

The cap terminates in a restricted outlet nipple 14 within which the outlet pipe 15 is secured. The end 16 of the pipe 15 is flattened, as shown in Figure 6, and each of the shorter sides of this end is provided with the arcuate notch 17 while the underside thereof is provided with the arcuate notch 18. This notch construction, when operating the piston 19, allows the material ejected from the container to flow evenly and directedly through the end 16 of the outlet feed pipe.

The stationary handle 20 is constructed of sheet steel or any other suitable material and is secured to the closed end of the container, and is formed U-shaped providing the parallel flanges 22 and the grip portion 21. The ends of the flanges are bent outwardly to form the bearings 23 and 24 as shown in Figure 3, which bearings lie adjacent to the rear end of the container and are secured thereon by the rivets 25.

It is observed that the stationary handle 20 is, in the present instance, disposed at a right angle to the longitudinal axis of the gun. This disposition of the handle permits of easy and convenient handling of the gun, mitigates the efforts required to operate the gun, and permits the gun to be used in places inaccessible to guns with the handle disposed otherwise than at an appreciable angle to the container.

The guide 26 is formed inwardly from the stationary handle to provide a support for one edge of the piston ratchet bar 27, while the guides 28 provide support for the other edge of the piston ratchet bar. The piston ratchet bar is constructed of bar steel or any other suitable material, and has a plurality of teeth 29 on one edge thereof. The end 32 of the piston ratchet bar extends within the container and is threaded to receive the threaded nut 33. The piston member 19 and the washers 34 on each side thereof are mounted on the end of the piston bar 27 and are clamped to the hub 35 by the nut 33.

It is observed that the outer edges of the washers 34 flare outward in relation to the member 19 to permit the outer edge of this member 19 to move back and forth, within limits allowed by these flared edges, and thereby form a seal between the inner wall of the container and the piston when the latter moves forth and back.

The pin 30, extends through the outer end 31 of the piston ratchet bar and is used for pulling the piston ratchet bar outwardly when desired for filling or loading the container or for other purposes, or for pushing the piston inward when desired for discharging the container independent of the operating handle. The piston ratchet bar passes through the slot 36 in the closed end of the container, and between the flanges 22, and the guides 26 and 28 of the stationary handle, and is operated by a ratchet mechanism.

The operating handle 37 is formed of sheet metal, is pivoted to the stationary handle by the pin 38, and is provided with the loop 44 on the lower end thereof to accommodate the fingers of the operator for back and forth manipulation of this lower end.

The ratchet dog 41 is formed angularly as shown in Fig. 4 and is constructed of sheet

steel, which is hardened to insure good wearing qualities and is pivoted on the pin 40 mounted in the operating handle. The stationary handle is flared out at 39 to provide room for the operation of the dog 41. The upper end of the dog 41 is adapted to engage or disengage the teeth 29 on the piston bar and is held in normal backward position by the spring 42 one end of which is secured in the slot 43 of the operating handle and the other end of which abuts the dog 41.

To operate the calking gun shown and described, remove the cap; then load the container with calking material, either by manual insertion of this material into the container through the now open front end while the piston is moved back in the container or by inserting this open front end into calking material while the piston is forward in the container and then pulling the piston backward by means of the pin 30 to pump some of this material into the container; while so pumping, the spring 42 permits the upper end of the dog to disengage the teeth 29 on the piston bar to permit the free backward movement of the piston; after the container is loaded, place the cap on the front end of the container either with the outer end of the outlet pipe pointing upward or downward as desired to accommodate the condition in hand; then grasp the stationary handle in one hand with one or more of the fingers of this hand in the loop of the operating handle and apply the gun to the job; then move the lower portion of the operating handle backward toward the stationary handle by pressing against the rear portion of this loop with this finger which movement causes the upper end of this operating handle to move forward and also causes the upper end of the dog to engage one of the teeth on the piston bar and move forward this bar and the piston attached thereto, thereby forcing some of the calking material out through the outlet pipe; then move the lower portion of the operating handle forward by pressing against the front portion of this loop with this finger which movement causes the upper end of the operating handle to move backward and also causes the upper end of this dog to disengage this tooth and, aided by the spring, to move to a new position and engage another tooth on the piston bar; repetition of this back and forth movement of the lower portion of the operating handle causes a periodic ejection of this material from the container.

While the piston is moving forward, the outer edge of the piston member 19 is forced backward, due to friction, as far as the flared edge of the adjoining washer 34 permits, and thereby wedges itself between

the inner wall of the container and this flared portion and forms an effective seal therebetween and such seal is retained even after the member 19 is worn considerably.

5 While the piston is moving backward, the member 19 acts in the same manner as previously described but in opposite direction.

When it is desired to discharge the calking material in a steady stream, or in a stream other than that procurable by the operating handle, the gun is held in one hand by the stationary handle or by the container and applied where required; then push the piston forward, the pin 30 acting as handle, until the desired quantity of material is discharged. When the piston is so moved, the upper end of the dog 41 automatically disengages the teeth on the piston bar.

20 Modifications may be made within the scope of the appended claims; therefore without limiting myself to the precise construction shown and described,

I claim:—

25 1. An apparatus of the character described comprising a container adapted to be loaded with calking material and having means for ejecting said material out of said container through said outlet opening, and an outlet opening, an outlet pipe over said opening out of alignment with the longitudinal axis of said container and the outer end thereof provided with two notches opposite each other and with a third notch intermediate these two notches to direct and equalize the flow and the spread of said ejecting material.

30 2. An apparatus of the character described comprising a container adapted to be loaded with calking material and having an outlet opening, means for ejecting said material out of said container through said outlet opening, and an outlet pipe over said opening out of alignment with the longitudinal axis of said container and having the outer end thereof flattened and provided with a notch in each of the short sides of

this flattened end and with a notch in one of the long sides of this flattened end.

3. An apparatus of the character described comprising a container provided with an outlet means on one end, a piston in said container and composed of a flexible member and of a washer on each side of this flexible member, the outer edge of each of said washers flared outward in relation to said flexible member to permit the outer edge of this flexible member to move forward and backward and thereby form a seal between the inner wall of said container and said piston when the latter moves backward and forward, a piston bar secured to said piston and extending through the other end of said container, and means for operating said piston ratchet bar.

4. An apparatus of the character described comprising a container provided with an outlet means on one end, a piston in said container and provided with a sealing member the outer edge of which can move forward and backward to form a seal between the inner wall of said container and said piston when the latter moves backward and forward, a piston bar secured to said piston and extending through the other end of said container, and means for operating said piston bar.

5. An apparatus of the character described comprising a container provided with an outlet means on one end, a piston in said container and composed of a flexible body and of a washer on each side of this body and each washer less flexible than this body and the outer edges thereof flared outward in relation to this body to permit the outer edge of this body to move forward and backward and thereby form a seal between the inner wall of said container and said piston when the latter moves backward and forward, a piston bar secured to said piston and extending through the other end of said container, and means for operating said piston bar.

SAMUEL CREWE.