No. 675,728.

Patented June 4, 1901.

C. F. GREEN.

NUT LOCK.

(Application filed Apr. 6, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

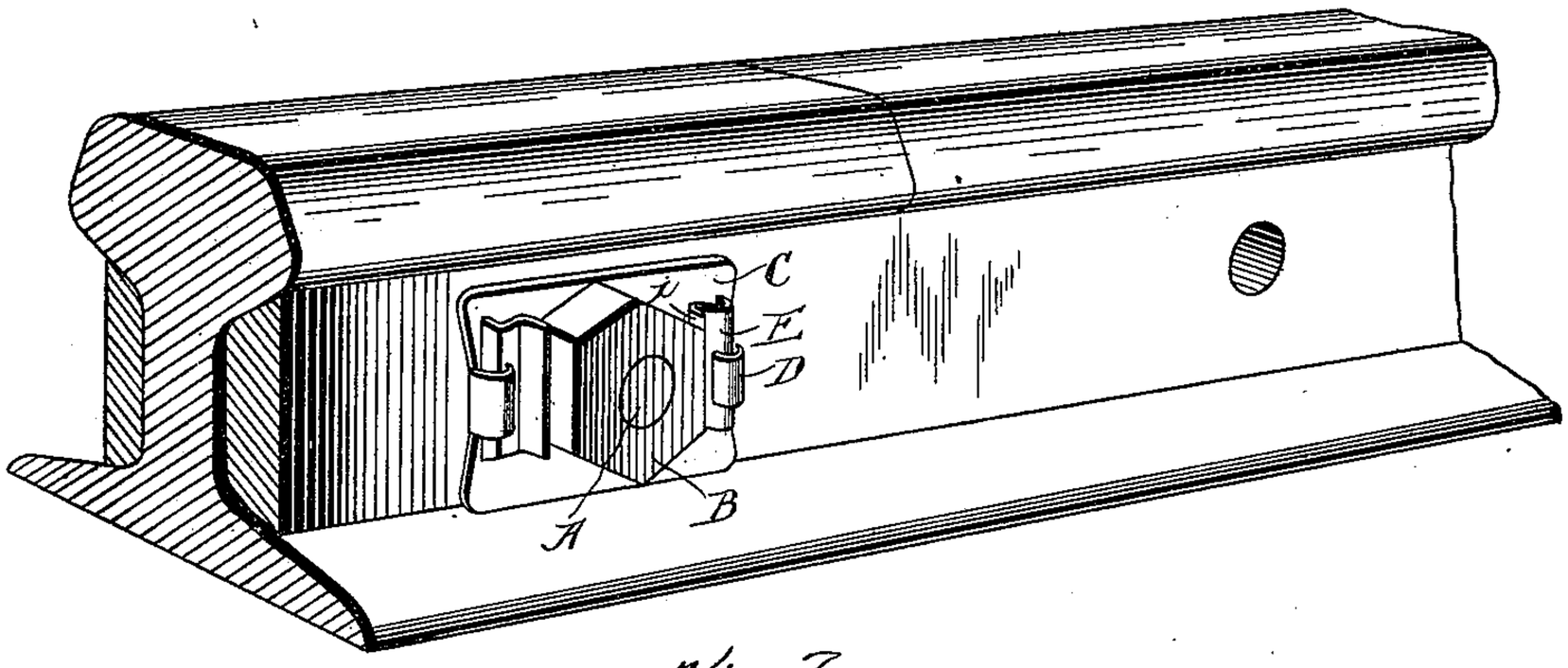


Fig. 2.

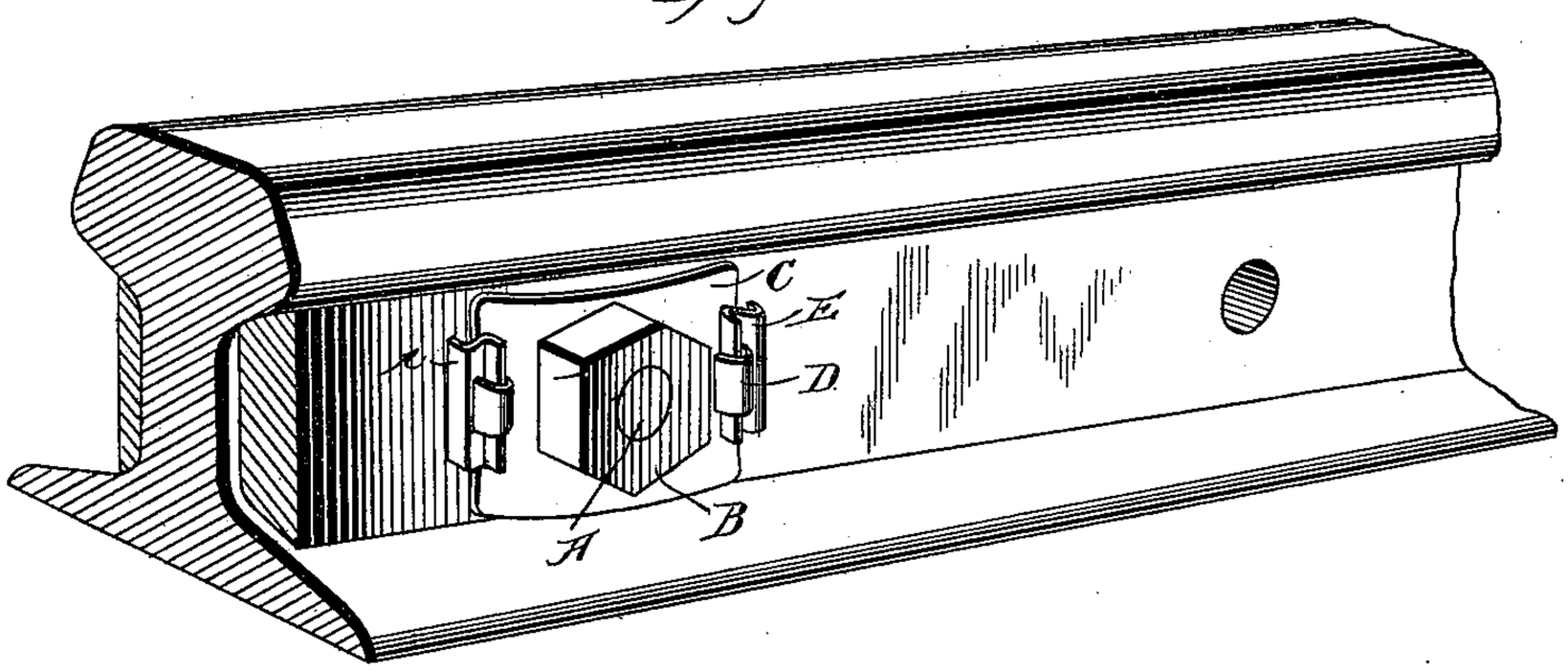
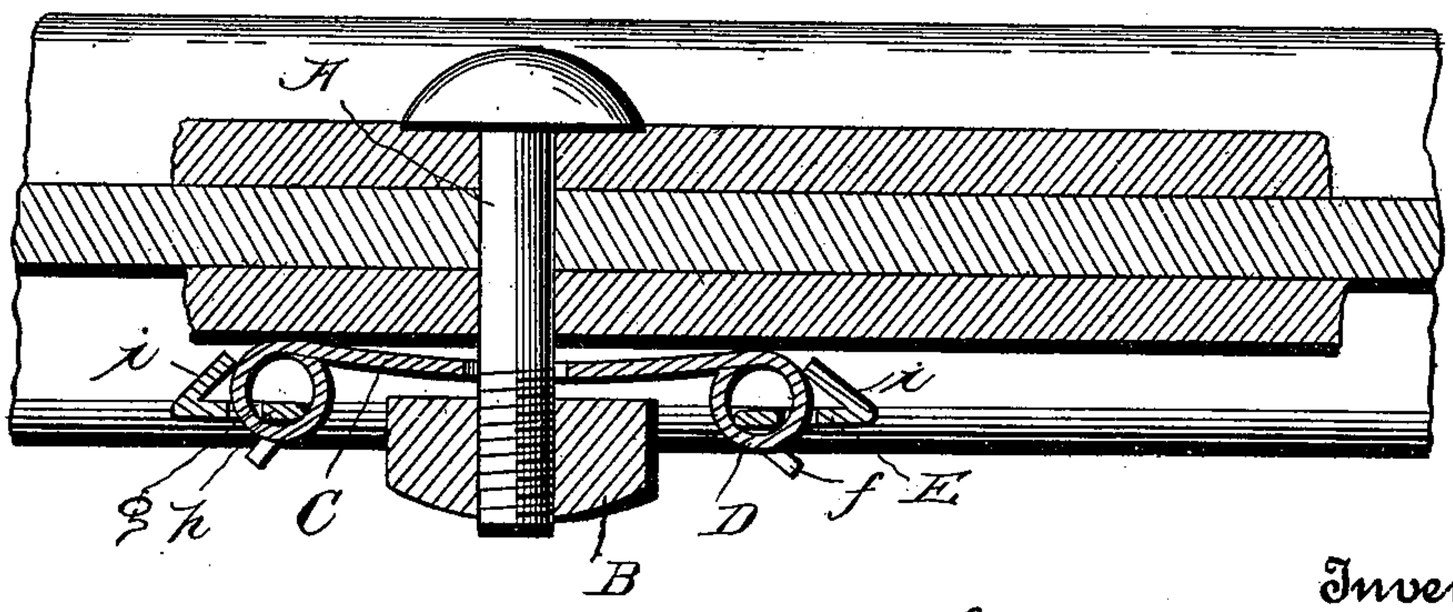


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

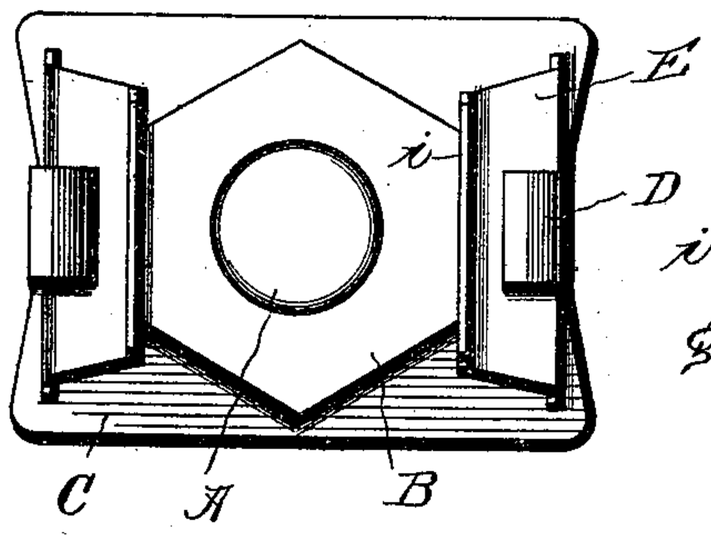


Fig. 5.

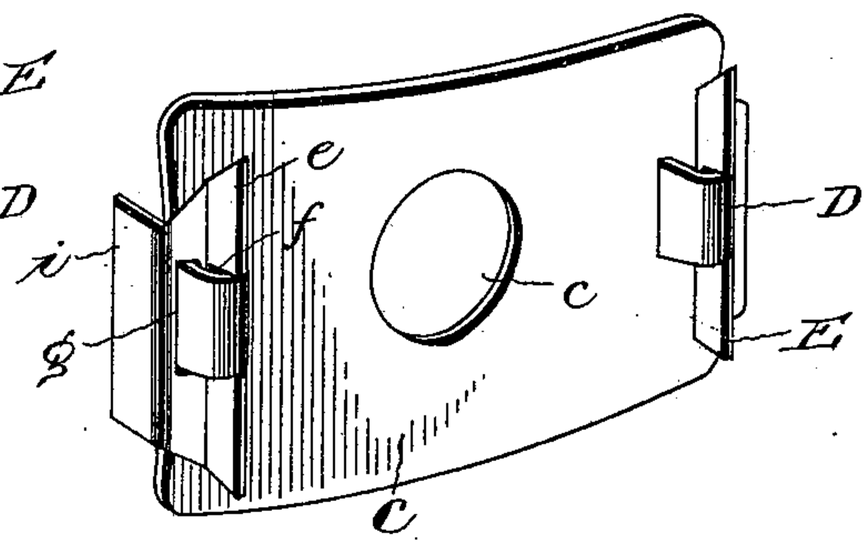
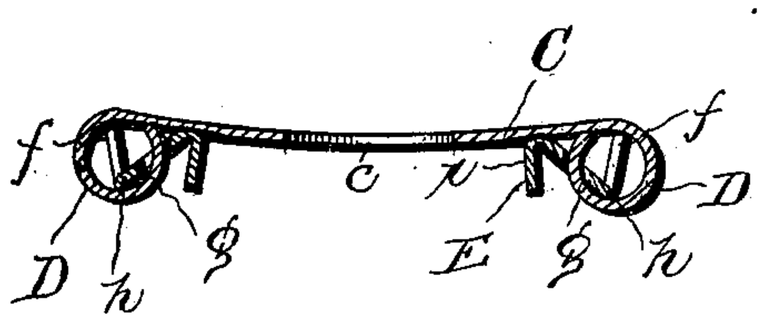


Fig. 7.

Fig. 6.



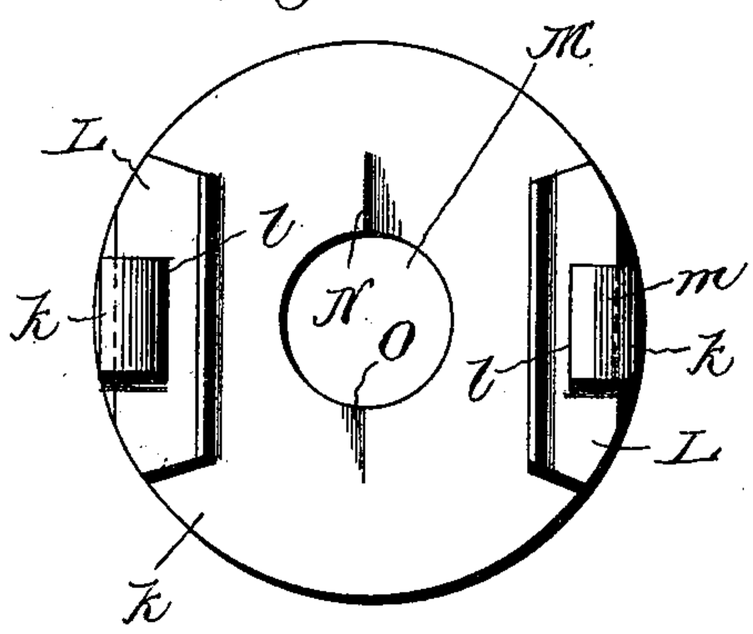
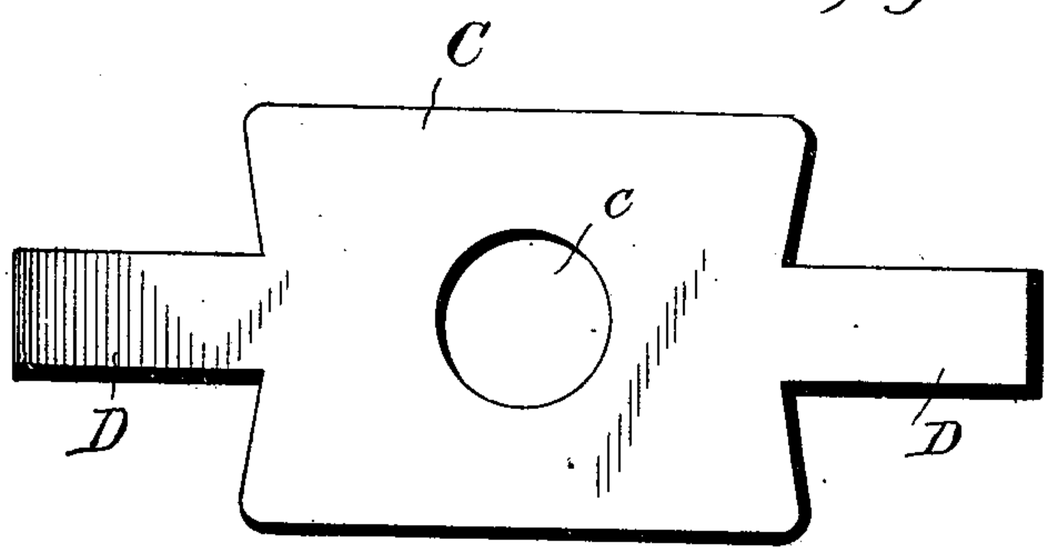
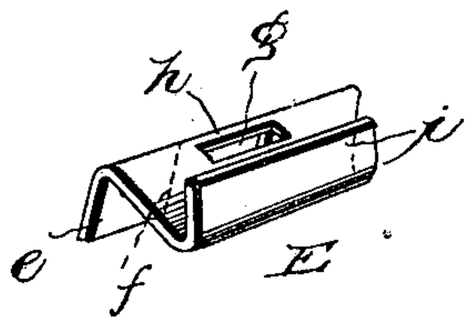


Fig. 8.





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UNITED STATES PATENT OFFICE.

CHARLES F. GREEN, OF CHOTEAU, MONTANA.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 675,728, dated June 4, 1901.

Application filed April 6, 1901. Serial No. 54,655. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. GREEN, a citizen of the United States, residing at Choteau, in the county of Teton and State of Montana, have invented certain new and useful Improvements in Nut-Locks; and I 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.

This invention relates to certain new and useful improvements in nut-locks; and it has for its object, among others, to provide a washer with the locking device firmly and securely attached to the washer, thereby providing a nut, washer, and lock combined, the principle of a hinge used on bolts or nuts next to iron as well as next to wood, providing a simple, cheap, yet efficient nut-lock which can be readily and quickly applied to the bolts and nuts employed in connection with railroad-rails, machinery, &c., and which when once in position to lock the nut the nut cannot possibly turn.

The invention is capable of embodiment in various forms, some of which will be hereinafter illustrated; but it is evident that the principle may be embodied in other forms.

I provide a washer with a hinged portion or hinged portions adapted to be thrown out of the way to permit of turning of the nut, and when once adjusted the hinged portion may be thrown down into such position as to engage the nut and effectually hold it against turning. The hinged portions have sufficient resiliency to provide a yielding resistance and still avoid all tendency of the nut to turn. The washer for track-bolts for railroad-rails is by preference slightly bowed, so as to stand out somewhat in the center and rest upon each end, and when the nut is turned it will draw down the washer; but the spring of the washer offers a resistance to the nut. In adapting the invention for use on bolts and nuts to be used on woodwork or ironwork I provide the washer about its central opening with slits which are made upon an incline, so as to form prongs or spurs which are adapted to be forced into the wood or slits in the iron to receive the prongs or spurs of the washer, so that when the nut is screwed home it is impossible for the washer to turn or work, the hinged portion acting in the same manner as in the other form, holding the nut secure from turning.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a nut-lock constructed in accordance with this invention and applied to a rail-joint. Fig. 2 is a perspective view of the washer with the hinged portions thrown back to allow of the nut being tightened down. Fig. 3 is a substantially central longitudinal sectional view showing the curvature and springy resistance of the washer. Fig. 4 is a front view showing the application of the invention to a nut. Fig. 5 is a perspective view of the washer with the hinged portions thrown back. Fig. 6 is a substantially central longitudinal section through the washer. Fig. 7 is a view of a round washer designed for use upon woodwork. Fig. 8 is a detail showing the blank from which the washer is formed and the hinged portions separated therefrom.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a bolt, and B a nut of known construction.

C is my improved washer, which is constructed of a blank such as is shown in Fig. 8, the opposite ends of which are somewhat indented, as shown, and provided centrally with a tongue D, which is designed to be bent over, as indicated. The washer is provided with a central opening *c* and may be of any desired length and width. It is preferably somewhat arched, as shown, so that it will possess a sufficient amount of resiliency or spring, and is forced downward by the nut as the latter is screwed upon the bolt.

E represents the locking portions, each of which is constructed as follows: I take a suitable piece of metal and bend it into substan-

tially Z shape in cross-section, as shown, and one of the flanges *e* is cut away, as shown at *f*, to receive the bent tongue on the washer, and the adjacent portion of the locking part is provided with a slot *g*, through which the tongue is passed before it is bent into the shape shown. One of these locking devices is provided at each end, as indicated, and it will be readily understood that they work as upon a hinge formed by the bent tongue and the cross-bar *h* of the locking part, which is received in the bent tongue.

In practice the locking portions are bent back out of the way, so as to allow free turning of the nut, and when the latter has been screwed up as much as desired the locking portions are bent over, so that the portions *i* thereof will engage the side of the nut and securely lock the same against retrograde movement.

The same principle is involved in the form of washer shown in Fig. 7, in which the washer K is provided with a tongue *k*, which is bent as are the tongues in the form of washer just described, and enters a slot *l* in the locking part L, which is provided with the cross-bar *m*, received in the bent-over tongue, the locking part in this instance having its outer surface preferably curved to conform with the curvature of the periphery of the washer. This washer is provided with the bolt-opening M, and at one or more points about the outer wall of the opening the body of the washer is slitted, as at N, the slits being formed, preferably, with inclined walls and the diametrically opposite portions bent downwardly, as seen at O, to form spurs or prongs which are designed to be forced into the wood as the nut is screwed up, and after the latter is in the desired position the locking portion is turned over upon its hinge, so as to engage the side of the nut, or when used in connection with a bolt the under side of the head of the bolt will force the spurs or prongs into the wood, and the locking part is then turned down, so as to engage one side of the head of the bolt in a manner which will be readily understood.

Modifications in detail and embodiment of the invention in other forms of nuts may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. The round washer may be provided with more than one tongue and locking device, if desired.

What is claimed as new is—

1. A nut-lock comprising a locking-washer provided with a hinged locking portion substantially Z-shaped in cross-section, substantially as described.

2. A nut-lock comprising a locking-washer having a bent-over tongue and a locking part movable upon said tongue and substantially Z-shaped in cross-section, as set forth.

3. A nut-lock comprising a locking-washer having a bent-over tongue and a locking part substantially Z-shaped in cross-section and having a slot and a cross-bar mounted for movement as upon a hinge upon said tongue, as set forth.

4. A nut-lock comprising a locking-washer having integral bent-over tongues, and locking portions bent into substantially Z shape in cross-section and mounted upon the washer to have movement upon the tongue as upon a hinge, as set forth.

5. A nut-lock comprising a locking-washer having bent-over tongues, and locking parts each bent into a substantially Z shape in cross-section with a slot to receive the bent-over tongue, a cross-bar to be received in the tongue, and a notch coincident with the tongue, as set forth.

6. A nut-lock comprising a locking-washer, comprising a plate with a bent-over tongue, a hinged locking part held by the tongue, the washer being provided about the bolt-opening with slits and prongs, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. GREEN.

Witnesses:
JOHN E. WEBB,
JOHN S. GORDON.