No. 895,481. PATENTED AUG. 11, 1908.

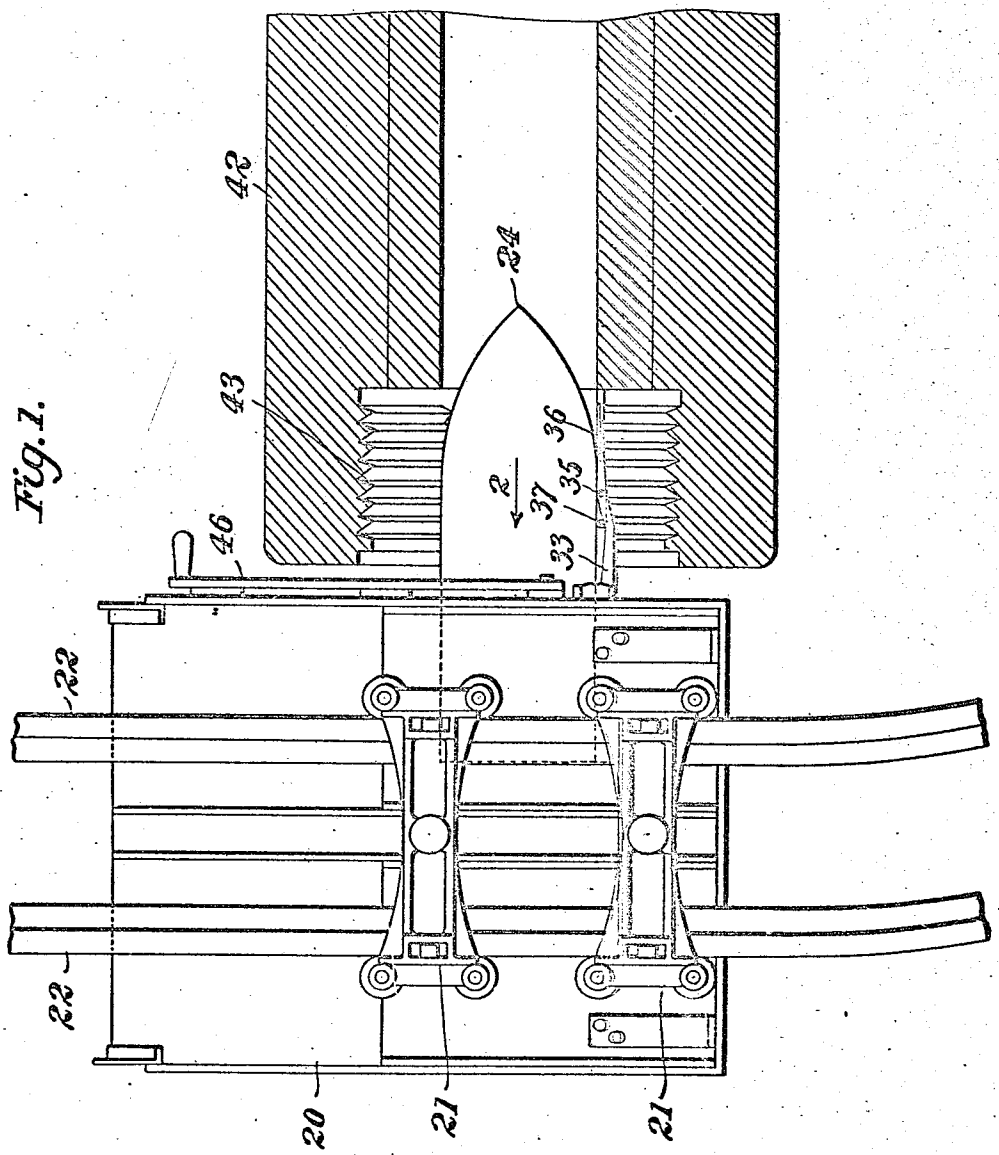
J. F. MEIGS & R. P. STOUT.

LOADING MECHANISM FOR GUNS.

APPLICATION FILED JUNE 18, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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Fig. 2.

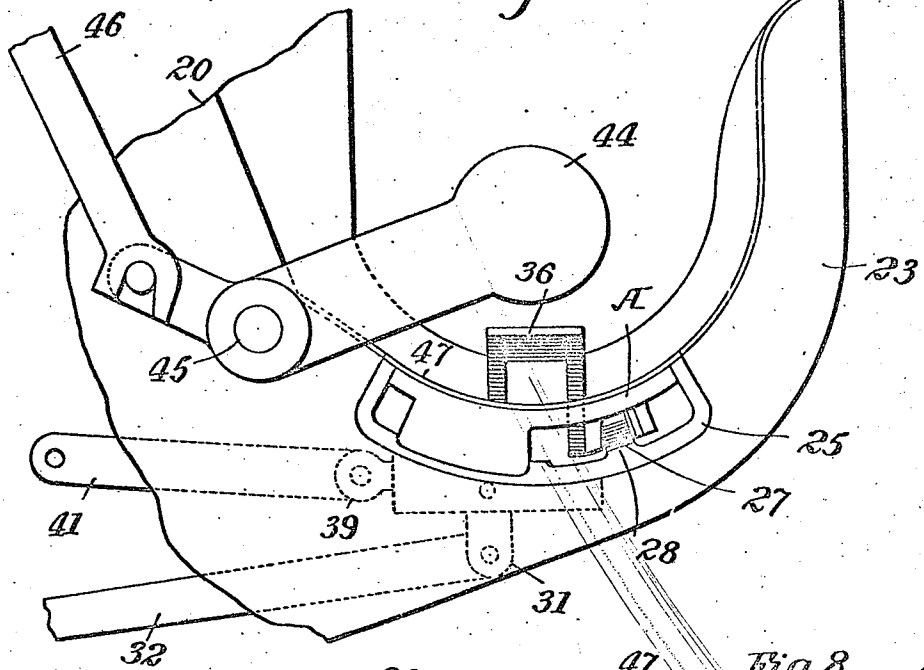


Fig. 7.

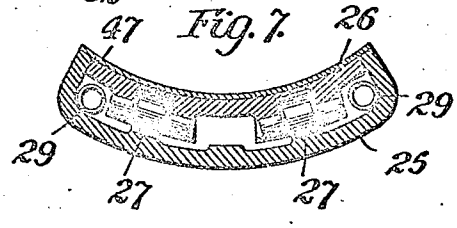


Fig. 8.

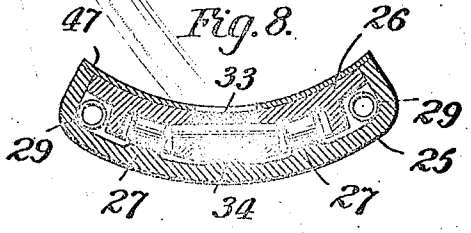


Fig. 9.

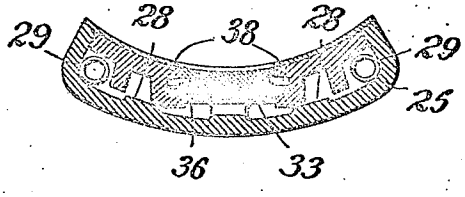


Fig. 10.

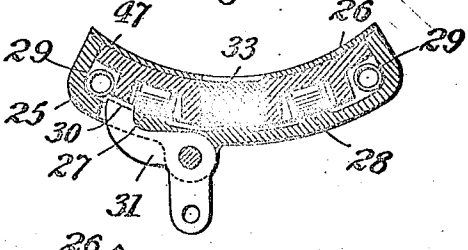
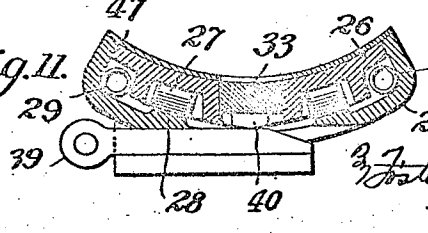


Fig. 11.



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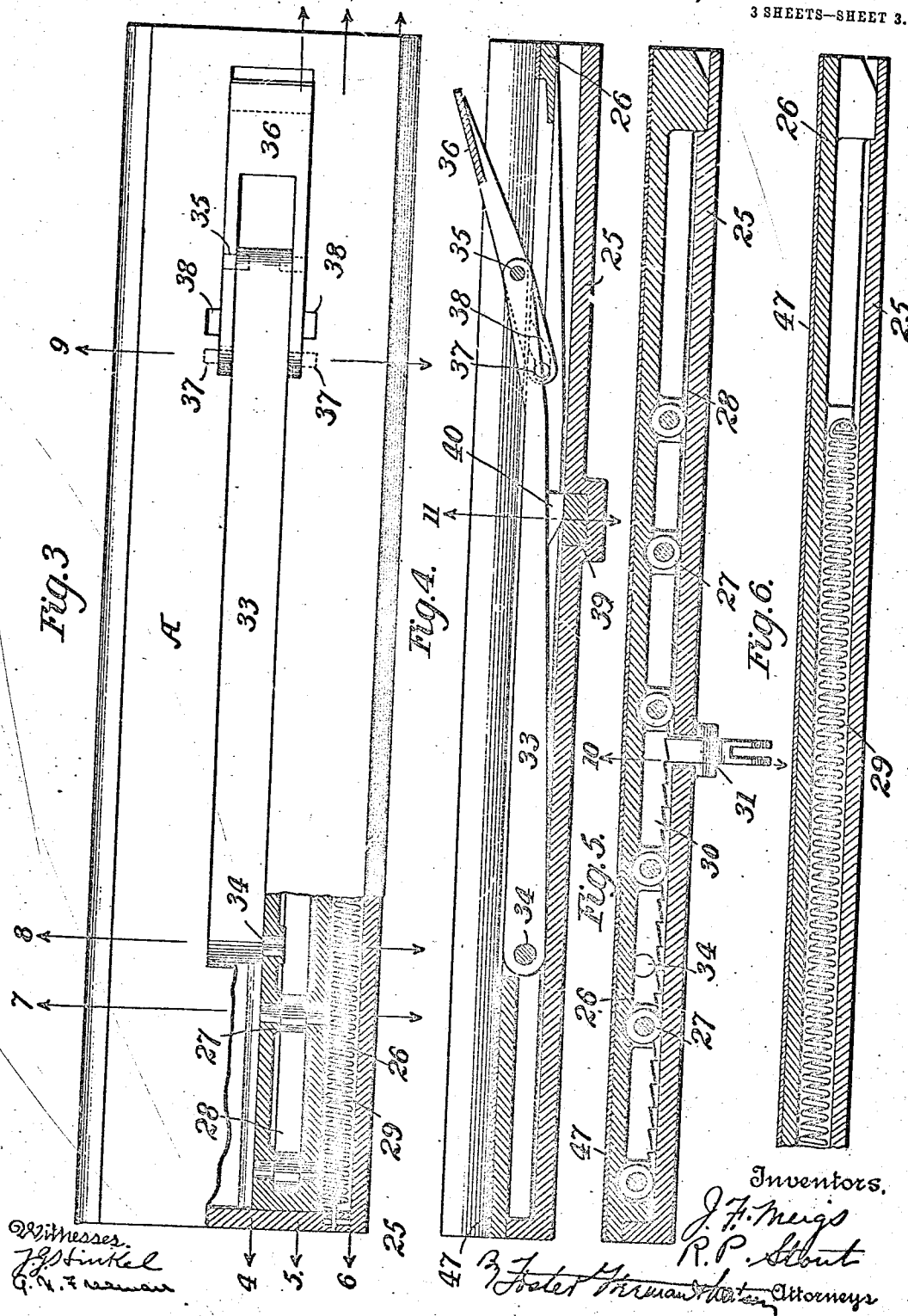
PATENTED AUG. 11, 1908.

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LOADING MECHANISM FOR GUNS.

APPLICATION FILED JUNE 18, 1904.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN F. MEIGS AND ROBERT P. STOUT, OF SOUTH BETHLEHEM, PENNSYLVANIA, ASSIGNORS TO BETHLEHEM STEEL COMPANY, OF SOUTH BETHLEHEM, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LOADING MECHANISM FOR GUNS.

No. 895,481. Specification of Letters Patent. Patented Aug. 11, 1908.

Application filed June 18, 1904. Serial No. 213,165.

To all whom it may concern:

Be it known that we, JOHN F. MEIGS and ROBERT P. STOUT, citizens of the United States, and residents of South Bethlehem, Northampton county, State of Pennsylvania, have invented certain new and useful Improvements in Loading Mechanism for Guns, of which the following is a specification.

The present invention relates to loading mechanism for guns and more especially to devices for loading heavy projectiles into breech loading guns.

The object of the invention is to provide a support for the projectile as it passes through the breech block cavity to protect the threads or other locking devices of the breech block and any other mechanism pertaining thereto.

In carrying out the invention we provide a tray on the ammunition car or hoist which is adapted to be moved laterally from the car into the breech block cavity and to constitute a bridge or support to carry the projectile through said cavity.

The invention will be described in detail in connection with the accompanying drawing, in which,

Figure 1 is an elevation, partly in section, showing a rear view of an ammunition car with the loading tray partly projected therefrom and a section of a gun into which a projectile is being transferred from the car; Fig. 2 is an end view of the lower shelf of the car looking in the direction of the arrow 2 Fig. 1; Fig. 3 is a plan view of the loading tray; Figs. 4, 5 and 6 are respectively sections on the lines 4, 5 and 6 of Fig. 3; Figs. 7, 8 and 9 are respectively sections on the lines 7, 8 and 9 of Fig. 3; Fig. 10 is a section on the line 10 of Fig. 5; and Fig. 11 is a section on the line 11 of Fig. 4.

Referring to the drawing, 20 indicates an ammunition car, which, in the present instance, is a hoisting car having trucks 21 running on vertical or upright rails 22. The car is provided with several shelves or holders for the sections of a charge for the gun, the lower shelf 23 being preferably arranged to receive and transport the projectile 24.

In the shelf 23 is a runway 25 in which is supported the loading tray A. The tray A comprises a cradle 26 supported by a series of rollers 27 which run on ribs or rails 28 of the runway 25. As shown the rollers are journaled in bearings in the lower side of the cradle. The tray is normally held in a retracted position, as shown in Figs. 3, 4 and 5, by suitable springs 29, there being one on each side of the tray, and the ends of the springs being connected respectively to the tray and the runway or other fixed part of the car. A ratchet 30 and retaining pawl 31 are provided for holding the tray in a projected position when it is moved forward on the runway, the ratchet, as shown, being connected with the tray and the retaining pawl 31 pivoted to the runway. A suitable connection 32 is provided for tripping the pawl to release the tray and permit the springs to return it to normal position.

A tongue 33 centrally and longitudinally arranged in the bed of the tray is pivoted to the cradle at 34. The forward end of the tongue is connected by pivots 35 to the intermediate part of a supplemental tongue 36. As shown the tongue 36 is U-shaped, being provided with legs on opposite sides of the tongue 33, and on the rear ends of the legs are pivot pins 37 which engage slots 38 in the cradle 26.

A bolt 39 which slides laterally in a groove in the bottom of the runway 25 coöperates with a projection 40 on the bottom of the tongue 33 to raise the tongue slightly as shown in Fig. 4. When the bolt 39 is withdrawn by means of a suitable connection 41 the tongue 33 drops to the position shown in Fig. 1 in which its upper surface is substantially flush with the upper surface of the tray or slightly lower. When the bolt is under the tongue the latter is raised as shown in Fig. 4 and the supplemental tongue 36 is thrown up at a more acute angle as also shown in Fig. 4. It will be understood that when the tongue is dropped the supplemental tongue also drops to a substantially horizontal position flush with the upper surface of the tray. The forward end of the bolt 39 is beveled as shown in Fig. 11 thus providing an incline or wedge which raises the tongue when the bolt is inserted beneath it.

In the drawing, 42 indicates a portion of a gun and 43 the breech block cavity thereof. The car is preferably provided with a guard 44 pivoted at 45 and adapted to be moved in front of the projectile after the latter is

loaded on the car to prevent it from being accidentally dislodged. The guard may be thrown out of the path of the projectile by a suitable connection 46.

The operation of the mechanism is as follows. The projectile, or other ammunition, is loaded on the car while the tray is in its retracted position, as shown in Fig. 3, the tongue being preferably dropped into its lower position, as shown in Fig. 1. If the projectile is loaded on the car from the left in Fig. 1 it will be immaterial whether the tongue is raised or lowered at the time of loading. Before operating the rammer to move the projectile from the car into the gun the tongue 33, 36 is raised and supported on the slide 39. On operating the rammer the projectile will be moved forward and will carry the tray with it by reason of engaging with the raised tongue. The tray will be carried forward into the gun until the projection 40 is carried beyond the end of the runway 25, when the pressure on the tongue 36 will press tongues 33 and 36 down, allowing the projectile to pass over the top of them into the gun chamber. The tray will be retained temporarily in this position by ratchet pawl 31. To protect the tray it is preferably covered with a sheet 47 of steel or other suitable material, which may be extended over the edge of the runway, as shown in the drawings, to protect the roller bearings and springs from dirt. After the projectile and powder have been thrust into the gun the pawl 31 is withdrawn and the tray drawn back by the springs to its normal position in the car.

It will be evident that various changes in the mechanical details of our improved loading apparatus may be made without departing from the spirit and scope of the invention. The two-part tongue described is a means for temporarily preserving the relative position of the tray and projectile, and other movable devices might be substituted. The roller bearings of the tray might be substituted by runners or slides adapted to move on lubricated surfaces. We have, however, illustrated the invention in the best form at present known to us.

Without limiting ourselves to the particular construction and arrangement illustrated and described, we claim,

1. In loading mechanism for guns, the combination with a runway, of a tray slidably supported on the runway and adapted to move to and from a gun, means for locking the tray in operative relation with the gun, and a spring for automatically returning the tray to normal position when unlocked.

2. In loading mechanism for guns, the combination with the runway, of a tray movable longitudinally of the runway and adapted to support a projectile, a ratchet on the tray, a pawl connected with the runway for coöperating with the ratchet, and springs connecting the tray with the runway, for the purpose set forth.

3. In a loading mechanism for guns, the combination with an ammunition car, of a runway on said car, a tray slidably supported on the runway and adapted to hold a projectile, a tongue pivotally connected with the tray and having its free end at the forward end of said tray, the tongue being arranged in the path of the projectile and adapted to be engaged by the projectile when the latter is moved forward whereby the tongue serves to draw the tray into the breech of the gun, manually operated means for raising and lowering the said tongue at will, and means for automatically lowering the tongue as it enters the gun and raising the tongue as it is retracted from the gun.

4. In loading mechanism for guns, the combination with an ammunition tray, of a tongue movable up and down relative to said tray, and a supplemental tongue movably connected to the free end of said tongue and to the tray, for the purpose set forth.

5. In loading mechanism for guns, the combination with the tray, of a tongue 33 pivoted thereto, and the transversely movable slide 39 adapted to raise and sustain said tongue.

6. In loading mechanism for guns, the combination with an ammunition car or support, of a tray movably mounted on said car, rollers supporting said tray, and springs for normally holding the tray in its rearmost position.

7. In loading mechanism for guns, the combination of an ammunition car or support, a runway on said car, a tray provided with rollers supported on said runway, springs for holding the tray in normal position, and means for causing the tray to travel with the projectile into the breech block cavity of the gun.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN F. MEIGS.
ROBERT P. STOUT.

Witnesses:
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EARL G. RUSH.