

No. 671,370.

Patented Apr. 2, 1901.

P. BROWN.  
DRAFT MECHANISM.

(Application filed Mar. 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.

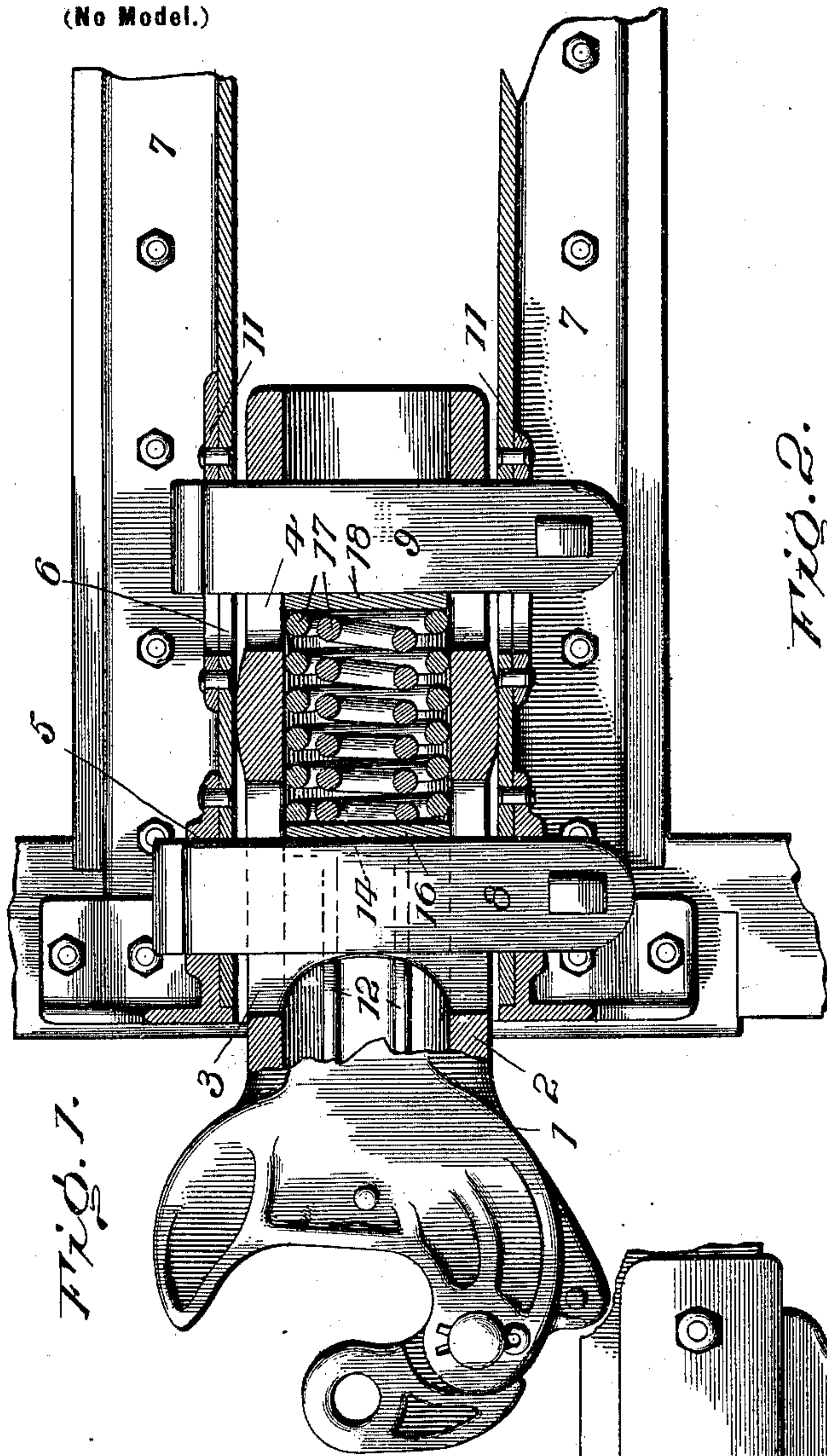


FIG. 1.

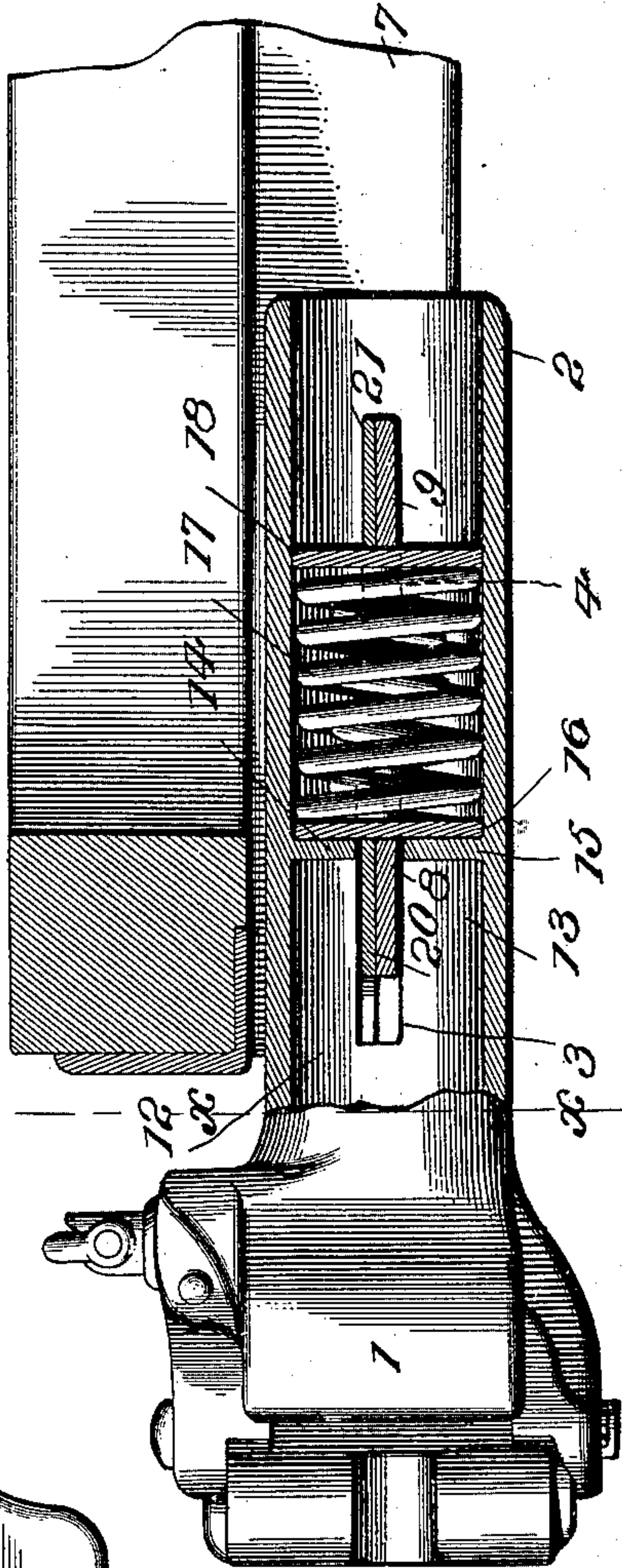


FIG. 2.

FIG. 7.

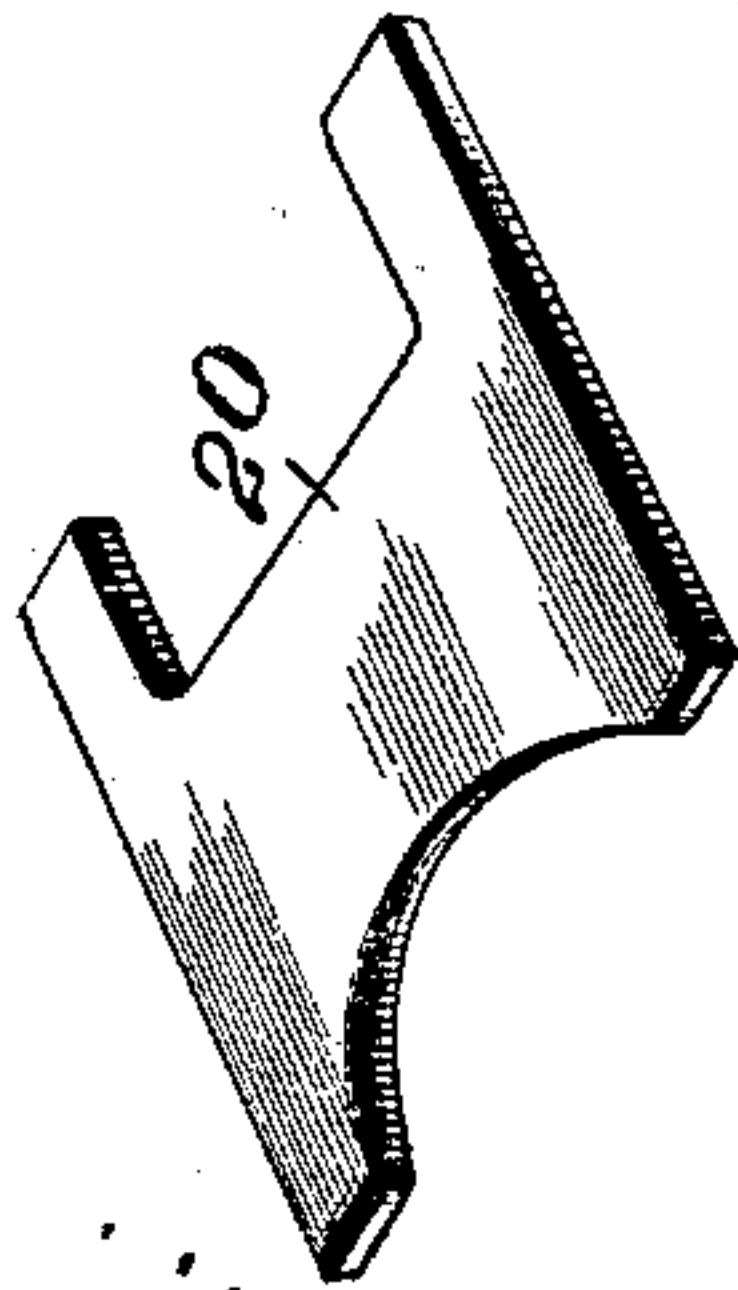


FIG. 3.

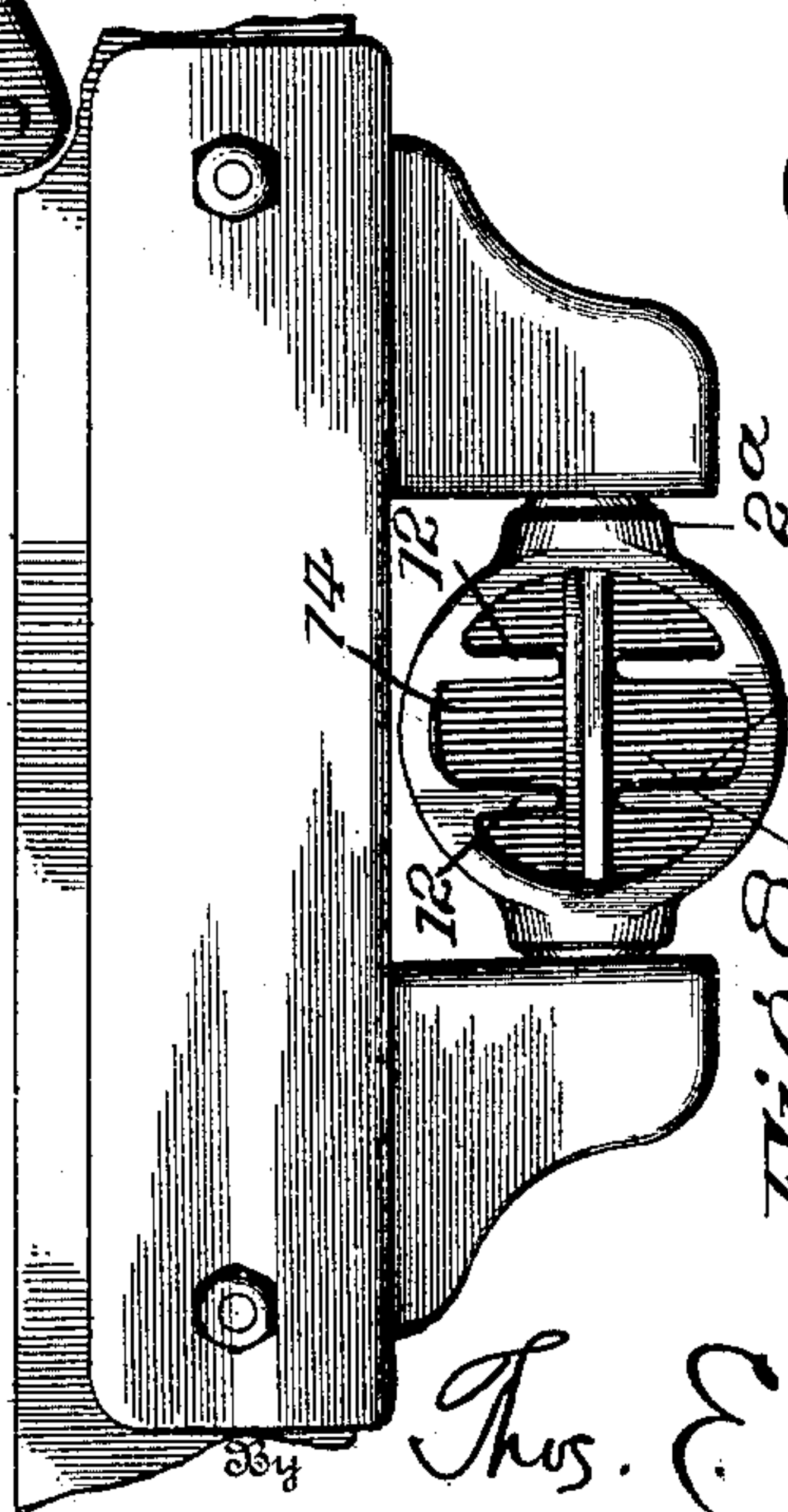
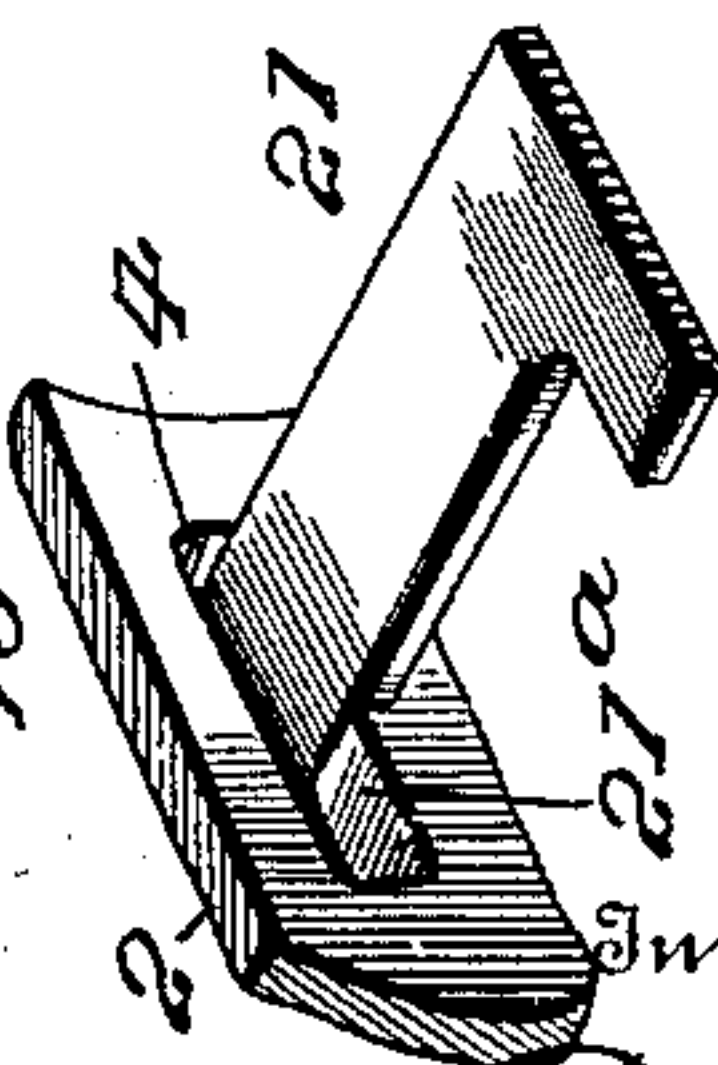


FIG. 8.



Witnesses

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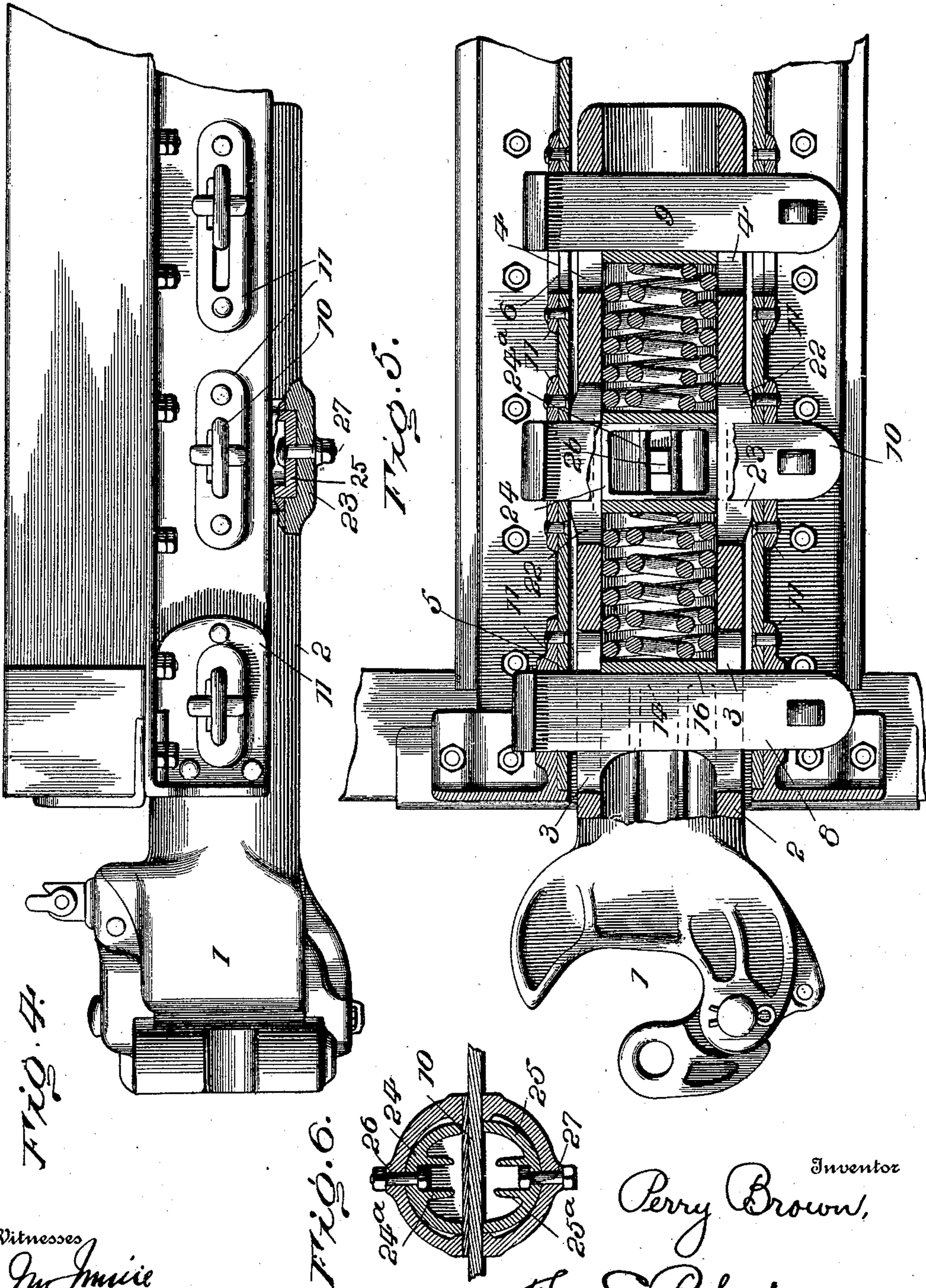
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# UNITED STATES PATENT OFFICE.

PERRY BROWN, OF WILMINGTON, DELAWARE.

## DRAFT MECHANISM.

SPECIFICATION forming part of Letters Patent No. 671,370, dated April 2, 1901.

Application filed March 30, 1900. Serial No. 10,768. (No model.)

*To all whom it may concern:*

Be it known that I, PERRY BROWN, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented a certain new and useful Improvement in Draft Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improvement in draft-riggings for railroad-cars, and has for one object to provide a simple, durable, and easily-attached draft-rigging which will be of the greatest strength in proportion to its weight and size.

Another object is to provide a draft-rigging of practicable form which may be made so as to be housed in the same casting as the draw-bar proper.

With these ends in view my invention consists in the peculiar construction, arrangement, and combinations of parts hereinafter more particularly described and then definitely claimed.

In the drawings accompanying this specification, Figure 1 is a bottom plan view of my improvement with parts broken away to better illustrate the parts. Fig. 2 is a longitudinal central section of the same, but with the coupler-head shown in full lines. Fig. 3 is a cross-section through the line *xx* of Fig. 2. Fig. 4 is a side elevation of my device arranged in tandem. Fig. 5 is a bottom plan of the same, but with most of the parts in section. Fig. 6 is a section through the shank at the point where the central flat bar passes through it. Figs. 7 and 8 are perspective details of "wearing-plates."

Referring now to the details of the drawings by numerals, 1 represents a coupler-head of the type now in common use, and 2 is the shank of the same. This shank, however, instead of being of the common square form is rather larger and is by preference round or cylindrical and formed, preferably, of the special construction shown in my drawings to adapt it to have the springs and followers of the draft mechanism inserted therein.

Referring now particularly to Figs. 1 and 2, the numerals 3 and 4 indicate horizontal slots in the shank 2, and through these slots, and also through slots 5 and 6 in draft-beams

7, are passed flat bars 8 and 9, which are provided with heads at one end and have their opposite ends secured by keys and cotters of the usual form. The draft-beams when made of metal are reinforced on their outer surfaces by the usual rigid wearing-plates 11, and the shank 2 is strengthened where it is slotted by the flanged portions 2<sup>a</sup>. (See Fig. 3.)

At the front end of the shank 2, where the flat bar 8 passes through it, are cast internal ribs 12 and 13, which terminate, respectively, in vertical cross-bars 14 and 15, and from these bars 14 and 15 the interior of the shank is of uniform size and is thus well adapted to allow the springs and followers to work therein. A front follower 16, springs 17, and a rear follower 18 are inserted within the rear end of the shank in the order named, and after they are pushed against the cross-bars 14 and 15 and flat bar 8 the rear flat bar 9 is passed through the slotted draft-beams and slotted shank and secured in position by the usual key.

In order to reduce the wear as much as possible where the shank of the coupler moves over the flat bars, I insert flat wearing-plates 20 and 21, the former, shown in Fig. 7, being placed in position in the front slot 3 before the followers and springs are inserted, and the latter, in Fig. 8, being inserted in the rear slot 4 after the rear follower 18 is in place. The wearing-plate 21 is of the shape of an inverted L, as otherwise it would be difficult to place it in position. To balance the opposite side, a portion of the slot 4 of the shank is made raised, as shown at 21<sup>a</sup> in Fig. 1. It is manifest that when these wearing-plates 20 and 21 become worn they may be thrown away and new ones substituted.

Referring now to Figs. 4 and 5, which show my improvement arranged "in tandem," it will be observed that the front and rear ends of the shank 2 are identical with the single form, but that in order to accommodate the two sets of springs the shank is made longer and provided with a third or intermediate slot 22, through which passes an intermediate flat bar 10. This bar 10 also passes through slots in the draft-beams, but has no movement in the latter, as the rear flat bar has in its slots. The shank 2, around the intermediate bar 10, is cast with a swelled portion 23, and the in-



terior of this swelled portion is formed of larger diameter than the interior of the remainder of the shank. Fitting in said larger portion, one above and one below the bar 10, are blocks 24 and 25, which are slipped in after the front followers and springs are placed in position. These blocks 24 and 25 are secured rigidly to the shank by means of bolts 26 and 27, the heads of which are kept from turning when the nuts are being screwed on by integral ribs 24<sup>a</sup> and 25<sup>a</sup>, projecting from the blocks 24 and 25.

In all other respects than those specially noted the tandem form just described corresponds exactly with the form shown in Figs. 1 and 2.

The operation is as follows: On an "impact" the cross-bars 14 and 15 of Figs. 1 and 2 act against the first follower 16 and compress the springs 17 against the rear flat bar 9 behind said springs, which is immovable rearwardly, the shank being able to pass over the front flat bar 8 on account of its having the slots 3, and on a "pull" the rear flat bar 9, which is allowed forward movement in its slot, acts against the rear follower 18, and thus compresses the springs 17 against the front flat bar 8, which is held from movement in the slots 5 of the draft-beams 6. In the tandem form when the cross-bars 14 and 15 act with the forward follower 16 to compress the front springs against the central flat bar 10 the blocks 24 and 25, which are bolted to the shank and move with it, act to compress the rear springs against the rear flat bar 9. On a pull the rear flat bar 9, having movement forwardly in its slots, compresses the rear springs against the fixed central flat bar, and the blocks 24 and 25, which are now moving forwardly, compress the front springs against the front flat bar, which is immovable in its slots in the draft-beams.

I am aware that it has heretofore been proposed to make a coupler with springs arranged in its shank, as shown in Nash's United States Patent No. 500,074, of June 20, 1893, and hence do not attempt to claim such broadly; but I believe I am the first to provide a coupler with its shank adapted to receive draft mechanism in which the same springs are arranged to receive action on both a pull and an impact. Another feature I believe to be novel is the arrangement of the supporting-bars, whereby the front bar besides acting to allow the springs to compress against it on a pull also acts to support the weight of the coupler, thereby dispensing with the usual "carrying-iron" or "stirrup." It is obvious that in avoiding the use of this carrying-iron or stirrup my arrangement can be taken off of a car by simply removing the flat bars 8 and 9 of Figs. 1 and 2 or the bars 8, 9, and 10 of Figs. 4 and 5 and without removing any bolts or giving any attention to the draft beams or sills.

It is of course manifest that changes may

be made without departing from my invention and that I do not confine myself to the forms shown in my drawings, which are shown as those I now prefer.

What I claim as new is—

1. In a draft mechanism; a draw-bar or coupler having a hollow shank with an open rear end; draft-beams on the sides thereof; a plurality of bars supported by said draft-beams and passing through said hollow shank, one of said bars being immovable and another movable in said draft-beams; and a spring arranged within said hollow shank and between said bars, the open rear end of said hollow shank being adapted to have the spring inserted therein.

2. In a draft mechanism; a draw-bar or coupler provided with a hollow shank having partially-inclosed sides with slots therein; draft-beams on the sides thereof; a plurality of bars supported by said draft-beams and passing through the slots in said hollow shank one of said bars being immovable and another movable in said draft-beams; and followers and springs within said hollow shank and between said bars.

3. In a draft mechanism; a draw-bar or coupler provided with a hollow shank having partially-inclosed sides with slots therein; draft-beams on the sides thereof having slots therein; a plurality of bars passing through the slots in said hollow shank and through said slotted beams one of said bars being immovable and another movable in said draft-beams; and a spring within said hollow shank and between said bars.

4. In a draft mechanism; a draw-bar or coupler provided with a hollow shank having partially-inclosed sides with slots therein; draft-beams on the sides thereof; a plurality of bars supported by said draft-beams and passing through the slots in said hollow shank one of said bars being immovable and another movable in said draft-beam; and a spring arranged within said hollow shank and between said bars; one of said bars performing the double service of supporting the front end of the said shank and of receiving the pressure of said spring.

5. In a draft mechanism; a draw-bar or coupler provided with a hollow shank having slots therein; draft-beams on the sides thereof; a plurality of bars passing through said slotted shank and draft-beams; one of said bars being immovable and another movable in said draft-beams; a spring between said bars and coacting therewith; and means in the shank as the cross-bars for coacting with said spring when the latter is compressed.

6. In a draft mechanism; a draw-bar or coupler provided with a hollow shank and having slots therein; draft-beams; a plurality of bars supported by said beams and passing through said hollow shank one of said bars being immovable and another movable in said draft-beams; a spring within said shank be-



tween the bars; and means on said shank as the cross-bars for coacting with said spring when the latter is compressed.

7. In a draft mechanism; a draw-bar or 5 coupler provided with a hollow shank having slots therein; draft-beams and a plurality of bars supported thereby, the latter passing through said hollow shank; a spring within 10 said shank and between the bars; cross-bars within said shank coacting with said springs; and longitudinal ribs integral with said cross-bars and strengthening said cross-bars.

8. In a draft mechanism; a draw-bar or 15 coupler provided with a hollow shank having slots therein; draft-beams on the sides thereof; three bars supported by said draft-beams and passing through the slots in said hollow shank; a spring between the first and second 20 bars; and a spring between the second and third bars, each of said springs absorbing the strain in each direction.

9. In a draft mechanism; a draw-bar or 25 coupler provided with a hollow shank having slots therein; slotted draft-beams on the sides thereof; three bars passing through said slotted shank and through said slotted beams; and springs between said bars; one of said bars performing the double service of sup- 30 porting the front end of the said shank and of receiving the pressure of said springs.

10. In a draft mechanism; a draw-bar or 35 coupler provided with a hollow shank having slots therein; slotted draft-beams on the sides thereof; three bars passing through said slotted shank and beams; springs between said bars; and means secured to said shank to act against the said springs.

11. In a draft mechanism; a draw-bar or 40 coupler provided with a hollow shank having slots therein; slotted draft-beams on the sides thereof; three bars passing through said slotted shank and beams; springs between said bars; and means as the blocks detachably secured to said hollow shank to act be- 45 tween said springs.

12. In a draft mechanism; a draw-bar or 50 coupler provided with a hollow shank having slots therein; slotted draft-beams on the sides thereof; three bars passing through said slotted shank and beams; springs between

said bars; cross-bars in said shank acting against the forward springs; and blocks secured to said shank intermediate of said springs.

13. In a draft mechanism; a draw-bar or 55 coupler provided with a hollow shank having slots therein; slotted draft-beams on the sides thereof; three bars passing through said slotted shank and beams; springs between said bars; the intermediate bar being station- 60 ary; and means within the hollow shank arranged to act on the springs on each side of said central bar.

14. In a draft mechanism; a draw-bar or 65 coupler; draft-beams on the sides thereof; a plurality of bars supported by said draft-beams; springs between said bars; slotted means as the hollow shank for inclosing said springs and bars; and a removable wearing- 70 plate interposed between said bars and inclosing means and extending the full length of wear on said slot, and saving the latter from wear.

15. In a draft mechanism; a draw-bar or 75 coupler provided with a hollow shank; slotted draft-beams on the sides thereof; a plurality of bars passing through said shank and supported by said draft-beams; springs between said bars; the said slotted shank having its interior enlarged between said springs; and 80 blocks placed in said enlarged portion of said shank between said springs and acting on the latter.

16. In a draft mechanism; a draw-bar or 85 coupler provided with a hollow shank having slots therein; draft-beams on the sides thereof; and a plurality of bars passing through the slots in said hollow shank, and supported by said draft-beams; the forward bar being immovable and the rear bar movable in said 90 draft-beams, and a slot in the forward part of the shank extending on each side of said forward bar.

In testimony whereof I affix my signature, in the presence of two witnesses, this 28th day 95 of March, 1900.

PERRY BROWN.

Witnesses:

THOS. S. ROBERTSON,  
ARTHUR E. DOWELL.