

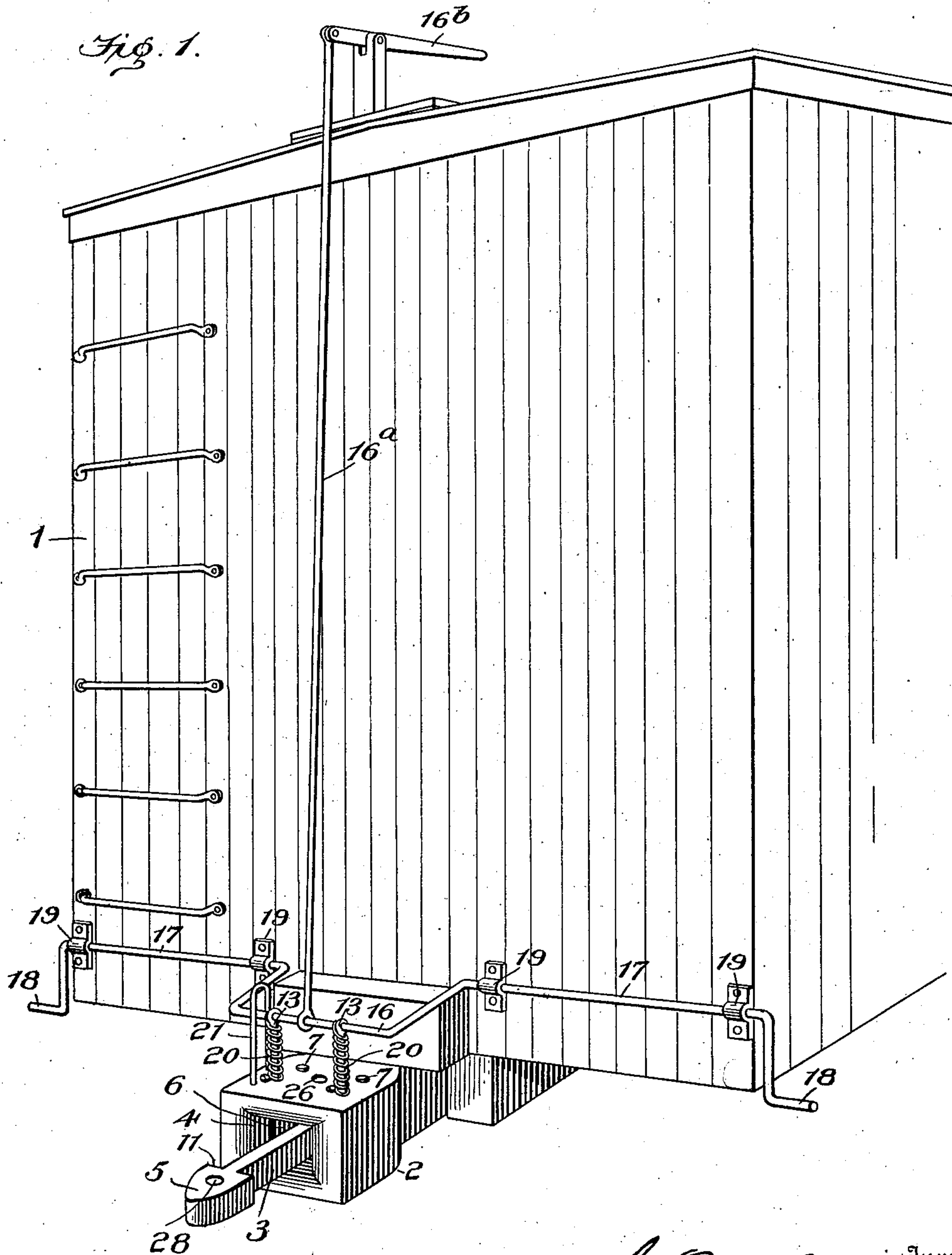
No. 896,067.

PATENTED AUG. 11, 1908.

G. W. SAYRE.  
CAR COUPLING.

APPLICATION FILED APR. 25, 1907.

2 SHEETS—SHEET 1.



Witnesses  
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H. B. Campbell.

Inventor  
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By Watson E. Coleman  
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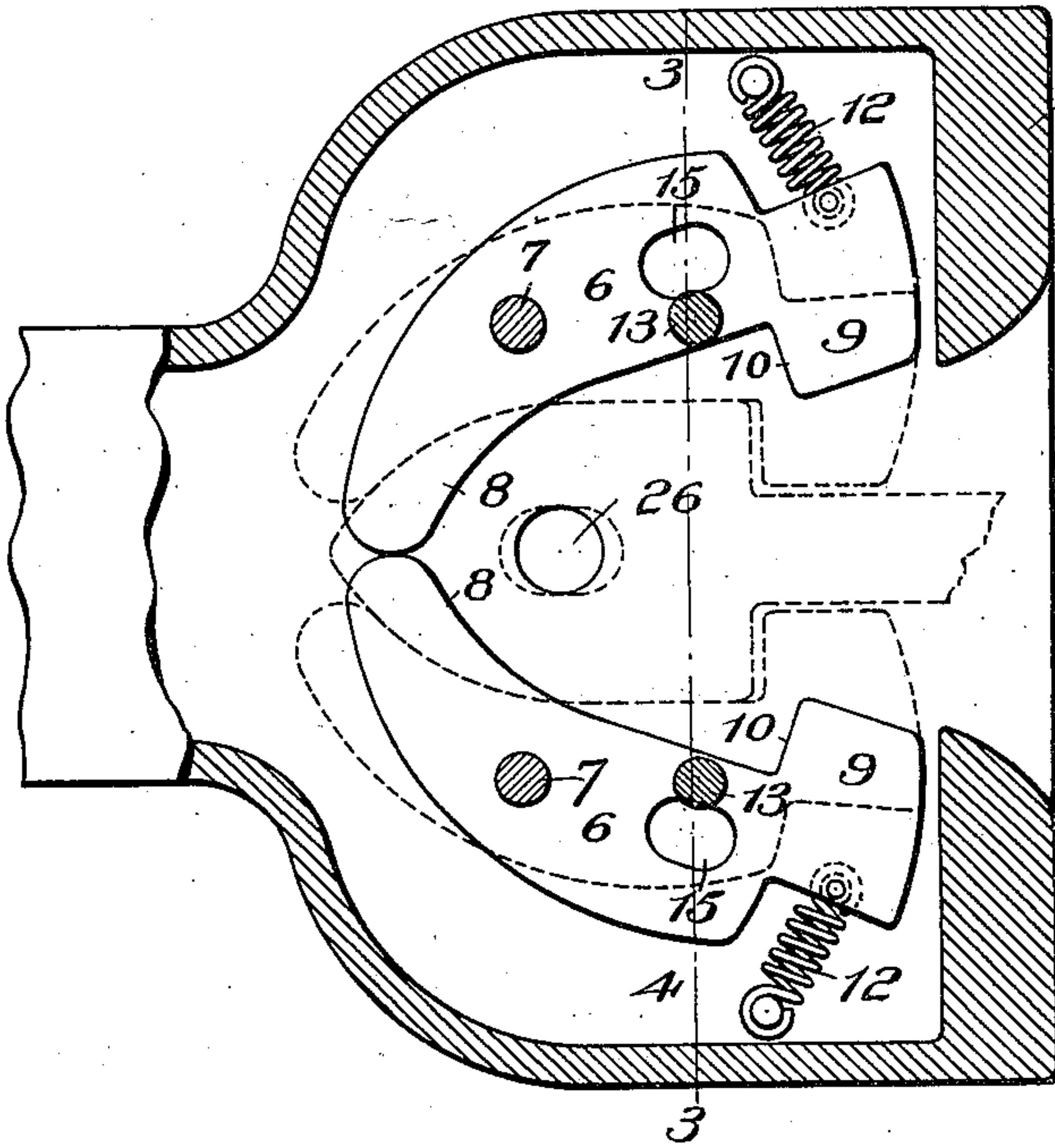


Fig. 2.

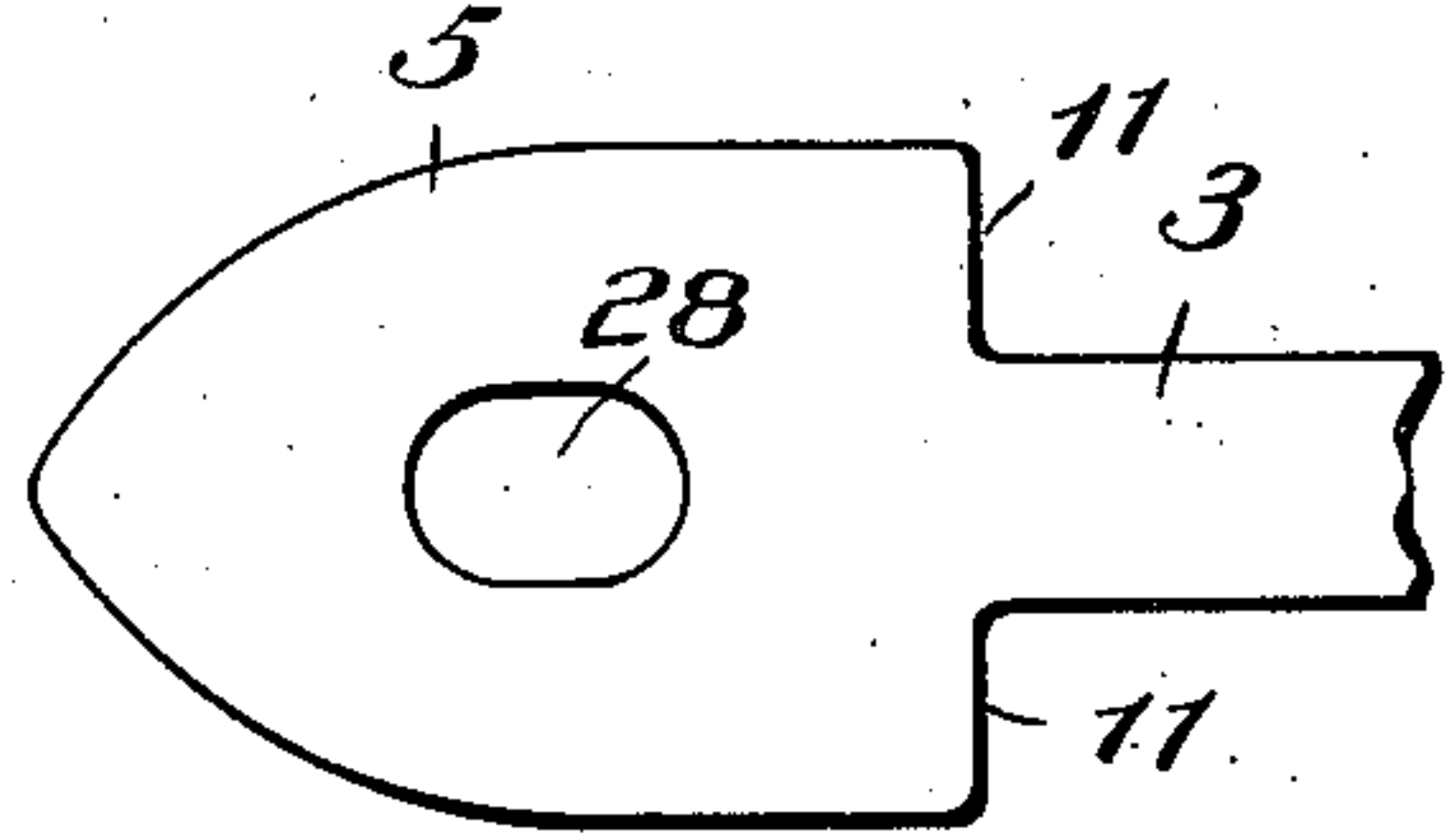


Fig. 5.

Fig. 3.

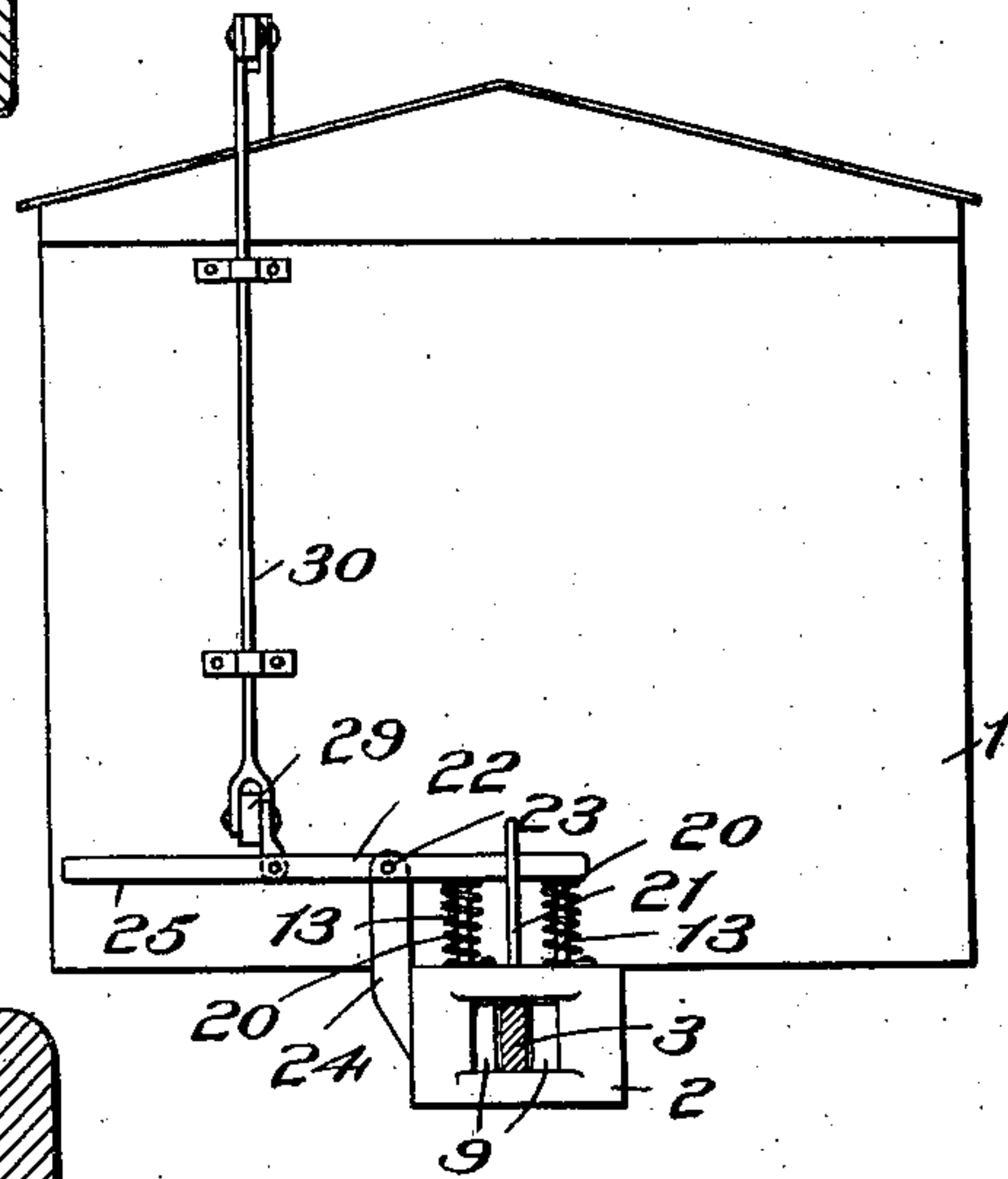
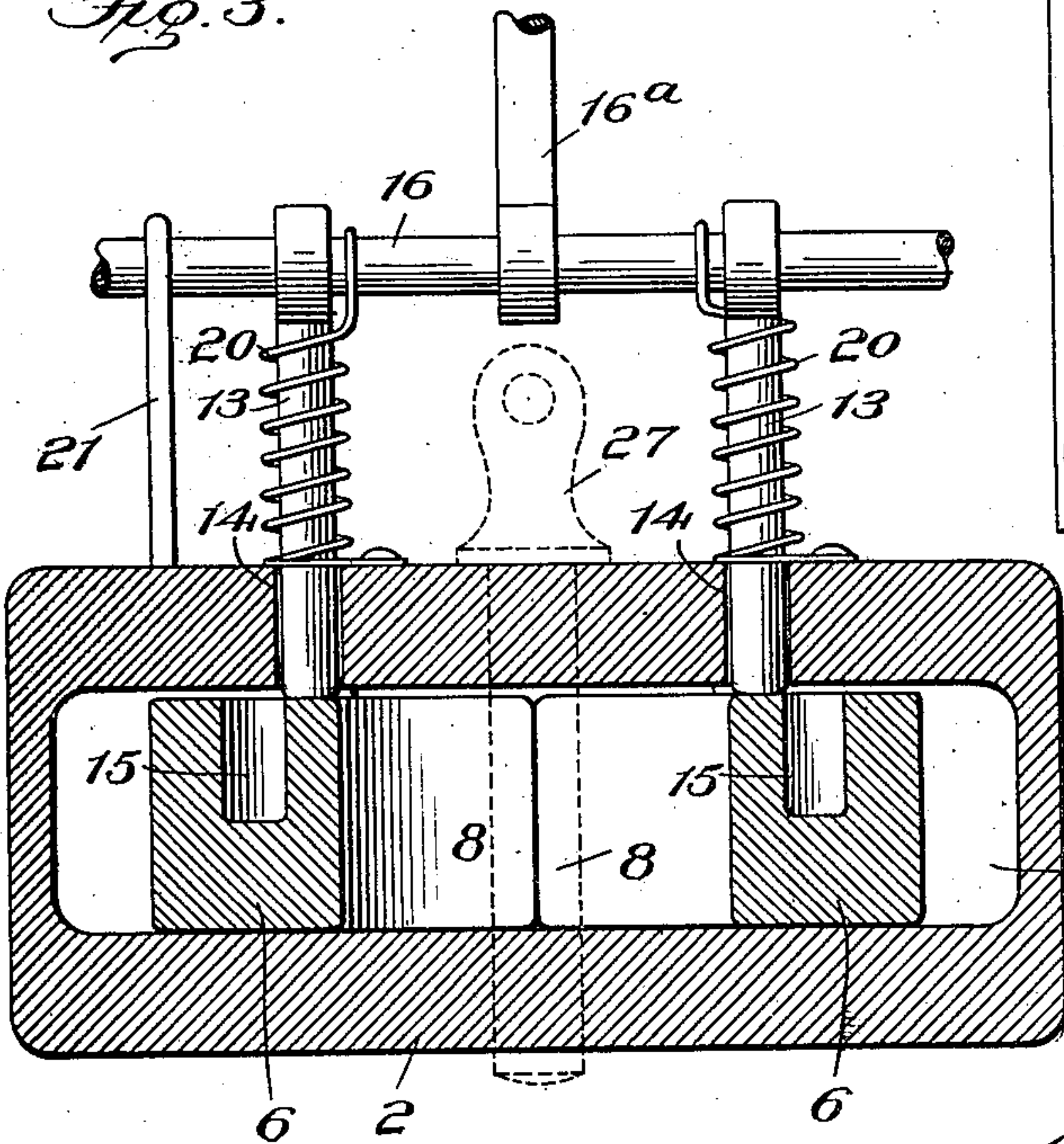
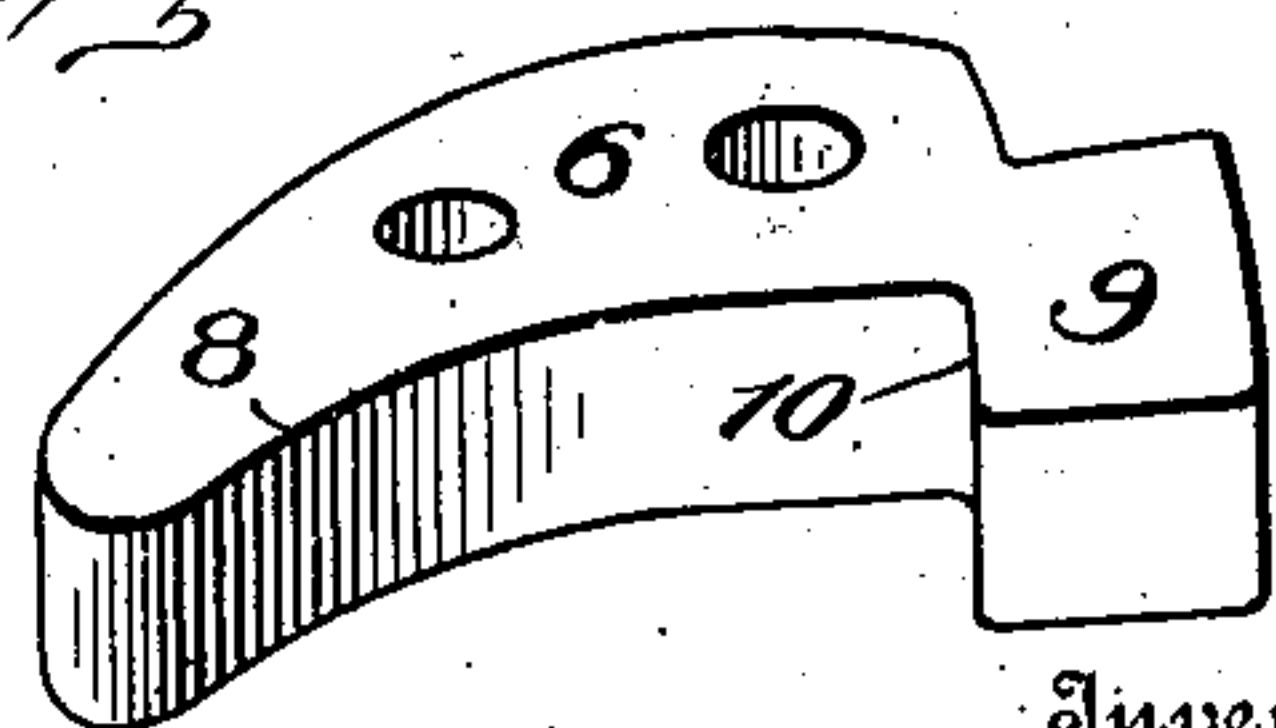


Fig. 4.



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# UNITED STATES PATENT OFFICE.

GEORGE W. SAYRE, OF STEVENS, WEST VIRGINIA.

## CAR-COUPLING.

No. 896,067.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed April 25, 1907. Serial No. 370,250.

*To all whom it may concern:*

Be it known that I, GEORGE W. SAYRE, a citizen of the United States, residing at Stevens, in the county of Mason and State of West Virginia, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in car couplers and consists in the novel features of construction, combination and arrangement of parts hereinafter described and claimed.

The object of the invention is to provide a simple, practical and efficient device of this character which will be automatic in its coupling operation after its parts have been properly set and which may be controlled and operated from either side of the car to obviate the necessity of trainmen going between the cars to couple or uncouple the same.

The above and other objects are accomplished in the preferred embodiment of my invention which is illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of the portion of one end of a car, illustrating the application of the invention thereto; Fig. 2 is a horizontal section through the coupler; Fig. 3 is a vertical transverse section taken on the plane indicated by the line 3—3 in Fig. 2; Fig. 4 is a detail perspective of one of the locking dogs; and Fig. 5 is a front end elevation of the coupler, showing a slightly modified form of the operating lever.

In the drawings, the numeral 1 denotes one end of a car or the like, and 2 denotes the improved coupler which may be suitably secured to the car and is in the form of a hollow casting. The front of the coupler body 2 is open to permit the coupling pin 3 to enter the chamber or cavity 4 in said body, and to facilitate the entrance of the same, the top, bottom and side walls of said front opening are inwardly beveled or inclined, as shown.

While the coupling link or member 3 may be of any suitable form and construction, I preferably employ one in the form of a straight bar having at its opposite ends arrow shaped heads 5. These heads are adapted to enter the coupler heads on the opposing ends of two cars and they are adapted to engage and actuate and be locked therein by pairs of opposing locking dogs 6 arranged in

the cavities 4 in said heads. As clearly shown in Fig. 2, the dogs 6 are arranged upon opposite sides of the center or longitudinal axis of the coupler to receive the head 5 between them and they are pivoted intermediate their ends upon vertical pivots 7. Their rearwardly projecting ends are shaped to provide opposing cams 8 which are adapted to be engaged and forced apart by the tapered end of the arrow or wedge shaped head 5 of the coupling pin. The forward ends 9 of the dogs 6 are angular in shape to provide shoulders 10 adapted to swing into the path of and to engage the shoulders 11 formed by the enlarged inner end of the head 5. For the purpose of retracting the ends 9 of the dogs I preferably employ coil springs 12 each of which has one of its ends connected to one of the dogs and its other end to the coupler, as clearly shown in Fig. 2. These springs hold the dogs normally in their open or unlocked position shown in Fig. 2, so that their cams 8 are held together and in position to be forced apart by the head 5 for the purpose of moving the shoulders 10 on the front ends of the dogs in front of the shoulders 11 on the head 5 and thus locking the latter in the coupler.

For the purpose of retaining the dogs in their projected or locking position, I employ two locking pins 13 which are vertically slidable in guide openings 14 formed in the top of the coupler head and which are adapted to enter seats or vertical cavities 15 formed in said dogs. My preferred construction for operating the pins 13 is clearly shown in Fig. 1 and comprises a lever 16 formed by bending a rod at its center into substantially U-form, then bending its ends 17 into longitudinal alinement to provide fulcrum or journal portions for the lever and finally bending the extremities of the portions 17 to provide operating or crank handles 18. The fulcrum or journal portions 17 of the lever frame are suitably mounted for rotation in bearings 19 arranged upon the end of the car 1 and said lever frame is of such length that the cranks 18 may be readily reached and operated by a person standing at the side of the car. The locking pins have a loose pivotal connection with the cross portion of the U-shaped lever so that they may readily slide in the guide openings 14 in the coupler head, which openings, if desired, may be slightly elongated to allow sufficient play for said locking pins.



While the locking pins may drop by gravity into their seats or openings 15 when the dogs are shifted to cause said seats to register with the openings 14, I preferably employ coil springs 20 for this purpose. These springs surround the locking pins and have their lower ends attached to the top of the coupler and their upper ends to the lever 16. Said springs tend to pull the lever downwardly and hence to force the locking pins into the seats or openings 15, as soon as the latter register with the openings 14. Any suitable stop device may be provided for preventing the lower ends of the locking pins from being lifted out of the guide openings 14 when they are elevated by the lever to release the locking dogs, but I preferably employ for this purpose an inverted U-shaped yoke 21 which is arranged upon the top of the coupler head and surrounds the lever so as to limit the upward movement of the same.

In order to permit the lever frame 16 to be operated from the top of the car, I preferably employ a vertical rod 16<sup>a</sup> which is slidable in guides upon the end of the car and has its lower end loosely connected to said lever. Its upper end is connected to a lever 16<sup>b</sup> fulcrumed in a bracket upon the top of the car.

Instead of employing the operating lever or device shown in Fig. 1, I may use that shown in Fig. 5. This device comprises a transversely extending lever 22 pivoted intermediate its ends at 23 and a bracket 24 projecting upwardly from one side of the coupling head 2. The outer end 25 of said lever projects to one side of the car to serve as a handle and to its inner end which is angular in shape are loosely connected the locking pins 13. In this form of the invention I also employ the stop yoke 21 and connect the springs 20 to the inner end of the lever. In all other respects the construction and operation of this embodiment of the invention is the same as that of the foregoing.

In order to permit the lever 22 to be actuated from the top of the car, I pivotally connect the handle 25 of said lever to a lever 29 pivoted to the end of the car and also connected to the lower end of a vertically sliding rod 30 mounted in guides upon the end of the car and having its upper end projecting above the top of the same. It will be seen that when the rod 30 is pressed downwardly the inner end of the lever 25 will be elevated to retract the locking pins.

In order to permit the coupling of two of the coupler heads in the event of the breakage of the pivot 7, the pins 13, the dogs 6, or other parts of the device, I provide in the center of the head 2 a vertically extending opening 26 adapted to receive a removable locking pin 27 which when inserted is also adapted to enter a vertical opening 28 formed in the head 5 of the coupling pin. It will be understood that the pin 27 is only used in

case of emergency but if desired it may be employed as shown in Fig. 2.

From the foregoing it will be observed that when the inner end of the lever carrying the locking pins 13 is elevated the lower ends of said pins will be disengaged from the seats 15 in the dogs 6 and the springs 12 will actuate the latter to their normal open position. When the lever is released the springs 20 will cause the lower ends of the pins 13 to press upon the upper face of the dogs so that said pins will be forced into the seats 15 the instant the latter are brought into register or alinement with said pins. When the cars to be uncoupled approach each other, the coupling pin 3 is carried by one of them and as its head 5 enters the coupler 2, the pointed end of said head will enter between the cams 8 and actuate the dogs to throw their shoulders into the path of the shoulders 11 on said arrow head and to bring the seats 15 into alinement with the locking pins which latter then enter said seats and retain the dogs in their actuated position, thus locking the head of the coupling pin in the coupler. To release the head 5 it is only necessary to elevate the lever so that the pins 13 are retracted from the seats 15. When this is done the springs 12 restore the dogs to their normal position.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

In a car coupler, the combination of a hollow head formed with an outwardly flared inlet opening for the arrow head of a coupling pin, a pair of dogs pivoted intermediate their ends in the head and having opposing cam shaped rear ends and front portions formed with inwardly extending projections providing stop shoulders, the intermediate portions of said dogs being formed in their top with seats or cavities, coil springs arranged in the head and connected to the front portions of the dogs for moving the shoulders apart and the cam ends into contact with each other, a pair of locking pins arranged for vertical sliding movement in the top of the head and adapted to have their lower ends rest upon the top of said dogs and to enter the seats or cavities therein, a cross bar connecting the upper and outer ends of said locking pins for simultaneous movement, coil springs surrounding said locking pins and having their upper ends engaged with the cross bar and their lower ends secured to the head, a guide loop arranged upon the head to limit the upward movement of the cross bar and means for operating said cross bar.

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

GEORGE W. SAYRE.

Witnesses:

ZUBAH RAY,  
LINA SWANK.