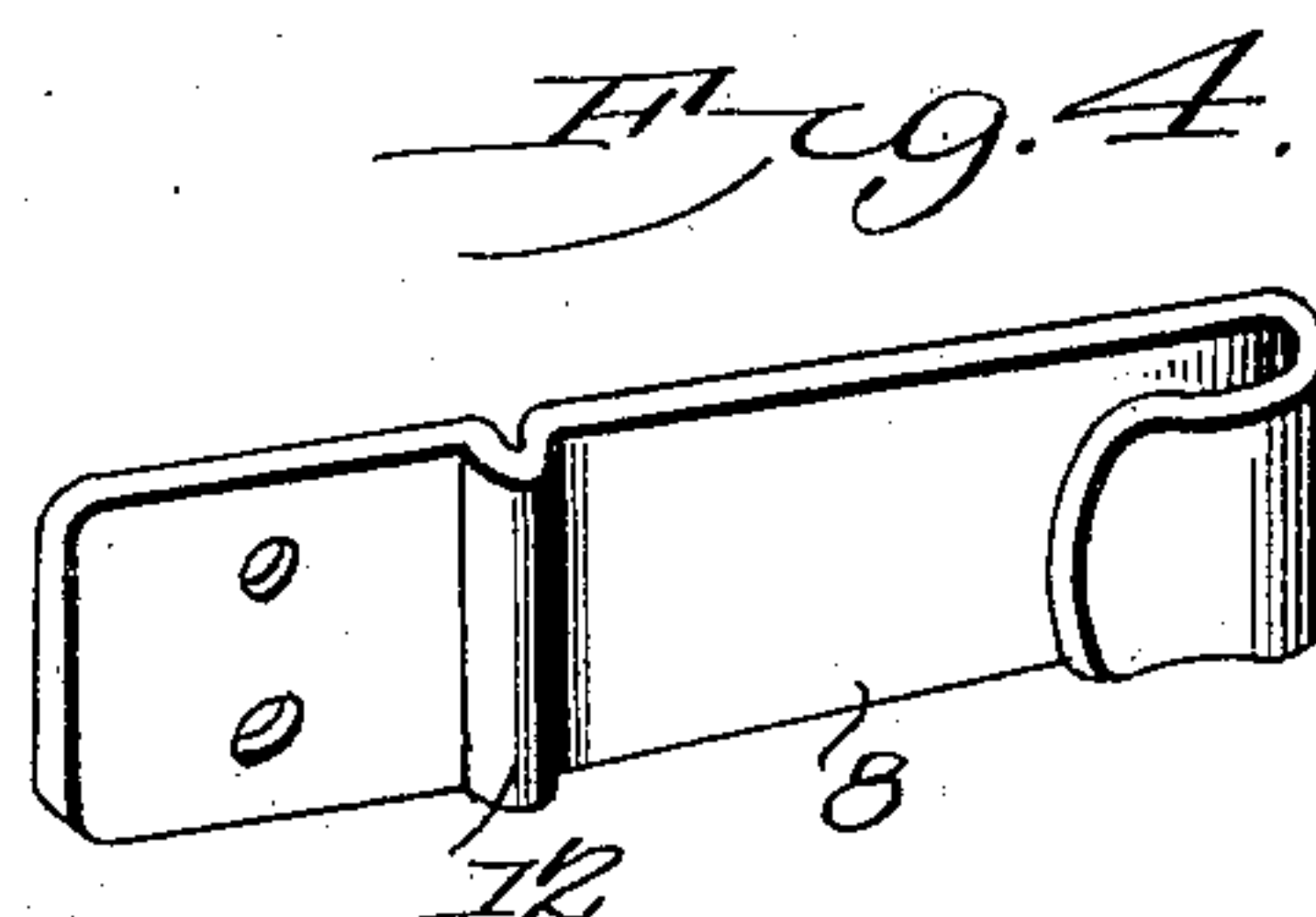
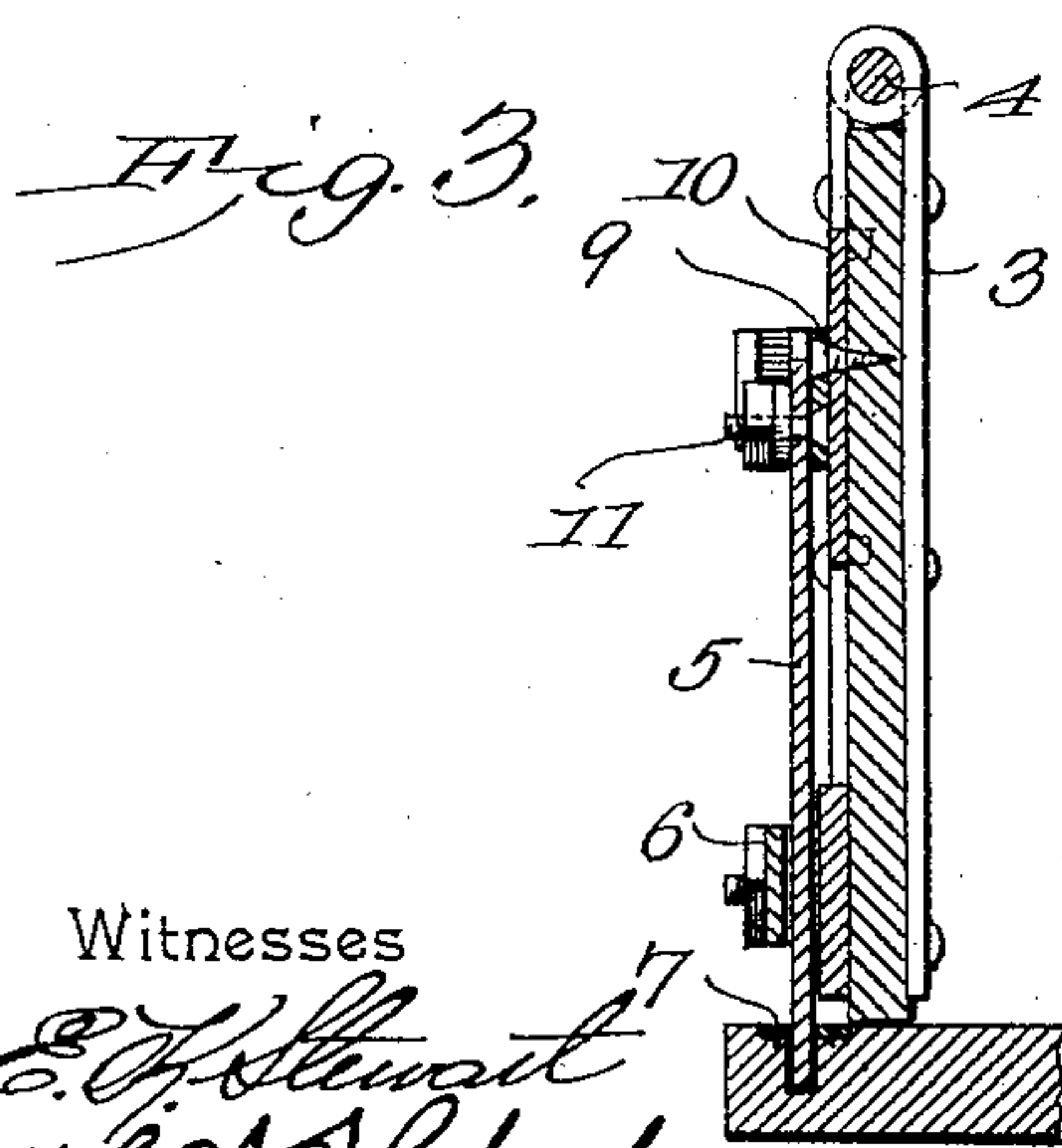
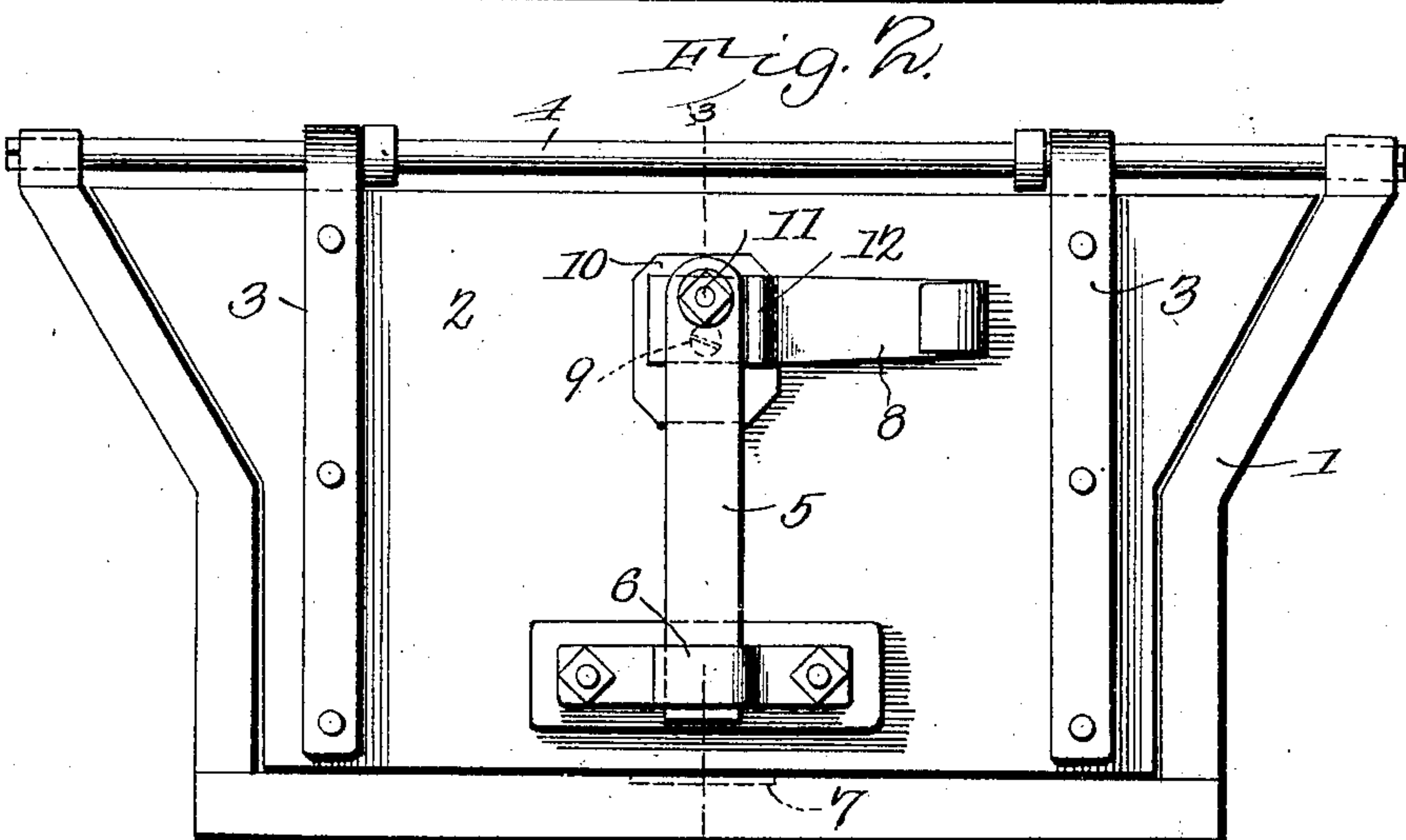
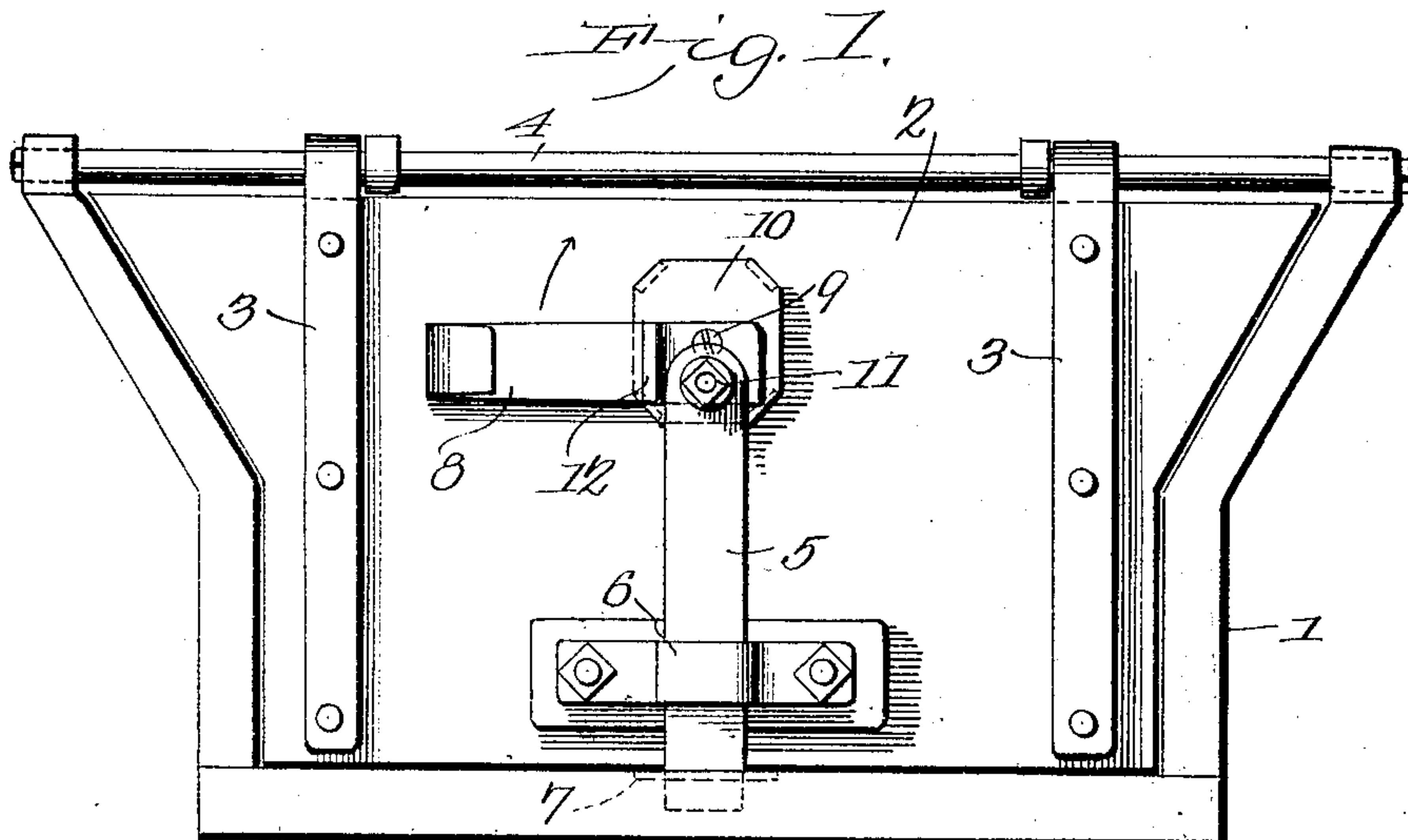


No. 764,754.

PATENTED JULY 12, 1904.

W. C. McDONALD.
END GATE FASTENER.
APPLICATION FILED APR. 14, 1904.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM CALDWELL McDONALD, OF BIRDVILLE, PENNSYLVANIA.

END-GATE FASTENER.

SPECIFICATION forming part of Letters Patent No. 764,754, dated July 12, 1904.

Application filed April 14, 1904. Serial No. 203,200. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CALDWELL McDONALD, a citizen of the United States, residing at Birdville, in the county of Allegheny and State of Pennsylvania, have invented a new and useful End-Gate Fastener, of which the following is a specification.

This invention relates to fastening means for end-gates, and is designed to provide improved means of this character especially adapted for application to the swinging end-gates of mine-cars.

It is furthermore designed to facilitate the operation of the fastener to lock and release the same and also to prevent accidental releasing of the locking-bolt when in either of its opposite positions.

Another object is to embody the invention in the nature of a complete attachment which is capable of convenient application to any ordinary swinging end-gate without requiring any changes or alterations therein and without interfering with the opening and closing of the gate.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is an end view of a mine-car having the present end-gate fastener applied thereto and in locked position. Fig. 2 is a similar view with the locking-bolt released. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of the bolt-operating lever.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

To illustrate the application and operation of this invention, I have shown in the drawings one end portion 1 of an ordinary type of mine-car, which is closed by the usual swinging end-gate 2, having strap-hinges 3, loosely

embracing the rod 4, which is carried transversely across the top of the car-body.

In carrying out the present invention I employ an upright endwise-movable bolt 5, which works through a suitable guide 6, applied to the rear side of the end-gate near the bottom thereof. A suitable keeper 7 is provided upon the floor or bottom of the car for the reception of the lower end of the bolt. For convenience in operating the bolt there is a vertically-swinging lever 8, the inner end of which has a fulcrum-support 9 upon an attaching plate or bracket 10, which latter is secured to the end-gate in any preferred manner—as, for instance, by having its corners bent over to form prongs, which are forced into the end-gate. It will be noted that the fulcrum-support of the lever is located at one side of the longitudinal axis thereof, and the upper end of the bolt is pivotally connected to the inner end of the lever at 11 and aligned transversely with respect to the fulcrum. Adjacent the fulcrum and between the latter and the free end of the lever said lever is bent or kinked to form a transverse shoulder 12, which is designed to engage one side of the bolt in the locked position thereof, as indicated in Fig. 1, to limit the downward swing of the lever and prevent upward breaking of the toggle-joint between the bolt and the lever by upward pressure upon the bolt. To release the bolt, the lever is swung in the direction of the arrow on Fig. 1 to its opposite position, as in Fig. 2, whereby the bolt will be drawn upwardly out of engagement with its keeper and the end-gate thereby released, the downward swing of the lever being limited by engagement of the shoulder 12 with the bolt, whereby the latter is locked against accidental movements in its released position.

From the foregoing description it is apparent that the device of the present invention is entirely complete in itself and may be fitted to any ordinary end-gate without altering or changing the latter in any manner whatsoever. Moreover, the device is free from springs and a plurality of loosely-connected parts, whereby the fastener is very strong and durable and not likely to get out of order.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 1. A fastener of the class described, comprising a slidable bolt, a lever, and a fulcrum-support for the lever, the bolt being pivotally connected to the lever, and the latter having a stop-shoulder for engagement with the bolt
10 at the opposite limits of the lever to lock the bolt against accidental movement.

2. A fastener of the class described, comprising an attaching-bracket, a lever fulcrumed thereto and provided with a shoulder
15 located between the fulcrum and the free end of the lever, a guide, and a slidable bolt working in the guide and pivotally connected to the lever adjacent the fulcrum thereof, the bolt lying in the path of the shoulder on the
20 lever to limit the swing of the latter in opposite directions.

3. The combination with a car-body, a

swinging end-gate carried thereby and a keeper upon the bottom of the car, of a vertically-disposed slidable bolt carried by the
25 end-gate and coöperatng with the keeper, and a lever fulcrumed upon the end-gate with its fulcrum disposed above and in alinement with the bolt in the lowermost position thereof, the bolt having its upper end pivoted to the lever
30 in transverse alinement with its fulcrum, and said lever having a transverse shoulder adjacent the fulcrum and between the latter and the free end of the lever, the bolt lying in the path of the shoulder to limit the swinging
35 movement of the lever in opposite directions.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM CALDWELL McDONALD.

Witnesses:

S. H. ALLEN,

G. W. FORSYTHE.