

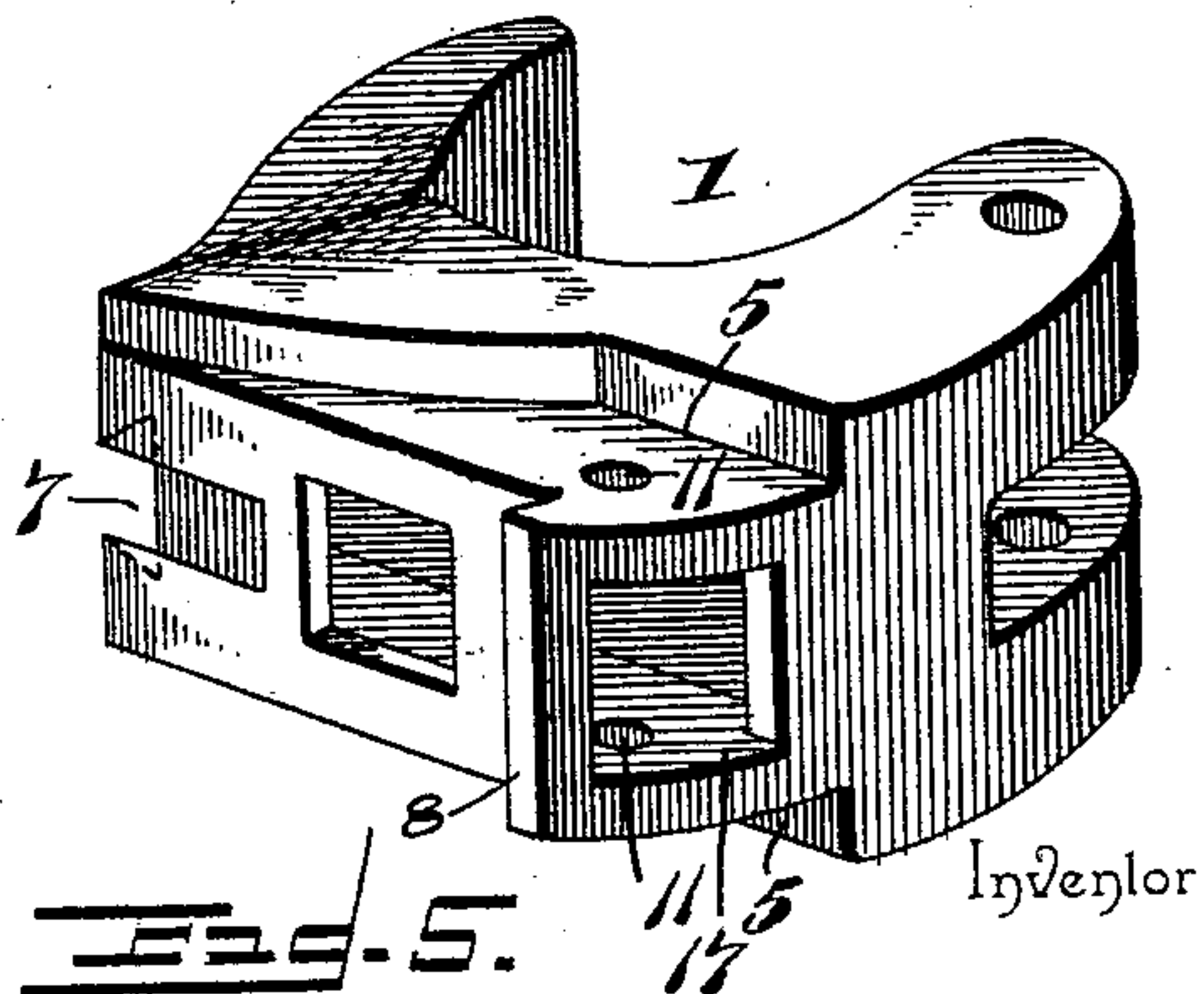
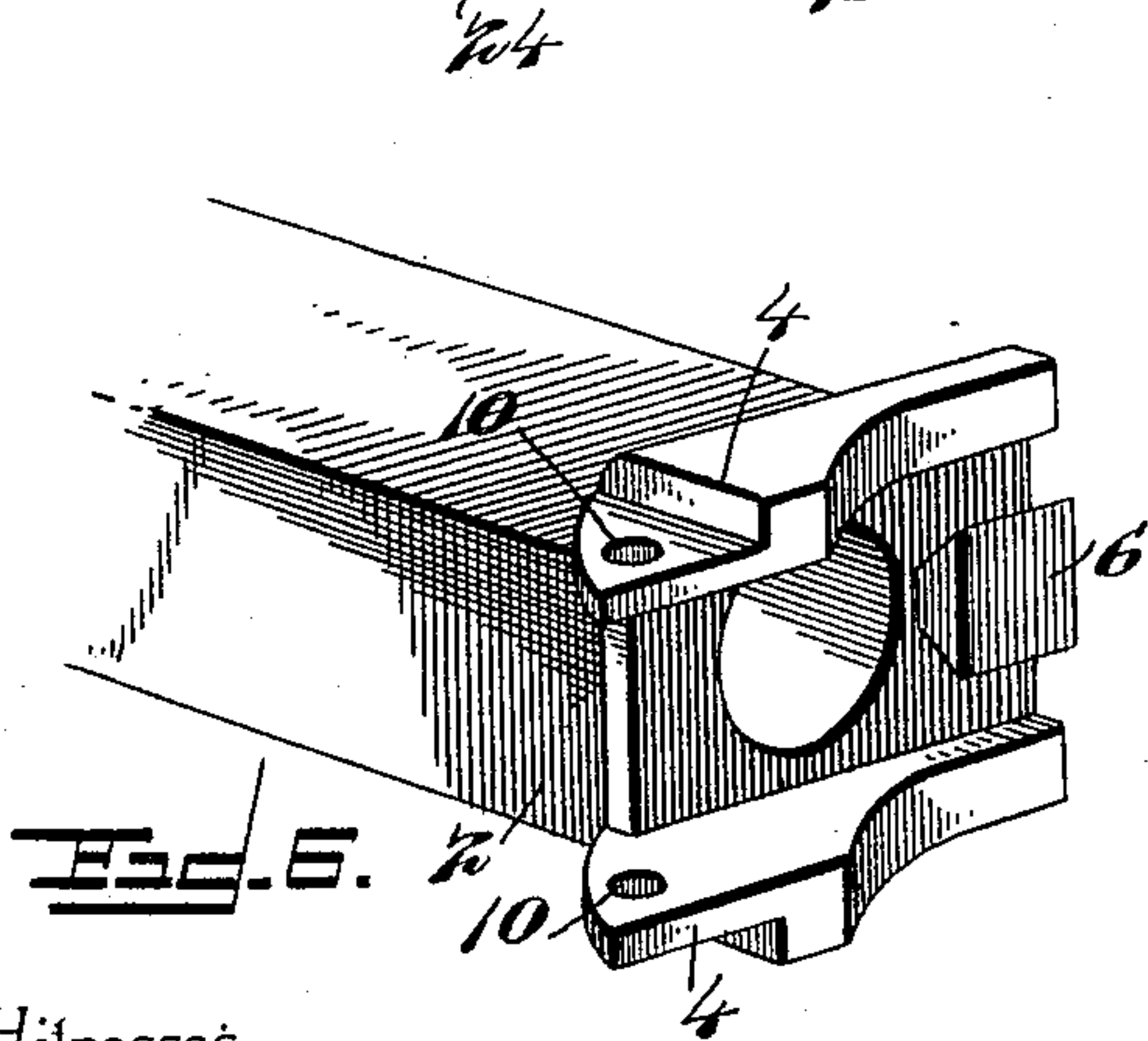
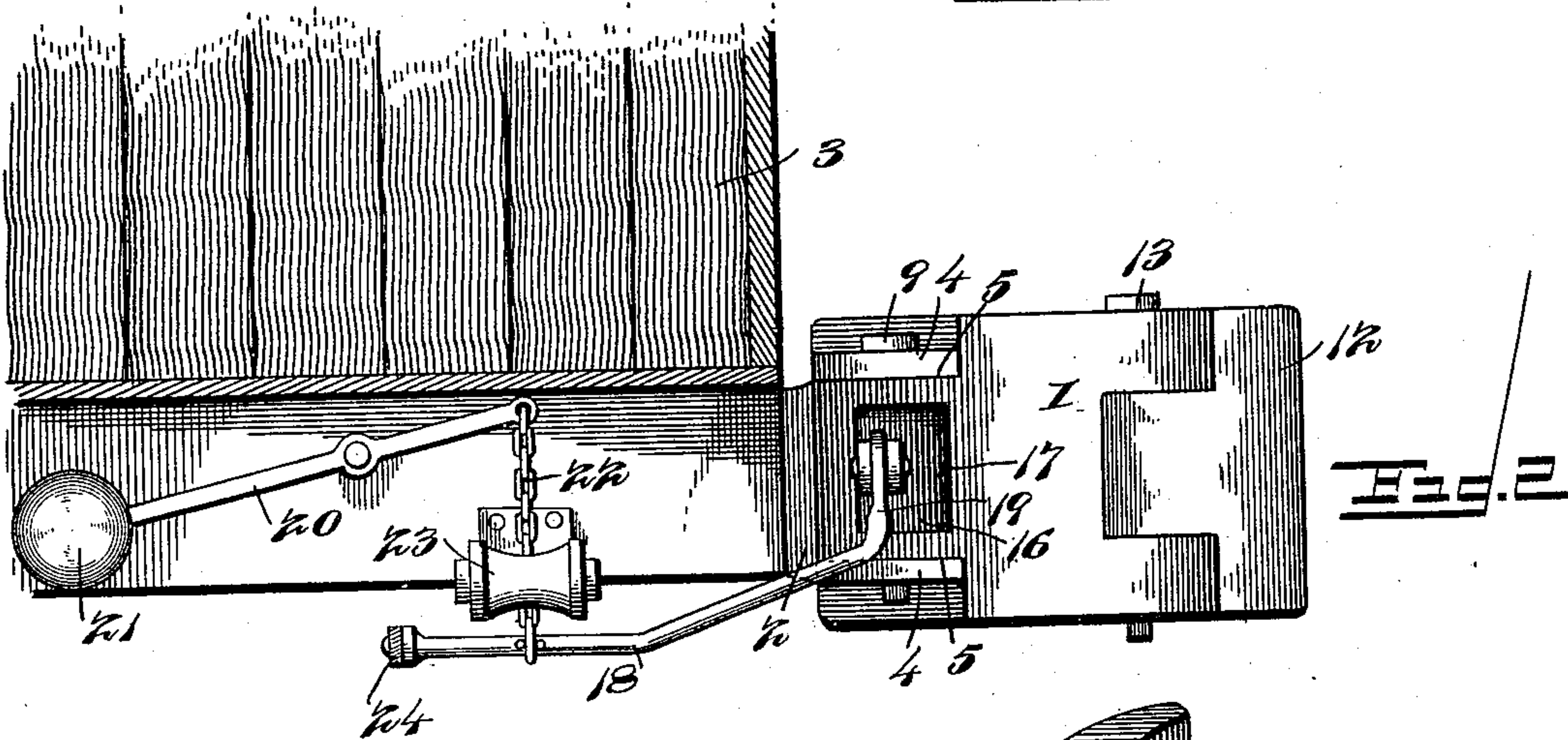
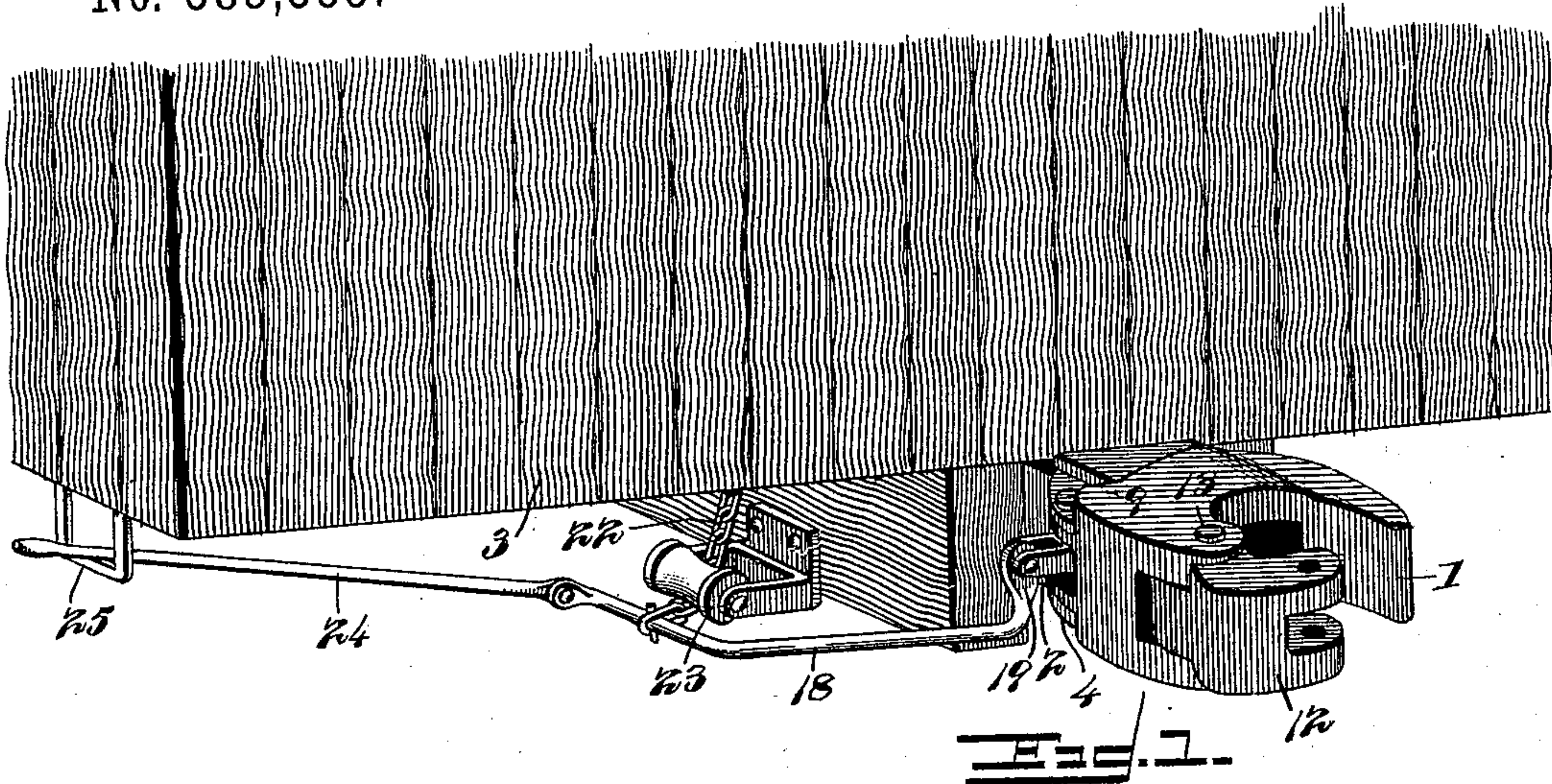
(No Model.)

2 Sheets—Sheet 1.

J. B. THOMAS.  
CAR COUPLING.

No. 583,555.

Patented June 1, 1897.



Witnesses  
*E. H. Stewart*  
*J. H. Riley*

By *his* Attorneys,

*James B. Thomas*

*C. A. Snow & Co.*

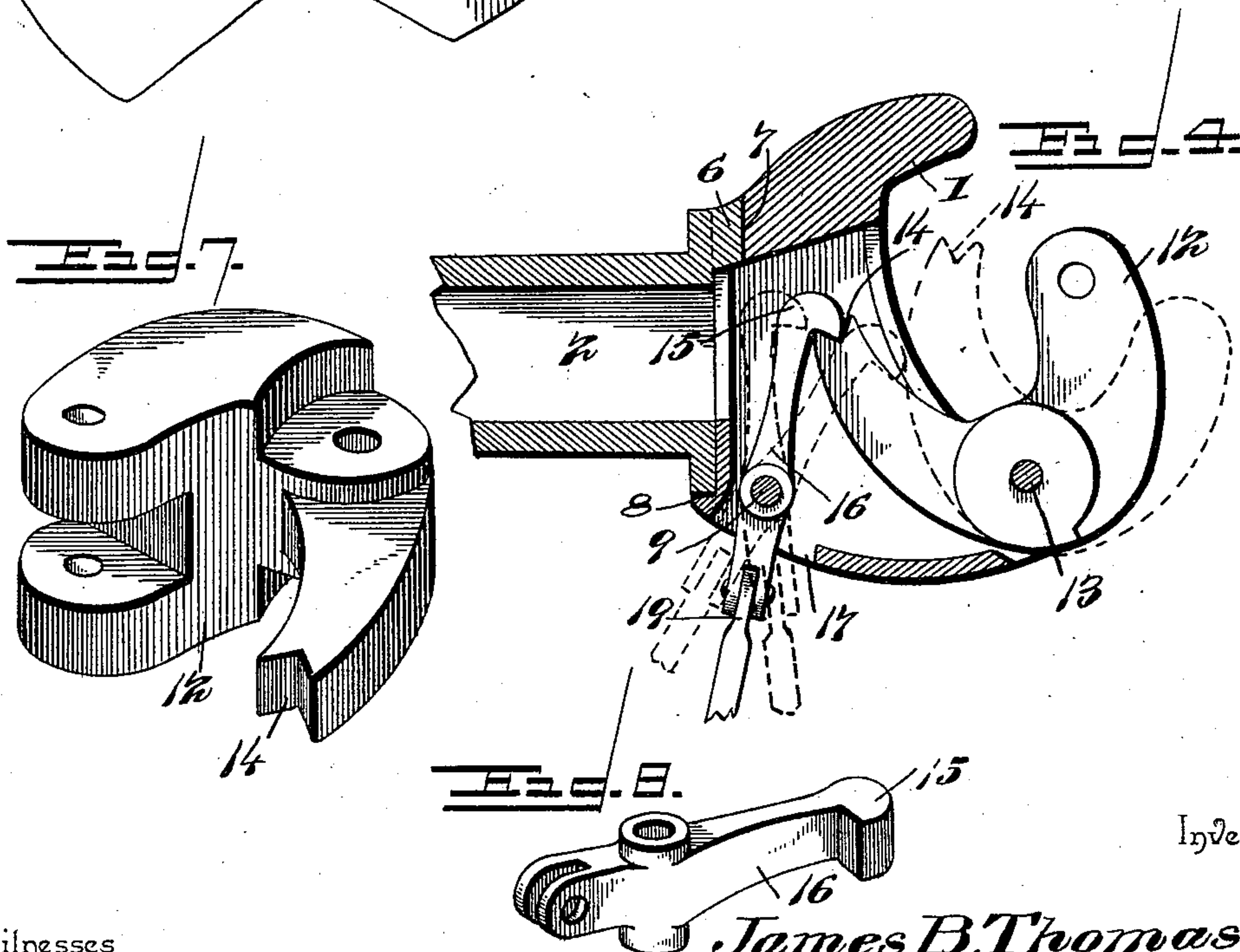
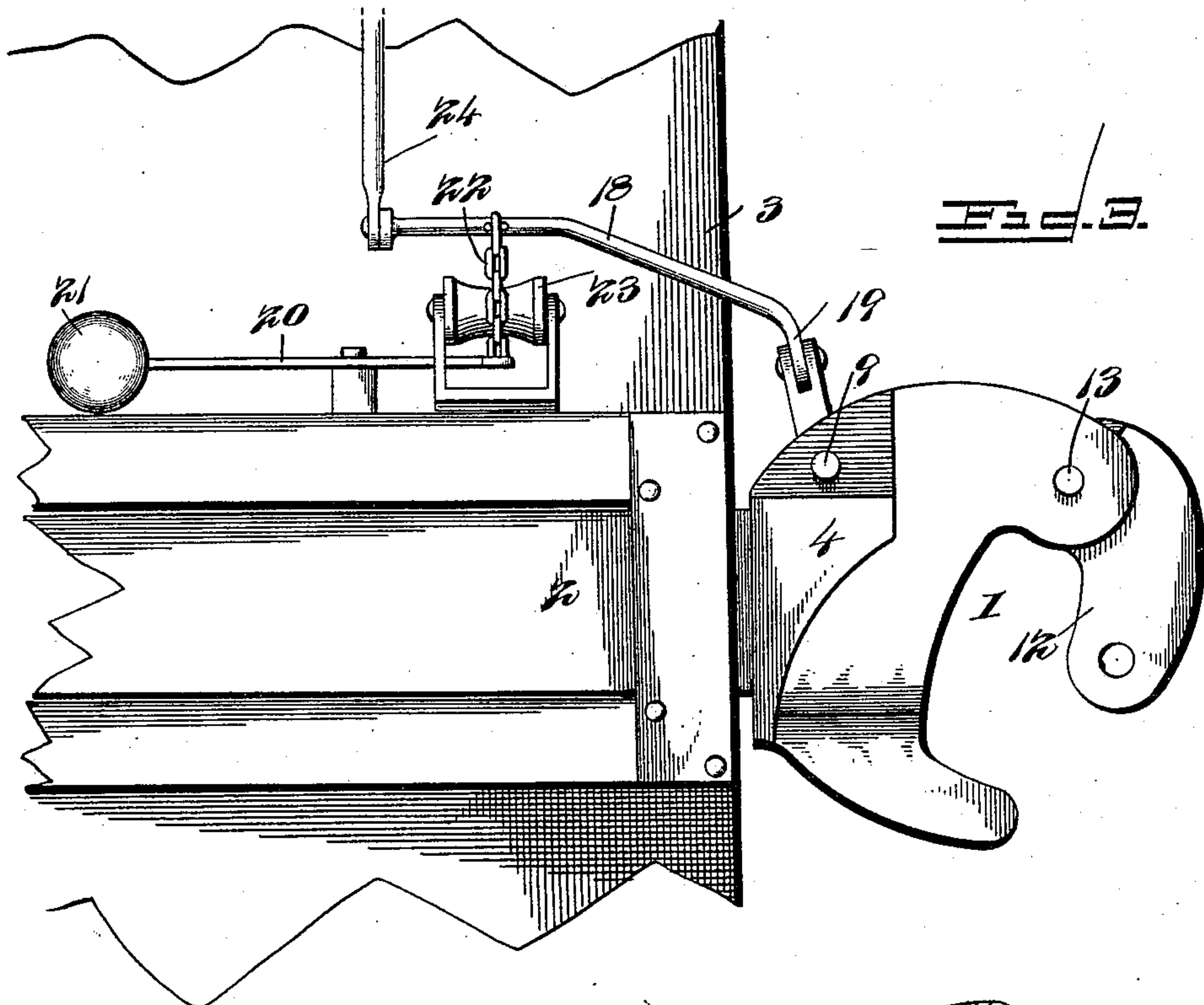
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# UNITED STATES PATENT OFFICE.

JAMES BRYANT THOMAS, OF ST. LOUIS, MISSOURI.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 583,555, dated June 1, 1897.

Application filed July 11, 1896. Serial No. 598,881. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES BRYANT THOMAS, a citizen of the United States, residing at St. Louis, Missouri, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The object of the present invention is to improve the construction of car-couplings of the Janney type, to hold the knuckle when opened in position for automatic coupling and avoid the necessity of going between cars preparatory to coupling and setting the knuckle by hand, and to enable the operation of uncoupling to be readily performed without going between cars.

A further object of the invention is to enable the draw-head, should it become worn, broken, or otherwise injured, to be readily detached from the draw-bar or shank and replaced by a new draw-head without interfering with the draft mechanism and without necessitating the removal of the draw-bar or shank.

Another object of the invention is to prevent the latch from being struck and injured by a link when the latter is employed in coupling.

Furthermore, it is the object of the invention to locate beneath the car the mechanism for operating the car-coupling to prevent such mechanism from being broken, crushed, or otherwise injured by being caught between cars during the operation of coupling, as is often the case when the operating mechanism is mounted on the end of a car.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a longitudinal sectional view of the car, the coupling being shown in elevation. Fig. 3 is a reverse plan view. Fig. 4 is a horizontal sectional view of the car-coupling. Fig. 5 is a detail perspective view of the detachable draw-head. Fig. 6 is a similar view of the shank of the draw-head. Fig.

7 is a detail view of the knuckle. Fig. 8 is a similar view of the latch for engaging the arm of the knuckle.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a draw-head detachably secured to a draw-bar or shank 2 and adapted, should it become broken or otherwise injured, to be readily removed from the draw-bar and replaced by a new one without necessitating the removal of the draw-bar from the car 3. The draw-bar is provided at its outer end with upper and lower horizontal flanges 4, which receive between them the inner or rear portion of the draw-head 1, provided at its upper and lower faces with recesses 5, receiving the projecting flanges 4, and the vertical shoulders formed by the recesses 5, conforming to the configuration of and fitting snugly against the outer edges of the flanges 4, as clearly illustrated in Fig. 3 of the accompanying drawings.

The draw-bar is provided at its outer end, at one side of its longitudinal bore or opening, with a dovetailed lug 6, and the draw-head is provided at its rear end with a corresponding dovetailed groove 7, the parts being interlocked by sliding the draw-head laterally on the end of the draw-bar. The groove 7 is located at one side of the draw-head, and the latter is provided at its opposite side with a vertical flange 8 and is locked against lateral movement by a pin 9, passing through registering perforations 10 and 11 of the flanges 4 and the draw-head 1. The vertical flange 8 forms a shoulder which fits against the adjacent side of the draw-bar and forms a stop.

By providing interlocking grooves or ways on the draw-bar and the draw-head the latter, should its guard-arm or any other portion become broken or otherwise injured, may be readily removed from the draw-bar, and a new draw-head can be quickly applied without necessitating the removal of the draw-bar or in any wise interfering with the draft mechanism of the car.

A knuckle 12 is pivoted to one side of the draw-head in the usual manner by a knuckle-pin 13, and it is provided at the end of its arm with a V-shaped notch 14, which is engaged by a head 15 of a pivoted latch 16,



whereby the knuckle is locked in its closed position. The arm of the knuckle is curved and extends inward toward the opposite side of the knuckle and terminates at the longitudinal center of the draw-head. The latch 5 16 consists of a lever fulcrumed intermediate of its ends on the pin 9, and the head 15 is arranged at the inner end of the latch and extends outward laterally of the same, being 10 rounded at its outside and having a straight engaging face at its inner side. By engaging the latch 16 with the notch of the knuckle-arm the latter extends in front of the latch when the knuckle is closed and forms a shield 15 to prevent the latch from being struck and injured by a link when the latter is employed in coupling. The outer portion of the latch extends through an opening 17 at one side of the draw-head and is bifurcated for the re- 20 ception of one end of a rod 18, which is pivoted in the bifurcation. The inner end 19 of the rod 18 is bent upward substantially at right angles to the body portion of the rod, so that the latter lies in a plane below the latch, 25 and the rod 18 is angularly bent, extending transversely of the car and inwardly beneath the same. The outer portion of the rod 18 is disposed longitudinally of the car, as clearly illustrated in Fig. 3 of the accompanying 30 drawings, and by swinging the same inward and outward the latch is operated.

The latch is normally held in engagement with the arm of the knuckle, or in position for automatically engaging the same, by a 35 weighted lever 20, fulcrumed intermediate of its ends on one of the draft-timbers of the car, provided at its inner end with a weight 21 and connected at its outer end with the rod 18 by a chain 22. The chain extends in- 40 ward from the rod 18, passing under a pulley 23 and extending upward therefrom to the outer end of the weighted lever 20. The rod 18 is drawn outward by an operating-rod 24, extending to one side of the car and sup- 45 ported by a stirrup 25; but any other suitable means may be employed for swinging the arm 18 outward and disengaging the latch from the arm of the knuckle. Such mechanism 50 may extend to the top and sides of a car or the platform of a coach, so that the operation of uncoupling may be performed without going between cars.

The weight of the lever 20 operates to hold the rod 18 against outward movement and 55 tends to swing the inner end of the latch forward, and when the knuckle is open, as illustrated in dotted lines in Fig. 4 of the accompanying drawings, the weight causes the latch to engage the rear edge of the knuckle-arm 60 and hold the knuckle in position for automatic coupling.

It will be seen that the car-coupling is exceedingly simple and inexpensive in construction, that it is positive and reliable in 65 operation, and capable of coupling automatically and of being readily uncoupled without going between cars. Furthermore, it will

be apparent that the latch operates to hold the knuckle when open in proper position for automatic coupling and that when a link is 70 employed for coupling it is protected by the arm of the knuckle; also, the draw-head, should it become broken or otherwise injured, may be quickly removed from the draw-bar and a new draw-head can be read- 75 ily attached to the same without necessitating the removal of the draw-bar or any of the draft mechanism that is connected with the draw-bar. By locating the operating mechanism beneath the car it will be apparent that 80 it cannot be crushed, broken, or otherwise injured by being caught between the cars during the operation of coupling, as is often the case when the operating mechanism is mounted 85 on the end of a car.

What I claim is—

1. In a car-coupling, the combination of a draw-head provided at its outer end with upper and lower flanges and having a dovetailed 90 lug located between the flanges, a detachable draw-head provided with a dovetailed groove to receive said lug and provided at its upper and lower faces with recesses receiving the flanges of the draw-head, and a fastening device passing through the flanges and the draw- 95 head, substantially as and for the purpose described.

2. In a car-coupling, the combination of a draw-head, a knuckle pivoted to the draw-head at one side thereof and provided with 100 a curved arm extending inward and rearward toward the opposite side of the draw-head and terminating on a line with the longitudinal center of the draw-head, said arm being provided with a notch, and the transversely- 105 disposed horizontally-swinging catch extending from one side of the draw-head to the center thereof and engaging said notch, whereby the end of the curved arm is arranged in advance of the engaging portion of the catch 110 and adapted to prevent the latter from being struck by a link entering the draw-head, substantially as described.

3. In a car-coupling, the combination of a draw-head, a knuckle pivoted at one side of 115 the same, a horizontally-swinging latch pivoted in the draw-head in rear of the knuckle and arranged to engage the arm thereof, and means for swinging the engaging portion of the latch forward, whereby said latch is adapted to engage the knuckle automatically when 120 the latter is closed, and is capable of holding the same when open in proper position for automatic coupling, substantially as described. 125

4. In a car-coupling, the combination with a car, of a draw-head, a knuckle pivoted to the draw-head at one side, a horizontally- 130 swinging latch fulcrumed intermediate of its ends in the draw-head and arranged to engage the arm of the knuckle, the outer portion of the latch extending through an opening at one side of the draw-head, a rod connected with the outer portion of the latch and



extending transversely and longitudinally of the car, a pulley mounted on the car and arranged at the inner side of the outer portion of said rod, a flexible connection extending  
5 inward from the outer portion of the rod and passing over the said pulley, a weighted lever fulcrumed on the car, attached to the inner end of the flexible connection and adapted to swing the rod inward automatically, and  
10 means for swinging the rod outward, substantially as and for the purpose described.  
5. In a car-coupling, the combination with a car, of a draw-head, a knuckle pivoted to the draw-head at one side thereof, a horizon-  
15 tally-swinging latch pivoted intermediate of its ends to the draw-head in rear of the knuckle

and adapted to engage the arm thereof, a rod connected with the outer end of the latch, a chain extending inward from the outer portion of the rod, a weight connected with the  
20 chain, adapted to hold the latch in engagement with the arm of the knuckle, and means for swinging the rod outward, substantially as and for the purpose described.

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

JAMES BRYANT THOMAS.

Witnesses:

JOHN H. SIGGERS,  
THEODORE DALTON.