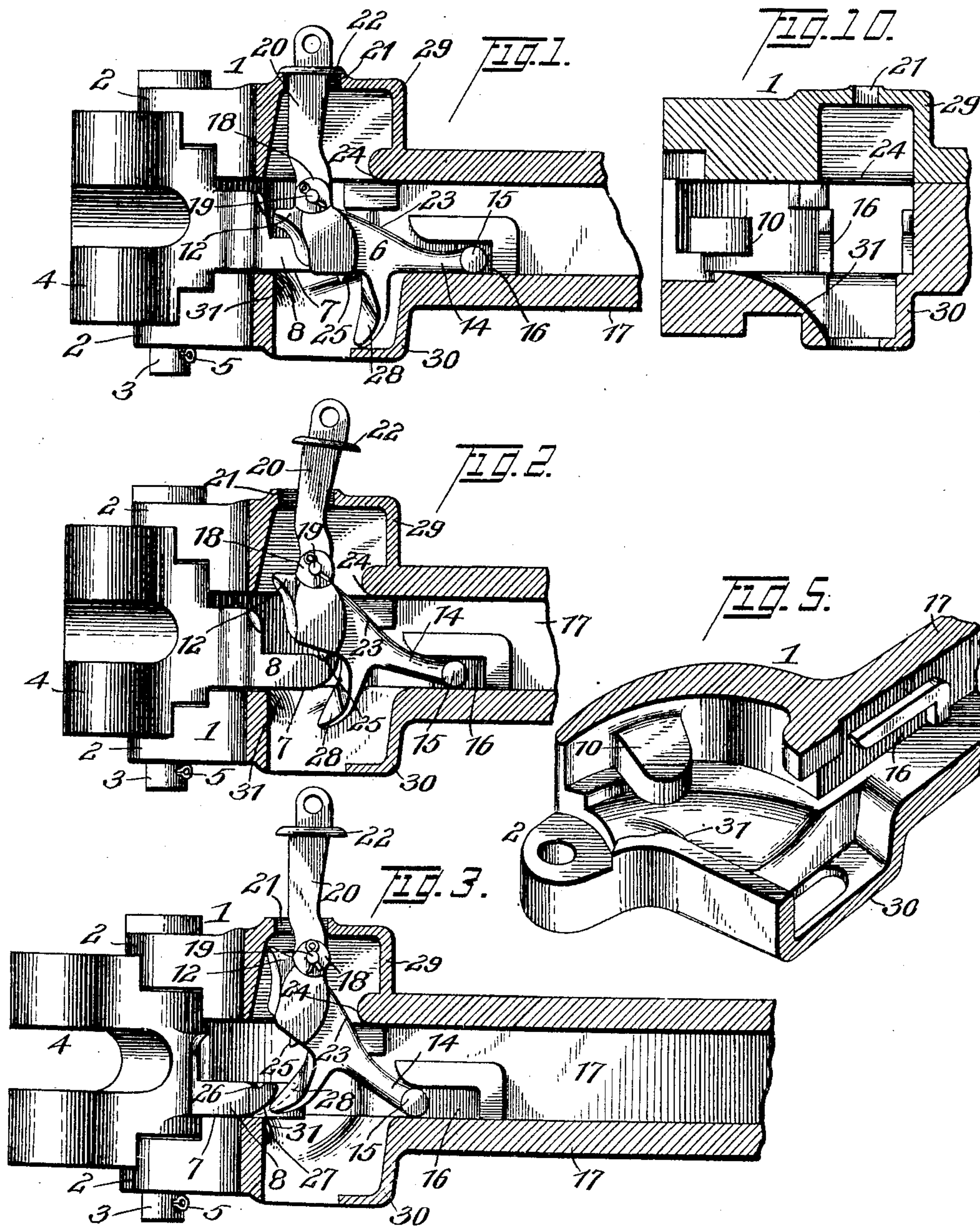


No. 804,031.

PATENTED NOV. 7, 1905.

W. A. PALMER.
AUTOMATIC CAR COUPLING.
APPLICATION FILED FEB. 28, 1905.

2 SHEETS—SHEET 1.



Witnesses

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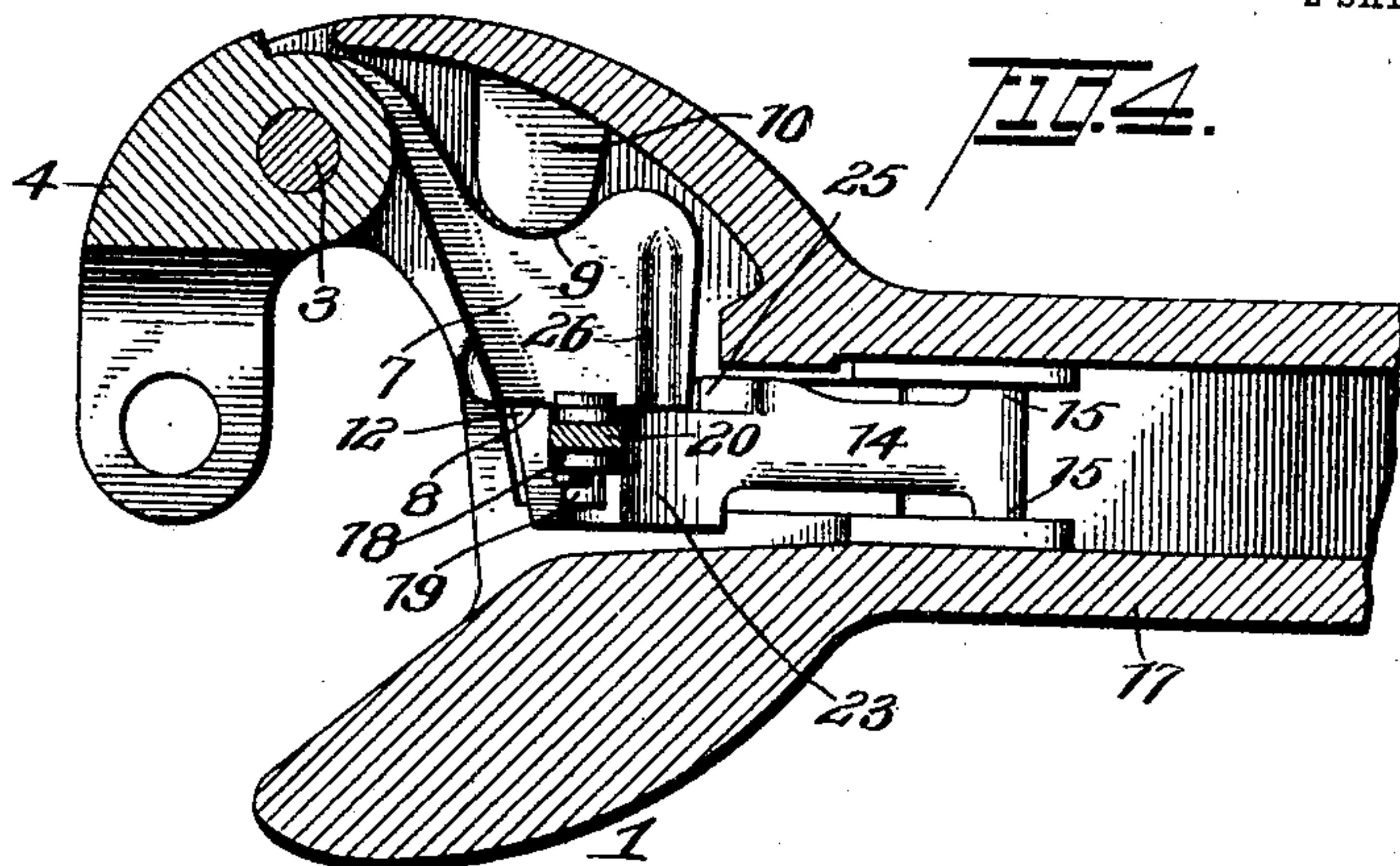


FIG. 6.

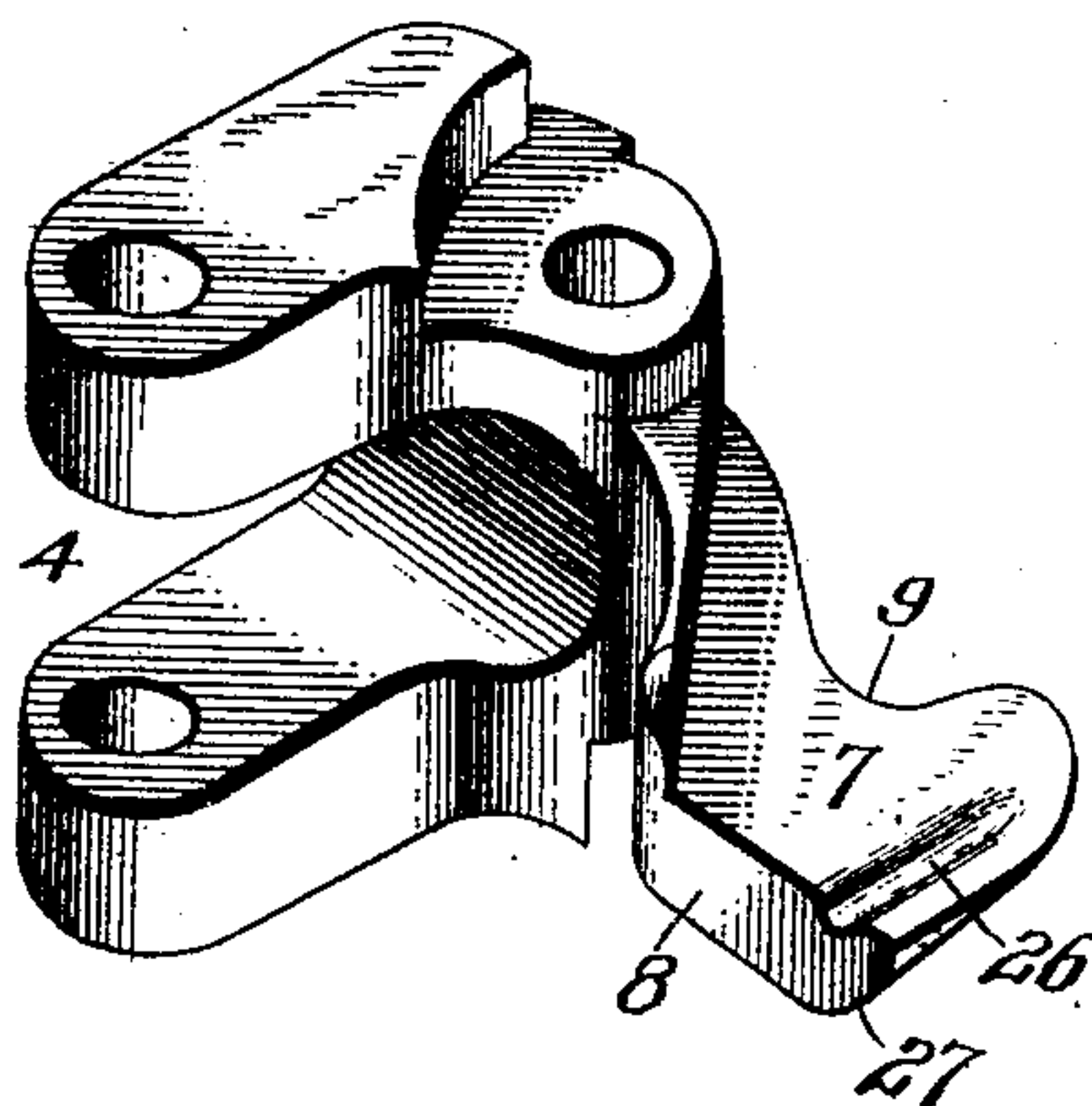
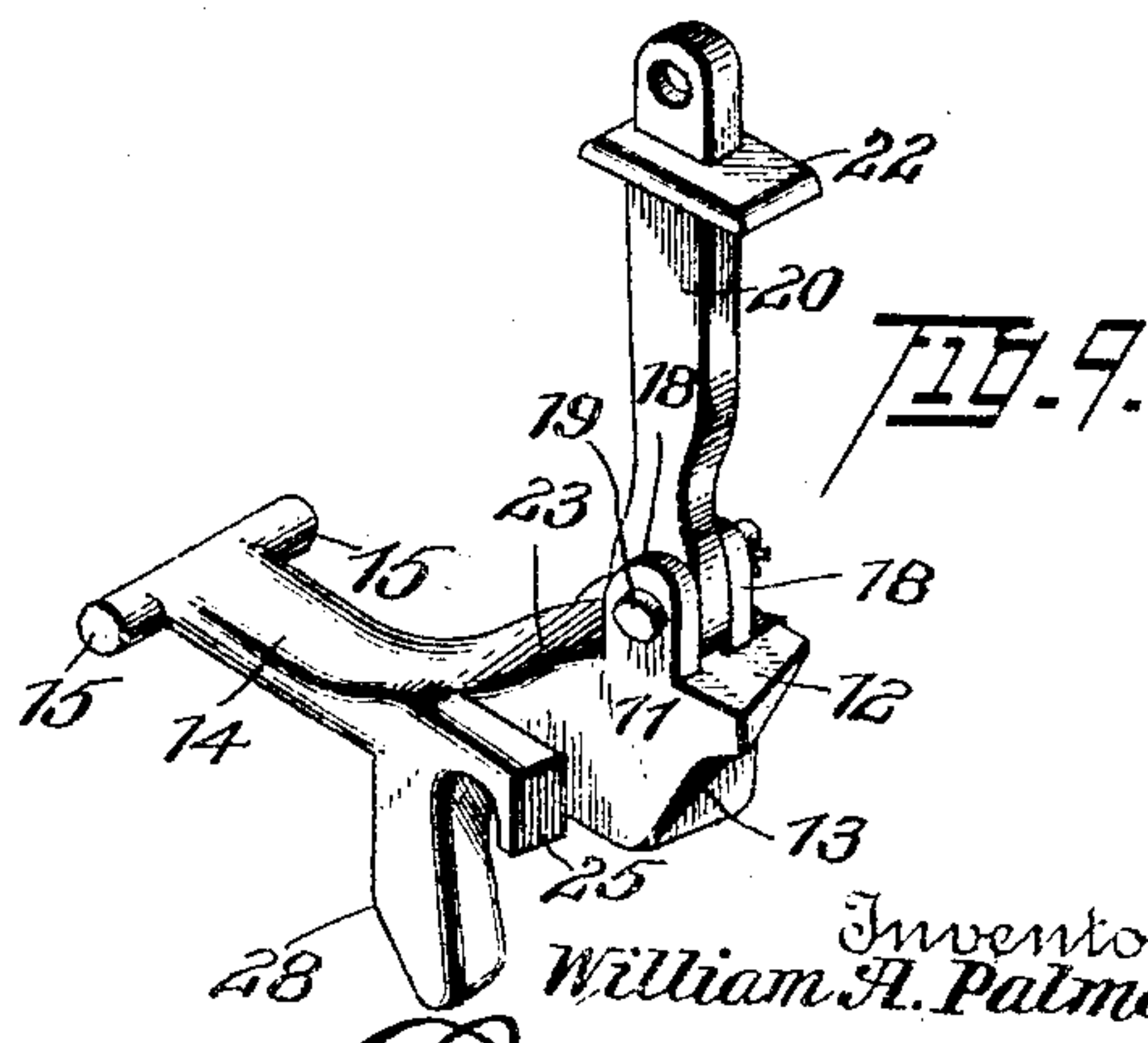
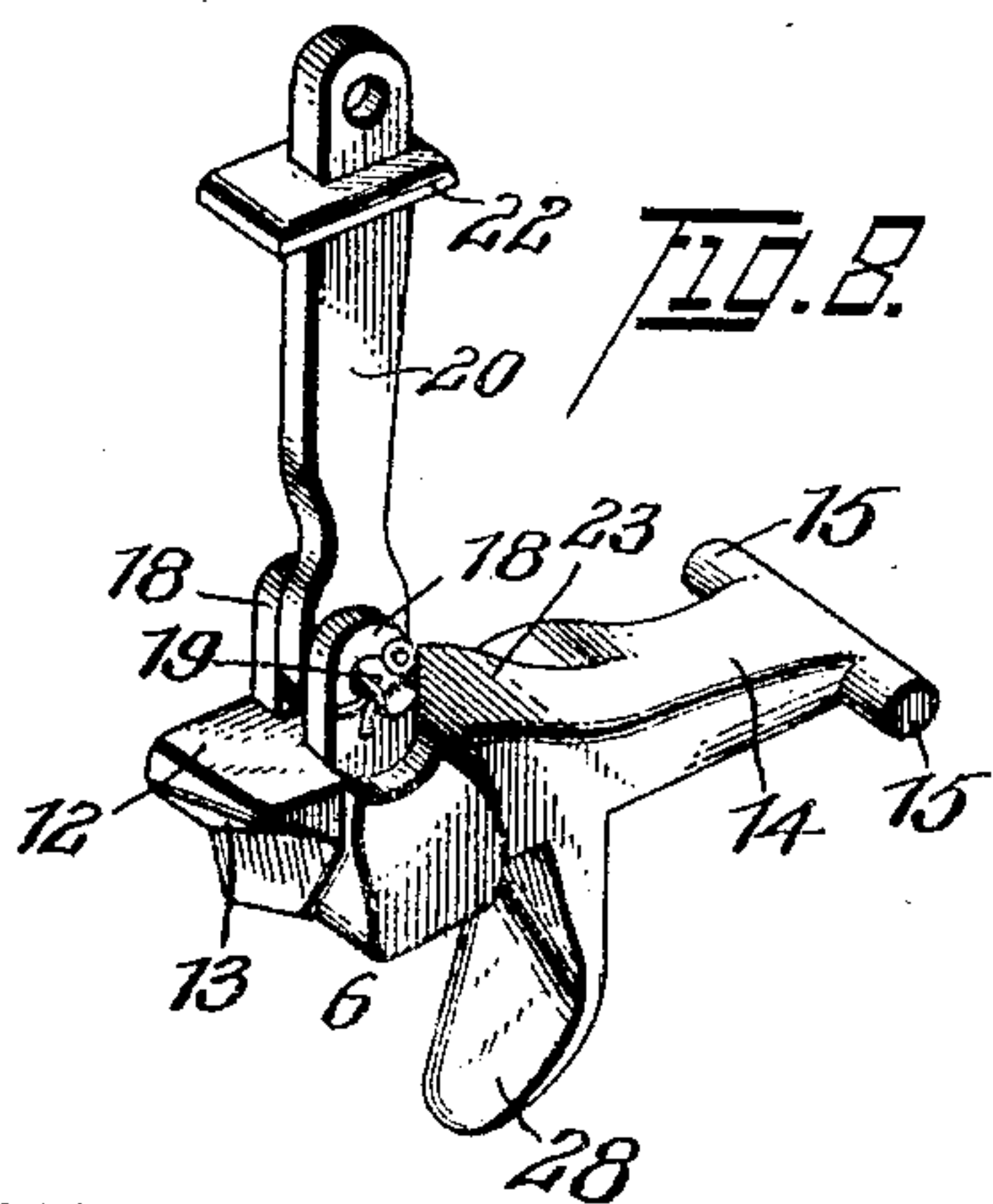
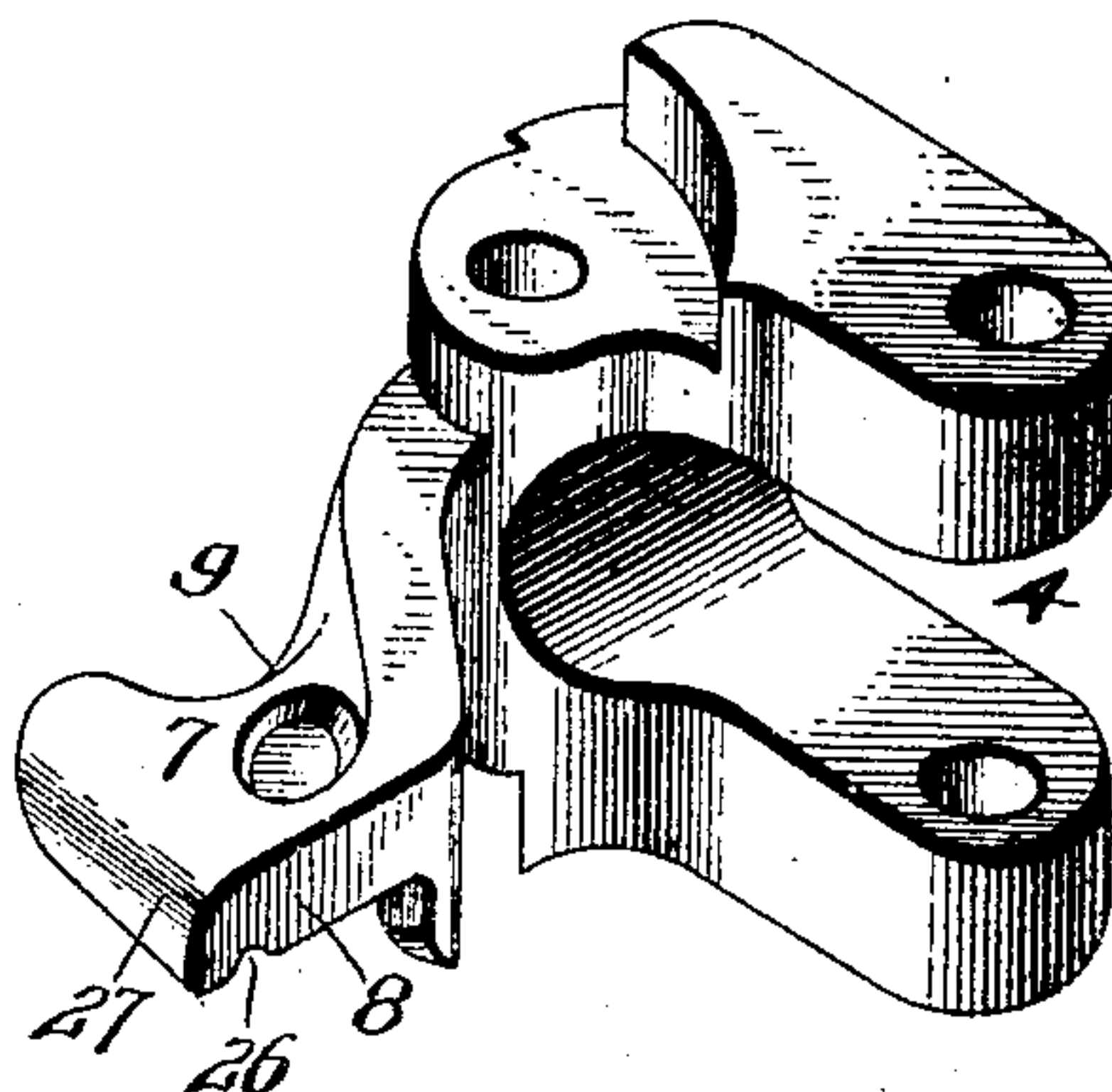


FIG. 7.



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AUTOMATIC CAR-COUPLING.

No. 804,031.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed February 28, 1905. Serial No. 247,701.

To all whom it may concern:

Be it known that I, WILLIAM ASBERY PALMER, a citizen of the United States, residing at Ensley, in the county of Jefferson and State of Alabama, have invented a new and useful Automatic Car-Coupling, of which the following is a specification.

The invention relates to improvements in automatic car-couplings.

The object of the present invention is to improve the construction of automatic car-couplings of the Janney type wherein the knuckle is both opened and held closed by the locking-block and to provide a simple, inexpensive, and efficient automatic car-coupling of great strength and durability adapted to be readily set for automatic uncoupling to obviate the inconvenience and the danger of holding the locking-block by hand in an elevated position until the cars actually separate.

With these and other objects in view 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, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a longitudinal sectional view of an automatic car-coupling constructed in accordance with this invention and illustrating the arrangement of the parts when the knuckle is closed and locked. Fig. 2 is a similar view illustrating the arrangement of the parts when the locking-block is set for automatic uncoupling. Fig. 3 is a longitudinal sectional view of the car-coupling, the knuckle being thrown open by the foot of the locking-block. Fig. 4 is a horizontal sectional view, the parts being arranged as shown in Fig. 1. Fig. 5 is an enlarged detail perspective view of a portion of the coupler or draw head. Figs. 6 and 7 are detail perspective views of the knuckle. Figs. 8 and 9 are detail perspective views of the locking-block. Fig. 10 is a transverse sectional view, the knuckle and the locking-block being removed to illustrate the construction of the draw-head more clearly.

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

1 designates a draw-head or coupler-head of the Janney type provided at one side with the usual upper and lower eyes 2 for the reception of a knuckle-pin 3, which pivots a knuckle 4 to the draw-head or coupler-head 1 in the usual manner. The knuckle-pin is provided at its upper end with a head, and it is held against accidental upward movement by a suitable key 5, which pierces the lower end of the knuckle-pin and which is located beneath the draw-head. The outer or engaging portion of the knuckle is provided with the usual slot or bifurcation and perforations for enabling it to be coupled by the link with other forms of car-couplings when necessary.

The knuckle is held in its closed position by a locking-block 6, arranged to engage the inwardly or rearwardly extending arm 7 of the knuckle, as clearly shown in Figs. 1 and 4 of the accompanying drawings. The arm 7 of the knuckle is provided at one side with a straight edge or face 8 for engagement with the locking-block, and it has a recess 9 at the opposite side, adapted to receive a projecting lug 10 of the draw-head, whereby the arm of the knuckle is interlocked with the draw-head. The lug 10, which extends from one of the side walls of the draw-head, forms a stop for preventing the knuckle from being forced inward. This will in a great measure prevent the knuckle-pin from breaking when cars are uncoupled. By interlocking the arm of the knuckle with the draw-head the knuckle is prevented from pulling out should the knuckle-pin break from any cause.

The locking-block is provided with a straight side face 11 to fit against the straight face or edge of the arm of the knuckle when the latter is closed and locked, as clearly shown in Fig. 4. The locking-block, which is slidably and pivotally mounted within the draw-head, as hereinafter explained, is provided at its front face with an upper projecting portion 12, having an inclined lower face, and the lower portion 13 of the front face of the locking-block is inclined and is set at an angle. When the knuckle closes, its arm is adapted to engage the front face of the locking-block, which is lifted by the said arm, and when the latter has passed the locking-

block and has assumed the position illustrated in Fig. 4 of the drawings the said locking-block drops into engagement with the straight face or edge 8 and holds the knuckle 5 firmly and securely in its closed position.

The locking-block is provided with a rearwardly or inwardly extending shank 14, provided at its ends with laterally-extending pivots or trunnions 15, which are arranged 10 to slide in guideways 16, located at opposite sides of the opening of the shank or draw-bar 17 of the draw-head. The guideways, which extend longitudinally of the draw-bar, are open at their front or outer ends and are 15 closed at their inner or rear ends, being preferably formed by substantially L-shaped ribs, as clearly shown in Fig. 5 of the drawings. These guideways, which receive the pivots or trunnions 15 of the locking-block, 20 may be constructed in any other desired manner and will permit the locking-block to be moved backward and forward and to swing upward and downward. The guideways, which are arranged horizontally, are pro- 25 vided with upper and lower walls and cause the trunnions or pivots 15 to positively slide backward and forward and prevent the said pivots or trunnions from moving upward. The pivots or trunnions are adapted to rotate in the guideways to permit the swing- 30 ing movement of the locking-block. The locking-block is provided at its top with a pair of upwardly-extending ears or flanges 18, which are perforated for the reception 35 of a pin 19, which also passes through a lifting bar or link 20, and the latter extends through a slot or opening 21 at the top of the draw-head, as clearly shown in Figs. 1 and 3 of the drawings. The pin 19, which is pro- 40 vided at one end with a head, is perforated at the other end for the reception of a key, which retains the pin in the perforations of the ears and the lifting bar or link. The lifting bar or link, which is provided with a 45 flange 22 for covering the slot 21, has a perforation at its upper end for enabling it to be connected with any suitable lifting mechanism for enabling the operation of uncoupling to be performed from the top and sides of 50 freight-cars and from the platform of a coach. The car-coupling is designed for use on all kinds of railway-cars, and any suitable operating mechanism may be employed, as will be readily understood. The locking-block is pro- 55 vided at the back with an upper inclined face 23, adapted to engage a rounded edge 24 of the upper portion of the draw-head when the locking-block is raised, whereby the locking-block will be thrown forward or outward to 60 carry a projection or toe 25 into engagement with a groove or seat 26 of the arm of the knuckle. The groove 26, which is arranged at the upper face of the arm of the knuckle, extends transversely of the same and is lo-

cated near the end of the arm 7, as clearly 65 shown in Figs. 4 and 6 of the drawings. The projection or toe is substantially hook-shaped and is located adjacent to the engaging face 11 of the locking-block, and when the latter is drawn upward the projection or toe is car- 70 ried forward and is adapted to drop into engagement with the said groove. As the projection or toe depends below the body portion of the locking-block, the latter is supported above the arm of the knuckle to per- 75 mit the knuckle to open freely. This construction obviates the danger and inconvenience of holding the locking-block in an elevated position until two cars actually separate. 80

The end 27 of the arm 7 of the knuckle is rounded or beveled at the lower face, and it is adapted to be engaged by a longitudinally-inclined laterally-beveled engaging face 28 of a knuckle-opening foot, which depends from 85 the locking-block at the rear portion of the body thereof. When the locking-block is swung upward and the knuckle is free to open, the depending foot 28 engages the be- 90 veled laterally-tapered rear end of the arm of the knuckle and swings the same outward, whereby the knuckle is opened for uncoupling. The knuckle when open is in position for automatic coupling, and it is adapted to be readily carried to such position by the pro- 95 jecting foot of the locking-block, as before explained.

The draw-head is provided at the top with an extension or casing 29 to receive the upper portion of the locking-block, and it has a 100 depending extension or casing 30 at its bottom to receive the knuckle-opening foot. The bottom of the draw-head is provided with a cut-away portion or recess 31 at one side of the depending extension or casing, forming an 105 inclined face and facilitating the introduction of the locking-block into the draw-head when assembling the parts.

It will be seen that the car-coupling is capable of coupling automatically, that the 110 locking-block is adapted to securely retain the knuckle in its closed position, and that the said block is also capable of automatically opening the knuckle when the same is free to move. Also it will be clear that the 115 locking-block is adapted to be arranged for automatic uncoupling and that it will be unnecessary to hold the block in an elevated position by hand until the cars separate.

Having thus fully described my invention, 120 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a draw-head provided with longitudinal ways having top and bottom walls, a knuckle, and a locking-block 125 having pivots or trunnions slidable in the ways and permitting the locking-block to slide backward and forward and swing up

ward and downward, said locking-block being provided with means for opening the knuckle.

2. The combination of a draw-head provided with horizontal ways having top and bottom walls, a knuckle, and a locking-block having pivots or trunnions slidable in the ways and permitting the locking-block to move backward and forward and swing upward and downward, said locking-block being also provided with means for supporting it out of engagement with the knuckle to permit the latter to open.

3. The combination of a draw-head provided with longitudinal ways having top and bottom walls, a knuckle, a locking-block slidable in the ways and having a vertical swinging movement, said locking-block being provided with a projection or toe arranged to open the knuckle, and means for positively sliding the locking-block along the ways and for swinging the said locking-block upward or downward simultaneously with the sliding movement.

4. The combination of a draw-head, a locking-block slidable longitudinally of the draw-head and movable upward and downward, said locking-block being adapted to engage the arm of the knuckle and provided with an inclined laterally-beveled front face and having a projecting portion at the top thereof, the projecting portion being provided with a

laterally-inclined lower face, and a knuckle provided with an arm arranged to engage and lift the locking-block.

5. The combination of a draw-head provided with ways having top and bottom walls, a knuckle, and a locking-block comprising a body portion provided at one side with a face for engaging the knuckle and having a depending projection located in rear of the said face and adapted to rest on the knuckle, and a shank extending from the body portion of the locking-block and provided with pivots or trunnions slidable in the said ways.

6. The combination of a draw-head having longitudinal ways provided with top and bottom walls, a knuckle, a locking-block having a rigid depending knuckle-opening foot and provided with a rearwardly-extending shank having terminal pivots or trunnions slidable in the ways of the draw-head and adapted also to rotate therein, and means for positively sliding the locking-block backward and forward in the ways and for simultaneously swinging the locking-block upward or downward.

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

WILLIAM ASBERY PALMER.

Witnesses:

N. F. RIDDLE,
SAM N. MATSON.