No. 682,827. Patented Sept. 17, 1901.

# O. P. CALLAHAN.

## CAR COUPLING.

(Application filed Sept. 28, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

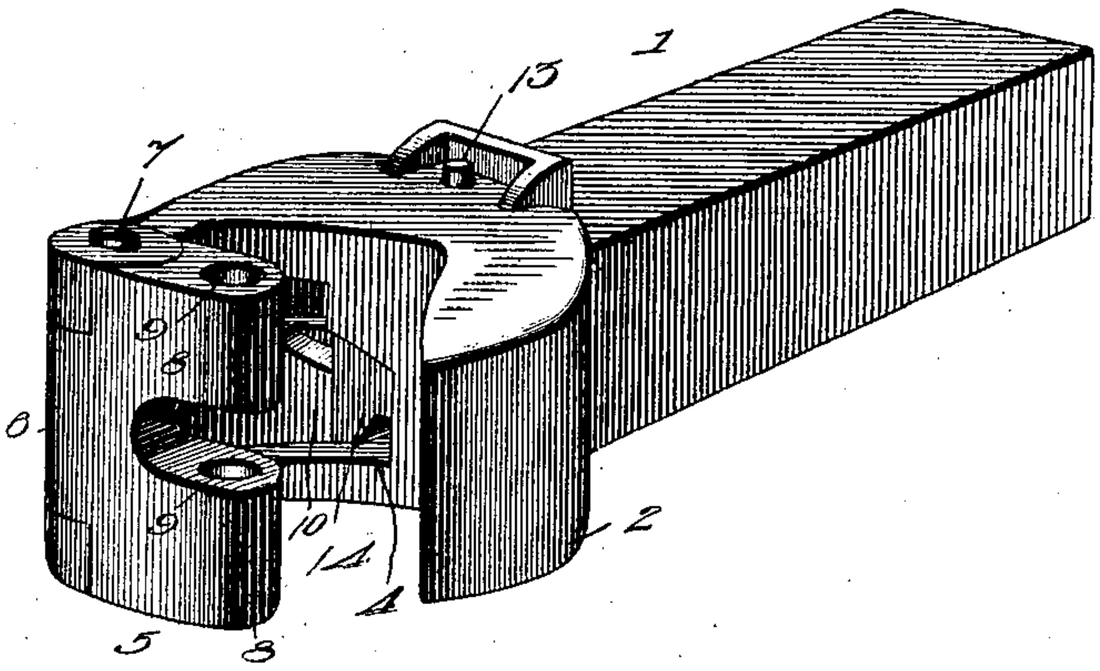



Fig. 2.

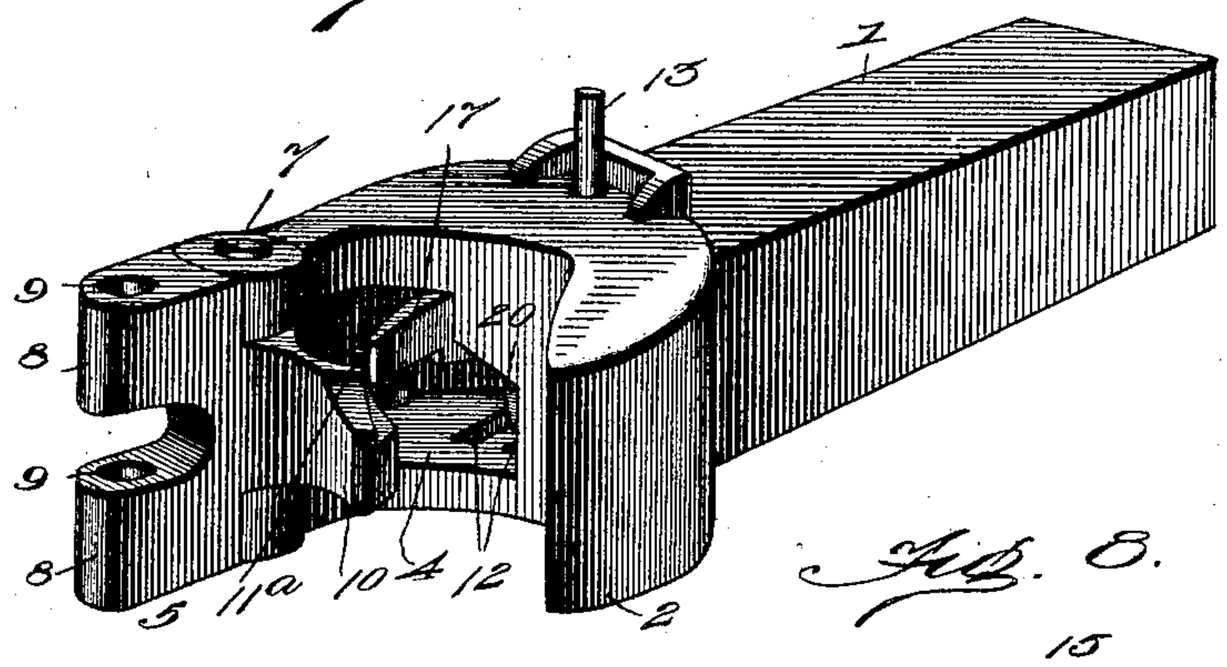



Fig. 7.

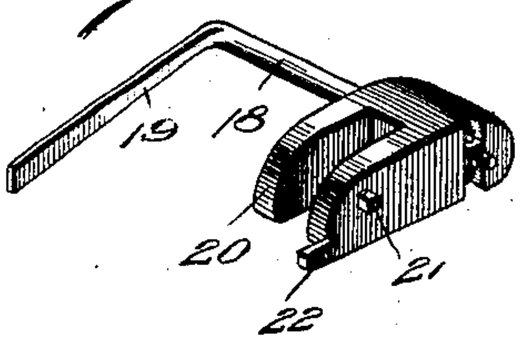



Fig. 6.

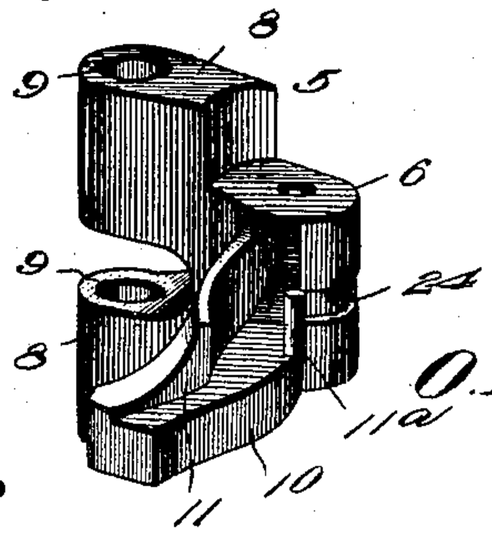
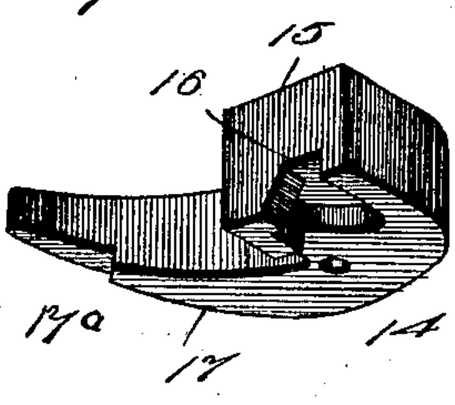



Fig. 8.

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No. 682,827. Patented Sept. 17, 1901.

# O. P. CALLAHAN.

## CAR COUPLING.

(Application filed Sept. 28, 1900.

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

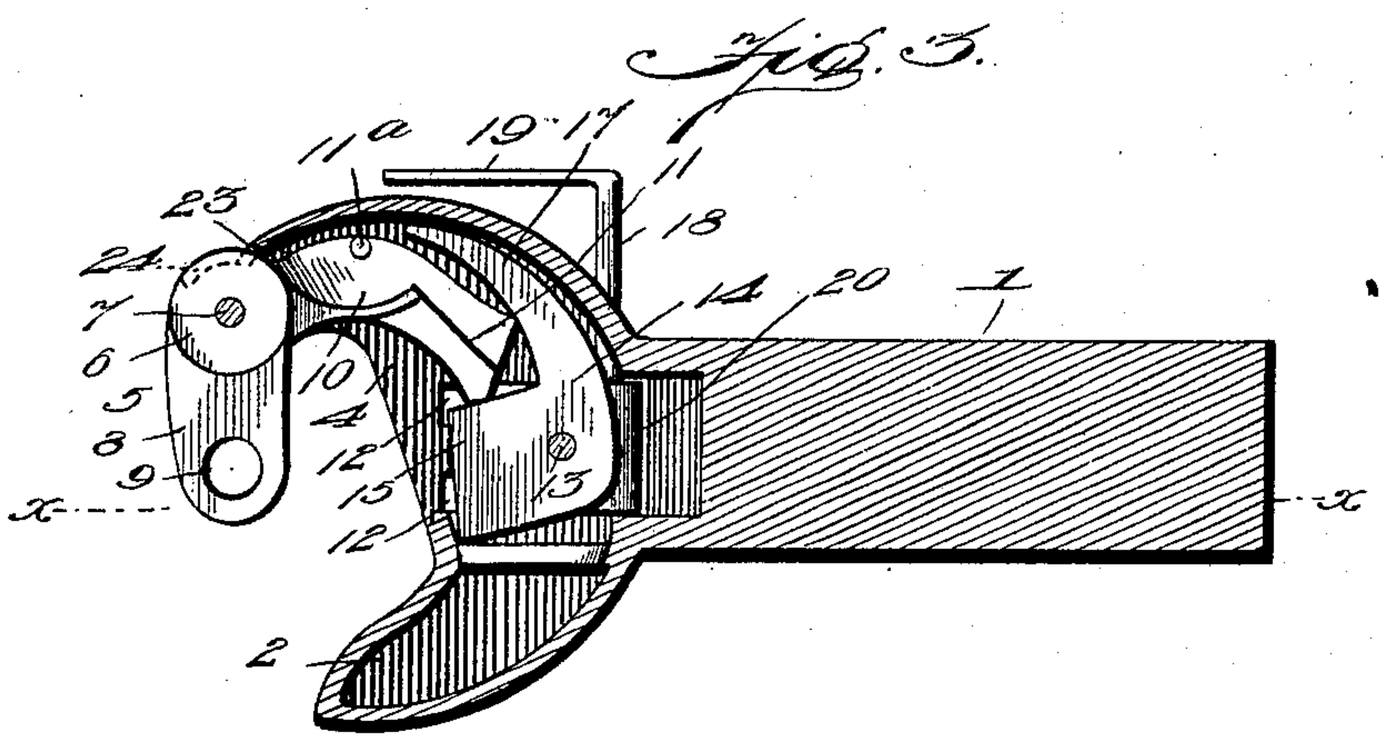



Fig. 4.

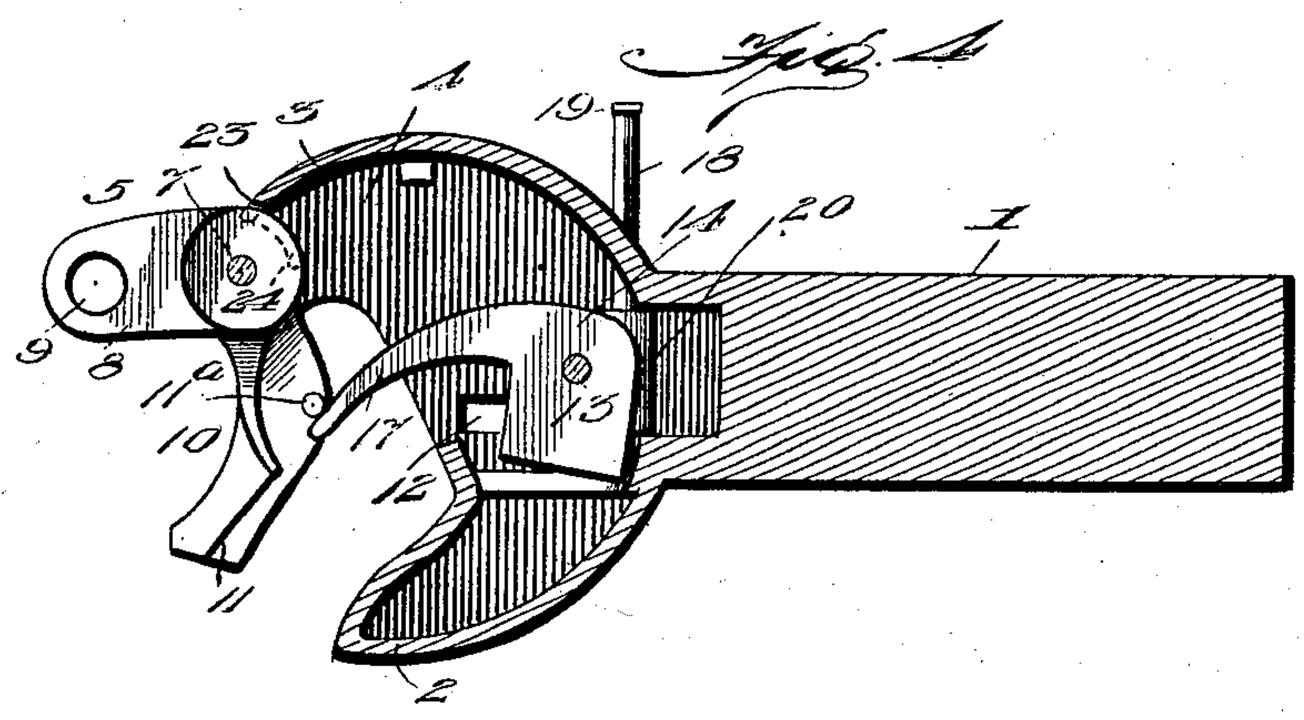
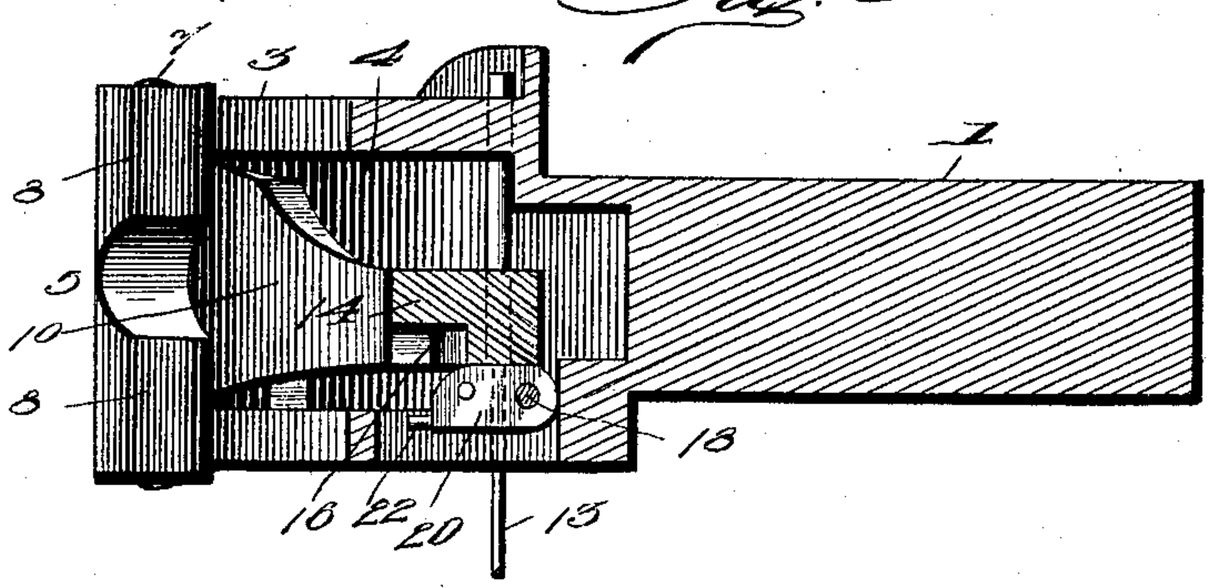



Fig. 5.

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# UNITED STATES PATENT OFFICE.

OWEN P. CALLAHAN, OF NEW YORK, N. Y.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 682,827, dated September 17, 1901.

Application filed September 28, 1900. Serial No. 31,394. (No model.)

*To all whom it may concern:*

Be it known that I, OWEN P. CALLAHAN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to new and useful improvements in car-couplers of the Janney type; and its primary object is to provide a coupler of this character having means whereby the knuckle thereof may be unlocked by raising a lever projecting from the draw-head and which will automatically lock when two draw-heads to be coupled are brought into contact with each other.

A further object is to so construct the knuckle and draw-head as to permit the coupled cars to pass around short curves without causing the same to become uncoupled.

To these ends the invention consists in providing a draw-head within which is mounted a horizontally-extending rod which projects therethrough and is provided with a lever, whereby the same may be readily operated. Secured to this lever within the draw-head is a lifting-block having two parallel arms, which are adapted to contact with the lower surface of a vertically-movable locking-block. This block is arranged within the draw-head so as to overlap the inner end of the knuckle when the same is in locked position, and a tongue extends from the block in rear of the knuckle and serves also to retain the same in locked position. The locking-block is provided with a groove adapted to receive a pin formed upon one of the arms of the lifting-block, when said block is turned upward upon its pivot by means of the lever before referred to. This pin after the locking-block has been raised out of the path of the knuckle swings the tongue thereof against said knuckle and throws the same outward. Said tongue rests upon the knuckle when the same is in unlocked position and is always in a position to lock the same as soon as it is swung inward.

The invention also consists in the further novel construction and combination of parts, as will be hereinafter fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a perspective view of the device shown in locked position. Fig. 2 is a similar view showing the knuckle unlocked. Fig. 3 is a central horizontal section through the draw-head when in the position shown in Fig. 1. Fig. 4 is a similar section through the unlocked knuckle and its jaw. Fig. 5 is a section on line $x\,x$ of Fig. 3. Fig. 6 is a detail view of the knuckle. Fig. 7 is a similar view of the lifting-block and its lever. Fig. 8 is a detail view of the locking-block.

Referring to the drawings by numerals of reference, 1 is the draw-head, formed of any suitable material, having arms 2 and 3 extending from the front end thereof. The arm 2 may be solid, if desired; but the arm 3 is provided with a centrally-extending slot or recess 4, which receives the knuckle 5 of the device. This knuckle is formed in one piece and has an intermediate portion 6, which receives a pivot-pin 7, extending therethrough and through the upper and lower walls of the recess before referred to. Extending from the intermediate portion 6 of the knuckle are parallel similar ears 8, each of which is provided with a longitudinally-extending passage 9, which may be employed for the reception of a pin adapted to hold a link in position within the knuckle. Extending from the intermediate portion 6 at a plane substantially at right angles to the plane of the ears 8 is an arm 10, which is adapted to swing into the slot of the draw-head when the ears 8 are swung inward and the knuckle locked. This arm 10 is provided upon its upper face with a flange 11, extending the full length thereof at the forward edge, while a pin $11^a$ is provided upon the upper face, at the inner edge thereof. The lower wall of the slot formed within the draw-head is provided with parallel slots 12, which are arranged at opposite sides of an aperture formed within said draw-head and adapted to receive a pin 13, which extends through a locking-block 14 of peculiar construction and thence upward to the upper wall of the slot. This pin is slidably mounted within the apertures in the draw-head, but is secured to the locking-block before referred to. This block comprises a substantially rectangular body portion 15, having a groove or recess 16 formed in the lower surface thereof at a point adjacent

to the pin 13 passing therethrough. This recess extends to one side of said pin, and a curved tongue 17 projects from the block at the opposite side of said pin and is adapted to fit snugly against the curved inner wall of the slot 4 at a point in rear of the arm 10 of the knuckle. This tongue 17 is arranged at such an angle to the block 15 as to prevent the arm 10 of the knuckle from swinging upon its pivot-pin 7 when said arm is seated therebetween. A shoulder 17ª is formed upon the lower surface of the tongue 17, and this shoulder is adapted to engage the edge of the arm 10 when the block 14 is raised and the arm moves inward. Extending through the draw-head and projecting from the sides thereof is a revoluble rod 18, having a lever 19 formed at one end thereof. This rod is secured to a forked cam or lifting-block 20, the arms of which are adapted to lie within the apertures 12, before referred to. Downward movement of this block within the apertures is prevented by a laterally-extending pin or stud 21, while a projection 22 extends longitudinally from the arm lying farthest removed from the knuckle. The ends of the lifting-block 20 are rounded, as shown, and the locking-block 14, before referred to, normally rests thereupon. When it is desired to lock two draw-heads together, the lever 19 is swung upward, causing the rod 18 to revolve and raising the lifting-block 20. As the rod 18 is secured to the lifting-block at one end thereof, said block will serve as a cam and cause the locking-block 14 to slide upward, its pin 13 serving as a guide therefor. When the block 20 has nearly reached the limit of its upward movement, the tongue 17 will be raised above and out of engagement with the arm 10 of the knuckle; but the tongue 17 will still lie within the path of the flange 11, formed upon said arm. As the movement of the lifting-block 20 is continued the pin 22 thereon will swing into the recess 16 and contact with the rear wall thereof. As said wall lies at the side of the pivot of the locking-block which is opposite to the tongue 17, it will swing said tongue forward, causing it to bear upon the flange 11 and swing the knuckle outward. Said tongue will lie normally upon the arm 10 and at a point between the flange 11 and the pin 11ª. The outward movement of the knuckle is limited by a tongue 23, which extends into a groove 24, formed within the intermediate portion 6 of the knuckle. When two draw-heads similar to that herein described are brought together after being opened, the knuckles thereof will project into the recess of the opposite draw-head and be swung inward upon their pivots. The inward movement of each knuckle will of course swing the arm 10 backward into the slot and cause the flange 11 to press against the end of the tongue 17 and swing the same backward, and this movement will throw the lifting block or cam 20 forward upon its fulcrum and cause the same to return to its normal position by force of gravity. As the backward movement of the arm 10 continues the shoulder 17ª, which lies in the path of the upper edge of the arm 10 when the cam is raised, will be contacted by the edge of said arm and the tongue will be thrown off of the arm and will drop in the rear thereof. At the same time the body 15 of the block will fall in front of the arm 10, and the knuckle will therefore be securely locked in closed position and can only be opened by repeating the operation before described.

In the foregoing description I have embodied the preferred form of my invention, though I do not wish to be understood as limiting myself thereto, as I am aware that modifications may be made therein without departing from the principle or sacrificing any of the advantages thereof, and I therefore reserve to myself the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. The combination with a recessed draw-head having arms projecting forward therefrom, of a knuckle pivoted in one of the arms, an arm thereto adapted to swing into the recess of the draw-head, a curved flange upon said arm, a stud arranged in rear of, and adjacent to, the flange, a vertically-movable locking-block pivoted within the recess of the draw-head, a curved tongue extending therefrom, a shoulder upon the lower surface thereof and means for lifting the locking-block and turning the same upon its pivot when it reaches the limit of its upward movement, the end of said tongue being adapted, when the block is turned, to lie upon the arm of the knuckle and contact with the flange and stud thereon.

2. The combination with a recessed draw-head having arms projecting forward therefrom, of a knuckle pivoted within one of the arms, an arm thereto adapted to swing into the recess of the draw-head, a curved flange upon the arm of the draw-head, a stud upon said arm adjacent to, and in rear of, the flange, a vertically-movable locking-block pivoted within the recess, a forked cam mounted thereunder and the ends thereof adapted, when swung upward, to contact with and raise the block, a stud upon one of the ends of the cam adapted to contact with the wall of the recess when the block reaches the limit of its vertical movement and swing the same upon its pivot, a tongue to the block, the end of which is adapted to rest upon the arm of the knuckle at points between the flange and stud thereon and a shoulder upon the tongue adapted to be contacted by the edge of the knuckle-arm when said knuckle is swung inward.

3. The combination with a recessed draw-head having upwardly-projecting arms, of a knuckle pivoted within one of the arms, an arm extending from said knuckle and adapted

to swing into the recess of the draw-head, a curved flange upon said arm, a stud upon the arm adjacent to, and in rear of, said flange, a vertical pin slidably mounted within the draw-head, a locking-block secured thereto and adapted to extend in front of the arm of the knuckle, a curved tongue to the locking-block adapted to lie in rear of the arm of the knuckle, a shoulder formed upon the lower surface of said tongue, a transversely-extending rod within the draw-head, means for turning the rod, a forked cam secured to said rod at a point below and normally contacting with the locking-block, the forks of said cam lying within slots in the bottom of the recess of the draw-head and adapted, when raised, to lift the locking-block out of engagement with the arm of the knuckle, and an extension upon one of the forks of the cam adapted to swing into engagement with the wall of a groove formed within the lower surface of the locking-block, when the block reaches the limit of its upward movement.

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

OWEN P. CALLAHAN.

Witnesses:
ELIZABETH L. PEEBLES,
GEORGE HIEBER.