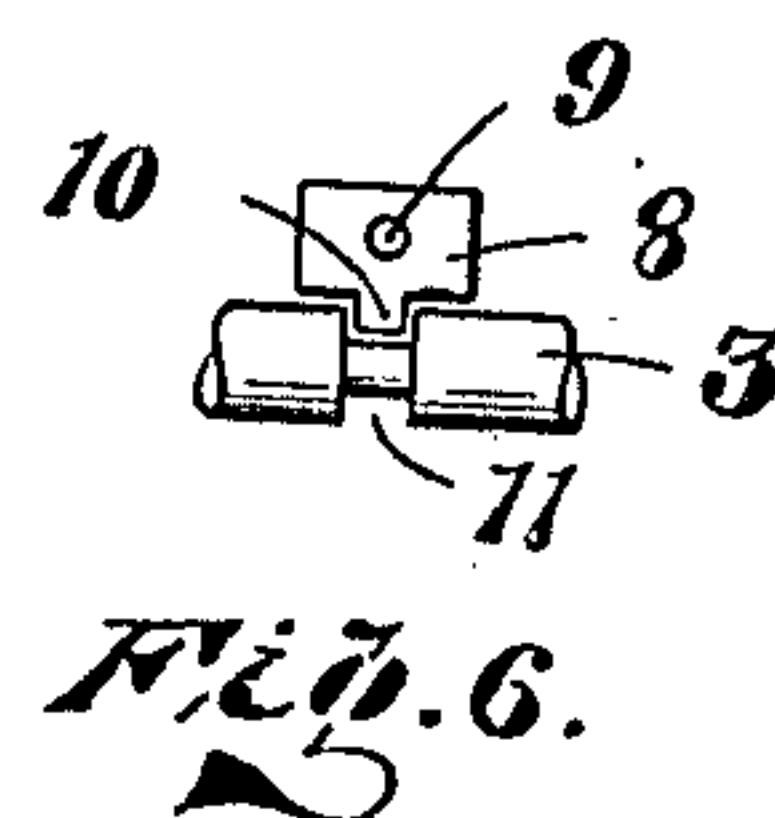
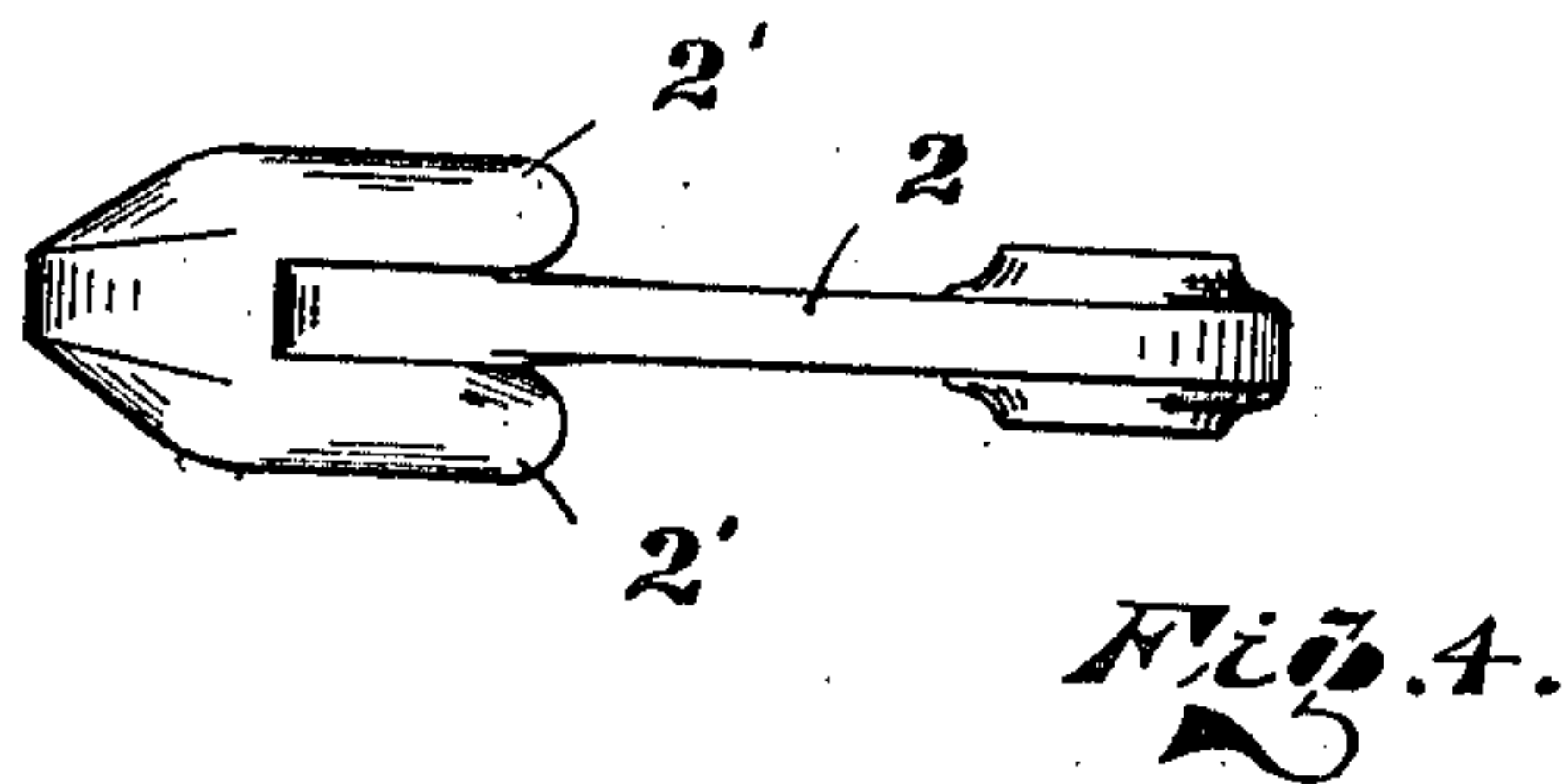
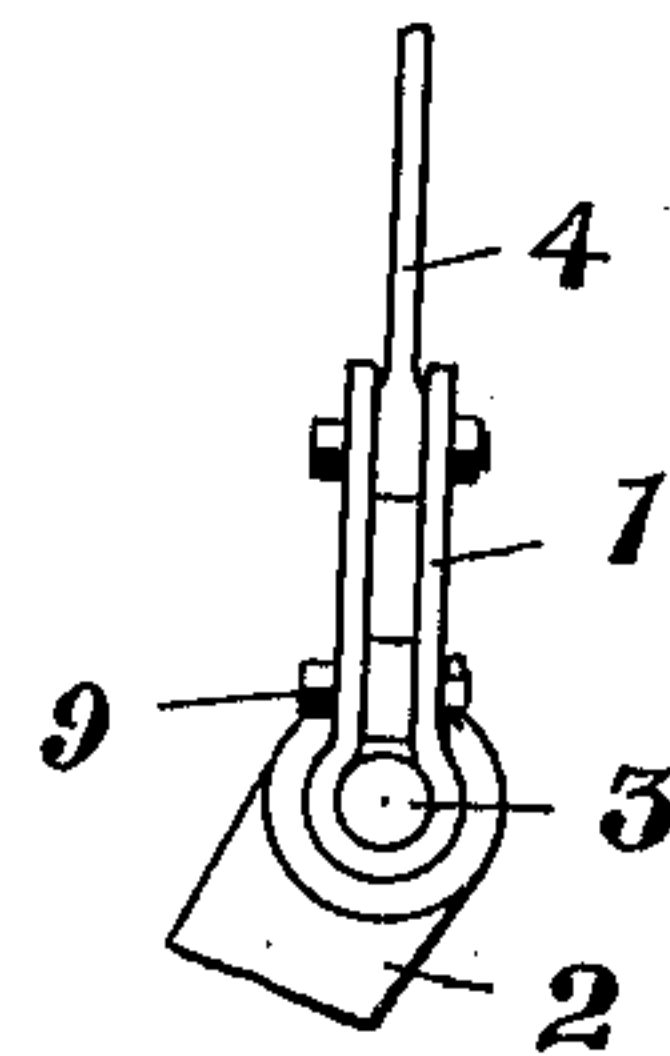
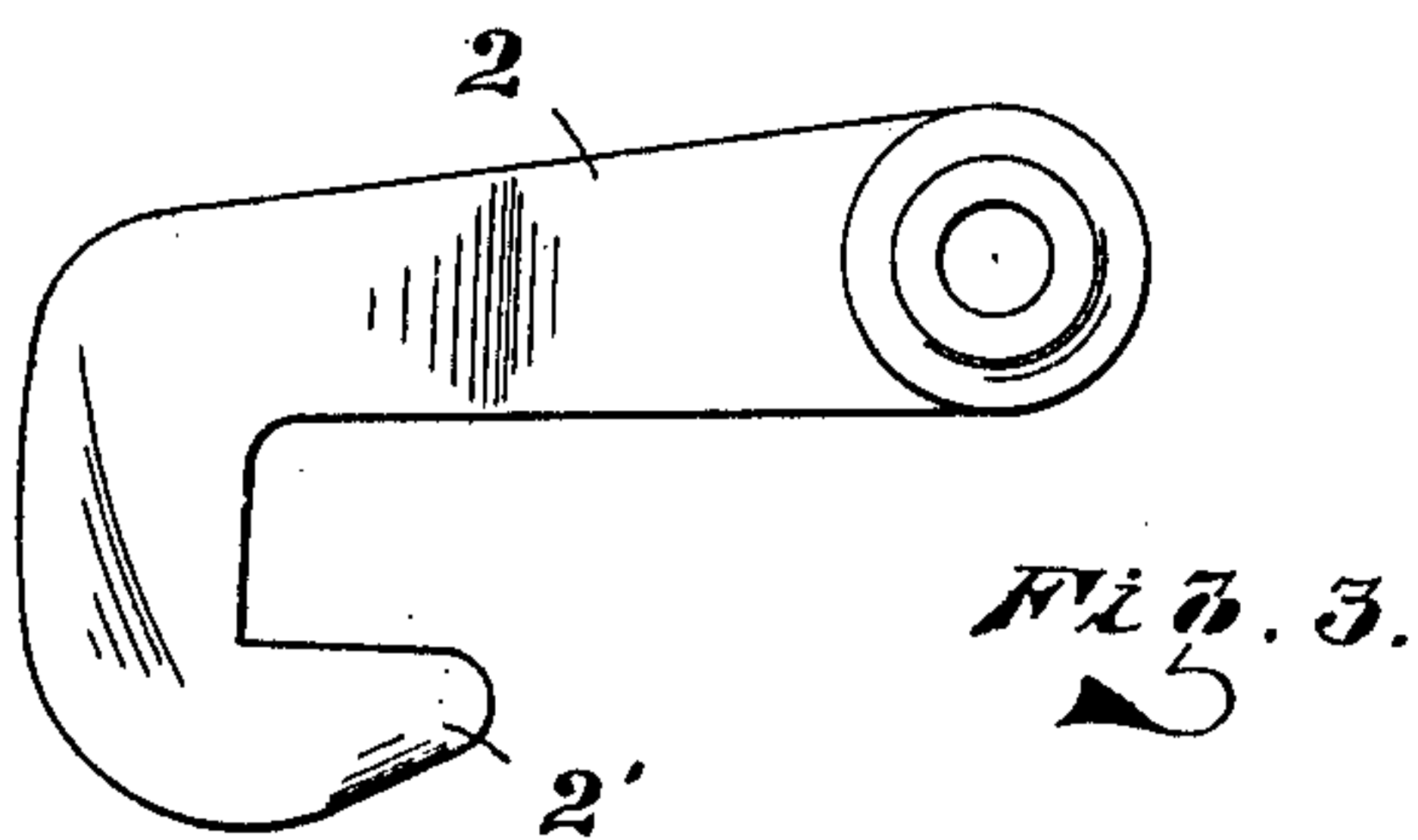
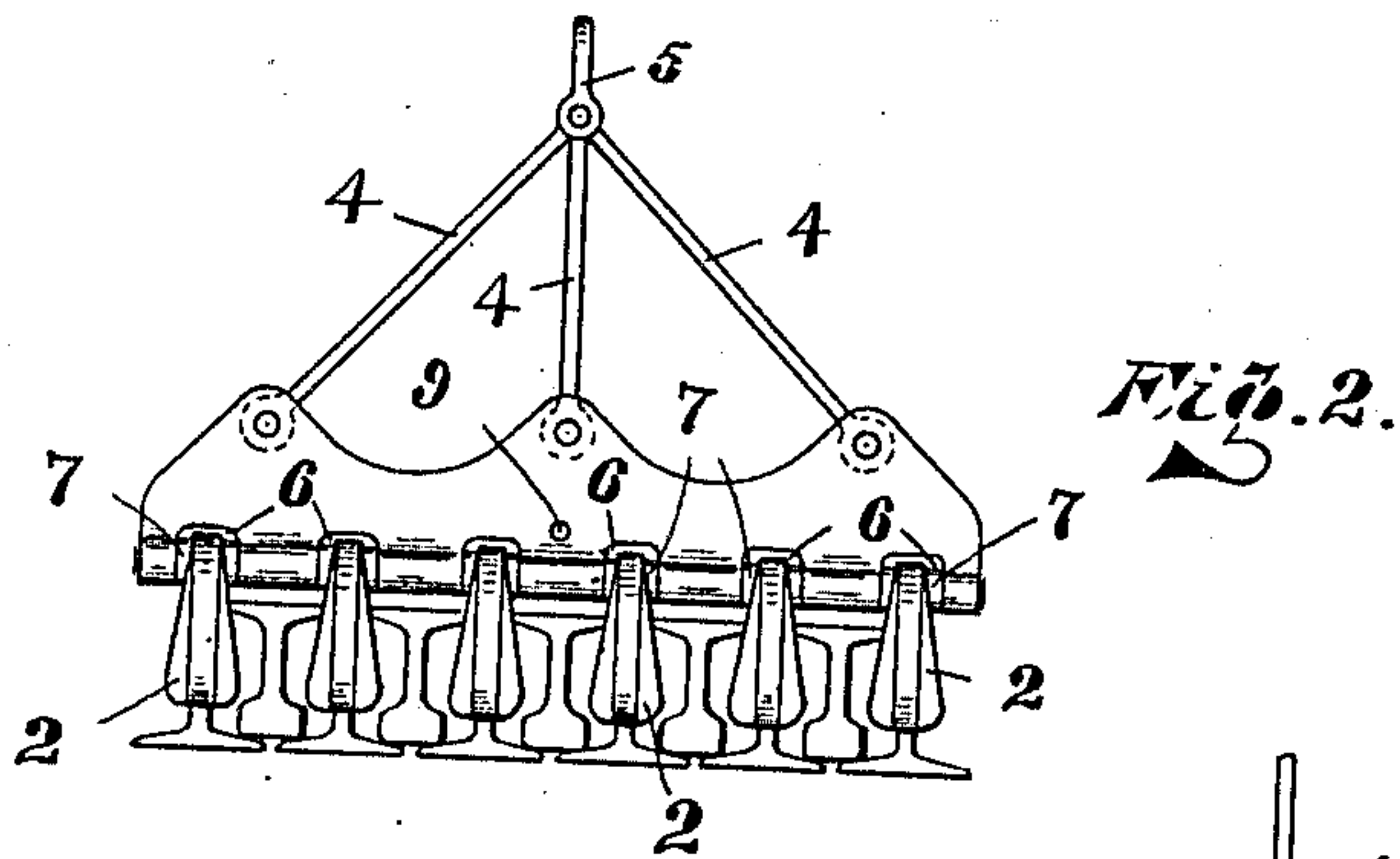
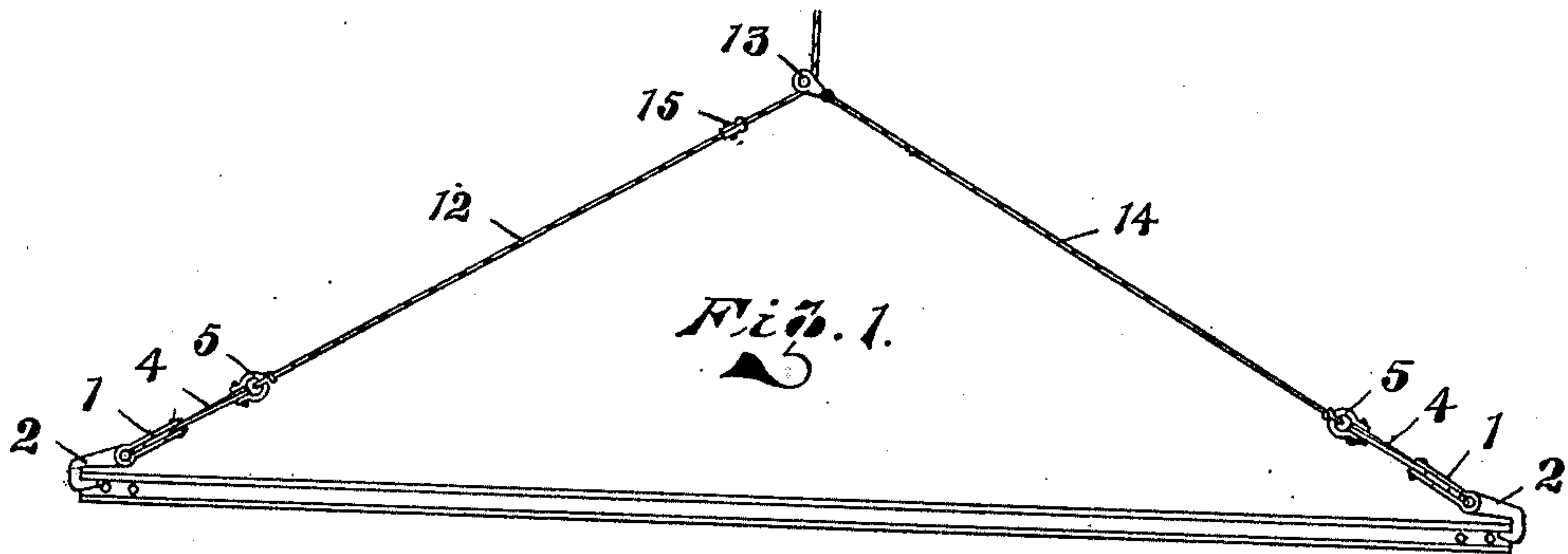


B. HARPER.  
RAIL HANDLING DEVICE.  
APPLICATION FILED SEPT. 17, 1910.

991,980.

Patented May 9, 1911.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

BLYTHE HARPER, OF DULUTH, MINNESOTA, ASSIGNOR OF ONE-FOURTH TO A. A. DESLAURIERS, OF DULUTH, MINNESOTA.

## RAIL-HANDLING DEVICE.

991,980.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed September 17, 1910. Serial No. 582,571.

*To all whom it may concern:*

Be it known that I, BLYTHE HARPER, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Rail-Handling Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in rail handling devices.

The object of my invention is to provide a device of this character which permits of the handling of rails separately and collectively and in a convenient and expeditious manner for loading or unloading for transportation.

Another object of my invention is to provide a simple, cheap and effective device of this character in which rails of any length can be readily handled.

In the accompanying drawings; Figure 1 is a side elevation of my improved rail handling device in operation. Fig. 2 is an end elevation of the same, showing the yoke in a vertical position, and showing the device as applied to the rails when handling them collectively. Fig. 3 is a side elevation of one of the rail grabs. Fig. 4 is a bottom plan view of Fig. 3. Fig. 5 is an end elevation of the yoke, and Fig. 6 is a detail view of the shaft retaining means.

In its general organization, this rail handling device comprises two sets of hooks or grabs which are adapted to engage opposite ends of the batch of rails to be lifted, two yokes, each of which pivotally carries a set of grabs, and a tackle whereby the two yokes are connected operatively with each other and also with the crane or hoisting device as is common in such practice, whereby the grabs and the load carried thereby are transported from one place to another.

It is evident that one or more rails may be handled at a time with this device as desired, but in the drawings the rails are shown as arranged in the form of two horizontal rows resting one within the other for the purpose of economizing space, the rails of the lower row being arranged with their bases lowermost and side by side, and the rails of the upper row are inverted and arranged with their heads between the webs of the lower row and their bases resting upon the heads of the lower row of rails. The batch of rails in this nested condition is shifted without

interruption from one place to another as previously indicated.

Referring now to the drawings, 1 represents the yoke in which the grabs 2 are pivotally mounted upon the shaft 3 which is carried in the lowermost portion thereof. This yoke is preferably made of sheet metal and completely surrounds the shaft 3, its two halves being brought close together and holding between their upper edges the suspending rods 4, of which there are preferably three, their upper ends being united by a suitable clevis 5, for engagement with the hoisting cable. Openings 6 are formed through the hub portion of the yoke 1 in which the grabs are mounted. These openings are made somewhat wider than the length of the hubs of the grabs so that shimming washers 7 may be mounted upon the shafts 3 between the ends of the grab hubs and the inner walls of the openings, thus providing an adjustment of the grabs longitudinally the shaft 3 to provide for different sized rails as the washers may be interchanged, the openings 6 being of slightly different sizes.

A rectangular shaped block 8 is interposed between the hubs of the central grabs and held between the sides of the yoke by means of the pin 9, this block 8 having a projecting teat 10, which engages the annular groove 11 within the shaft 3, whereby the shaft is securely held longitudinally, thus avoiding any nuts or cotters upon the shaft 3, which might obstruct the operation of the device.

Each of the grabs 2 is formed with a bifurcated or forked bill, the prongs 2' of which are adapted to straddle the web of the rail at one end thereof and bear against the under side of the head of the rail when lifted, the upper edges of the prongs being suitably shaped for this purpose.

The two sets of grabs having been properly placed upon the opposite ends of the lower row of rails of the batch to be lifted and also connected with the hoisting and shifting device by means of a tackle which preferably comprises a main cable 12 connected at one end with the hoisting and shifting mechanism and at its other end to the clevis 5 embracing the yoke supporting rods 4 and a pulley block 13, which receives the main cable and is connected by means of a short cable 14 to the clevis 5 in the set of



grabs in the opposite end of the batch of rails to be lifted.

In attaching the handling device to a batch of rails, that set of grabs connected to the pulley block 13 are first engaged with one end of the batch of rails and then the set of grabs which are connected directly to the main cable 12 are engaged with the opposite end of the batch of rails. Upon now drawing or pulling upon the main cable 12 the two sets of grabs will be first drawn tightly into engagement with the opposite ends of the batch of rails and after being thus tightened, the further or continued pull of the main cable will cause the load to be moved either horizontally or vertically, depending upon the direction of pull of the main cable, this being governed according to what it is desired to do with the load. After the load has been shifted to the desired place, the main cable is slackened sufficiently to permit disengagement of the two sets of grabs from the ends of the batch of rails and the grabs are carried away for another load. In order to prevent the set of grabs that are directly attached to the main cable from being hauled close to the pulley block 13 when no load is being carried and the grabs are being drawn back into position for another load, a stop 15 is securely bolted to the main cable a short distance from the block 13 and between it and the set of grabs. This stop may be of any desired shape, but is sufficiently large so that upon striking the pulley block, the same can not pass through it, thereby holding the grabs of the main cable at a considerable distance from the pulley block and permitting the engagement of the same with the ends of the batch of rails without any inconvenience and unnecessary loss of time in drawing the cable through the block.

While I have shown the preferred means of carrying my invention into practice, I do not wish to limit myself to the exact construction shown, as the same may be varied in many respects and still come within the scope of my invention.

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

1. A device of the character described, comprising two yokes, shafts carried by the lower ends of the yokes, said yokes having cut-away portions spaced apart and exposing the shaft, grabs pivotally mounted upon said shaft, and means for drawing said yokes together.

2. A device of the character described, comprising two yokes, shafts carried by the lower ends of the yokes, said yokes having cut-away portions spaced apart and exposing the shaft, grabs pivotally mounted upon said shaft, and means carried by the yokes for holding the shaft against longitudinal movement within the yokes.

3. A device of the character described, comprising two yokes, shafts carried by the lower ends of the yokes, said yokes having cut-away portions spaced apart and exposing the shafts, grabs pivotally mounted upon said shaft within the cut-away portion, means for holding the shaft against longitudinal movement within the yokes and means for drawing the yokes together.

4. A device of the character described, comprising two yokes, shafts carried by the lower ends of the yokes, said yokes having cut-away portions spaced apart and exposing the shafts, grabs pivotally mounted upon said shaft within the cut-away portion, a tongue carried by the yoke and entering peripheral grooves in the shafts and holding the shaft against longitudinal movement within the yokes, and means for drawing the yokes together.

5. A device of the character described comprising yokes, a shaft mounted in each yoke and having a peripheral groove intermediate its ends, a tongue carried by each yoke and entering said grooves, said yokes having cut-away portions exposing the shaft, and grabs pivoted upon the shaft within the cut-away portion.

6. A device of the character described, comprising yokes, a shaft mounted in each yoke and having a peripheral groove intermediate its ends, a plate secured to the yokes and having a tongue entering the groove of its respective shaft, said yokes having cut-away portions spaced apart and grabs pivoted upon said shaft within the cut-away portions of the yoke.

7. A device of the character described, comprising a yoke, grabs pivotally carried by the yoke, a cable carried by the upper end of the yoke, a block carried by the end of the cable, a second yoke having grabs pivotally mounted thereon, a cable secured to the grab and passing over the pulley carried by the other cable, and a stop carried by the second cable to limit the movement thereof through the block.

8. A device of the character described, comprising elongated yokes, grabs spaced apart and pivotally mounted in the lower ends of the yokes, suspension bars pivotally connected to the yokes and pivotally connected together, a clevis connected to said pivotal connection, and cables secured to the clevis and adapted to draw the yokes together.

9. A device of the character described, comprising a yoke, formed of sheet metal doubled upon itself forming a shaft receiving bearing in its lower end, a shaft within said bearing and having a peripheral groove intermediate its ends, a plate secured to the yoke and having a tongue entering the peripheral groove to hold the shaft against longitudinal movement, said yoke having



cut-away portions spaced apart, grabs pivoted upon the shaft within said cut-away portions and having washers on each side, and a suspension means pivoted between the 5 doubled portion of the upper end of the yoke.

10. A device of the character described, comprising a yoke formed of sheet metal doubled upon itself forming a shaft receiving bearing in its lower end, a shaft within 10 said bearing, means for securing the shaft in the bearing against longitudinal movement, said yoke having cut-away portions placed apart and exposing the said shaft, 15 grabs pivoted upon the shaft within said cut-away portion, and a suspension means pivoted between the double portion of the upper end of the yoke.

11. A device of the character described, 20 comprising a yoke formed of sheet metal doubled upon itself forming a shaft receiving bearing in its lower end, a shaft within said bearing, means for holding the shaft

in said bearing against longitudinal movement, said yoke having cut-away portions 25 spaced apart and exposing the shaft, grabs pivoted upon the shaft within said cut-away portion, and having a bushing on each side to hold the body-portion away from the yoke, and a suspension means carried by the 30 upper end of the yoke.

12. In a device of the character described, comprising two yokes, a shaft mounted in each yoke, means carried by the yokes for holding the shaft therein against longitu- 35 dinal movement, said yokes having cut-away portions spaced apart, and grabs pivoted upon said shafts within the cut-away portions of the yokes.

In testimony whereof I hereunto affix my 40 signature in the presence of two witnesses.

BLYTHE HARPER.

Witnesses:

A. A. DESLAURIERS,  
S. GEO. STEVENS.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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