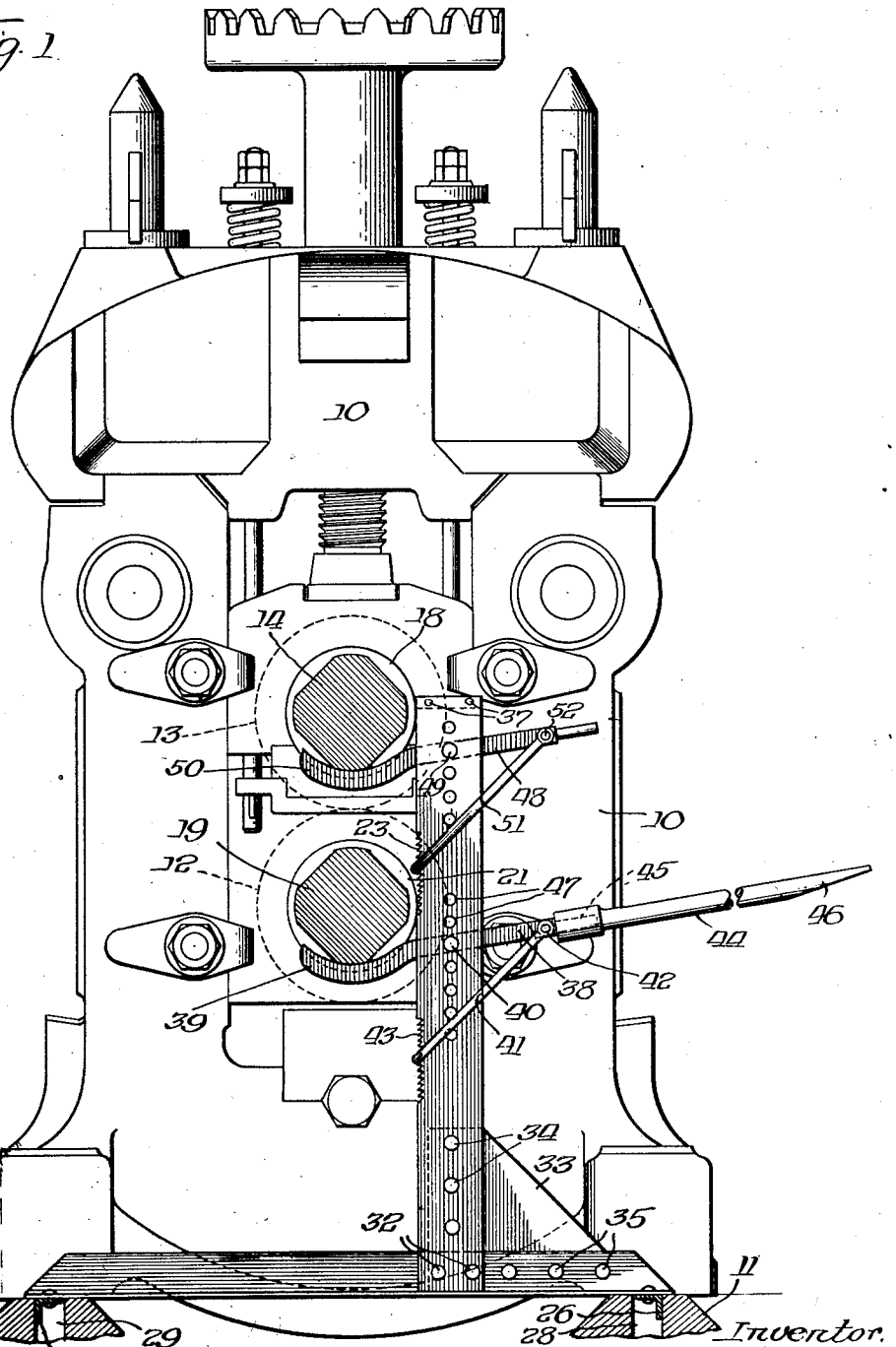
June 19, 1928. 1,674,148

E. D. WRIGHT

ROLL JACK

Filed July 21, 1927 3 Sheets-Sheet 1

Fig. 1.



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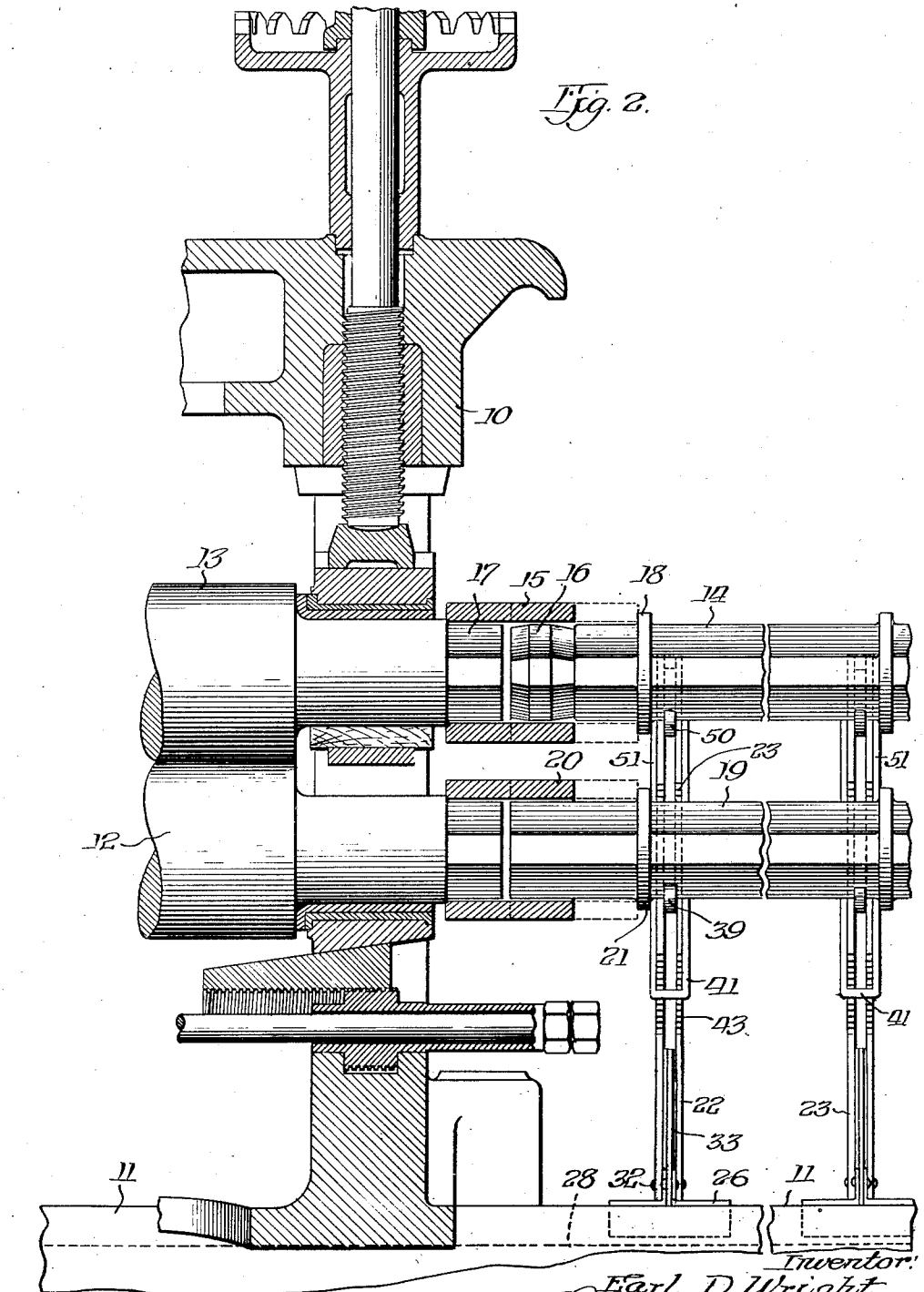
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Fig. 2.



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Fig. 4

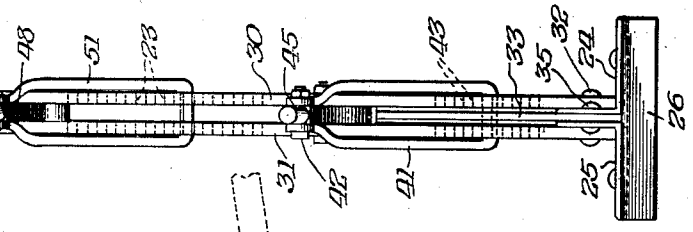
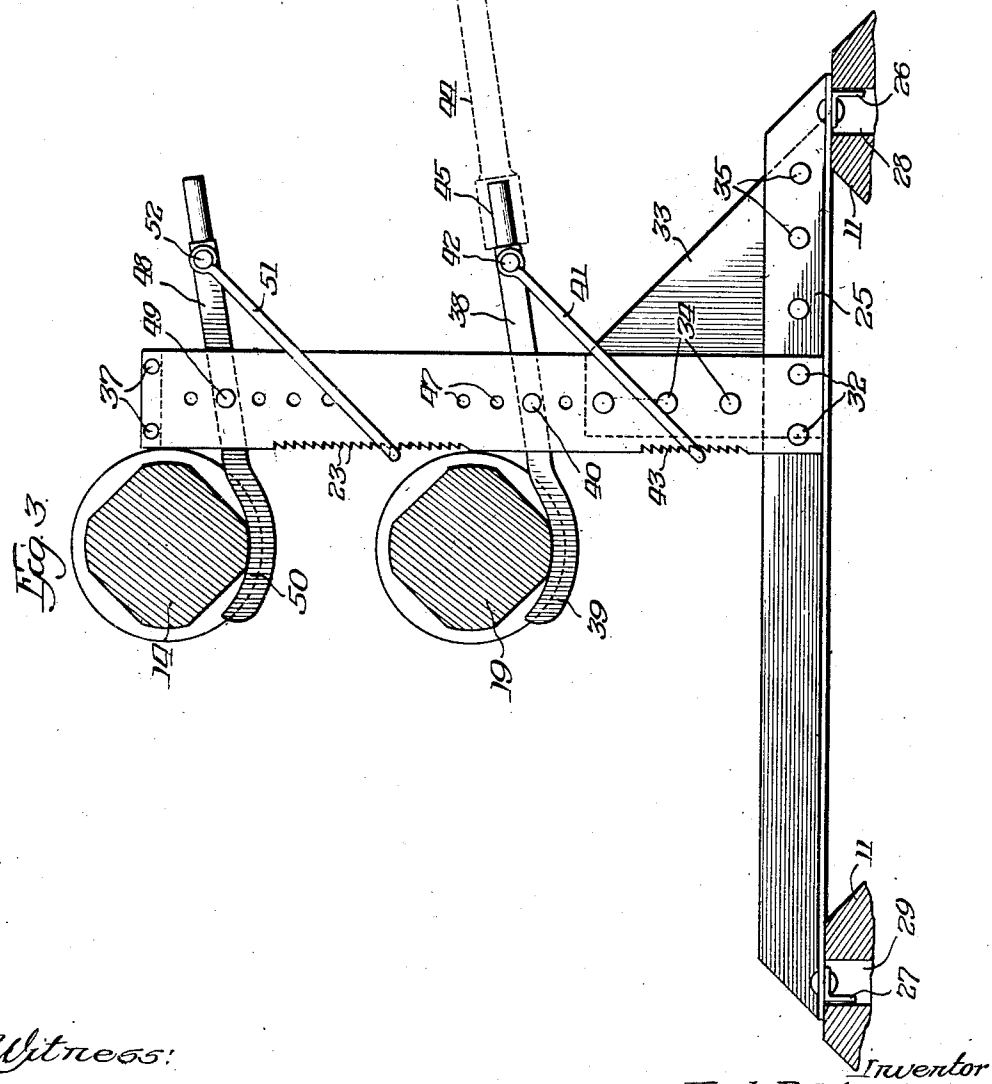


Fig. 3.



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UNITED STATES PATENT OFFICE.

EARL D. WRIGHT, OF CHICAGO, ILLINOIS.

ROLL JACK.

Application filed July 21, 1927. Serial No. 207,437.

My invention relates to roll jacks and has particular reference to a jack used in connection with rolling mills for handling rolls and also driving spindles for the rolls.

Another and further object of my invention is a provision of a roll jack which takes the place of a crane in the handling of driving spindles and in which a material amount of time and labor is saved in changing the rolls, or in changing the driving spindles of the rolls.

In connection with the changing of rolls from one stand to another, heretofore it has been the practice to employ cranes which frequently are in use at some other point in the mill and which must be run to the point where the spindles are located and a great deal of time is consumed in removing the spindles by the use of the crane.

In my improved device the jacks are preferably permanently positioned adjacent to spindles, so that in case it is desired to change the rolls, the spindles are lifted and disconnected from the rolls and allowed to remain in position on the jacks if desired when new rolls are put in the stands. The jacks are also capable of manual manipulation thus materially lessening the length of time required for connecting the driving spindles to the rolls, and may be used for the handling of the rolls as well as the driving spindles.

These and other objects of my invention will be more fully and better understood by reference to the accompanying sheets and drawings, and in which:

Figure 1 is an end view of a roll housing, with the jacks in position adjacent the housing;

Figure 2 is a side view partially in elevation and partially in section, showing the roll jacks in position alongside the roll stand;

Figure 3 is a side elevational view of the roll jacks in operation.

Figure 4 is an end view of the jacks, as shown in Figure 3.

Referring now specifically to the drawings a roll housing 10 is shown, which is mounted upon the usual concrete foundation 11, with a lower roll 12 and upper roll 13 mounted therein in the usual manner. The upper driving spindle 14 is shown having a coupling box 15 on one end thereof which is adapted to fit over the squared end 16 of a driving spindle 14 and also over the squared end 17 of the roll 13, the driving box 15 being capable of longitudinal movement on the driving spindle 14 against an annular projection 18 on the driving spindle 14.

A second driving spindle 19 is provided having a driving box 20 mounted thereon and capable of longitudinal movement against the annular portion 21 of the driving spindle 19, so that this driving spindle can also be disconnected from the lower roll 12 if desired.

It will be understood that in the construction just described, the driving spindles 14 and 19 lead to another roll stand, which is positioned in alinement with the roll stand 10, the roll from the stand 10 being driven from the rolls in adjacent stands, which is common practice in rolling mills at the present time—in fact it is common practice to place several roll stands in alinement and then drive the one set of rolls from the common driving shaft leading to a source of power located in a power house adjacent to the mill, and then connect the rolls in the alined rolling stand, so that the rolls of these stands are all driven thru a common power shaft. In this arrangement it is frequently necessary to change the rolls and in changing the rolls it is of course necessary to disconnect the driving shafts and my invention is designed particularly for this purpose.

Positioned upon the foundation 11 is a pair of roll jacks designated as a whole as 22 and 23. These jacks comprise a base composed of a pair of angles 24 and 25, which are connected at each of their ends by transverse angle members 26 and 27, adapted to extend into recesses 28 and 29 formed in foundation 11. These members have a pair of standards 30 and 31 secured thereto by means of rivets 32—32 with a reenforcement member 33. Positioned between members 30 and 31, at the lower ends thereof, which acts as a spacing member for said members 30 and 31, and is riveted thereto by means of rivets 34—34 and is also secured the angles 24 and 25 by rivets 35—35.

At the upper end of the said members 30 and 31 a spacer 36 is provided with a rivet 37 passing thru the members 30 and 31, so that the members 30 and 31 are built up into vertically extending standards adapted to support the pivotally mounted levers adapted to lift and support the coupling box, as hereinafter described.

Extending between the standards 30 and

31 and pivotally mounted thereon, is a lower lever 38, having a curved forward end 39 adapted to rest under the driving spindle 19, the said lever 38 being pivotally mounted to the members 30 and 31 by a loose pin 40 extending thru these members and thru the lever 38.

A clevis 41 is provided which is pivotally secured to the rear end of the lever 38 and by a pin 42, the said clevis extending downwardly thereof to the front side of the members 30 and 31, as adapted to engage in a plurality of notches 43, 43 formed by the forward sides of these members. A handle 44 is provided having a socket 45 in one end thereof and is tapered off to a wedge shaped end 46 at the outer end thereof, the handle 44 being adapted to fit over the outer end of the pivotally mounted lever 38.

A plurality of holes 47, 47 are provided in the members 30 and 31 near the lower ends thereof, adapted to receive the pin 40, so that the lever 38 may be changed to different positions to correspond to different heights of the coupling box leading to the roll mill.

In the upper ends of the members 30 and 31 is mounted a second lever 48 upon a pin 49 extending thru the members 30 and 31 the said lever 48 having a curved forward end 50 adapted to be positioned under the upper driving spindle 14. A clevis 51 is provided which is connected to the lever 48 by a pin 52 and which extends across to the forward side of the members 30 and 31 and is adapted to engage notches 53—53 formed on the edges of these members. The handle 44 is adapted to apply over the end of the lever 48 for the purpose of lifting the driving spindle 14 in the same manner as heretofore described with relation to the lower lever 38.

In operation the device is exceedingly simple, as when it is desired to remove the rolls from the housing the pair of jacks 22 and 23 are placed in position as illustrated in Figure 2 so that the lever 38 is under the driving spindle 19 and the upper lever 48 is under the driving spindle 14. The handle 14 is thereupon inserted over the ends of the levers and the coupling box is lifted up, the clevises in the meantime engaging in the notches so that the weight of the coupling boxes is sustained by the levers. The handle 44 is removed from the jacks and the tapered end is used to pry the coupling boxes over onto the driving spindles in the position shown by dotted lines in Figure 2. The spindles are allowed to remain in position upon the jacks so long as may be needed during the changing of the rolls.

Though certain preferred embodiments of the present invention have been described in detail, many modifications will occur to those skilled in the art, it is intended to cover all such modifications that fall within the scope of the appended claim.

I claim:

A roll jack comprising in combination, a base member, means on said base member for interengagement with the roll stand base, a pair of spaced vertical members secured to said base member having notches on one of their edges, a pair of pivotal mounted members positioned between the said vertical members in spaced vertical relation with each other, and retaining members secured to said pivotal members at one of the ends and adapted to be received in the notches on the sides of said vertical members.

Signed at Chicago, Illinois, this 15th day of July, 1927.

EARL D. WRIGHT.