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B. BOYKIN, JR

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CROWN BLOCK

Filed Jan. 7, 1930

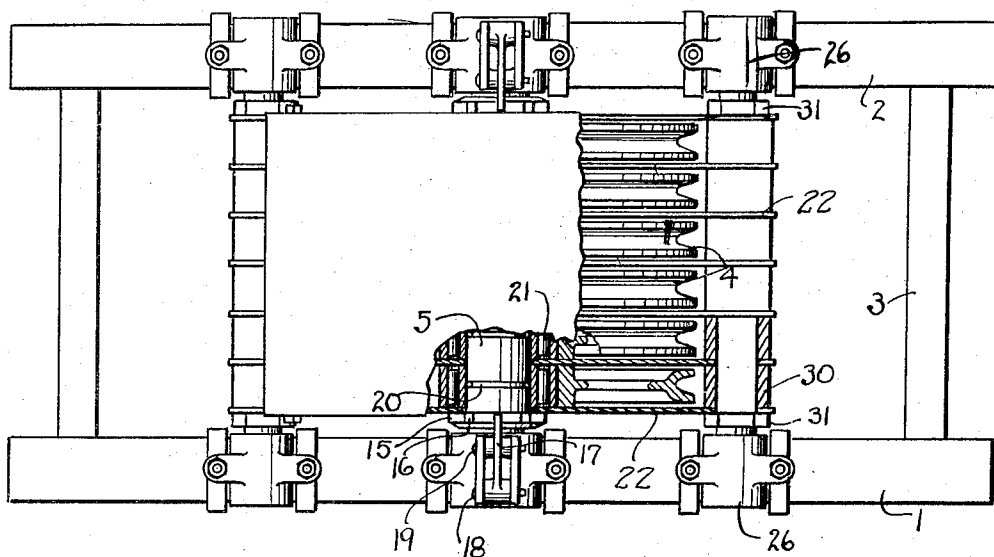


Fig. 1.

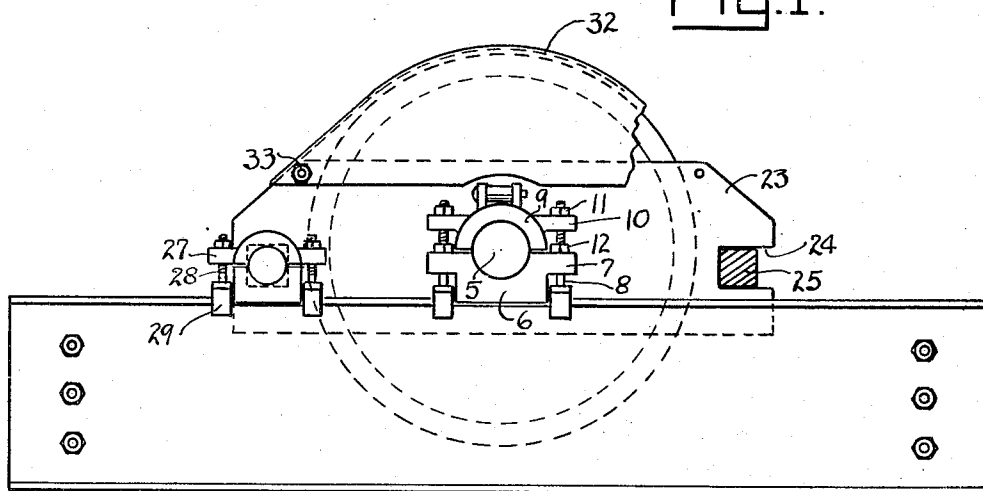


Fig. 2.

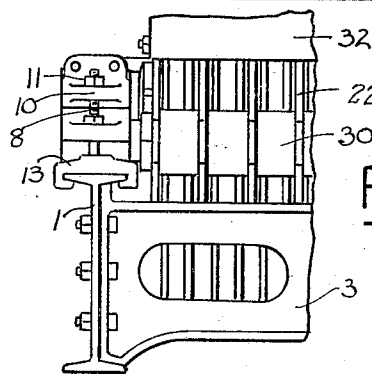


Fig. 3.

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BURWELL BOYKIN, JR., OF BEAUMONT, TEXAS, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO INTERNATIONAL-STACEY CORPORATION, OF COLUMBUS, OHIO, A CORPORATION
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CROWN BLOCK

Application filed January 7, 1930. Serial No. 419,028.

My invention relates to crown blocks such as are employed particularly on well derricks for use in the drilling of wells for oil, gas, sulphur and the like.

5 In the ordinary crown block such as is used on oil field derricks the cable, which is employed in raising and lowering the tools and pipe, is passed over a plurality of pulleys or sheaves on the said block and there may
10 be eight or more of these sheaves about which the cable is passed. As these sheaves are usually mounted upon a shaft reinforced by the use of other adjacent shafts or supports upon the crown block, it is difficult to obtain
15 free access to the sheaves for threading the cable over the same when the cable is changed or when a different number of sheaves are to be employed in the particular job at hand. The difficulty arises in the fact that the ad-
20 jacent transverse supports or rods upon the crown block interfere with moving the cable into position upon the sheaves.

It is an object of my invention to provide
25 a crown block having the sheaves mounted upon a shaft which is partially supported upon two adjacent rods or shafts and to be enabled to move the adjacent shafts or rods out of connection with the supporting plates so as to leave the sheaves open and unob-
30 structed when the cable is to be installed thereon.

I desire to mount the supporting rods at each side of the pulley shaft on blocks which may be slidably engaged with the frame of
35 the crown block and thereby moved laterally out of the way when the cable is being installed upon the sheave.

I also desire to provide a particularly convenient structure of supporting rod for use
40 with my crown block and to make such rods freely movable in the manner stated.

It is a further object to provide a shaft upon which the sheaves are rotatable, which shaft is capable of rotative adjustment to
45 present different bearing surfaces thereon in the direction of the loads sustained by the shaft.

My invention resides generally in the particular construction and arrangement of my
50 improved device, which will be more clearly

understood from the specification which follows:

Referring to the drawings herewith, Fig. 1 is a top plan view partly in section illustrating a crown block equipped with my in- 55
vention.

Fig. 1 is a side elevation of said crown block, one of the supporting rods being broken away for greater clearness.

Fig. 3 is a broken end elevation of the de- 60
vice.

I have shown by invention as applied to a crown block, some parts of which are known to be old. The crown block is made up of a pair of spaced beams 1 and 2, adapted to be 65
supported upon the derrick. These beams are spaced apart by transverse spacing members 3, one at each end of the frame.

The sheaves or pulleys 4 of the crown block are mounted upon a central shaft 5. 70
Said shaft is supported at its ends in bearing blocks including a lower member 6 resting upon the upper side of the beam 1. Said member 6 has lateral ears 7, which are provided with openings to receive clamping 75
bolts 8. The upper portion of the bearing block 9 also has laterally extending ears 10 through which the clamping bolts 8 may project. It will be seen that nuts 11 at the upper end and nuts 12 above the ears 7, are 80
adapted to tighten the bearing blocks upon the clamping bolt 8.

The lower end of the clamping bolt 8 is connected with a yoke 13 which engages around the upper end of the beam 1 as will 85
be seen from Fig. 3. This structure is clearly illustrated in my prior Patent No. 1,588,872, issued June 15, 1926, and is no novel feature of the present invention. This yoke member is slidable along the beam but 90
when the nuts 11 and 12 are tightly clamped upon the bolt the yoke 13 is drawn tightly against the end of the beam and is thereby held rigidly in place.

The shaft 5 is provided at each end with 95
a flange 15, which flange is notched at 16 to receive a latching member 17. Said latch comprises an arm of rigid material pivoted at its outer end upon a pin 18. Between its ends it is provided with an opening to re- 100

ceive a pin 19. Thus the latching arm 17 may be moved inwardly and locked in position by the insertion therethru of the pin 19. When said pin is withdrawn, however, the latching arm 17 may be raised up to allow a partial rotation of the shaft 5 so that the arm 17 may be dropped in to some other notch 16 in the flange 15. My shaft is provided with lubricant channels 20 therein and the sheaves 4 are mounted upon roller bearings 21, both of which are thought to be ordinary construction.

Between the adjacent sheaves 4 are plates 22. These plates space the pulleys or sheaves slightly apart and also serve to support the shaft 5. The shaft extends through said plates and the plates are extended laterally beyond the edges of the pulleys, as shown at 23 in Fig. 2. The ends of the plates beyond the periphery of the pulleys are notched at 24 to receive supporting rods 25.

The supporting rods 25 are of heavy construction and are formed to fit within the notches 24 and as shown in Fig. 2 these shafts may be squared in cross section. It is understood that they may be of any desired shape, however. The ends of these rods are mounted in supporting blocks 26 mounted upon the beams 1 and 2 in a manner similar to that of the bearing shaft. The upper portion of the supporting block is provided with lateral ears 27, which have openings therein to receive the clamping bolts 28 adjustably mounted upon the beams by means of clamping yokes 29. The plates 22 are spaced apart at their ends upon the rods 25 by means of spacing sleeves 30. Said sleeves fit upon the shafts and are adapted to be held tightly between the plates by means of clamping nuts 31 at each end of the rod and adjacent the bearing support.

The crown block assembly may be housed if desired in a sheet metal cover 32 shaped to fit over the upper ends of said sheaves and held in place on the end plates 22 by means of bolts 33.

It will be seen that the shaft 5, which supports the sheaves 4 and thus sustains the load handled by the cable is reinforced by the supporting plates 4. Said plates assist in the supporting of the load by their connection with the rods 25 at each end thereof. When it is desired to obtain access to the pulleys for changing the cable the housing 32 may be removed and one or both of the supporting rods 25 may be moved laterally out of the way. This is done by loosening the clamping bolts 28 at the ends of the rods 25 and thus enabling said blocks 26 to be slid along the tops of the beams away from the plates 23, as will be understood from Fig. 2. With the rods thus removed the operator will have free access to the pulleys for any operation thereon which he may desire. The supporting rods may be easily replaced

without the loss of any material amount of time.

It will thus be seen that I have provided a strong substantial crown block which is capable of adjustment without the loss of time or the removal of any unnecessary parts. Also when the shaft 5 becomes worn on its upper side, due to the wear of the load on the sheaves, the shaft may be partially rotated to present another side upwardly, thus providing a smooth running block at all times.

What I claim as new is:

1. A crown block including spaced supporting beams, bearing blocks adjustable thereon, a shaft supported in said blocks, sheaves rotatable on said shaft, plates on said shaft between said sheaves, and means supporting the ends of said plates, said means being slidable into and out of supporting engagement with said plates.

2. A crown block including spaced supporting beams, bearing blocks adjustable thereon, a shaft supported in said blocks, sheaves rotatable on said shaft, plates on said shaft between said sheaves, means supporting the ends of said plates, said means being slidable into and out of supporting engagement with said plates, and means to secure said supporting means in any desired position.

3. A crown block including spaced supporting beams, bearing blocks adjustable thereon, a shaft supported in said blocks, sheaves rotatable on said shaft, plates on said shaft between said sheaves, and means mounted on said beams supporting the ends of said plates, said means being slidable into and out of supporting engagement with said plates.

4. A crown block including spaced supporting beams, bearing blocks adjustable thereon, a shaft supported in said blocks, sheaves rotatable on said shaft, plates on said shaft between said sheaves, and a rod mounted on said beams and detachably engaging the ends of said plates, said rod being slidable out of engagement with said plates.

5. A crown block including supporting beams, a shaft supported thereon, a plurality of sheaves on said shaft, plates on said shaft adjacent said sheaves and extending laterally beyond said sheaves, the ends of each of said plates being formed with a recess therein, and a rod mounted on said beams and adapted to fit said recesses, said rod being removable from engagement with said plates.

6. A crown block including supporting beams, a shaft supported thereon, a plurality of sheaves on said shaft, plates on said shaft adjacent said sheaves and extending laterally beyond said sheaves, the ends of each of said plates being formed with a polygonal

recess therein, and a polygonal rod mounted on said beams and slidable to and from supporting engagement with said recesses.

5 7. A crown block including supporting beams, a shaft supported thereon, sheaves on said shaft, plates on said shaft adjacent said sheaves, the ends of said plates extending beyond said sheaves and provided with recesses, supporting blocks on said beams at
10 each side of said shaft, rods in said blocks adapted to engage in said recesses, said blocks being adjustable along said beams to move said rods to and from supporting engagement with said recesses in said plates.

15 8. A crown block including supporting beams, bearings on said beams, a shaft supported in said bearings, rods on said beams on both sides of said shaft, means normally supported on said rods and extending beneath said shaft to assist in supporting said
20 shaft, said rods being movable out of engagement with said means when desired.

In testimony whereof I hereunto affix my signature this 2nd day of January, A. D.
25 1930.

BURWELL BOYKIN, JR.

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