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ADJUSTABLE CROWN BLOCK

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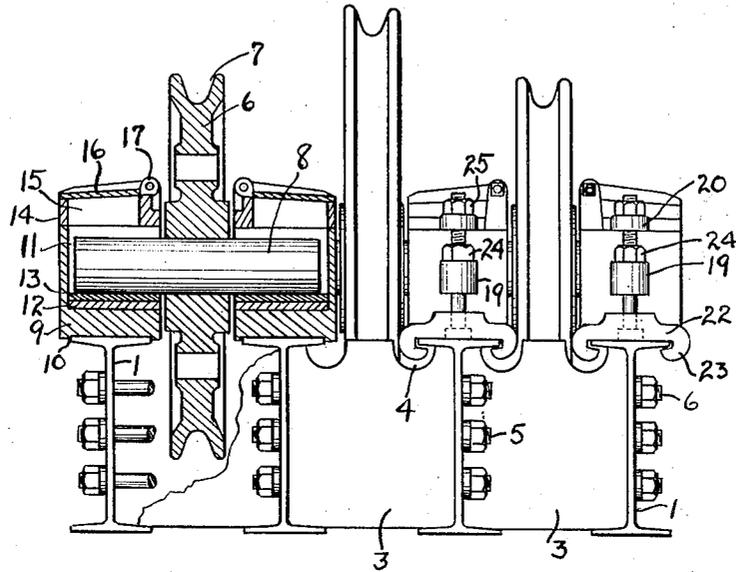


Fig. 3.

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BURWELL BOYKIN, JR., OF BEAUMONT, TEXAS.

ADJUSTABLE CROWN BLOCK.

Application filed December 27, 1924. Serial No. 758,355.

My invention relates to crown blocks for use in pumping operations.

In the operations concerned with well drilling and pumping, the tools and apparatus are raised and lowered in the well hole by a hoisting apparatus including a cable running from the hoisting drum up over the crown block at the upper end of the derrick and back to the well. It is necessary for most effective operations that the crown block be adjusted so that the travelling block or the tool engaging end of the cable be suspended directly above the well hole. This is not possible of accomplishment with some type of derrick equipment as now used.

It is an object of the invention to provide a crown block in which the cable supporting elements are capable of adjustment as desired.

It is also an object to provide a crown block which is strong and durable and can be cheaply and economically constructed and quickly installed.

Further objects and advantages will appear from the description which follows:

Referring to the drawing herewith, Fig. 1 is a side elevation of a crown block embodying my invention. Fig. 2 is a broken top elevation thereof, and Fig. 3 is an end elevation of the invention, a portion thereof being broken away in central vertical section of one of the bearings. Like numerals of reference designate like parts in all the views.

In the construction of the crown block I employ a plurality of parallel beams which are preferably of the I beam form uniformly spaced apart so as to furnish supports between adjacent beams for the bearing shafts of the pulleys. The two outer I-beams 1 are shown as being somewhat shorter than the two central I beams 2. The said beams are spaced apart at their ends by approximately rectangular plates 3, said plates having recesses or notches 4 cut in their upper edges to provide space for the bearing clamps which will be later described. The beams are held in spaced relation against the said plates 3 by means of transverse bolts 5 and 6. The said bolts 5 secure the two central I-beams 1 together and are passed through the said beams beyond the ends of the side beams 1. The bolts 6 extend transversely through all the beams and are tightened in position by means of nuts on their outer ends in the usual manner.

The sheaves or pulleys 6 are of the ordinary construction having an outer grooved periphery 7 to receive the cable and are secured upon a bearing shaft 8 which extends laterally from each side of said pulleys.

The shafts 8 have their bearings within bearing boxes 9 which are recessed slightly at 10 on their lower faces to fit slidably upon the upper faces of the I-beams. The blocks are approximately rectangular in shape on their outer faces, and are recessed to provide a chamber 11 which receives the bushings 12 shaped to fit about the shaft 8 and having wearing surfaces 13 of Babbitt or other bearing metal. The upper ends of the chambers 11 of the bearing are closed by means of a cap 14. Said cap has a central opening 15 therein which is closed by means of a cover or gate 16 hinged at its inner end at 17 to upwardly extending lugs 18 upon the body of the cap.

Both the bearing box and the caps are formed with laterally extending lugs 19 and 20, respectively, on each of their ends. These lugs are formed with openings to receive bolts or pins 21 and as will be noted in the drawing, are adapted to register with each other so that one bolt on each end will secure both the box and the cap in position.

The said bolts 21 are secured at their lower ends within clamps 22. The shape of these clamps is best seen in Fig. 3. They are flattened at their lower faces to fit upon the I-beams and have their ends formed with hooks 23 to engage about the sides of the I-beams. The clamps are thus slidable over the ends of the beams and along the upper sides thereof to any desired position. The bolt 21 has a head fitting within a square recess in the lower face of the clamp, thus preventing its rotation. Nuts 24 are placed upon the said bolts above the lugs 19 of the boxes, and similar nuts 25 are placed on said bolts above the lugs 20 of the caps. It will thus be obvious that when the boxes have been adjusted along the beams to the desired point, the nuts 24 may be tightened against the lugs 19 of the boxes so as to clamp the box firmly to the supporting beam. The caps may be then placed in position on the upper ends of the boxes, and be also tightened by means of the nuts 25. The bearings will be accessible for lubrication or examination by means of the cover 18 previously described.

It will be noted that by means of this

type of bearing for the pulley blocks the position of the pulleys upon the beams may be adjusted, and if desired, again changed to any point along the beams. It is possible also to change the number of pulleys upon the beams by spacing them in any manner desired. The crown block is easily and economically assembled and the pulleys and their bearings also easily positioned and adjusted at any desired point. These features of construction are of great value in the art.

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

1. In a crown block, the combination of a shaft, a supporting I-beam, a bearing box for said shaft on said beam, a longitudinally extending lug on each end of said box centrally of said beam, a cap on said box having lugs thereon above said box lugs, a separate clamping plate at each end of said box, said

plate having hooked ends slidably engaging said beam and movable relative to said box, a bolt extending through said plate and said lugs, and means to secure said lugs on said bolt and clamp said box to said beam.

2. In a crown block, the combination of a shaft, a supporting I-beam, a bearing box for said shaft on said beam, a bearing cap on said box, lugs extending longitudinally at each end of said box and cap, clamping plates slidably engaging said beam and movable independently of said box, a bolt secured non-rotatably in each of said plates and extending upwardly through said lugs at each end of said box, and nuts on said bolts securing said lugs thereon and nuts clamping said box to said beam.

In testimony whereof I hereunto affix my signature this 22nd day of December, A. D. 1924.

BURWELL BOYKIN, Jr.