W. C. BOOZ.

BRAKE MECHANISM FOR OIL WELL DRILLING AND PULLING MACHINES.

APPLICATION FILED MAR. 8, 1916.

1,278,098. Patented Sept. 10, 1918.

Fig. 1.

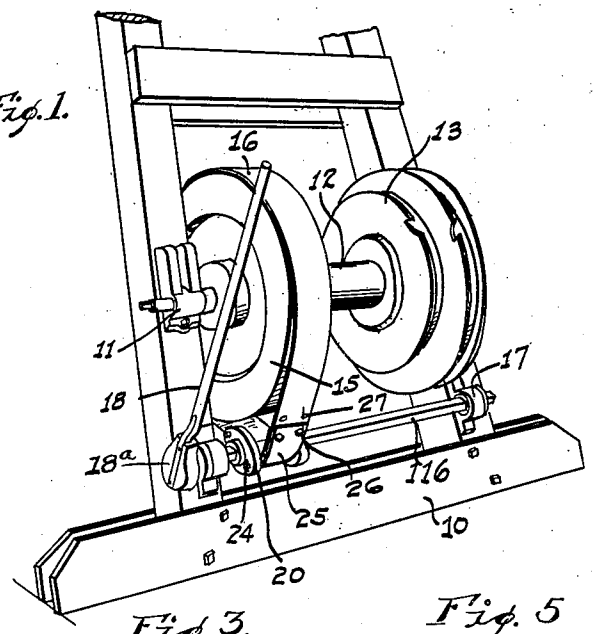


Fig. 3.

Fig. 2

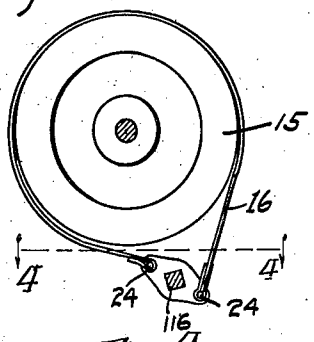


Fig. 4.

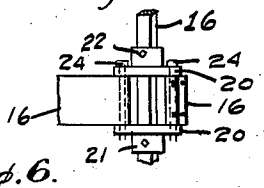


Fig. 5

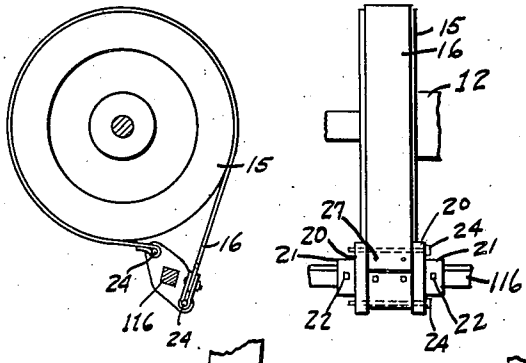


Fig. 6.

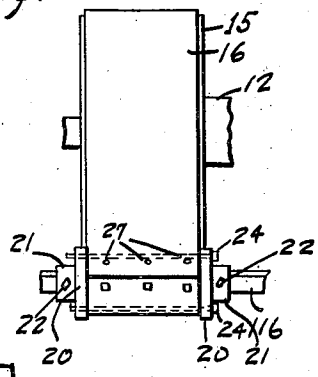
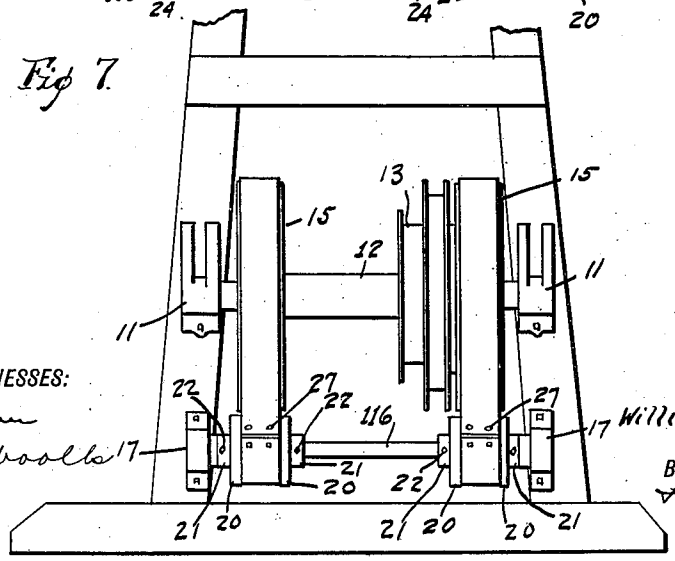


Fig. 7.



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BRAKE MECHANISM FOR OIL-WELL DRILLING AND PULLING MACHINES.

1,278,098. Specification of Letters Patent. Patented Sept. 10, 1918.

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To all whom it may concern:

Be it known that I, WILLIAM C. BOOZ, a citizen of the United States, and a resident of Vanburen, county of Grant, and State of Indiana, have invented a certain new and useful Brake Mechanism for Oil-Well Drilling and Pulling Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

This invention is an improved brake mechanism for use in devices like windlasses, oil well pulling machines, oil well drilling machines and like machinery where it is desired to brake or control frictionally the operation of a shaft or drum.

The chief feature of the invention consists in combining with a brake drum and brake band surrounding the drum, a rocking lever means connecting the two free ends of the brake band so that when said means is oscillated it will draw both ends of said brake band simultaneously against the surface of the drum, or simultaneously tighten both ends of the brake band so as to put it quickly and effectively into braking condition. In the device shown a rock shaft is employed with means for oscillating it and on said rock shaft is mounted the rocking lever which is connected with the two ends of the brake band so that when the rock shaft is oscillated in one direction, both ends of the brake band will be tightened on the drum and when operated in the opposite direction, both ends of the brake band will be loosened or moved out of braking condition.

Another feature of the invention consists in constructing the rocking lever with such parts that its width can be readily adjusted to brake bands of different widths. In this connection one member of the rocking lever is adjustable on said rock shaft toward or away from the other part of the rocking lever for the adjustment above mentioned. Also with such rock shaft construction a plurality of rocking levers may be mounted on the same rock shaft for operating a plurality of brakes simultaneously and to the same extent.

This arrangement is very advantageous, not only for the efficiency of the brake mechanism after assembled, but also in assembling it, adjusting it and adapting it for changing conditions, to one or more drums or from a plurality of drums to one or to brake bands of varying widths or lengths.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim.

In the drawings, Figure 1 is a perspective view of the lower part of the oil well pulling machine. Fig. 2 is a section at the near side of the brake drum in Fig. 1, showing the parts with the brake loose. Fig. 3 is the same showing the brake set. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a front elevation of what appears in Fig. 3, showing a narrower brake band. Fig. 6 is the same showing the parts adjusted for a wide brake band. Fig. 7 is a modified form showing two brake drums and bands and tightening means mounted on one rock shaft.

For the purpose of explaining the general nature of the invention there is shown herein the lower part of a derrick 10 which carries bearings 11 for a bull wheel shaft 12 and bull wheel 13 about which a cable, not shown, operates and winds. On said bull wheel shaft there is a brake drum 15 surrounded by a metal brake band 16. The ends of said brake band are secured to a rocking lever adjustably mounted on a rock shaft 116 mounted in the bearings 17 on the frame and operated or rocked by a hand lever 18. The shaft 116 is preferably square in cross section and projects a distance beyond each end of the bearings 17 and said projecting ends are adapted to enter a rectangular seat in the socket head 18^a. One face of the socket head 18^a is provided with an elongated slot into which extends one end of the lever 18, said lever being secured therein in any suitable manner, and as the lever extends across one end of the socket the socket head is limited in its movement on to the ends of the shaft, and it will be readily seen that said lever can be quickly engaged with either end of the shaft 116 as occasion may require.

The rocking lever construction consists of two side plates 20 with collars 21 and rectangular openings through the same for the shaft 116, so that they can slide on said shaft and be secured at any suitable place by the set screws 22. There is an eye at each end of the brake band through which a bolt 24 extends, said bolt extending

through the two plates 20 which thus secures the brake band to them. There is an extra eye piece 25 on one end of the brake band which is adjustably secured to said brake band as said brake band has a series of holes 27 for the bolts 26. If desired, the rocking lever can be adjusted for a brake band of greater or less width, as shown in Figs. 5 and 6, by removing the short bolts 24 and putting in long bolts and adjusting the plates 20 to the proper position on the rock shaft 116. Also a plurality of rocking levers may be located on the same rock shaft 116 for a plurality of brake drums, as shown in Fig. 7. In this construction all of the brake bands will be simultaneously and equally operated.

The invention is not limited to oil well pulling machines, but may be operated in any similar machine or in a machine where it is desirable to apply brake bands for braking the operation of the shaft or other rotary member.

The invention claimed is:

The combination with a frame and a brake drum rotatably mounted thereon, of a brake band extending around said drum, an eye at each end of said band, means to adjust said eyes on the ends of the band for adapting the band for brake drums of varying diameters, a pair of bearings on said frame, a rock shaft rotatably mounted in said bearings and having its ends extended beyond the bearings, said shaft being square in cross section, a pair of plates having apertured hubs through which said shaft extends, means to lock said plates in adjusted position to the shaft whereby brake bands of varying widths may be employed, bolts extending through the ends of said plates and through the interposed eyes at the ends of the brake band, an operating lever for said shaft, and a socket head having a slot therein to receive one end of said lever, said head having a socket for engagement with the ends of said shaft, said lever closing one end of said socket and limiting the movement of the shaft through the socket head.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM C. BOOZ.

Witnesses:
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CLAUDE J. DILLON.