Aug. 31, 1926. 1,598,019

H. V. SHIRLEY

BRAKE

Filed Sept. 2, 1924

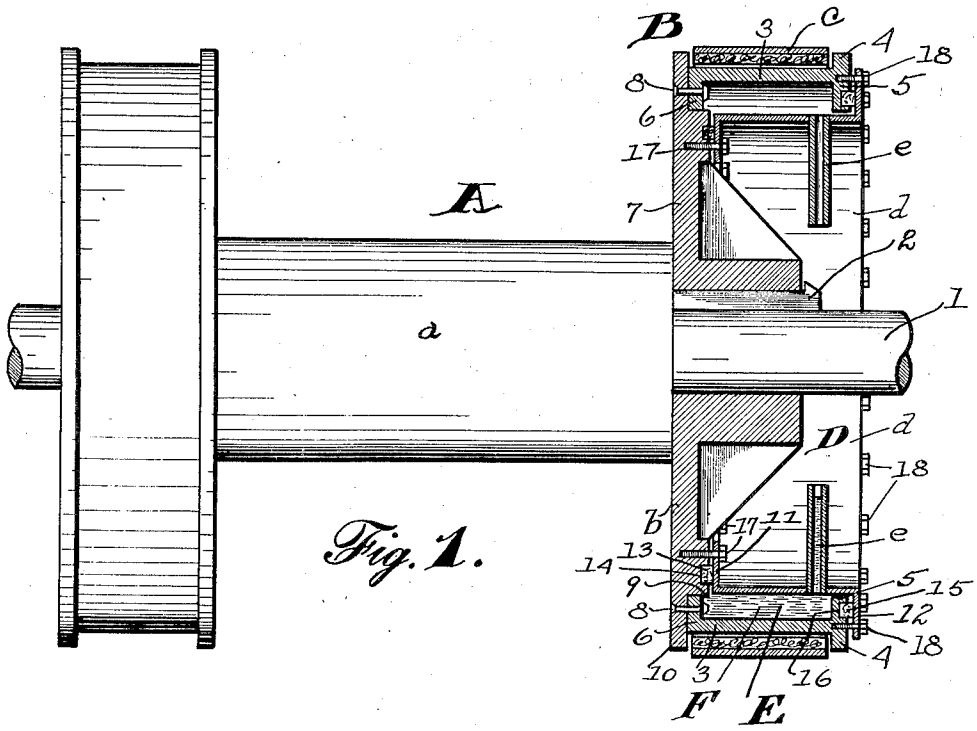


Fig. 1.

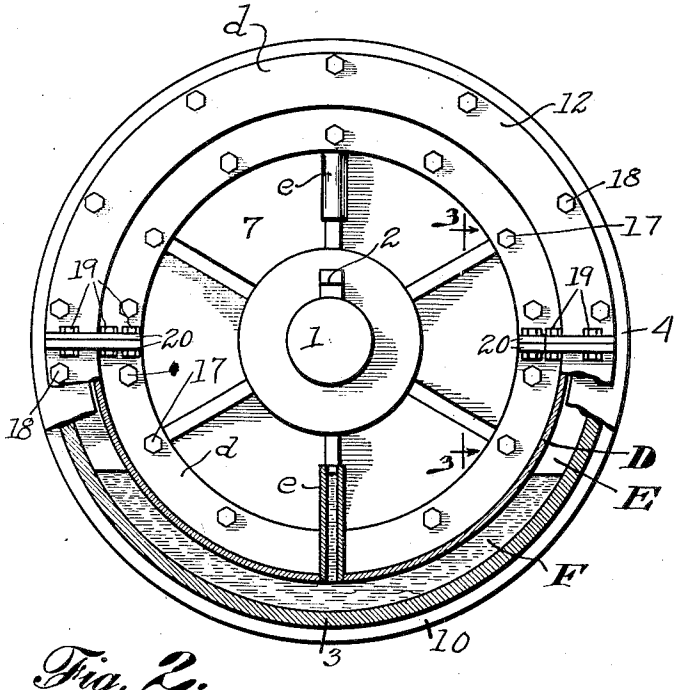


Fig. 2.

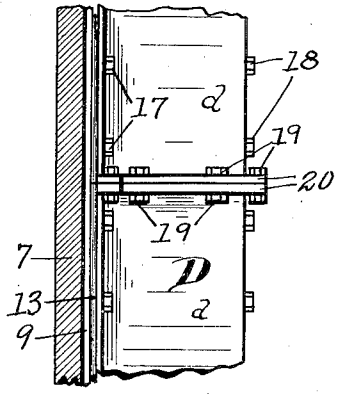


Fig. 3.

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UNITED STATES PATENT OFFICE.

HERMAN V. SHIRLEY, OF LONG BEACH, CALIFORNIA.

BRAKE.

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This invention relates to improvements in brakes and more particularly to drum brakes, such as used, for example, in oil well apparatus, and the main object of the invention is to provide improved means for cooling the braking parts of the brake and preventing burning thereof.

A more particular object of the invention is to provide water-cooling means in the drum of the brake for cooling and preventing burning of the peripheral braking wall of the drum and the brake band which engages said wall.

A further object is to provide a cooling means which may be applied to the drums of brakes of the present construction.

With the above and other objects in view the invention consists in the novel and useful provision, formation, construction and inter-relation of parts, members and features, all as shown in the drawing, hereinafter described, and finally pointed out in claims.

In the drawing:

Figure 1 is a view of a cable reel including a drum brake, such as used on an oil well derrick, the brake being shown in longitudinal section and the remaining portion of the reel being shown in side elevation;

Figure 2 is an end view of the brake drum partly broken away and shown in cross section; and,

Figure 3 is a fragmentary sectional view of the brake drum, taken on line 3—3 of Fig. 2.

Referring with particularity to the drawing A designates in its entirety a cable reel such as used on an oil well derrick for raising and lowering oil well tubing, which reel comprises a spool *a* and a brake B at one end of the spool. The brake comprises a drum *b* and a brake engaging member such as a band *c* surrounding the drum, the drum being keyed on the shaft 1 of the spool by means of a key 2. The peripheral brake wall 3 of the drum is formed with an external flange 4 and an internal flange 5 at its outer edge and with an internal flange 6 at its inner edge, which latter flange is secured to the outer side of the wheel member 7 by rivets 8, there being an annular embossment 9 on the outer side of said wheel member over which the flange 6 fits, all of which is standard construction. The brake band *c* surrounds the wall 3 between the flange 4 and the peripheral edge 10 of the wheel member 7, which edge extends externally of the wall 3.

Within the drum and adjacent the outer edge of internal flange 5, I place from the outer end of the drum an annular shell D formed with an internal annular flange 11 at its inner edge and with an external annular flange 12 at its outer edge, the flange 11 resting adjacent the annular embossment 9 of the drum wheel member 7, and the flange 12 resting against the outer side of the flanges 4 and 5 of the drum brake wall 3. An annular packing ring 13 is interposed between the embossment 9 and the flange 11, said ring resting in an annular groove 14 in said embossment. An annular packing ring 15 is interposed between the flange 5 of the drum brake wall 3 and the shell flange 12, the ring resting in an annular groove 16 in the outer side of said flange. Screws 17 extend through the shell flange 11 and are seated in the drum member 7 and screws 18 extend through shell flange 12 and are seated in the drum brake wall 3, whereby the shell D is detachably secured in the drum and the packings 13 and 15 respectively compressed between flange 11 and embossment 9 and between the flanges 12 and 5, thus forming a fluid-tight reservoir or water jacket E between the drum braking wall 3 and shell D. The shell D may be composed of a pair of semi-annular sections *d* detachably secured together at their ends, by bolts 19 extending through flanges 20 formed on the ends of the sections. A tube *e* is connected to and extends through each section *d* of the shell D in communication with the water jacket E through which tubes water F may be introduced into the lower portion of the water jacket or removed therefrom.

The water F is caused to flow over the entire inner surface of the brake wall 3 of the drum as the drum is rotated, whereby the wall and the brake band *c* are kept cool and prevented from burning, thus prolonging the life of the brake indefinitely.

When the drum is rotated slowly, the water F remains in the lower part of the water jacket E, the water in the lowermost tube *e* running downwardly out of the tube into the jacket. When the drum is rotated fast, the water may be carried upwardly around the drum but it is prevented, by centrifugal force, from running out of the tubes *e*. The ends of the tubes *e* could of course be corked if desirable.

It is obvious that various changes and modifications may be made in practicing the invention, in departure from the particular showing of the drawing, without departing from the true spirit of the invention.

Having thus disclosed my invention, I claim and desire to secure by Letters Patent:

1. A brake comprising a brake drum, a brake-engaging member for engaging the annular brake wall of the drum, an annular shell fitted within said drum and forming a fluid jacket between itself and said brake wall, an internal flange on the inner edge of said shell, a packing ring between said flange and the wheel member of the drum, screws extending through said flange into said wheel member, an external flange on the outer edge of said shell, a packing ring between said external flange and outer edge of said brake wall, and screws extending through said external flange into said outer edge of said brake wall.

2. A brake comprising a brake drum, a brake-engaging member for engaging said brake wall, an annular shell secured within the drum and forming a fluid jacket between itself and said brake wall, said shell being formed in a plurality of sections, and means for detachably securing said sections together.

3. A brake comprising a brake drum, a brake-engaging member for engaging said brake wall, an annular shell secured within the drum and forming a fluid jacket between itself and said brake wall, said shell being formed in a plurality of sections, and means for detachably securing said sections together; there being a tube connected to each section in communication with the fluid jacket.

In testimony whereof, I have signed my name to this specification.

HERMAN V. SHIRLEY.