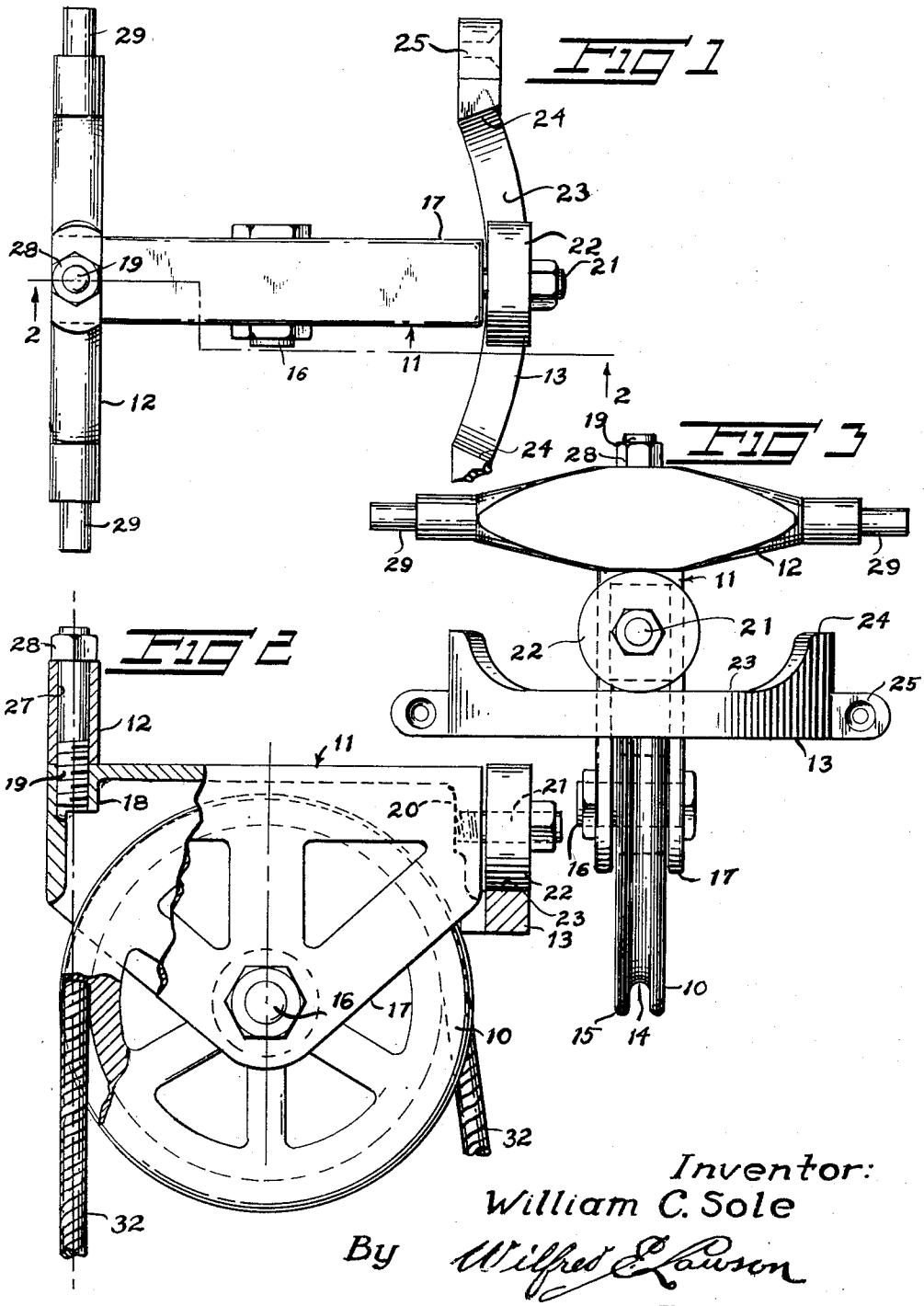
March 27, 1951 W. C. SOLE 2,546,794

OSCILLATING SHEAVE SUPPORT

Filed May 28, 1946 2 Sheets-Sheet 1



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Fig 4

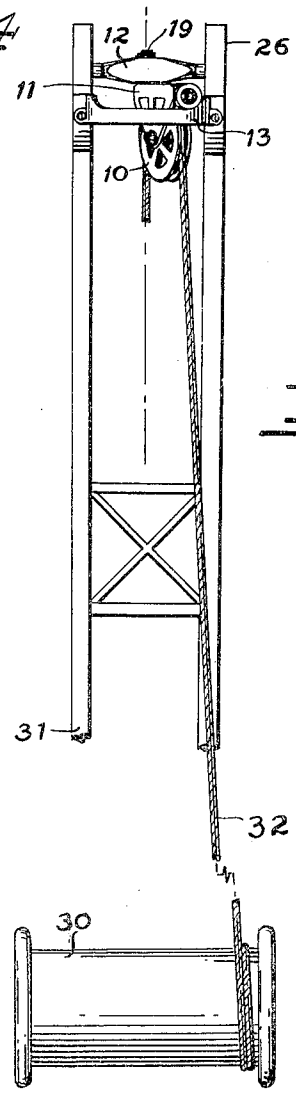
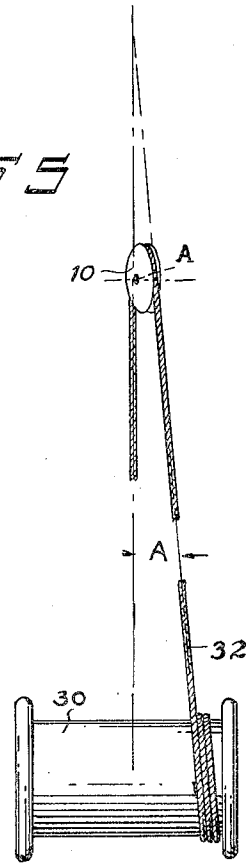


Fig 5



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OSCILLATING SHEAVE SUPPORT

William C. Sole, Bristow, Okla.

Application May 28, 1946, Serial No. 672,793

1 Claim. (Cl. 254—190)

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My invention relates to a support for carrying a hoisting cable over a sheave from a winding reel or from a sideways moving object as in the case of an oil well derrick or a tow-line for tug boats or for propelling street cars as well as for other similar purposes.

The main object of the invention is to so construct and arrange the support that it will prevent the cable from rubbing on the side rims of the sheave in whatever angular direction the cable is fed to or from the sheave. And furthermore, to guide the cable on leaving the sheave to descend along a vertical center line and without rubbing either the rims or the casing.

These and other objects and advantages of the device will be made clear from the following description with the aid of the attached drawing, which forms part of this application.

Figure 1 is a top plan view of the hoisting sheave and support assembled;

Figure 2 is a view in section on a plane along line 2—2 of Figure 1;

Figure 3 is a front view seen from the right side of Figure 2;

Figure 4 is a fractional view in front elevation of the hoisting sheave and the swinging support assembled at the top of a two pole mast for oil drilling rig; and

Figure 5 is a diagrammatic front view indicating the "fleet" angle of the wound cable as passing over the sheave.

The following main features of the device are claimed:

First.—The vertical axis, around which the support swings, remains at all times stationary, and extends from a point in the horizontal plane through the axis of the sheave, which intersects the center line of the hoisting cable, to a point such as the center of a hole drilled in the ground for the cable.

Second.—The swinging end of said support always aligns itself automatically to the different positions of the cable on the drum.

Third.—In other words, the entering and leaving points of the cable around the sheave always remain in one vertical plane on the sheave, although oscillating, so as not to cross over the rim thereof.

Fourth.—The swinging end of the support always travels along a flat, horizontal path around the axis of its vertical spindle.

This device consists of four main parts; the sheave 10, the swinging support 11, the hinge bracket 12, and the track or bridge piece 13 for the swinging support.

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Of these main parts, the sheave 10 is of any known type with a plain, circumferential groove 14 between upstanding side rims or flanges 15 and mounted with its hub to rotate an axle 16 carried in bearings provided in the side walls 17 of the support 11.

The latter has a straight horizontal top surface which at one end terminates at its rear, flat end with a boss 18 into which a spindle member 19 is secured, as by threads. This forms the vertical axis around which the support swings.

At its other or forward flat end is provided another boss 20 in which is similarly secured a horizontal pivot 21 for a roller 22.

This roller is adapted to travel on a circular track 23 with flat, horizontal top face formed on the bridge piece 13. The track 13 terminates at each end with an upstanding lug or abutment 24 at each end forming a stop for the roller 22 to strike against to limit the side swing of the support 11. Each lug 24 has a side ear 25 for securing the bridge piece 13 firmly as by bolts to the top of the mast head 26, across the path of the roller 22.

As already stated, the spindle 19 provided at the rear end of the swinging support 11 is carried in a vertical bearing 27, of the hinge bracket 12 and is secured in position therein by lock nut 28 permitting turning of said spindle in the bearing 27. The hinge bracket 12 has a horizontally directed trunnion 29 at each end, by means of which it is mounted near the top of the mast head 26.

Referring now particularly to Figures 4 and 5, of the drawings, the relative positions of the parts and their cooperation is as follows: from a reel or spool 30 at the base of the mast 31, the cable 32 shifts from one end to another when unreeling. A so-called "fleet angle A" is then formed between the extreme right and left stretches of the cable from the apex on the sheave above. Evidently, it is of greatest advantage to keep this angle as small as possible to prevent the cable from running against the side flanges of the sheave.

The outer side of the sheave is now caused to swing around the vertical axis of spindle 19 on the opposite side of the sheave, in order to follow the shifting of the cable. The apex of the fleet angle is actually now located at the tangent point A between the center line of the cable and the vertical axis of the spindle 19. The width of the "fleet angle" at the line of swing of the cable is thus narrowed by the length of that line

and accordingly all chance of cable rubbing avoided against the sheave flanges.

The term "cable" used herein and in the claim is intended to include ropes whether made of hemp metal wire as well as tow-lines and the like.

It is to be understood that the invention as herein disclosed may be varied from the details described and shown without departure from the spirit of the subjoined claim.

I claim:

In a sheave support mounted between a pair of vertically disposed spaced uprights comprising a horizontally disposed bracket secured to one side of the uprights, a horizontally disposed arcuate track member having upwardly extending curved opposite end portions and secured to the opposite side of the uprights in downwardly spaced relation to the bracket, a vertical bearing in the central portion of the bracket, a sheave support between the uprights, a spindle rotatably secured in said bearing and extending below the bracket, the lower end of said spindle being

rigidly connected to one end of the sheave support to provide a pivotal connection of the sheave support to the bracket, a horizontal pivot pin extending from the opposite end of the sheave support, a roller carried by the pivot pin and adapted to roll on the top of said arcuate track between the curved end portions to support said opposite end of the sheave support, said opposite curved end portions of the arcuate track limiting the movement of the roller, and a rotatable sheave removably mounted in said sheave support below the arcuate track and the bracket.

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The following references are of record in the file of this patent:

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