Nov. 18, 1924.

M. R. PONTIUS

1,515,881

SAND REEL APPLIANCE

Filed Dec. 17, 1920

2 Sheets-Sheet 1

Fig. 1

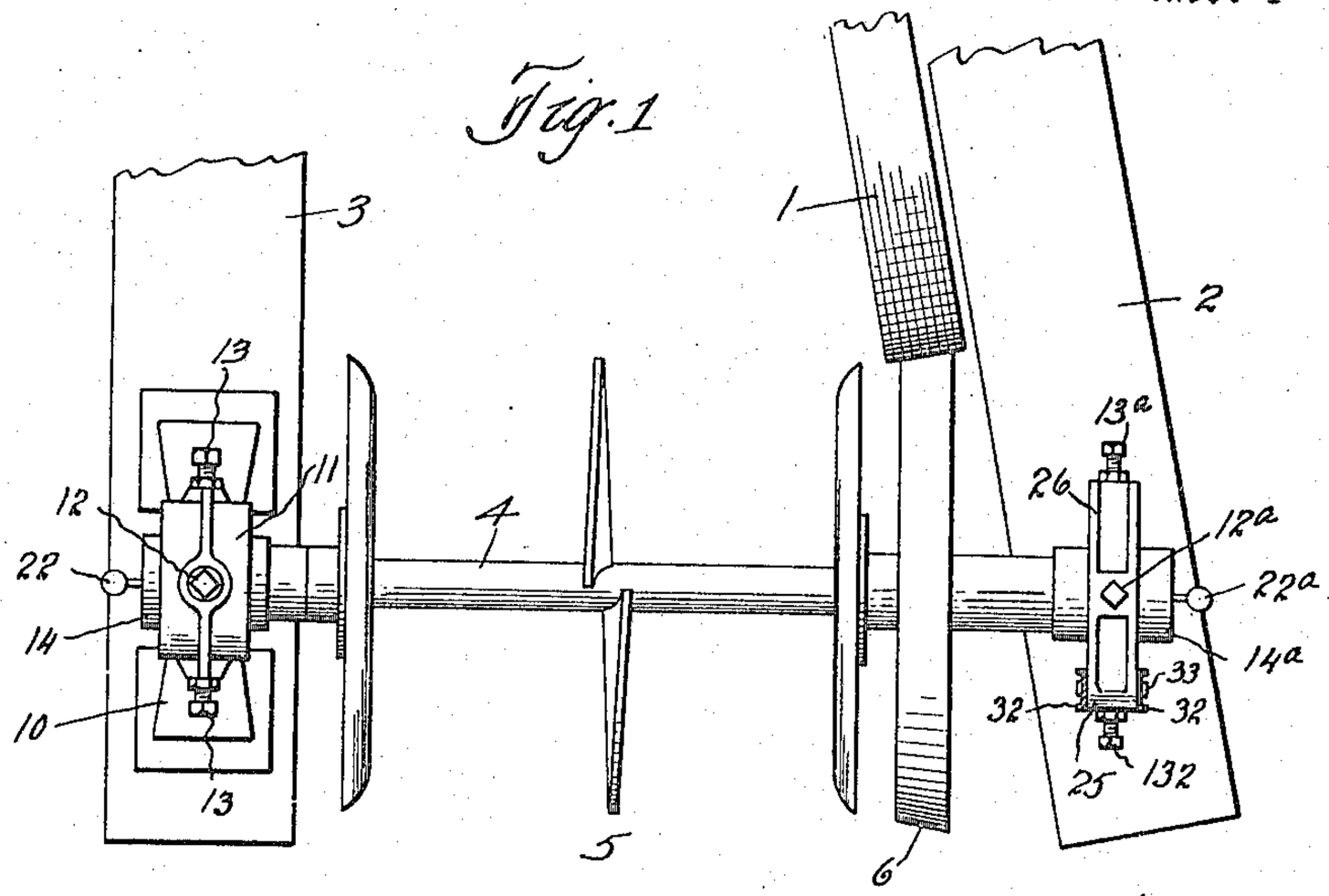
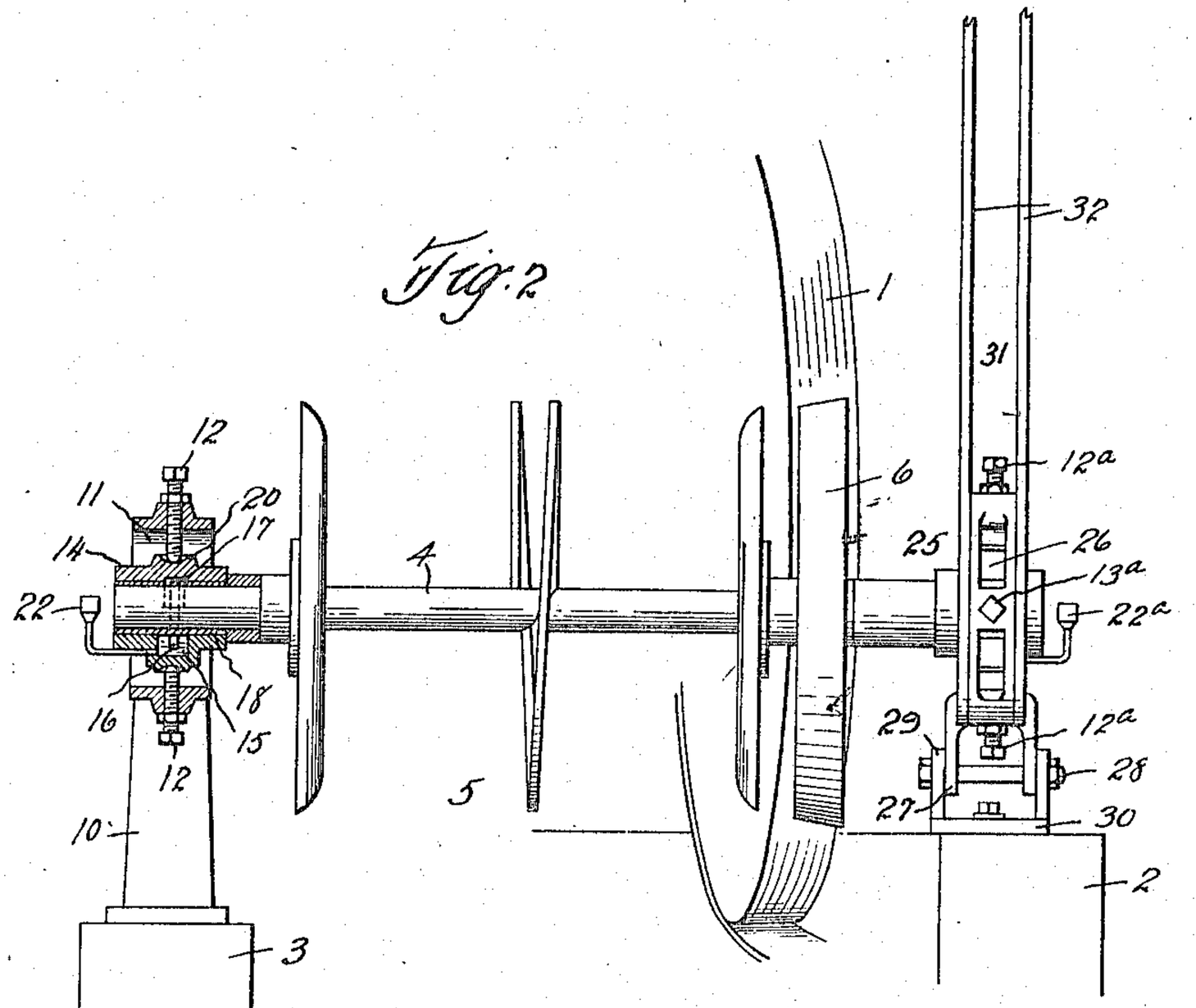


Fig. 2



Inventor

Merl R. Pontius

By

Hull, Smith, Brock & West Attys.

Nov. 18, 1924. 1,515,881

M. R. PONTIUS

SAND REEL APPLIANCE

Filed Dec. 17. 1920 2 Sheets-Sheet 2

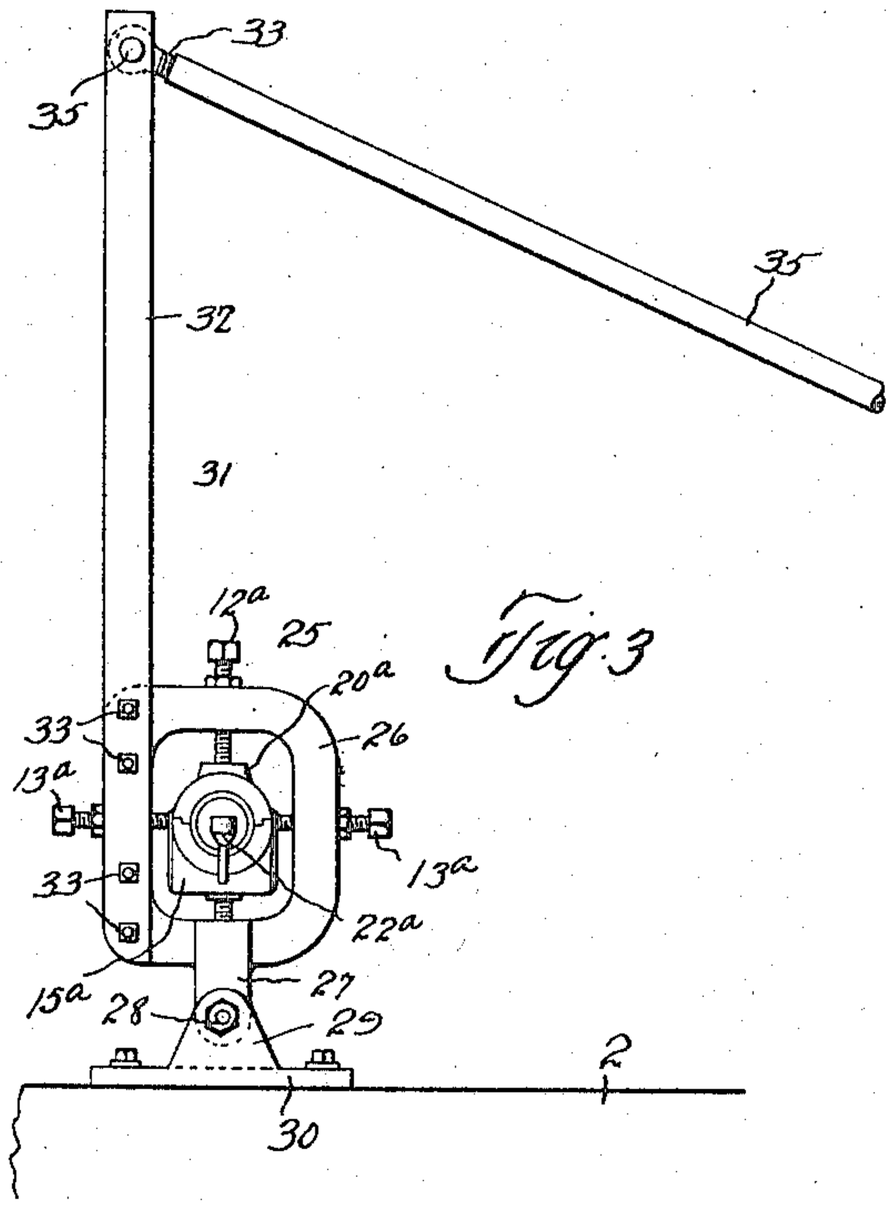


Fig. 3

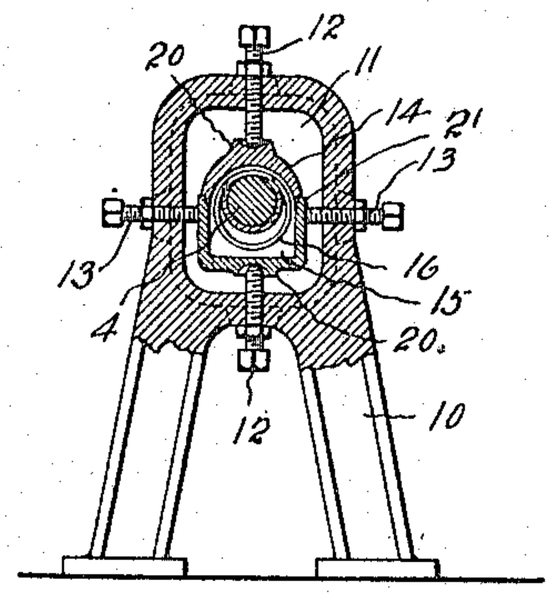


Fig. 4

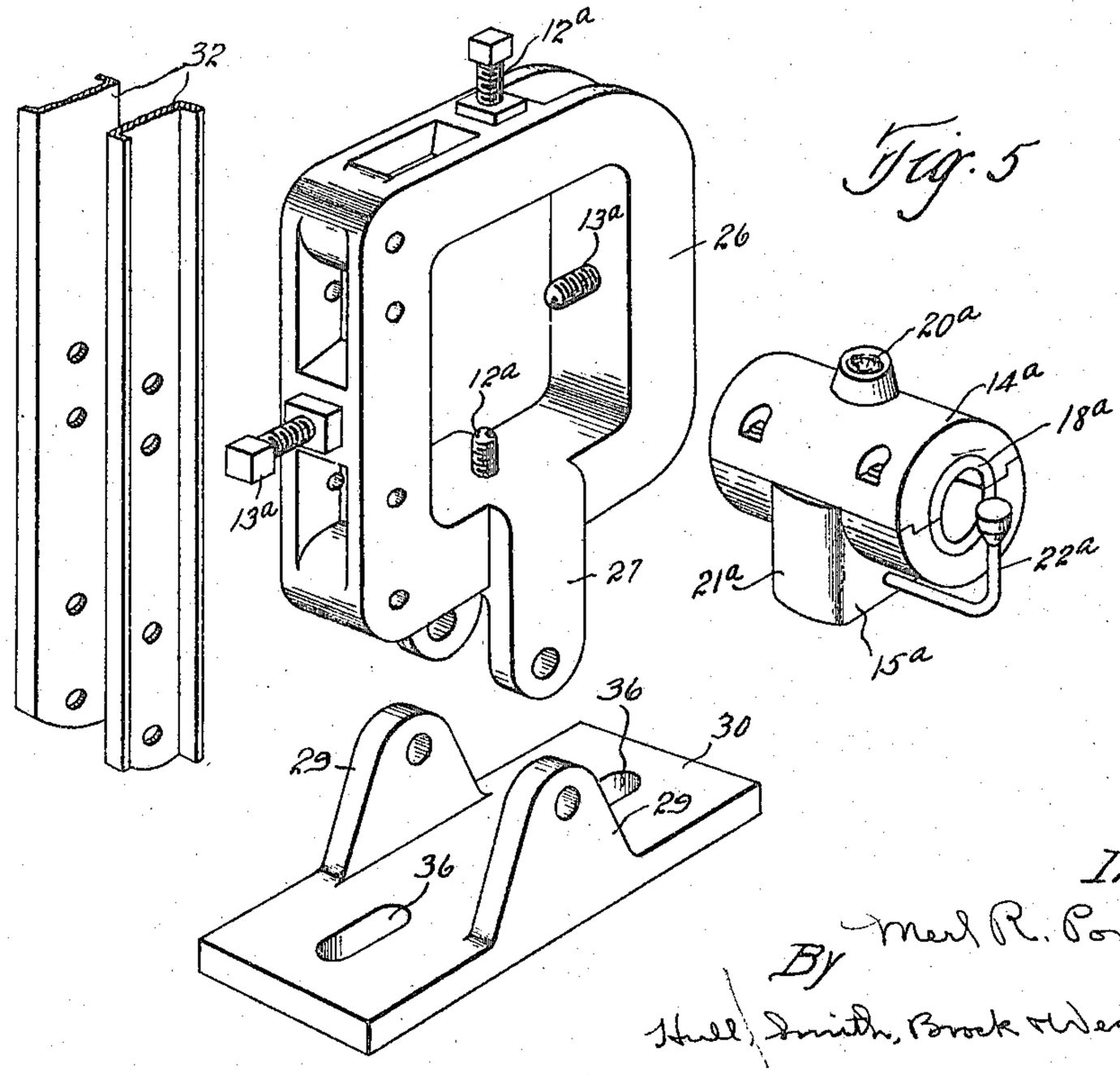


Fig. 5

Inventor
Merl R. Pontius
By Hull, Smith, Brock & Weat
Attys.

Patented Nov. 18, 1924. 1,515,881

UNITED STATES PATENT OFFICE.

MERL R. PONTIUS, OF ELDORADO, KANSAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO SHAFFER SPECIALTY COMPANY, OF TULSA, OKLAHOMA, A PARTNERSHIP CONSISTING OF ERNEST J. SHAFFER, ELIAS W. SHAFFER, GEORGE W. SHAFFER, AND JOHN E. SHAFFER.

SAND-REEL APPLIANCE.

Application filed December 17, 1920. Serial No. 431,409.

To all whom it may concern:

Be it known that I, MERL R. PONTIUS, a citizen of the United States, residing at Eldorado, in the county of Butler and State of Kansas, have invented a certain new and useful Improvement in Sand-Reel Appliances, of which the following is a full, clear, and exact description, reference being had to accompanying drawings.

This invention relates to an improved sand-reel shaft support for use in well drilling rigs.

According to prevailing practice, the sand-reel shaft is journaled at one end in a fixed wooden tail post and at the other in a timber that is pivoted to a wooden knuckle post so as to constitute a swing lever by means of which the shaft may be oscillated to bring the friction pulley that is on the shaft into and out of driving engagement with the band wheel. Through the continual operation of these wooden supporting structures, and the assembling and disassembling of them when the rig is moved from one job to another, the joints become loose and the bearing apertures enlarged so that after a comparatively short time they operate in an unsatisfactory manner, require frequent repair, and after few installations are rendered worthless. These difficulties date from the earliest stages of the industry to the present time.

It is the purpose of my invention to provide a thoroughly mechanical sand-reel appliance comprised entirely of metal parts that are so designed and organized as to afford rigidity of structure; quickness and convenience of adjustment; ease of operation; durability; effective lubrication; and ready assembly and disassembly, thereby to facilitate transportation, and rendering the device capable of use indefinitely in successive drilling operations without depreciation.

The use of my device, therefore, obviates the difficulties incident to the employment of prevailing types of sand-reel shaft supports and represents an immediate saving of time and labor thereover, and an ultimate saving of money.

In general terms, my invention may be defined as consisting of the combination and arrangement of elements set forth in the claims annexed hereto and illustrated in the drawings accompanying and forming a part hereof, and wherein Fig. 1 is a plan and Fig. 2 an elevational view of a sand-reel sustained in operative relation to a band wheel by my improved supporting means, the latter view showing the tail post and the corresponding journal box in section; Figs. 3 and 4 are right and left hand end elevations, respectively, of the support, the journal box and adjacent part of the tail post being shown in section in Fig. 4; and Fig. 5 is a perspective view of the parts constituting the knuckle post and swing lever in separated condition.

In the drawings, 1 designates the usual band wheel of a well drilling rig, and 2 and 3 the sub-sill and sand-reel tail sill, respectively. Supported from the sills 2 and 3 by means of my improved device is the shaft 4 of the sand-reel that is designated generally by the reference numeral 5 in a position to present the friction pulley 6 that is secured to the sand-reel shaft in operative relation to the band wheel. It will be understood by those familiar with the subject that in the operation of the sand-reel, the shaft is oscillated to bring the friction pulley 6 into and out of engagement with the band wheel.

With reference, now, to the parts which constitute the supporting means of my invention, 10 designates the tail post which is in the form of a rigid standard having an opening 11 in its upper end within which is sustained by means of the screws 12 and 13, a journal box 14. The journal box is conveniently formed of two halves that are secured together in the usual manner and the same incorporates an oil reservoir 15 into which dips a ring 16 that engages the sand-reel shaft 4 where it is exposed through an opening 17 in the bushing 18 that is clamped between the two halves of the journal box. The screws 12 are in vertical alignment and their rounded ends engage within cupped bosses 20 of the journal box, the nature of the engagement between the screws and bosses permitting the box to oscillate freely on a vertical axis while allowing limited universal movement of the box with respect to the screws. The box is held against lateral

movement by the screws 13 that are in transverse alignment, the screws bearing at their inner ends upon the surfaces 21 of the box. Oil may be supplied to the reservoir 15 through the tube 22.

The journal box associated with the knuckle post that is designated generally by the reference numeral 25 and through which the opposite end of the shaft is supported, is identical with the one just described, wherefore the same reference numerals, augmented by the exponent *a*, are used to designate the corresponding parts of the box. The knuckle post is comprised of a frame 26 having depending ears 27 that are pivoted upon a pin 28 sustained within the lugs 29 of a base plate 30, the base plate being secured by suitable means to the sub-sill 2. A swing lever 31 is attached to the frame 26, and, in the present instance, is composed of channel members 32 that are secured to the opposed faces of one side of the frame by means of bolts 33. The journal box 14^a is yieldingly and adjustably sustained within the frame 26 by means of the vertically aligned screws 12^a and the transversely aligned screws 13^a. The free end of the swing lever 31 is connected by means of the reach 35 with a suitable sand-reel handle (not shown). The reach 35, in the present instance, is composed of a length of tubing into the end of which, adjacent the swing lever 31, is screwed the shank of an eye 33 that is journaled between the upper ends of the channel members 32 upon a pin 35.

It will be seen from the foregoing description that my invention provides supporting means for the sand-reel shaft which may be readily assembled and disassembled; which may be compacted into small space when disassembled; which will not be affected by repeated assembly and disassembly; and wherein the parts are durable, the supporting elements rigid, and the supported parts so connected to the supporting members as to have freedom of movement within the scope required in the operation of the device. With respect to the adjustments, it will be noted that the base plate 30 of the knuckle post is provided with slots 36 which allow the knuckle post to be shifted bodily to insure proper relation at all times between the friction pulley 6 and the band wheel.

Having thus described my invention, what I claim is:—

1. A sand-reel shaft support comprising a fixed member, a pivoted member, a bearing associated with each member and wherein one end of the shaft is journaled, vertically aligned supporting means on each member between which the corresponding bearing is sustained, transversely aligned thrust means on each member and between which the corresponding bearing reposes, and means for oscillating the pivoted member.

2. A sand-reel shaft support comprising a tail post having an opening, vertically aligned screws threaded within the tail post and entering said opening, a journal box sustained by and between said screws, said journal box being arranged to receive one end of the sand-reel shaft, a pivotally supported knuckle post wherein the opposite end of the shaft is adapted to be yieldingly sustained, and means for oscillating the knuckle post.

3. A sand-reel shaft support comprising a tail post having an opening, vertically aligned screws threaded within the tail post and entering said opening, a journal box sustained by and between said screws, transversely aligned screws threaded within the tail post and entering said opening in a position to engage the sides of the journal box, said journal box being arranged to receive one end of the sand-reel shaft, a pivotally supported knuckle post wherein the opposite end of the shaft is adapted to be yieldingly sustained, and means for oscillating the knuckle post.

4. A sand-reel support comprising a pivotally supporting knuckle post having an opening, vertically aligned screws threaded within the post and entering said opening, a journal box sustained by and between said screws, said box being arranged to receive one end of the sand-reel shaft, a tail post wherein the opposite end of the shaft is yieldingly sustained, and means for oscillating the knuckle post.

5. A sand-reel support comprising a pivotally supported knuckle post having an opening, vertically aligned screws threaded within the post and entering said opening, a journal box sustained by and between said screws, transversely aligned screws threaded within the post and entering said opening in a position to engage the sides of the box, said box being arranged to receive one end of the sand-reel shaft, a tail post wherein the opposite end of the shaft is yieldingly sustained, and means for oscillating the knuckle post.

6. A sand-reel shaft support comprising a tail post, a bearing for one end of the shaft movably sustained by the tail post, a pivotally supported knuckle post incorporating an open frame, a bearing for the other end of the shaft movably sustained within said frame, and a swing lever comprised of channel members applied to opposed faces of and extending upwardly from one side of the frame, and means for oscillating the knuckle post.

In testimony whereof, I hereunto affix my signature.

MERL R. PONTIUS.