

C. L. HEISLER & L. G. NEELY.
 SWING FRAME FOR PUMPING OIL WELLS.
 APPLICATION FILED JAN. 3, 1907.

989,708.

Patented Apr. 18, 1911.

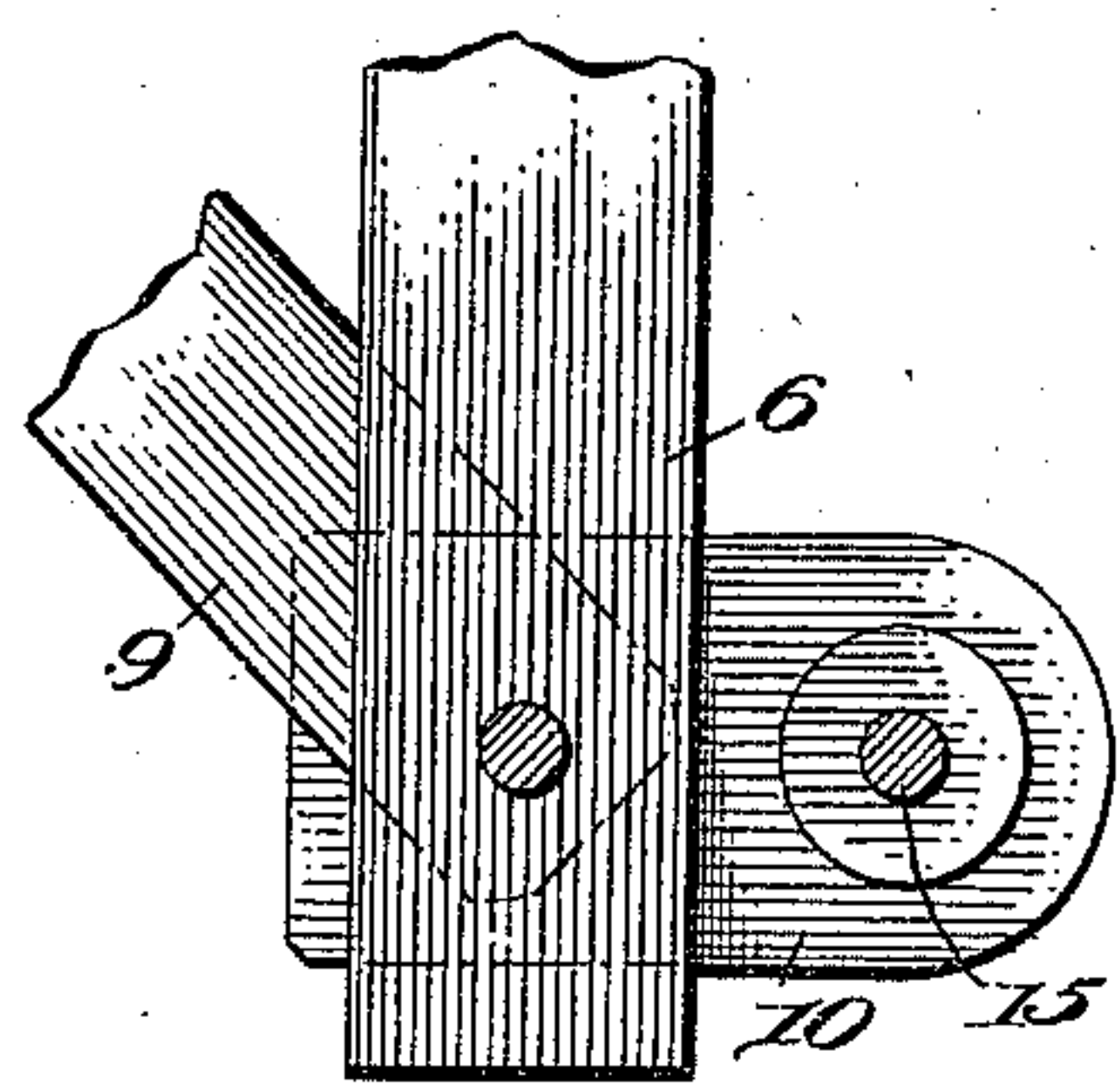


Fig. 3.

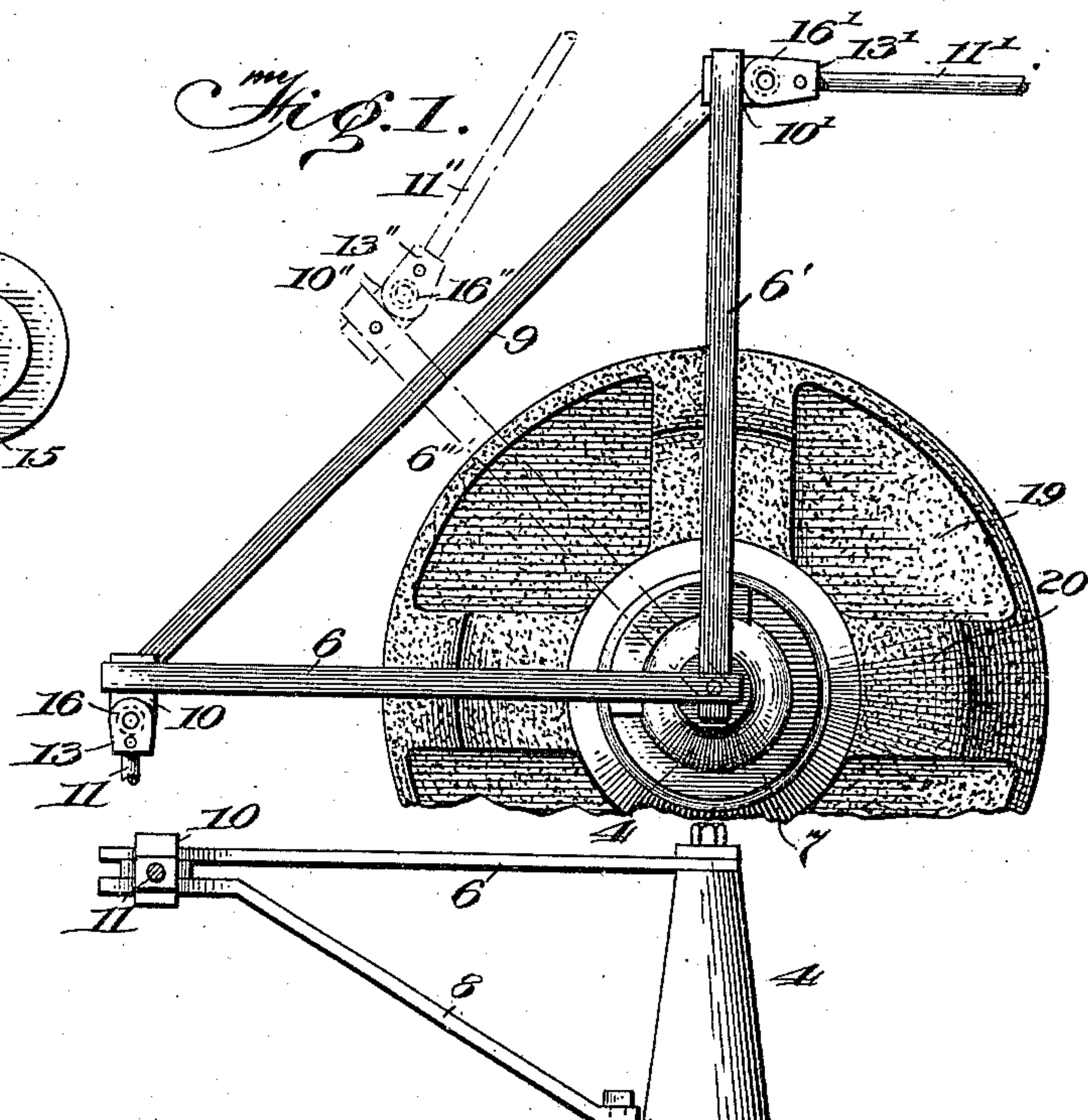


Fig. 1.

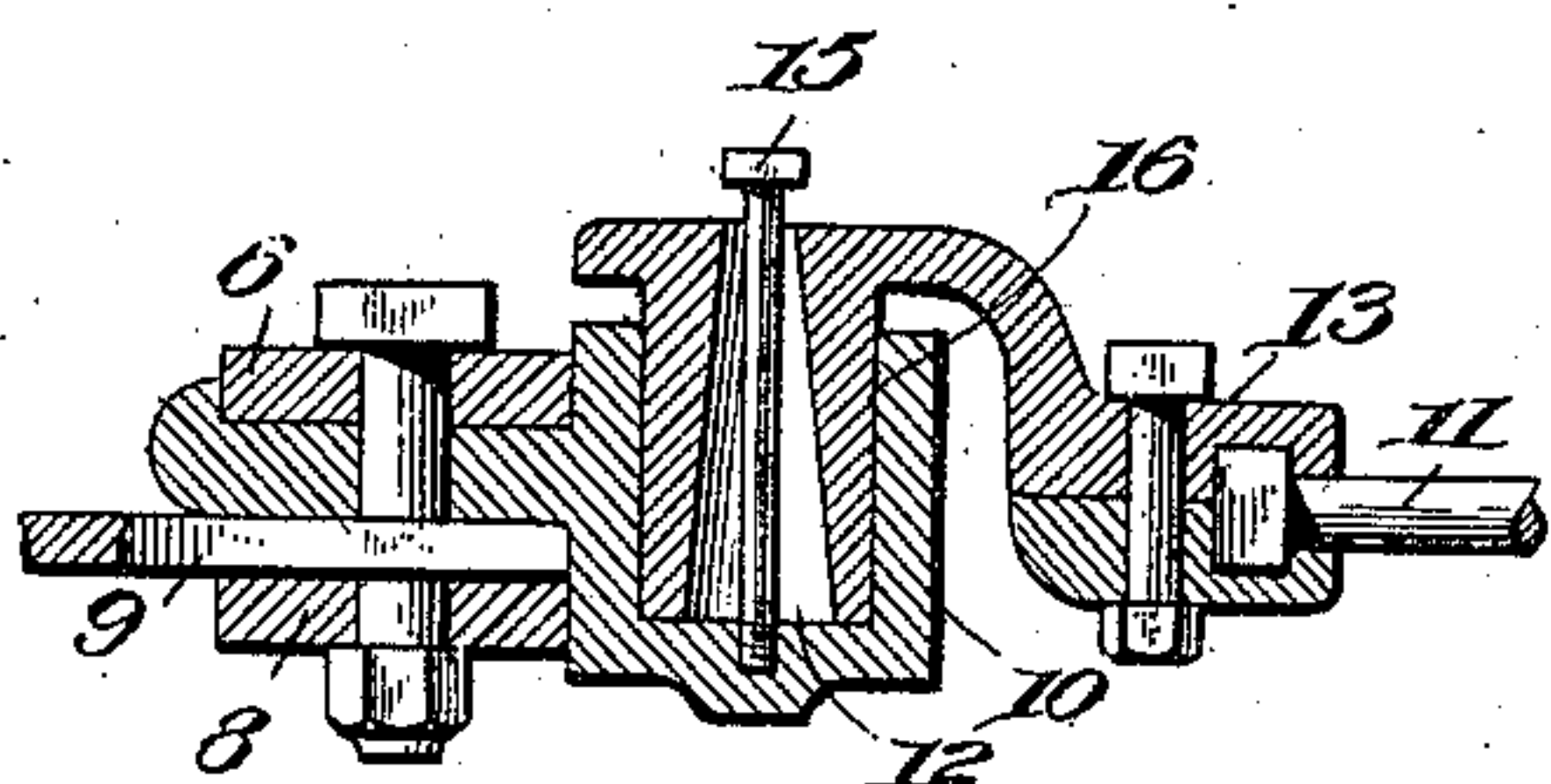
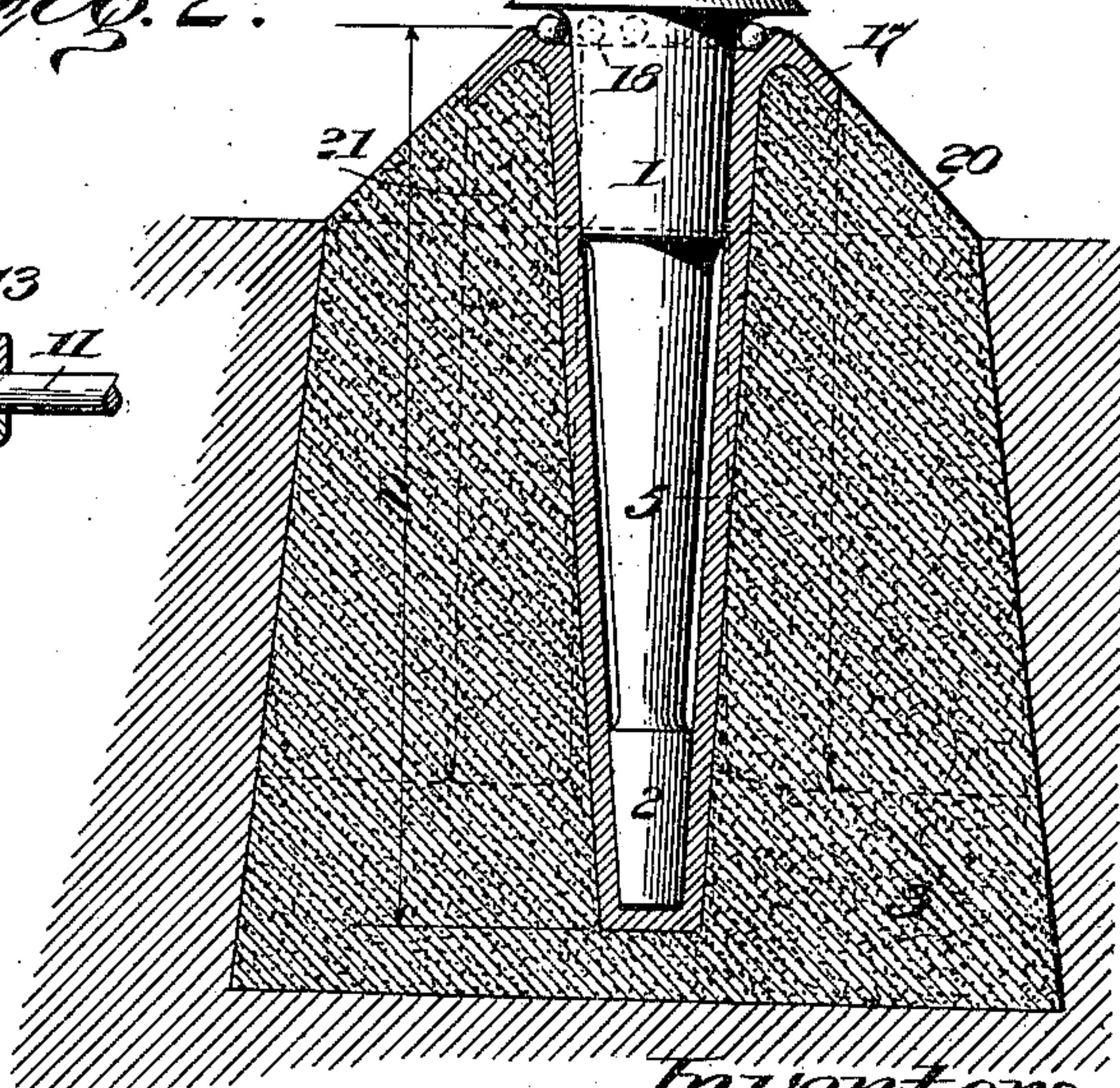


Fig. 4.



Witnesses:
 M. Hollingsworth.
 T. E. Barton

Inventors:
 Charles L. Heisler,
 L. G. Neely,

UNITED STATES PATENT OFFICE.

CHARLES L. HEISLER AND LEMON G. NEELY, OF ST. MARYS, OHIO.

SWING-FRAME FOR PUMPING OIL-WELLS.

989,708.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed January 3, 1907. Serial No. 350,687.

To all whom it may concern:

Be it known that we, CHARLES L. HEISLER and LEMON G. NEELY, citizens of the United States, and residents of St. Marys, in the State of Ohio, and whose post-office addresses are St. Marys, Ohio, have invented certain new and useful Improvements in Swing-Frames for Transmitting Power for Pumping Oil-Wells.

The invention relates more particularly to that type of swing frame in which the frame swings in a horizontal plane and about a vertical axis, and which is attached to two or more pull rods that may radiate in several directions from the frame to operate one or more wells.

The object of the invention is to provide a more rigid and permanent support for the frame bearings, as shown in several drawings forming part of this specification.

In Figure 1 is shown a top view of the frame with the pulling rods attached. Fig. 2 shows a cross section of the frame and foundation. Figs. 3 and 4 show details of the oil submerged pivotal bearing and method of attaching the pull rods to the swing frame.

Heretofore the swing frame pivotal journals have been placed near together or made as one and were always placed at some distance above the foundation, or arranged in a large wooden frame above ground. In our improved frame the pivotal journals 1 and 2 are arranged to have a considerable length over the bearings on the post 4 as "L" shown in Fig. 2, and which are located mainly in the socket of a box or shell 5, said box being embedded in the concrete foundation block 3. The socket is oil tight and forms a self oiling rigid and permanent journal bearing for the swing frame 6. A shield 7 is arranged directly over the socket in a manner to prevent water from entering the oil filled socket or chamber, which incloses the journal bearings 1 and 2 on the post 4; directly under the shield 7 and at the upper end of the elongated journal and socket is arranged a ball bearing 18 to take the thrust that comes from the several pull rods against the upper end of the elongated journal thereby avoiding the excessive friction at this point. The radial horizontal frame arms 6 and 6' are rigidly attached to the upper end of the semi-rotating post 4 that projects at considerable distance above the foundation 3. Diagonal braces 8 and 8'

are also attached to the post near the upper bearing 1 and meet the corresponding arms 6 and 6' at their outer ends. Another horizontal tie bar 9 and the pocket pivotal pull rod connections 10 and 10' are bolted as shown in the drawings to the said braces and arms, thereby forming a complete swing frame, which is attached to the semi-rotative post 4. Two or more pull rods 11 and 11' and 11'' may be attached to the frame as shown. The broken line 6'' in Fig. 1 shows that the arms 6 and 6' may make any angle to permit the pull rod to radiate in several directions when desired, also showing that several arms may be connected and more than two pull rods can be attached to the frame.

With the swing frame are combined connections for the pull rods. As shown each connection has a box 10 or 10', open at the top, forming a vertical socket, and into this socket fits a journal 16 pendant from the elevated end of a bracket, the lower end of which constitutes a part of a clamp 13 for receiving the end of one of the pull rods, holding the same in a position about opposite the center of the journal at one side of the latter so that the pull will be almost in line with the frame to which it is attached. The vertical journal and the box are connected so as to allow the play on the journal of the socket of the box by means of a bolt 15 extending through the journal and into the box, the journal being recessed centrally to form an oil chamber 12. A retaining bolt 15 Figs. 3 and 4 is centrally arranged in 10 and 12 to hold the bearing 16 in place within the oil reservoir 12 as shown.

It is evident that by having a considerable length L over the journals (or journal if the bearing is made continuous) such an elongated journal bearing prevents all possible cramping in the journals thereby reducing frictional loss of power and wear to a minimum. By being embedded in the concrete block, the journals are always held in perfect and rigid alinement and much better than if arranged above ground on a yielding support.

When desired, evidently sheet metal sections can be fastened to the post to form an equivalent of the arms attached to the post as in the usual construction of pulleys. A wood foundation may be substituted for the concrete foundation, the concrete however being much more desirable.

To better secure the box or shell 5 to the foundation 3 a retaining flange or rim 17 is cast on the socket as shown. The concrete foundation consists of a disk formed base 3 5 having cast thereon an upward projecting core 21 and several wings 20 connecting with the core and base in such a manner as to form pockets 19 between the several parts as shown. The socket 5 is centrally located 10 and securely held by the core and further supported by the several wings as shown. This construction effects a large saving in material and gives a good anchorage in the ground.

15 We do not here claim broadly a foundation embedded in the earth in combination with a box in said foundation, and a shaft in said box and means for operating the pull rods from the shaft, as this is the subject of a 20 separate application for Letters Patent Serial No. 309,555.

What we claim is:—

1. The combination in a swing frame power transmitter, of a post, a box socketed 25 to receive the greater portion of the length of the post and to constitute an oil chamber, a frame extending from that part of the post above the box, means for jointing a plurality of pull rods to said frame, substantially parallel annular bearings on the post and box, 30 and intermediate antifriction rolls, the bearing on the post extended to form a shield above the box.

2. The combination with the rock post, 35 its support and laterally extended frame, of a plurality of pull rods, a bearing for the joint of each pull rod, said bearings having boxes with vertical sockets, brackets attached to the ends of the rods, with upwardly extending arms, and journals pendant from 40 said arms and fitting said sockets.

3. The combination with the rock post, its support and laterally extended frame, of a

plurality of pull rods, bearings for the joints 45 of said pull rods, said bearings having boxes with vertical sockets, brackets attached to the ends of the rods, with upwardly extending arms, journals pendant from said arms and fitting said sockets, and bolts extending 50 centrally through the journals and into the boxes.

4. The combination of a foundation an elongated bearing secured therein a vertical rotative post supported in said bearing, a swing frame securely attached to 55 the upper projecting end of said rotative post; two or more horizontal pull rods pivotally connected to said frame and arranged for pumping wells, there being an elongated journal for supporting said post and pivotally 60 secured in said elongated bearing arranged below said frame, and there being a rim 17 attached to the upper end of said elongated bearing for retaining the foundation. 65

5. The combination of a foundation an elongated bearing secured therein a vertical rotative post supported in said bearing, a swing frame securely attached to 70 the upper projecting end of said rotative post; two or more horizontal pull rods pivotally connected to said frame and arranged for pumping wells, there being an elongated journal for supporting said post and pivotally 75 secured in said elongated bearing arranged below said frame, said foundation being formed by the base 3, the core 21 surrounding the pivotal journal bearing and the several wings 20 attaching said core to said base for the purpose described.

CHARLES L. HEISLER.
LEMON G. NEELY.

Witnesses:

M. HOLLINGSWORTH,
E. S. STOKER.