

No. 886,208.

PATENTED APR. 28, 1908.

R. F. HADLEY.
CASING HEAD FOR OIL WELLS.
APPLICATION FILED MAY 27, 1907.

Fig. 1.

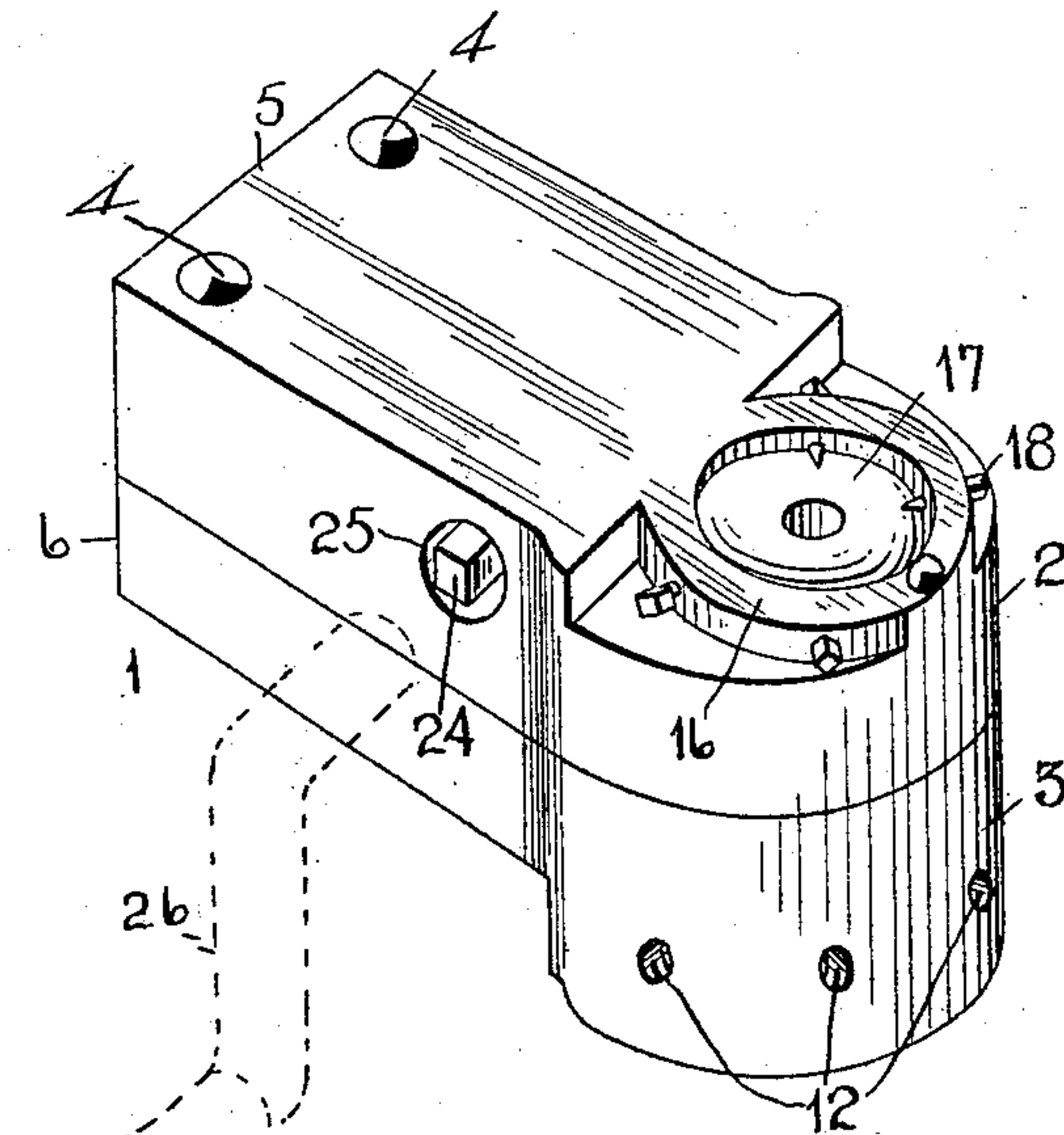


Fig. 2.

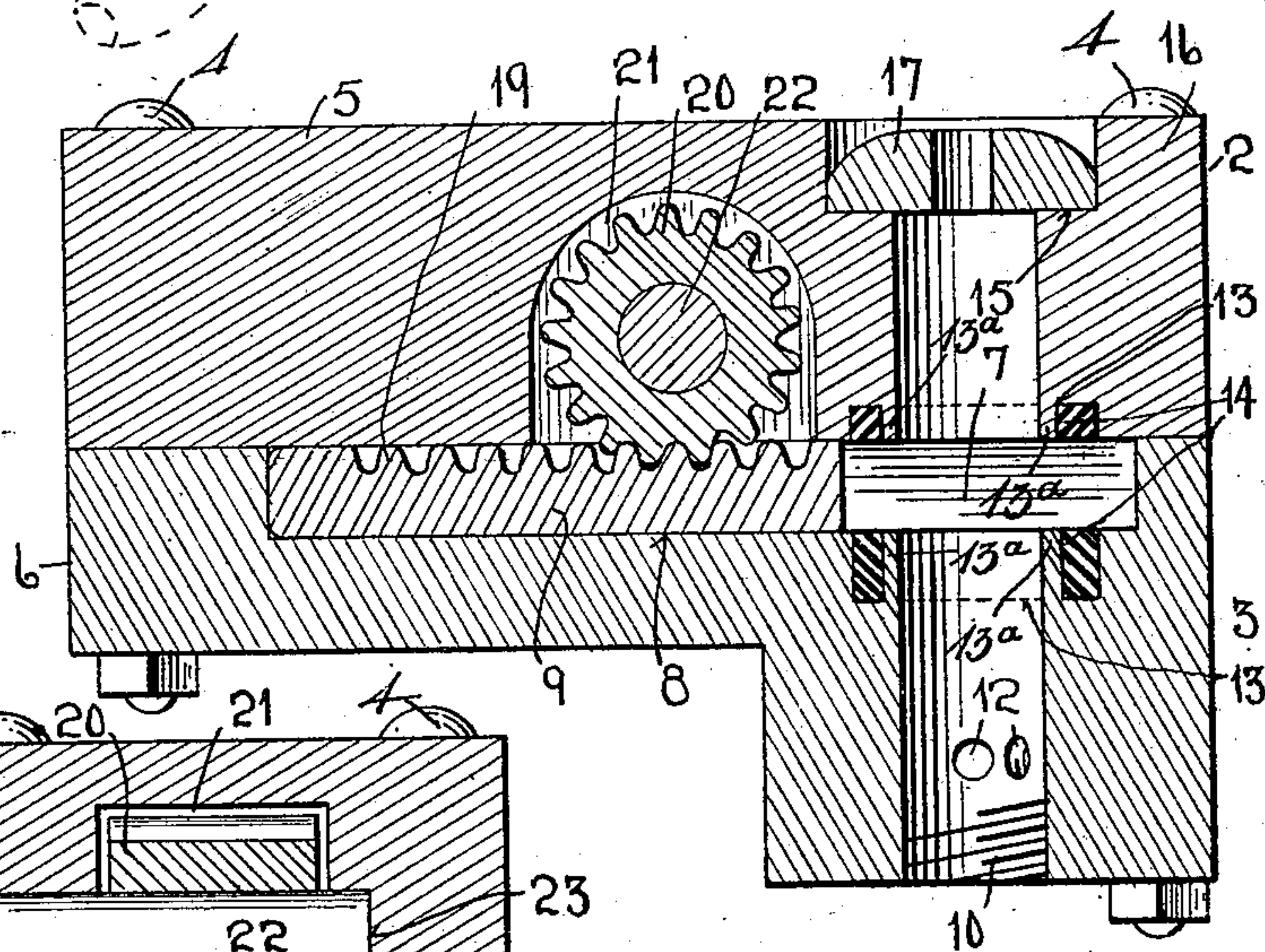
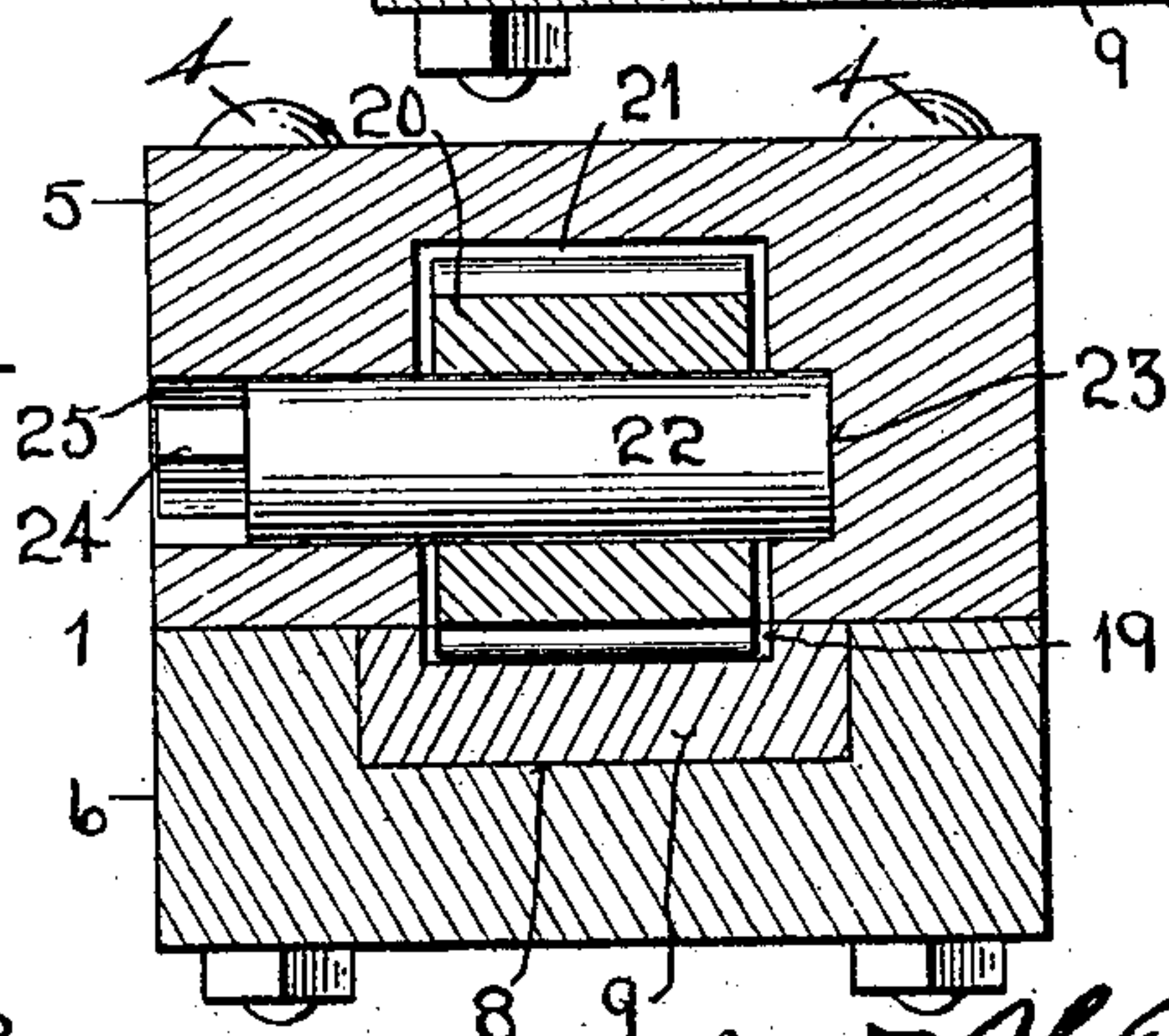


Fig. 3.



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CASING-HEAD FOR OIL-WELLS.

No. 886,208.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed May 27, 1907. Serial No. 375,927.

To all whom it may concern:

Be it known that I, RICHARD F. HADLEY, a citizen of the United States, residing at Slicker, in the county of Tyler and State of West Virginia, have invented certain new and useful Improvements in Casing-Heads for Oil-Wells; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in casing heads for oil wells.

The object of the invention is to provide a casing head of this character having means whereby the flow of oil may be cut off or controlled when desired.

A further object is to provide a casing head so constructed and arranged that the cut off valve therein will not become clogged with sand or other foreign matter in the oil.

With the foregoing and other objects in view, the invention consists in certain novel features of construction, combination and arrangement of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a casing head constructed in accordance with the invention and showing in dotted lines the valve operating crank or key in position to be applied to the valve operating mechanism; Fig. 2 is a vertical longitudinal sectional view of the casing head; and Fig. 3 is a transverse vertical sectional view taken on the line with the valve operating mechanism.

Referring more particularly to the drawings, 1 denotes the casing head which is constructed in upper and lower separable sections 2 and 3 which are preferably secured together by means of fastening bolts 4.

The sections 2 and 3 of the casing head proper are provided with laterally-projecting valve casing sections 5 and 6 in the lower one 6 of which is formed a rectangular recess 7 to provide a seat 8 in which is slidably mounted a cut off valve 9.

The casing head sections 2 and 3 are provided with a centrally-disposed bore 10 in the lower end of which is formed interior screw threads by means of which the casing head is screwed into engagement with the upper end of the well tubing. In the lower section 3 of the head is formed a series of radially-disposed branch openings or passages 12 which communicate at their inner ends

with the bore and are provided at their outer ends with interior screw threads to receive the threaded ends of branch pipes or tubes not shown. Formed in the sections of the casing head above and below the valve 9 are annular recesses or seats 13, said recesses being concentric with the bore 10 of the casing head. In the seats or recesses 13 are arranged packing rings 14 which bear against the opposite sides of the valve when the same is operated to close the bore 10 of the casing head, thus preventing the passage of any oil past the valve when the same is in a closed position. Around the outer edges of the recesses or seats 13 are formed annular flanges 13^a which serve to retain the packing rings 14 in their seats when the valve passes between the same.

On the upper side of the upper section 2 of the casing head is arranged an annular seat 15, said seat being formed by an annular flange 16 on the upper side of the section 2 as shown, said flange and seat being concentric with the bore 10 of the casing head. Adapted to be placed in engagement with the seat 15 is a sand cap 17, said cap being held in position by a series of radially-disposed set screws 18 which are passed through the threaded apertures in the flange 16 and into engagement with the sand cap as shown.

The valve 9 preferably consists of a rectangular plate on the upper side of which is formed a series of teeth which constitute a rack 19 with which is adapted to be engaged an operating gear pinion 20 arranged in a recess 21 on the upper section 5 of the valve casing, said pinion being operatively mounted upon a shaft 22 which is journaled in bearing recesses 23 formed in said section 5. One end of the shaft 22 is squared at 24 and projects into an annular passage 25 formed in one side of the section 5 in position to be engaged by an operating crank or key 26 which has formed in one end a rectangular recess to receive the squared end of the shaft. By turning the crank or key 26 in the proper direction, the valve 9 will be reciprocated back and forth on its seat 8 to open and close the bore 10 in the casing head. The shaft 22 has its squared end 24 located inside the annular passage 25, and with its extreme outer end flush with the casing so that it cannot be engaged by the ordinary wrench.

By arranging the operating gear and rack on the upper side of the valve, the teeth of the same will not become clogged with sand

or foreign matter in the oil which would tend to interfere with the operation of the valve. By providing a detachable key or crank for actuating the valve operating mechanism, 5 said key may be removed when not in use thereby preventing the valve from being tampered with by unauthorized persons.

From the foregoing description taken in connection with the accompanying drawings, 10 the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and minor details of construction may be re- 15 sorted to without departing from the spirit or sacrificing any of the advantages of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Let- 20 ters-Patent is:—

A device as described, comprising a casing head formed in sections detachably connected together and adapted to be connected to

the upper ends of a well tube, a gate valve, a vertical passage or bore in said casing head 25 controlled by said valve, said casing head also having its sections provided with annular recesses surrounding and opening into said bore, annular packing members in said recesses adapted to form a fluid-tight joint 30 with the valve when in closed position, a rack on said valve, a pinion engaging said rack, a squared end stub shaft keyed to said pinion and having its squared end flush with the side of the upper section, and a crank 35 handle adapted to enter the upper section and engage said squared end to turn the pinion and operate the valve.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 40 nesses.

RICHARD F. HADLEY.

Witnesses:

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