July 29, 1941. R. H. LANDERS 2,250,836

PIPE CLAMP

Filed May 27, 1940 3 Sheets-Sheet 1

Fig. 1.

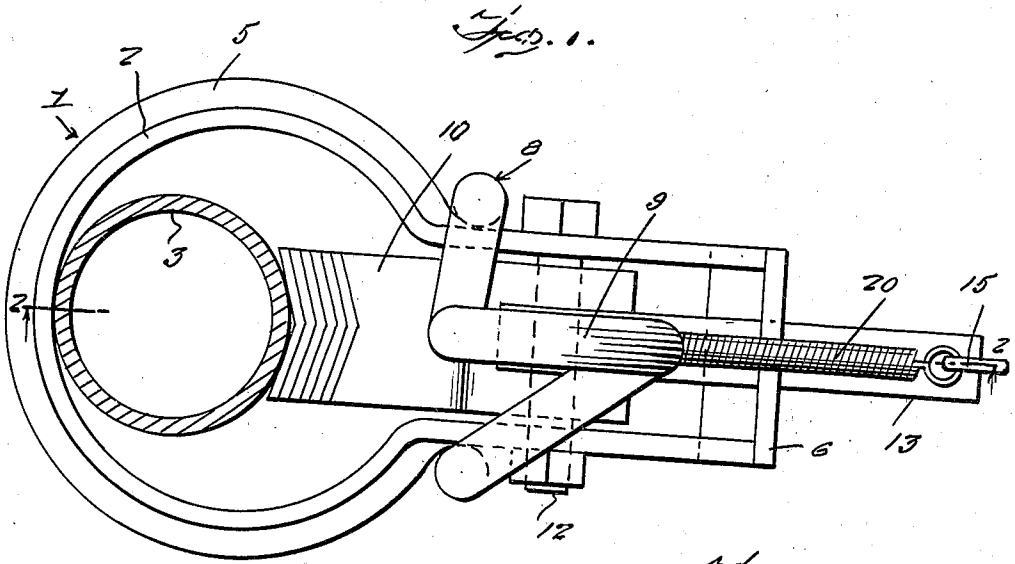



Fig. 4.

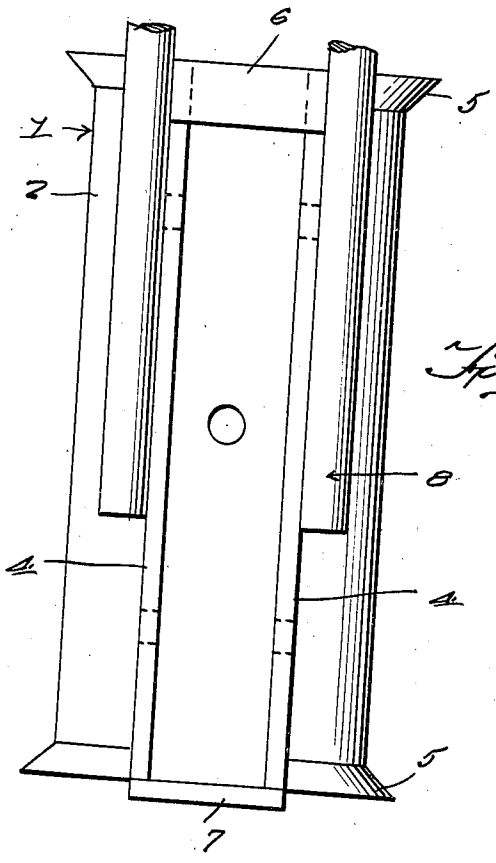
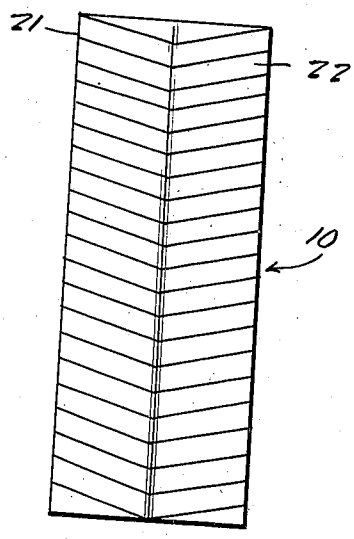



Fig. 3.




Inventor

Raymond H. Landers

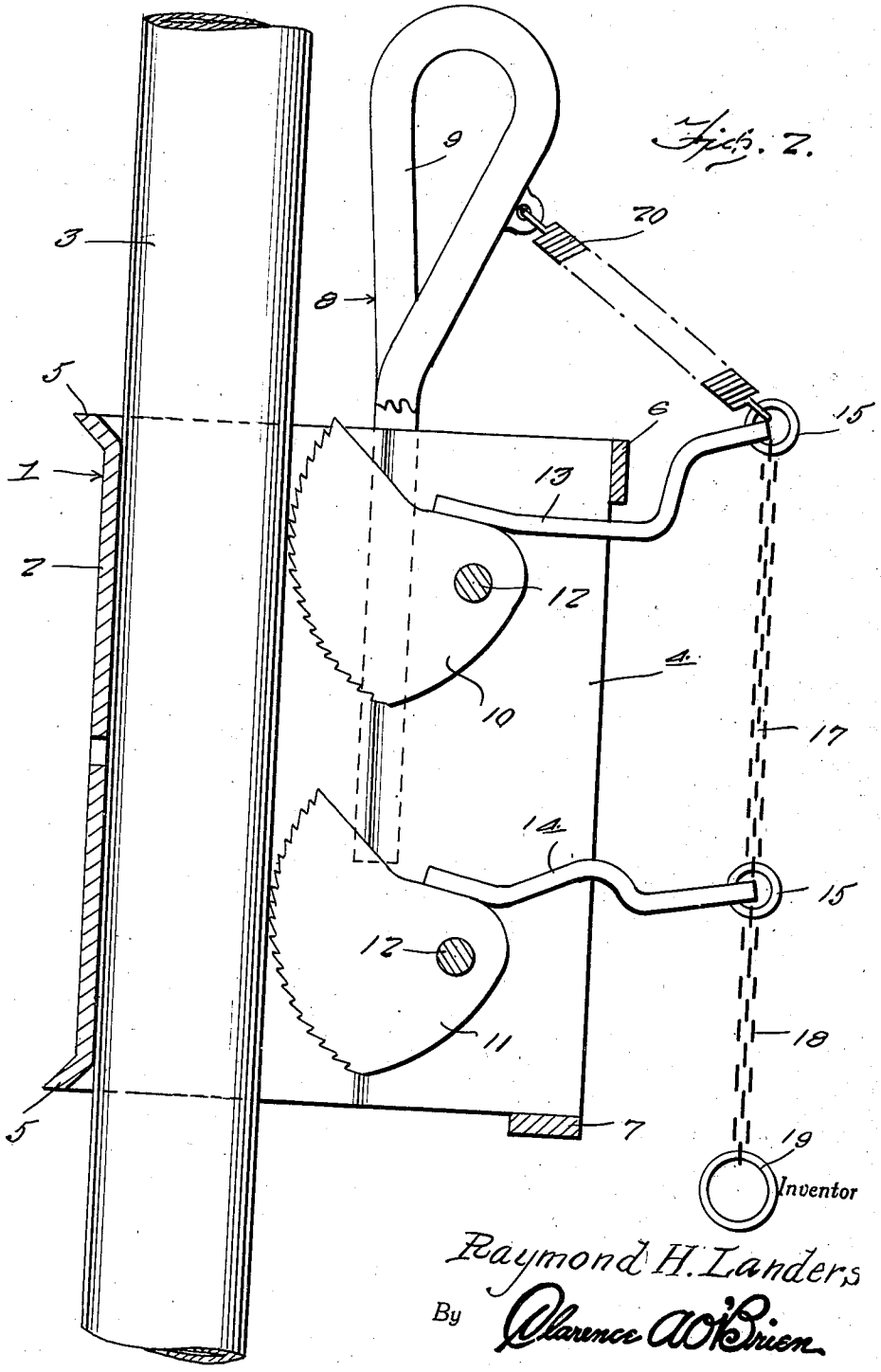
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July 29, 1941. R. H. LANDERS 2,250,836

PIPE CLAMP

Filed May 27, 1940 3 Sheets-Sheet 2




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July 29, 1941. R. H. LANDERS 2,250,836

PIPE CLAMP

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Fig. 5.

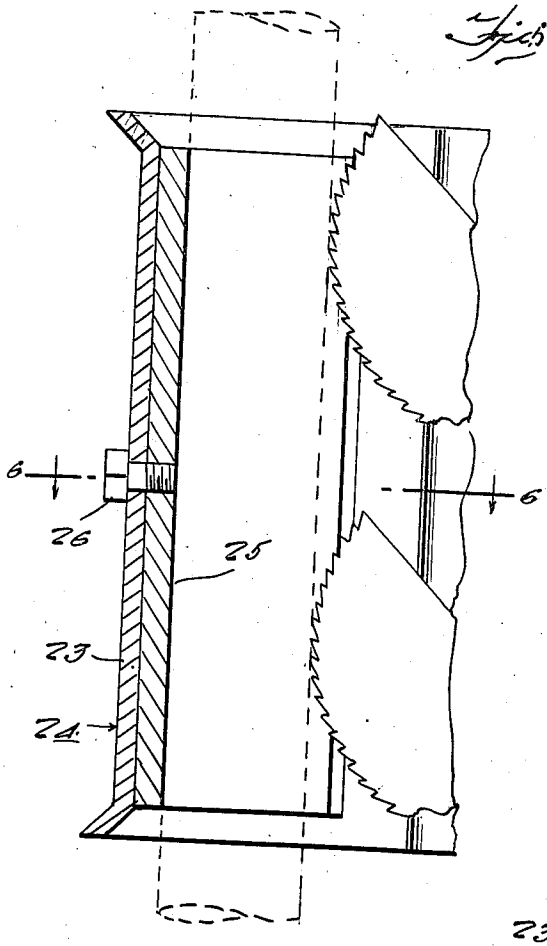
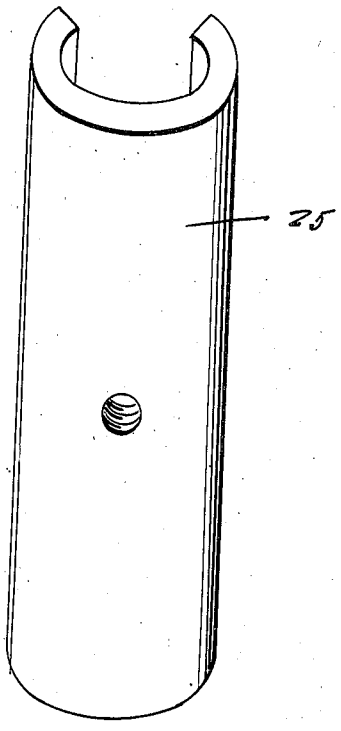



Fig. 7.



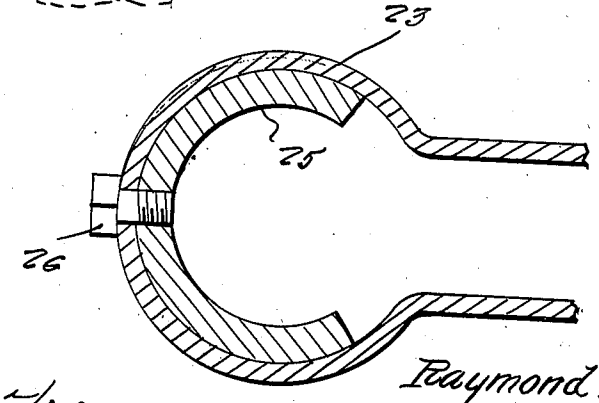




Fig. 6.

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2,250,836

# UNITED STATES PATENT OFFICE

2,250,836

## PIPE CLAMP

Raymond H. Landers, Gillette, Wyo.

Application May 27, 1940, Serial No. 337,544

1 Claim. (Cl. 294—104)

My invention relates to improvements in pipe clamps for use more particularly in lowering and pulling well tubing and the like.

The principal object of the invention is to provide a simply constructed, heavy duty clamp, which may be easily attached to a well tubing and which is operative under the weight of the tubing to increase its gripping action thereon without bending the tubing and which will positively obviate slipping of the tubing therein.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description, and defined in the claim appended hereto.

In said drawings:

Figure 1 is a view in top plan of the preferred embodiment of the invention,

Figure 2 is a view in transverse section taken on the line 2—2 of Figure 1,

Figure 3 is a view in side elevation,

Figure 4 is a view in edge elevation of one of the gripping sectors,

Figure 5 is a view similar to Figure 2 of a modification of the invention,

Figure 6 is a view in transverse section taken on the line 6—6 of Figure 5, and

Figure 7 is a view in perspective of the liner.

Referring to the drawings by numerals, and first to Figures 1 to 4 thereof, my improved clamp, in the preferred embodiment, comprises as its basic element a body 1 having the form of a longitudinally split cylinder 2 designed to be slipped endwise over the upper end of a tubing 3, and a pair of laterally spaced, flat edge flanges 4 extending longitudinally along said body upon opposite sides of the split, respectively, the body 1, including the flanges, being formed of a single piece of sheet steel. The ends of the cylinder 2 may be outwardly flared, as at 5, to facilitate adjusting the same along the tubing 3. A cross-bar 6 extends across what constitutes the upper corners of the flanges 4, and a similar cross-bar 7 extends across the lower corners of said flanges.

The described body 1 is designed to be suspended from a block and tackle, not shown, when used in lowering or pulling well tubing and for that purpose is provided with a bail 8 formed of rod-like metal, preferably milled steel, having its ends suitably secured, as by welding, not shown, to the outer sides of the flanges 4, respectively, and a loop 9 upstanding from the upper edges of said flanges 4 and twisted to dispose its closed end centrally between said flanges as best shown in Figure 1. A pair of upper and lower ratchet toothed sectors 10, 11, are pivotally mounted in the body 1 by bolts 12 extending transversely through the flanges 4 with their toothed edges extending into the cylinder 2 by way of the split therein, said sectors being pivoted eccentrically for vertical oscillating movement in a common plane and so that under downward movement thereof said toothed edges of the sectors will be thrown into engagement with the tubing 3 for coacting with the wall of the cylinder to clamp said tubing therebetween. As will be understood, by virtue of the described arrangement of the sectors 10, 11, the described clamping is effected by the sectors at two vertically spaced points on the tubing, and the weight of the tubing 3 tends to pull the sectors downwardly and increase the clamping action thereof against said tubing.

Manually operative means is provided for swinging the sectors 10, 11, upwardly to release the tubing 3, and as follows.

A pair of sector operating upper and lower levers 13, 14, are suitably secured to the upper edges of said sectors 10, 11, respectively, to extend laterally outwardly of the space between the flanges 4 in the plane of the sectors, said levers having rings 15 suitably secured in the outer ends thereof. A pull chain 17 connects said rings, 15, and a second pull chain 18 with a ring 19 in the free end thereof depends from the ring 15 of the lower lever 14 for grasping by an operator. A coil spring 20 having its opposite ends suitably secured to the loop 9 and to the ring 15 of the upper lever 13 urges said levers upwardly and hence the toothed edges of the sectors 10, 11, downwardly toward clamping position. The upper lever 13 is arranged to move upwardly against the upper cross-bar 6 under the action of the spring 20 when the device is idle, to limit swinging of the sectors under the urge of said spring.

Preferably the sectors 10, 11, are formed of two complemental sections 21, 22, as indicated in Figure 4, welded together, the welding not shown, and with the teeth case hardened and of the hypoid gear type.

In the modification shown in Figures 5, 6 and 7, the cylinder 23 of the body 24 is provided with a similarly shaped and split liner 25 of suitable metal which may be bolted therein, as at 26, to act as a filler whereby the device may be used with a smaller size of tubing.

In the use of the invention, when lowering

the tubing, the device is applied by slipping the cylinder 2 over the tubing, in the manner already described, the sectors 10, 11, are held out of clamping position by pulling on the chain 18 and the device is lifted up on the tubing as high as possible by means of the block and tackle previously mentioned, but not shown. The chain 18 is then released, whereupon the spring 20 will act to move the sectors 10, 11, in a direction to clamp the tubing 3 between the same and the cylinder 2. The device and tubing are then lowered and held by means of the usual pipe dog, not shown, and the operation repeated as often as may be required. When pulling tubing the device is lowered on the tubing 2 to the required position, the sectors 10, 11, wiping along the tubing idly, as will be clear. The device and tubing are then pulled up by the block and tackle and the tubing held by the usual pipe dog until said device can again be lowered and the lifting operation of the device repeated.

As will be understood, the described clamp may be used in pulling tubing horizontally, should occasion require.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the subjoined claim.

What I claim is:

A pipe clamp including a body of substantially tubular form for fitting over a pipe, said body having a longitudinally extending opening therein, and a pair of laterally spaced flanges extending along said body upon opposite sides of said opening, and projecting outwardly of the body, a yoke fixed to said flanges, to extend beyond one end of the body for suspending said body in upended position, a pair of upper and lower toothed sectors eccentrically pivoted between said flanges for oscillation vertically into and from biting engagement with said pipe, means to move said sectors into biting engagement with said pipe in unison comprising a pair of upper and lower levers extending from the sectors, out of the space between said flanges, a coil spring connecting the upper lever to said yoke, and a chain connecting the lower lever to the upper one, and a pull chain depending from the lower lever for exerting force against said levers to disengage the sectors.

RAYMOND H. LANDERS.