No. 812,131. PATENTED FEB. 6, 1906.

W. HOEKSTRA.

PUMP ROD EJECTOR.

APPLICATION FILED SEPT. 2, 1905.

Fig. 1.

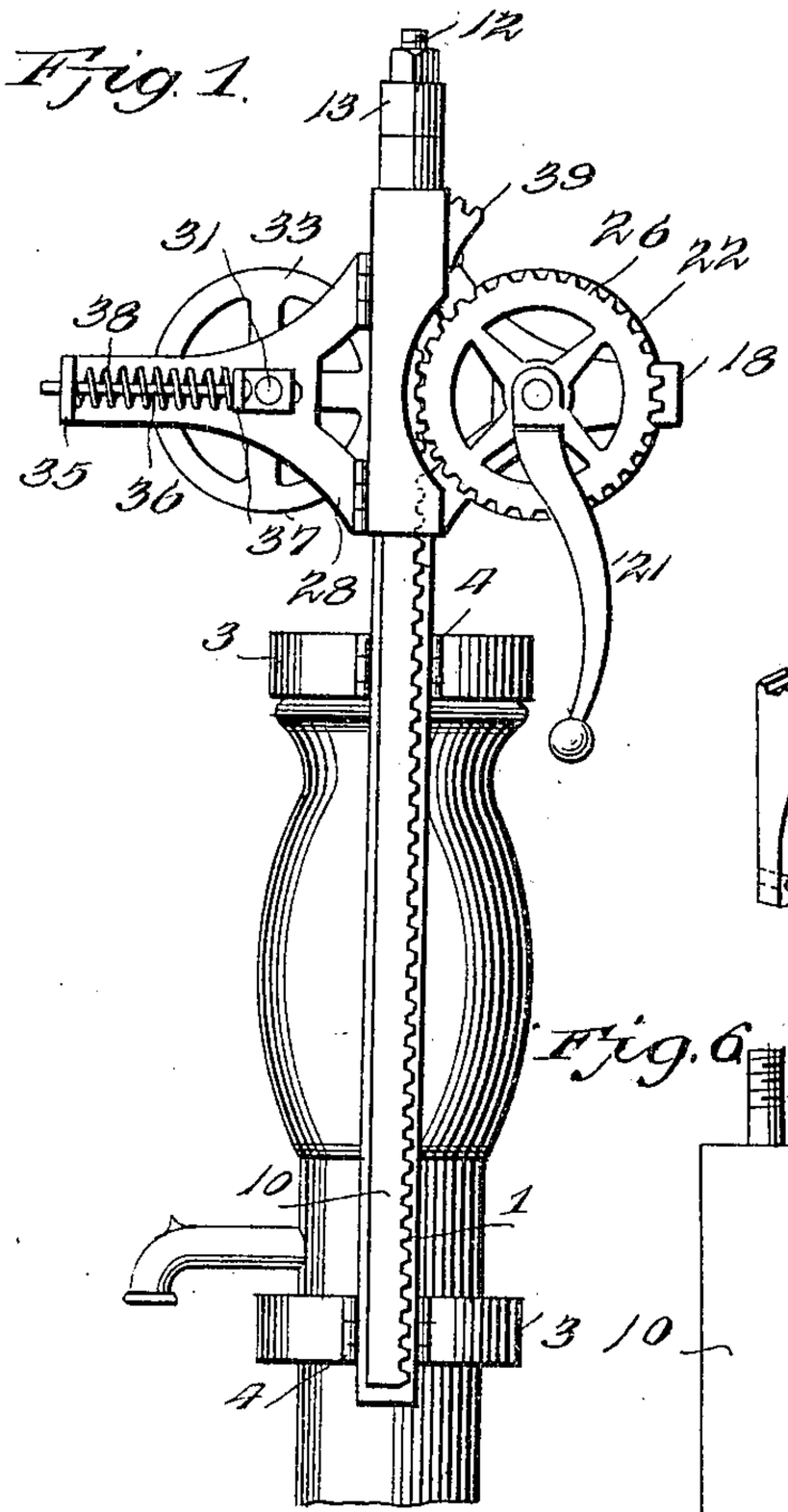


Fig. 2.

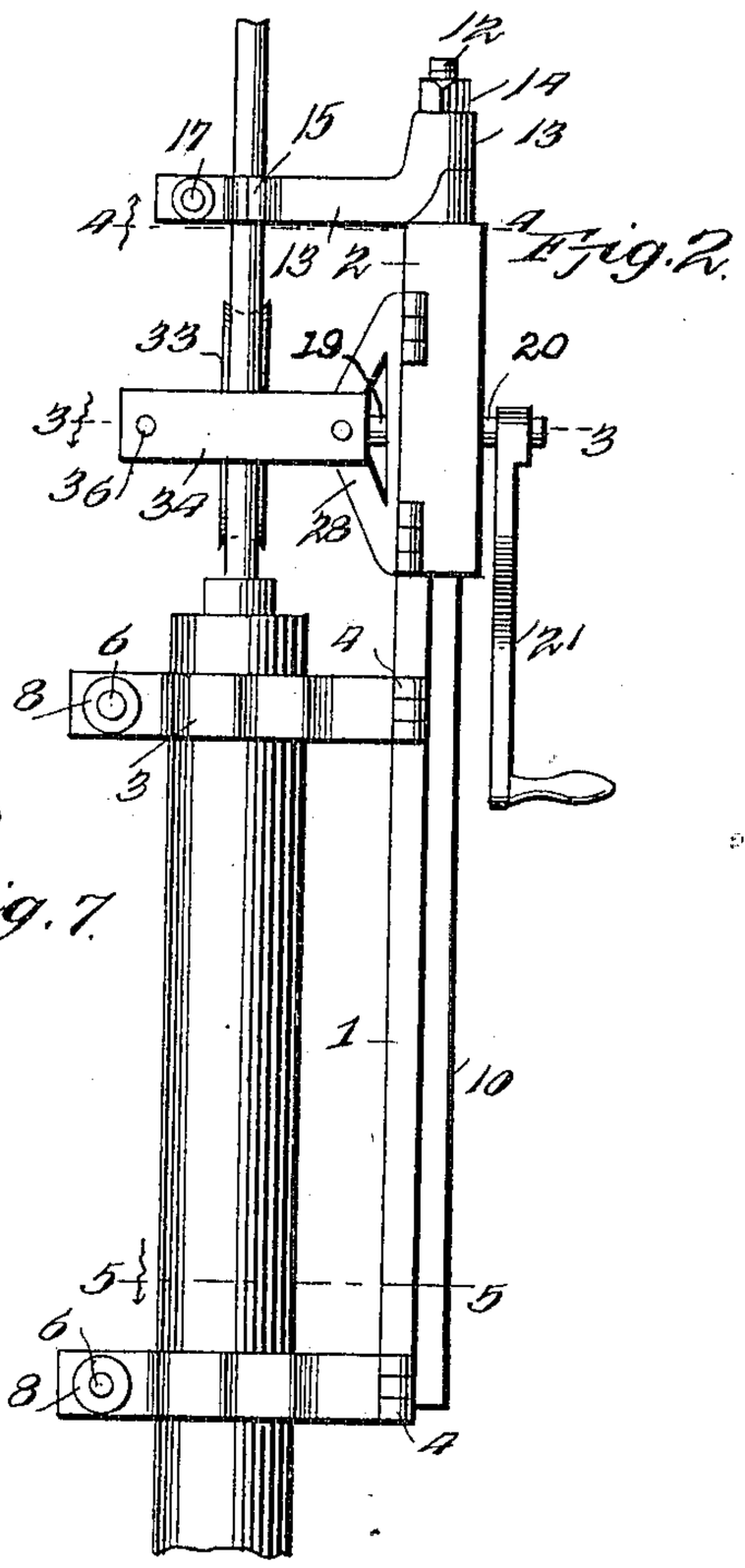


Fig. 7.

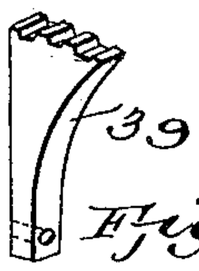


Fig. 6.

Fig. 3.

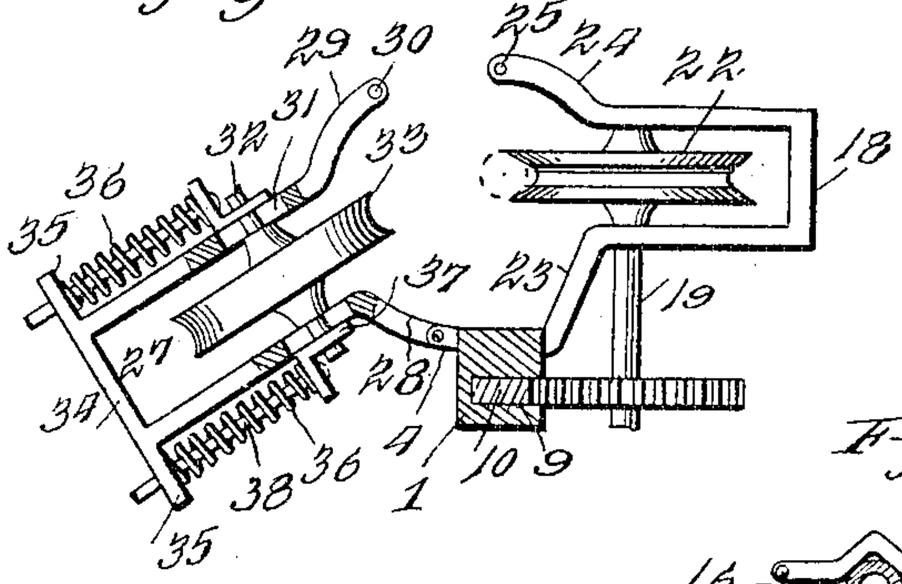


Fig. 5.

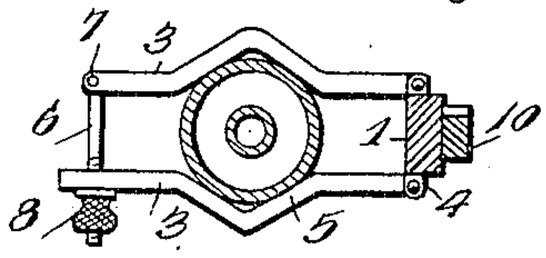
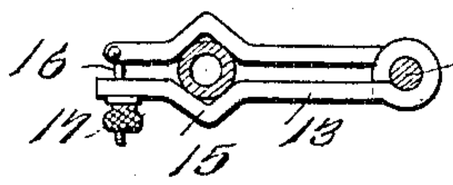


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PUMP-ROD EJECTOR.

No. 812,131. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed September 2, 1905. Serial No. 276,804.

To all whom it may concern:

Be it known that I, WILLIAM HOEKSTRA, a citizen of the United States, residing at Harrison, in the county of Douglas and State of South Dakota, have invented new and useful Improvements in Pump - Rod Ejectors, of which the following is a specification.

My invention relates to devices for ejecting pump-rods or the pipes of Artesian wells; and its primary object is to provide a novel and highly-useful ejector of this character which may be easily and quickly applied to and removed from a pump or the casing of an Artesian well, which is simple and durable of construction, and which may be manufactured and sold at a comparatively small cost.

With the above and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter fully described, claimed, and illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of an ejector constructed in accordance with my invention, the same being shown in applied position to a pump. Fig. 2 is an end elevation thereof, the same being shown applied to the casing of an Artesian well. Fig. 3 is a sectional view on the line 3 3 of Fig. 2 looking in the direction indicated by the arrow. Fig. 4 is a sectional view on the line 4 4 of Fig. 2 looking in the direction indicated by the arrow. Fig. 5 is a sectional view on the line 5 5 of Fig. 2 looking in the direction indicated by the arrow. Fig. 6 is a view in side elevation of the upper portion of the rack-bar, and Fig. 7 is a detail perspective view of the dog.

Referring to the drawings by reference-numerals, 1 designates a standard constructed, preferably, of metal and provided with an enlarged or head portion 2. The standard supports the mechanism for extracting a pump-rod or pipe and is secured in applied position either to a pump or the upper section of the casing of an Artesian well by means of clamps comprising arms 3, hingedly connected to the longitudinal edges of the standard, as at 4. The arms 3 are bent intermediate their ends to provide engaging portions 5, said portions serving to engage around a pump or the upper section of the casing of an Artesian well. The arms of the clamps are caused to tightly engage the support by means of bolts 6, each being pivotally connected to one of the arms, as at 7, and loosely passed through an opening in the other arm. The free ends of the bolts are provided with nuts 8, by means of which the arms 3 may be caused to tightly clamp the support, as is apparent.

The head 2 of the standard 1 is slotted longitudinally to provide a way or guide 9, said way or guide being formed to slidably receive a rack-bar 10 and is provided along one of its longitudinal edges with a cut-away portion 11 to expose a portion of the racked edge of the bar for a purpose to be presently stated. The upper end of the rack-bar 10 is reduced to provide an upstanding threaded stud 12, and pivotally mounted thereon are clamp-arms 13, said clamp-arms being held in place by means of a nut 14. The clamp-arms 13 are bent at points intermediate their ends, as at 15, to form portions adapted to engage either a pump-rod or the pipe of an Artesian well and are firmly clamped therearound by means of a bolt 16 and a nut 17. One of the clamp-arms 13 limits the downward movement of the rack-bar 10 by its engagement with the upper end of the head portion 2. A bracket 18 is rigidly secured to the head portion 2 and is of approximately U shape in cross-section. A shaft 19 is journaled on the bracket 18 and has its forward end projecting beyond the outer face of the head 2, as at 20, for the reception of a crank-handle 21.

Mounted upon the shaft and intermediate the arms of the bracket 18 is a guide-pulley 22. One of the arms of the bracket is bent, as at 23, to dispose the bracket in rear of the head portion 2 and to position the guide-pulley 22 to engage either a pump-rod or the pipe of an Artesian well. The other arm of the bracket is bent, as at 24, to pass around the pump-rod or pipe and has its extremity provided with an opening 25. A cog-wheel 26 is keyed to the shaft 19 and engages the rack-bar 10 through the opening 11 in the head 2. Another bracket 27 is hingedly connected to the head portion 2 and has one of its arms bent, as at 28, to position said bracket in alinement with the bracket 18. The other

arm of the bracket 27 is bent, as at 29, to correspond with the bent portion 24 of one of the arms of the bracket 18, said portion 29 being provided with an opening 30, which is adapted to be brought in alinement with the eye 25 and through which a suitable key is inserted to retain the brackets in proper position. The bracket 27 is provided with elongated bearings 31, which receive a pintle 32, upon which is keyed a yielding guide-pulley 33. The connecting portion 34 of the bracket 27 is provided with lateral projections 35, which are provided with openings through which pass the ends of bolts 36, carried by angular arms 37, secured to the pintle 32. Mounted upon the bolts 36 between the projections 35 and the angular arms 37 are expansion-springs 38, said springs serving to retain the pulley 33 projected or in forcible engagement with a pump-rod or the pipe of an Artesian well.

In practice the device is secured either to a pump or the upper section of the casing of an Artesian well by means of the clamp-arms 13. After the device is secured in applied position the clamp-arms 13 are caused to engage the pump-rod or the pipe of an Artesian well, and then the bracket 27 is swung to cause the pulley 33 to engage either said rod or pipe. As the pulley 33 is yieldingly supported the device is adapted to extract pump-rods or pipes of any diameter, and in view of the engagement of the pump-rod or pipe by the pulleys 22 and 33 the same will be guided while being removed, whereby all liability of the same becoming bent or otherwise injured is obviated. When it is desired to either remove a pump-rod or a pipe, the cog-wheel 26 is caused to revolve by means of the crank-handle 21, the revolution of the cog-wheel 26 serving to move the rack-bar 10 upwardly. As the clamp-arms 13 are secured to the rack-bar 10, an upward movement of the latter will extract a pump-rod or pipe.

When it is desired to retain the rack-bar at any height, the dog 39 may be thrown into engagement with the cog-wheel 26, said dog being pivotally mounted upon the head portion 2.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be understood without a further extended description.

Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having fully described and illustrated my invention, what I claim is—

1. In a device of the character described, the combination with a pump-rod, of a standard, pump-rod-engaging means carried by the standard, and means for moving the pump-rod-engaging means upwardly to eject the pump-rod.

2. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted upon the standard, means carried by said member to engage the pump-rod, and means for moving the member upward to eject the pump-rod.

3. In a device of the character described, the combination with a pump-rod, of a standard, a rack-bar movably mounted thereon, means carried by the rack-bar to engage the pump-rod, a cog-wheel, and means for turning the cog-wheel to raise the standard to eject the pump-rod.

4. In a device of the character set forth, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by said member to engage the pump-rod, guiding means carried by the standard, and means for raising said member vertically to eject the pump-rod.

5. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by the member to engage the pump-rod, pulleys carried by the standard to guide the pump-rod as it is being ejected, and means to move the member vertically to eject the pump-rod.

6. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by the member to engage the pump-rod, a bracket fixed to the standard, a shaft carried by said bracket, a pulley mounted upon said shaft, means carried by the shaft to engage the member to the bracket secured to the standard, and a pulley yieldingly mounted on said last-named bracket.

7. In a device of the character described, the combination with a pump-rod, of a standard, a rack-bar movably mounted thereon, means carried by the rack-bar to engage the pump-rod, a bracket secured to the standard, a shaft carried by said bracket, a pulley mounted on said shaft, a cog-wheel mounted on said shaft and adapted to engage the rack-bar, another bracket secured to the standard, and a pulley yieldingly mounted on said last-named bracket.

8. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, and a yielding member to guide the pump-rod as it is being ejected.

9. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, a pulley journaled in fixed bearings, and a pulley yieldingly journaled,

said pulleys serving to guide the pump-rod as it is being ejected.

10. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, a pulley journaled in fixed bearings, another pulley journaled in yielding bearings and pivotally mounted, said pulleys serving to guide the pump-rod as it is being ejected.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HOEKSTRA.

Witnesses:

GEO. E. CULVER,

L. J. DE BIER.