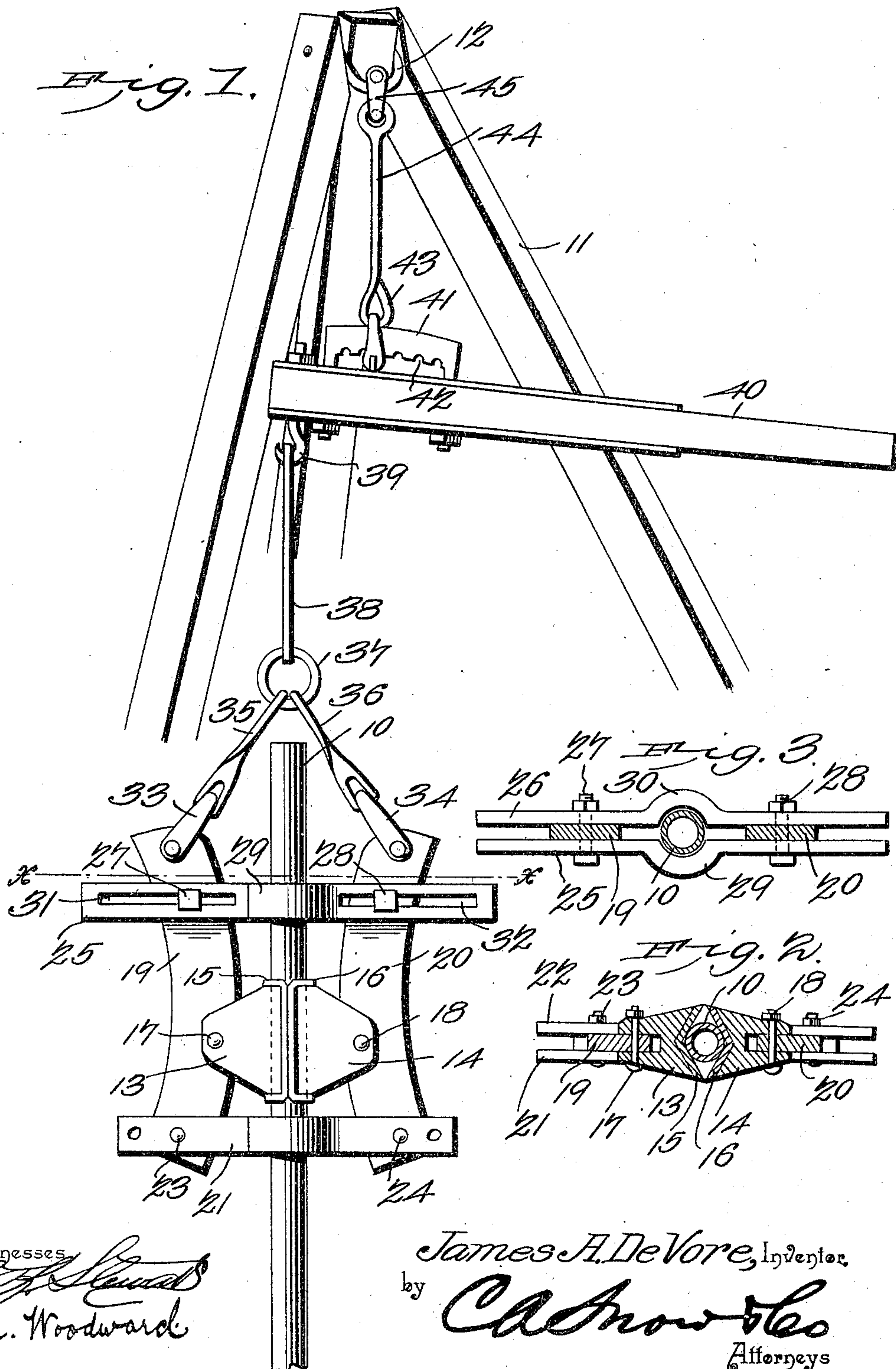


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PATENTED FEB. 3, 1903.

J. A. DE VORE.
WELL PIPE PULLER.
APPLICATION FILED MAR. 21, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

JAMES A. DE VORE, OF MACKSVILLE, KANSAS.

WELL-PIPE PULLER.

SPECIFICATION forming part of Letters Patent No. 719,444, dated February 3, 1903.

Application filed March 21, 1902. Serial No. 99,380. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. DE VORE, a citizen of the United States, residing at Macksville, in the county of Stafford and State of Kansas, have invented a new and useful Well-Pipe Puller, of which the following is a specification.

This invention relates more particularly to devices employed for the purpose of removing well-tubing from driven wells, but which may be employed for any purpose where it is required to grip a pipe or rod.

The object of the invention is to produce a device whereby the pipe or tube may be gripped with sufficient force to draw it from the ground and without crushing or bending the pipe.

Further objects of the invention will appear in the following description, and the novel features will be particularly specified in the claims.

In the drawings illustrative of the invention, Figure 1 is a side elevation of the device complete. Fig. 2 is a plan view of the gripping portion of the device. Fig. 3 is a transverse section on the line *x x* of Fig. 1.

The device may be employed to grip and elevate any size of pipe and is adjustable to fit different sizes of pipe.

The pipe is represented at 10 and the derrick by which the device is supported at 11, the derrick being of the usual tripod form, as shown, with a clevis 12, from which the device will be suspended.

The grip mechanism consists of two jaws 13 14, reversely disposed on opposite sides of the pipe 10 and having hardened-metal linings or "grip-plates" 15 16, preferably roughened or serrated to increase the "grip."

The jaws 13 14 are pivotally connected at 17 18 to two reversely-curved lever-arms 19 20, the lower ends of the levers being coupled to straps 21 22 by bolts 23 24, as shown. The upper ends of the lever-arms are coupled adjustably to slotted straps 25 26, as shown, by bolts 27 28. The straps will be employed in pairs, with one strap of each pair on opposite sides of the levers and pipe and curving outward where they pass the pipe, as indicated at 29 30, to avoid coming in contact with it, so that while firmly supporting the levers and jaws the jaws alone will engage the pipe.

The slots 31 32 in the straps 25 permit the free lateral movement of the lever-arms, while at the same time holding them in proper position with relation to the jaws and pipe. Connected flexibly to the upper ends of the levers 19 20, as by clevises 33 34, are links 35 36, united centrally to a ring 37, the latter in turn connected, as by a link 38, to a hook 39 in the end of an operating-lever 40. On the upper side of the lever 40 is a fulcrum-plate 41, having a series of graduated recesses or notches 42 and adapted to support a clevis 43, to which the suspension-link 44 is coupled. The upper end of the link 44 is coupled flexibly, as by a clevis 45, to the suspension means 12 of the derrick 11, as shown.

The derrick may be of any approved form, but will generally be of the usual tripod form, as shown. By this simple means a downward movement on the longer end of the lever 40 will elevate the shorter end and correspondingly elevate the gripping mechanism, this causing the links 35 36 to exert an inward strain upon the lever-arms 19 20, and thus exert a strong inward force against the jaws 13 and 14 and cause them to tightly grip the pipe 10 and draw it upward.

The grip of the jaws will be sufficient to effectually prevent any slipping upon the pipe, and the stronger the upward pull the firmer will be the grip.

The graduated notches 42 in the fulcrum-plate 41 will enable the leverage to be increased or decreased, as required.

The straps 21 and 22 and the straps 25 and 26, each having the outwardly-curved portions 29 30 embracing the pipe, form guides to the device, and insure the proper horizontal movement, and effectually prevent any lateral strains upon the jaws, and consequently also materially assist in preventing any lateral strains upon the pipe.

The straps 21 22 will be provided with extra holes 45 46, so that the distance between the jaws 13 14 may be increased and decreased to adapt the device to pipes of different sizes.

By this simple device the pipe is grasped equally from both sides, and the upward pull is at all times in a vertical or straight upward direction. Hence the pipe will not be subjected to lateral or bending strains. This

is a very important consideration, especially when employed to pull drive-well tubing, as this tubing is generally drawn for the purpose of cleaning or repairs and is then again driven into the ground, and any device which would bend or deflect the pipe would be very objectionable. The jaws 13 14 being of considerable length distribute the strains over so large an area of the pipe as to obviate any tendency to crush the pipe, no matter how great a strain may be required to draw it upward.

All the parts are simple in construction, and can be operated by any person, and will not require skilled operators to handle it.

The proportions may be changed and the device modified in minor details without affecting the operation or in any manner changing the nature or scope of the invention.

Having thus described my invention, what I claim is—

1. A pipe or rod gripping device, comprising jaws reversely disposed on opposite sides of the pipe, lever-arms pivotally united centrally to said jaws, straps embracing opposite sides of said lever-arms below said jaws and pivotally connected thereto and reversely curved at their centers to encompass opposite sides of and form a guide to the pipe, links connecting said lever-arms above said jaws, means for flexibly coupling the upper ends of said links and means to forcefully move said lever-arms upwardly and inwardly, substantially as described.

2. A pipe or rod gripping device comprising reversely-disposed jaws on opposite sides of the pipe, lever-arms pivotally united centrally to said jaws, straps embracing opposite sides of said lever-arms and pipe below said jaws, straps having longitudinal slots

and embracing opposite sides of said lever-arms and pipe above said jaws, bolts engaging said lever-arms through said slots, links flexibly coupling the upper ends of said lever-arms, and means for forcibly moving said lever-arms upwardly and inwardly, substantially as specified.

3. In a pipe or rod gripping device, reversely-disposed jaws on opposite sides of the pipe, lever-arms pivotally connected centrally to said jaws, straps embracing opposite sides of said lever-arms below said jaws and reversely curved at their centers to encompass the pipe, straps having longitudinal slots and embracing opposite sides of said lever-arms and pipe above said jaws and reversely curved at their centers to encompass the pipe, bolts engaging said lever-arms through said slots, means flexibly connecting the upper ends of said lever-arms, and means coupled to said flexible connection and operating to forcibly move said lever-arms upward and inward, substantially as specified.

4. A pipe or rod gripping device comprising pipe-gripping jaws, curved levers pivotally connected with said jaws, straps having pivotal connection with the lower ends of said levers, hoisting means connected with the upper ends of said levers, and slotted guides disposed on opposite sides of the latter and receiving guide-bolts extending therethrough, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES A. DE VORE.

Witnesses:

J. B. WARE,
W. L. JENNINGS.