

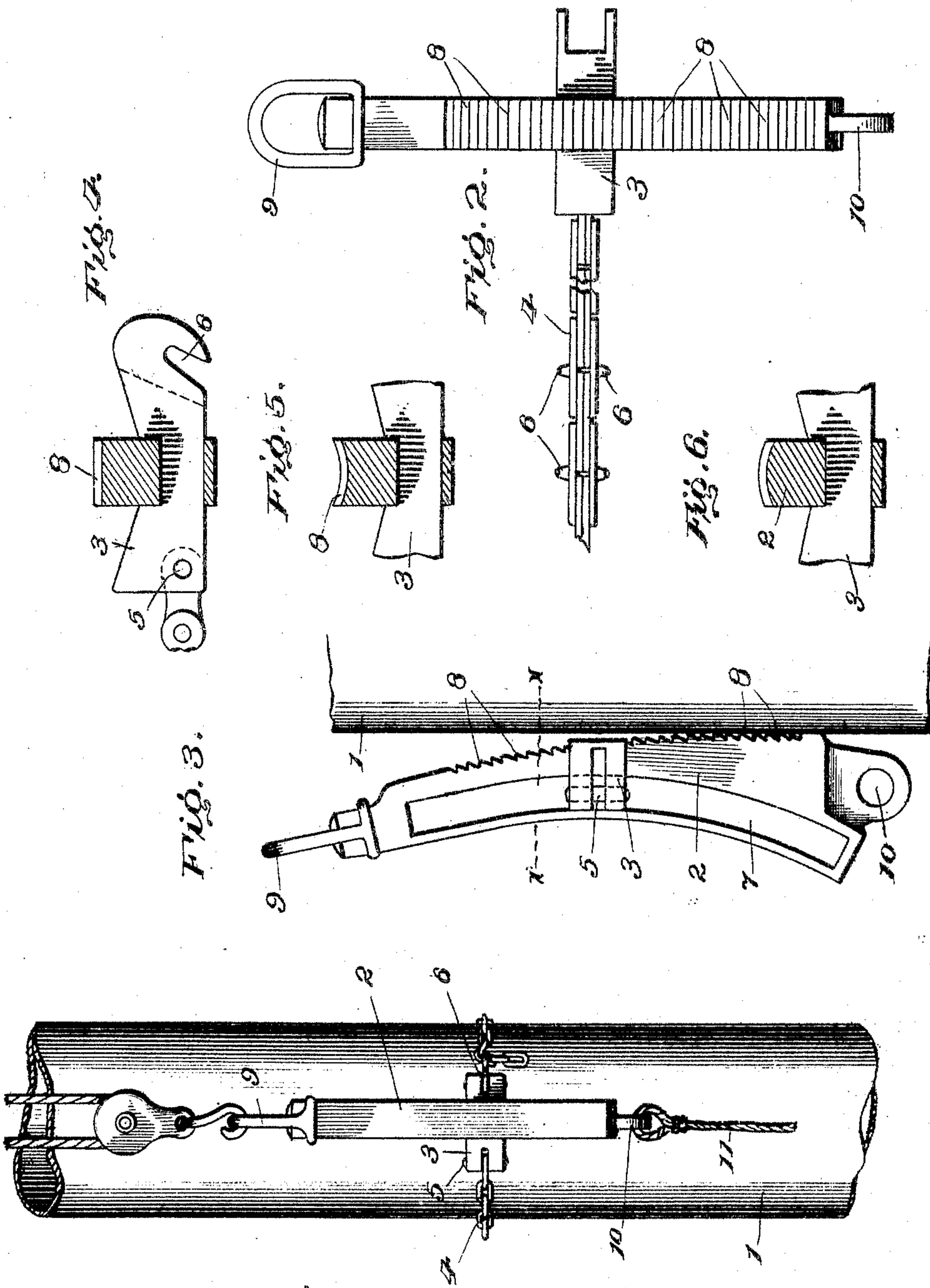
No. 780,038.

PATENTED JAN. 17, 1905.

E. G. HUNTINGTON.
PIPE GRIP.

APPLICATION FILED MAY 2, 1904.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 1.

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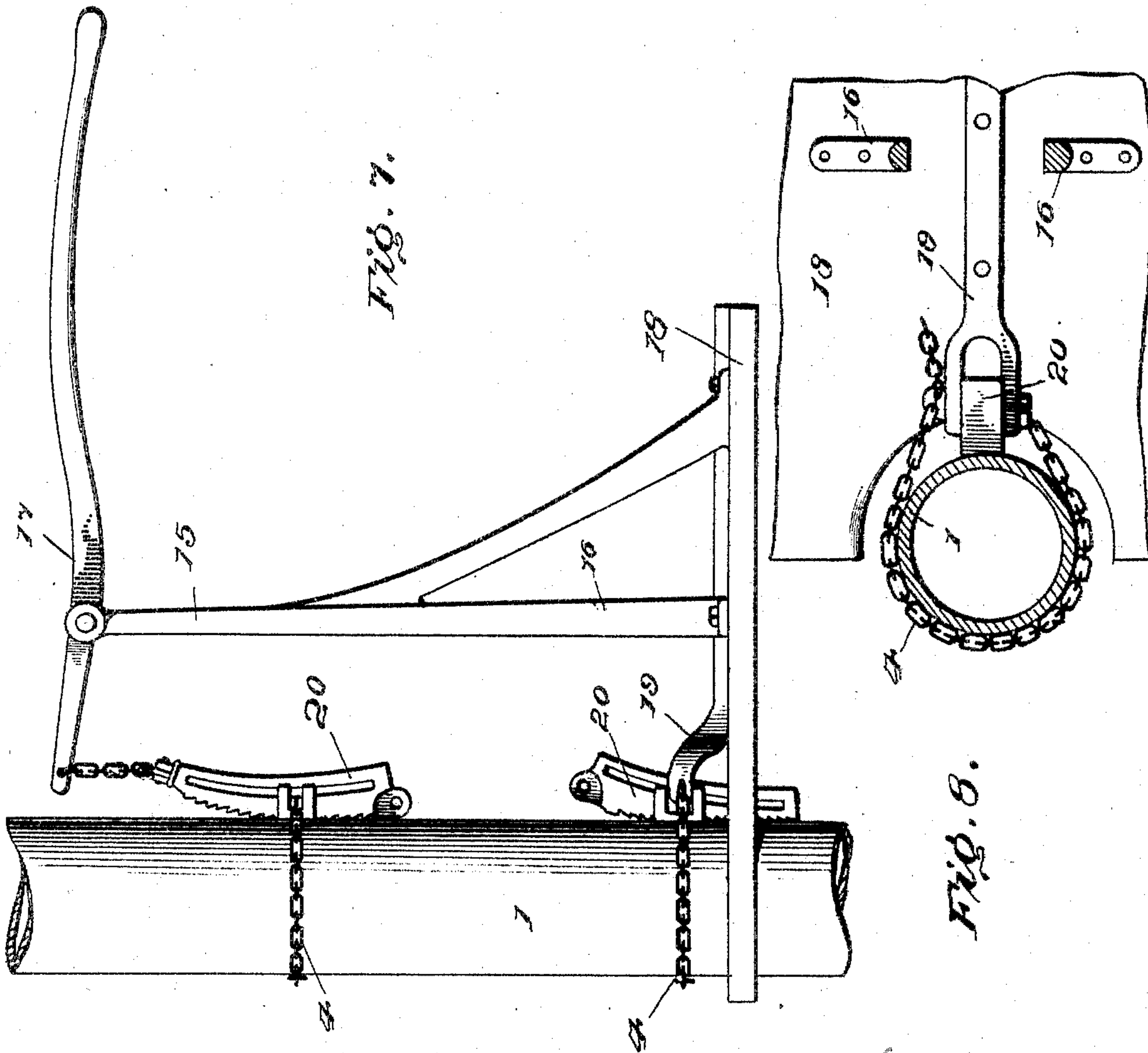
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UNITED STATES PATENT OFFICE.

EMERY G. HUNTINGTON, OF SANTA ANA, CALIFORNIA.

PIPE-GRIP.

SPECIFICATION forming part of Letters Patent No. 780,038, dated January 17, 1905.

Application filed May 2, 1904. Serial No. 206,054.

To all whom it may concern:

Be it known that I, EMERY G. HUNTINGTON, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented certain new and useful Improvements in Pipe-Grips, of which the following is a specification.

This invention relates particularly to pipe-grip devices especially adapted for use in raising and lowering pipes of deep wells, though susceptible of any analogous uses, such as drawing well-casings or handling heavy shafting or the like.

My invention comprises, essentially, attaching means by which the device is adapted to be secured to the object which it is desired to elevate and a peculiar form of engaging member consisting of a wedge which directly engages the object being elevated, said wedge being carried by the attaching means above mentioned.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation, illustrating the practical operation of my invention. Fig. 2 is a detail view of the attaching device alone. Fig. 3 is a detail perspective view of the engaging member or wedge, the supporting member and the attaching means therefor being also shown in position. Fig. 4 is a horizontal sectional view taken about on the line *x x* of Fig. 3. Figs. 5 and 6 are sectional views of modified forms of the engaging member, the supporting member of the binder being broken away. Fig. 7 is a view in elevation, illustrating the adaptation of the principles of my wedge device to a jacking apparatus for lifting pipes or well-casings. Fig. 8 is a plan section of the structure shown in Fig. 7.

Corresponding and like parts are referred

to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the invention is shown illustrating the manner of operation of same in lifting a pipe or like part, the latter being designated 1. The attaching means whereby the engaging member 2, which constitutes the wedge device which has been mentioned hereinbefore, consists, essentially, of a transverse supporting member 3, which latter carries the binder 4, which may be an ordinary cable-chain, as shown in Fig. 1, or wrench-chain, as illustrated in Fig. 2. The binder is secured at one end to a pin 5, which is carried by one end of the supporting member 3, and the other end of this member 3 is provided with a hook or hooks 6, with which the binder is adapted to engage when secured about the pipe or other object which is being operated upon. In Fig. 1 the hook 6 is shown attached to the supporting member 3, whereas in Fig. 2 the supporting member 3 has the hooks 6 integrally formed therewith, this feature, however, not being essential, since the hooks 6 may be provided as found most suitable for the special purpose for which the grip device may be designed.

The gripping means comprises the engaging member 2, which is a wedge provided longitudinally thereof with a slot 7. The slot 7 is curved in its length and receives the shank of the supporting member 3, the latter being reduced for this purpose, as shown most clearly in Figs. 4, 5, and 6. The engaging face of the wedge or engaging member 2 is provided with a plurality of teeth 8, and the latter may be of straight, convex, or concave form, dependent upon conditions of service, as will be readily obvious. The wedge 2 is movable independent of the attaching means with which it is connected and may be said to have a relative longitudinal movement as regards the supporting member 3 of the said attaching means. By "longitudinal" movement is meant the movement in the direction of the length of the wedge 2, whereby the same gets the necessary engaging action by which it is caused to cooperate and firmly grip against the object which is being elevated. The wedge 2 is

provided at its upper end with a supporting member in the form of a swivel-link 9, and the latter may be engaged by an elevating rope or tackle of any suitable form, as shown in Fig. 1, in the actual use of the invention. The object is lifted by the tackle, which is connected with the swivel-link 9, and the weight of the object of course causes a slidable or longitudinal movement of the wedge relative to the attaching means, which effects a biting action of this member 2 against the object 1 to secure the necessary coöperation of the parts. The swivel-link-supporting member 9 is used with special advantages, since the same will admit of rotation of the pipe, so as to screw sections together without necessitating unhooking of the binder 4 or causing twisting of the tackle connections should the binder 4 remain in position upon the pipe.

It will be noted that the binder 4 is adjusted so that the device is thereby adapted for use in connection with different-sized pipes, which of course broadens the scope of its use and the practical value of the invention. The lower end of the engaging member or wedge 2 is formed with an eye or like part, (indicated by the numeral 10,) and a tail-rope 11 is secured to the part 2 by being passed through the eye 10, and actuation of this tail-rope 11 is adapted to disengage the member 2 in a manner which will be readily apparent. Thus when it is desired to adjust the points of adjustment of the binder from the pipe or object 1 the same can be pulled down by a downward jerk of the tail-rope 11 after the tackle-rope has been slackened somewhat. When the binder has reached the desired point, the engaging member 2 is caused to grip against the pipe upon upward pull upon the member 9. The greater the weight of the object the greater the gripping tendency of the engaging member 2 against the same in the elevation of the said object, and the latter device is adapted to be readily adjusted, removed, and used in connection with different-sized pipes, which increases the general utility thereof, as will be appreciated by those versed in the art to which my invention appertains.

In Figs. 7 and 8 I illustrate an adaptation of the principles embodied in pipe-grip structure when used in connection with a lifting-jack. Describing the jack generally, the same consists of a support 15, provided with standards 16, a lifting bar or lever 17 being pivoted in fulcrum to the upper portion of the support 15. One end of the lever constitutes an operating-handle for actuation thereof, and to the other end is connected the elevating wedge or grip device. (Shown most clearly in Figs. 1 and 2 of my drawings.) In connection with the lifting or elevating grip device above mentioned I utilize a second holding grip device which is designed to support the pipe or tubing when the upper elevating

grip device is being adjusted preparatory to further elevation of said tube. The second or holding grip device is mounted upon the base 18 of the support 15, and a supporting-plate 19 is secured to the upper side of the base 18, above mentioned. The base 18 is cut away to form a seat, receiving the body of the article which is being lifted, and the attaching chain or binder 4 is substantially the same as has been before described, having its ends adapted for attachment to the plate 19. The binder 4, carried by the plate 19, is adapted to hold the pipe or tube 1 in engagement with the wedge 20. The wedge 20 is of a form similar to the wedge 2 or engaging member embodied in the preferred construction of my invention, the teeth of the wedge 20, however, being inclined toward the broader end thereof. The wedge 20 has its broader or wider end uppermost when in use and is movably mounted upon the plate 19. In the operation of the jack device above described as the lever 17 is operated to lift the upper grip device the pipe or tube will move past the lower wedge device 20, because of the mounting and structure of this member. As soon, however, as the wedge 2 is lowered to obtain a new grip upon the pipe 1 the lower wedge 20 is caused to positively engage the pipe to prevent any downward movement thereof. Continuous operation of the lever in the manner indicated above will thus elevate the pipe 1 to the necessary position, and the lower wedge may be utilized to hold a lower pipe-section while an upper pipe-section is being attached thereto.

Having thus described the invention, what is claimed as new is—

1. In a pipe-grip, the combination of adjustable attaching means adapted to be secured to a pipe or the like, an engaging member carried by and movable independently of the attaching means aforesaid, and supporting means coöperating with said engaging member.

2. In a pipe-grip, the combination of attaching means adapted to be secured to a pipe or the like, a wedge secured to said attaching means, elevating means, and connecting means between the elevating means and the wedge means aforesaid.

3. In a pipe-grip, the combination of a supporting member, attaching means adapted to be secured to a pipe or the like, a longitudinally-movable toothed wedge carried by said supporting member and provided with a longitudinal curved slot receiving the same, elevating means, and connecting means between the wedge and the elevating means.

4. In a pipe-grip, the combination of attaching means comprising a supporting member and a flexible binder, an engaging member slidably mounted relative to the supporting member and adapted to grip a pipe or the like, elevating means, and connecting means be-

tween the engaging member and the elevating means.

5 In a pipe-grip, the combination of attaching means comprising a supporting member and an adjustable binder, an engaging member secured to the supporting member aforesaid and adapted to grip a pipe or the like, elevating means, and connecting means between the engaging member and the elevating means.

10 6. In a pipe-grip, the combination of attaching means comprising a supporting member and a binder adapted to embrace a pipe or the like, a pipe-engaging member provided with a longitudinal slot receiving the supporting member aforesaid, elevating means, and connecting means between the elevating means and the engaging member.

15 7. In a pipe-grip, the combination of an adjustable means adapted to be secured to a pipe or the like, a movable engaging member permanently carried by the attaching means aforesaid, elevating means, and connecting means between the engaging member and the elevating means.

20 8. In a pipe-grip, the combination of a supporting member, a binder permanently secured at one end to the supporting member

and adapted for adjustable cooperation at the other end with said supporting member, and a pipe-engaging member slidably mounted upon the supporting member aforesaid. 30

9. In a pipe-grip, the combination of attaching means comprising a transverse supporting member and an adjustable binder, a pipe-engaging wedge provided with a longitudinal slot receiving the supporting member aforesaid, a swivel-link carried by the upper portion of the wedge, teeth provided upon the engaging side of said wedge, operating means connected with the lower end of the wedge for effecting disengagement thereof. 35 40

10. In a pipe-grip, the combination of a supporting member, a wedge mounted upon said supporting member, a binder cooperating with the supporting member, means connected with the lower end of the wedge for effecting disengagement thereof, and means connected with the upper end of the wedge for elevating the same. 45 50

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

EMERY G. HUNTINGTON. [L. s.]

Witnesses:

C. F. MANSUR,

W. F. HEATHMAN.