

No. 688,708.

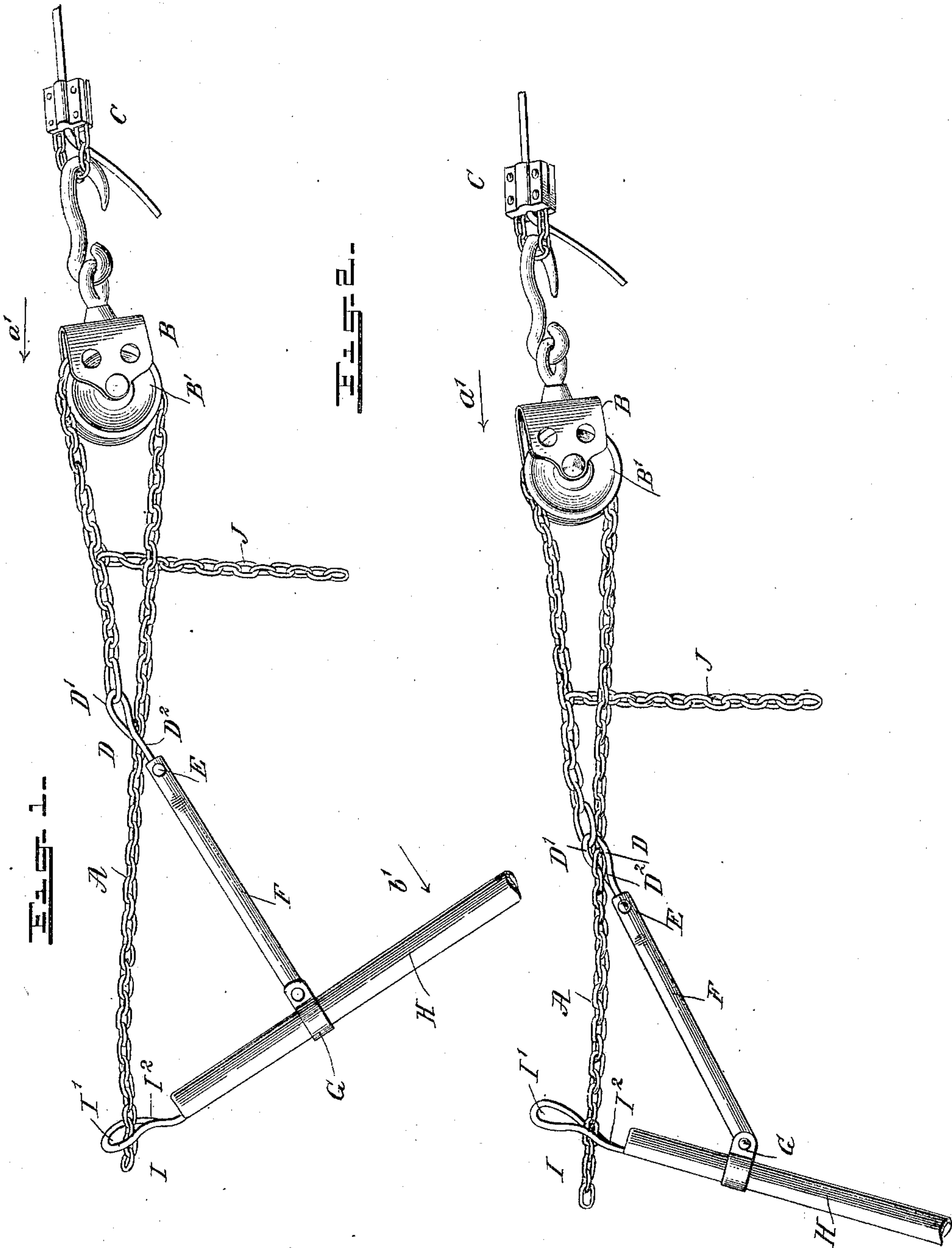
Patented Dec. 10, 1901.

A. C. SMYTH.
LEVER DEVICE.

(Application filed Sept. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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INVENTOR

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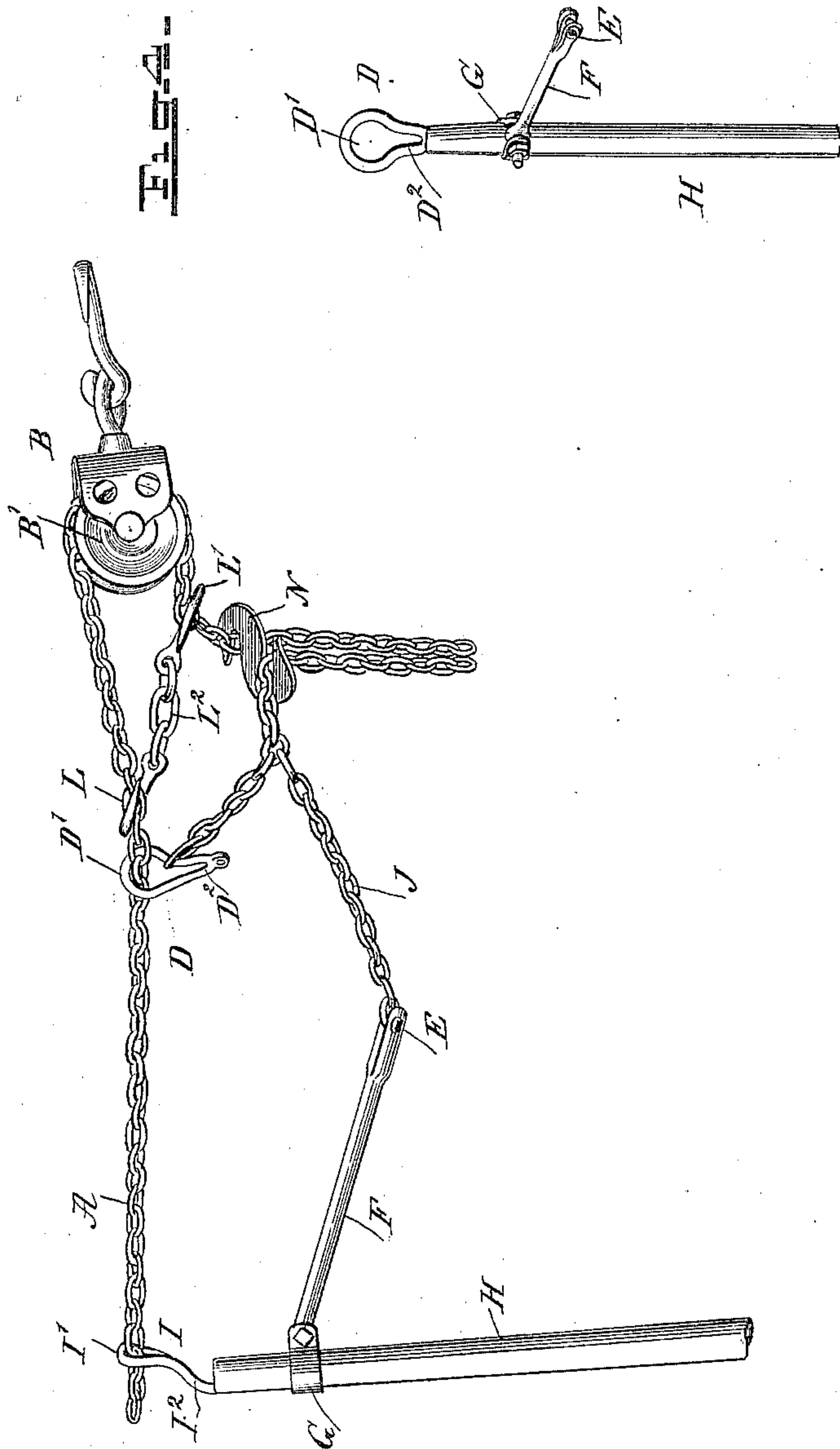
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2 Sheets—Sheet 2.

Fig. 2.

Fig. 1.



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UNITED STATES PATENT OFFICE.

ASAHEL CLARK SMYTH, OF BOLIVAR, NEW YORK.

LEVER DEVICE.

SPECIFICATION forming part of Letters Patent No. 688,708, dated December 10, 1901.

Application filed September 23, 1901. Serial No. 76,225. (No model.)

To all whom it may concern:

Be it known that I, ASAHEL CLARK SMYTH, a citizen of the United States, and a resident of Bolivar, in the county of Allegany and State of New York, have invented a new and Improved Lever Device, of which the following is a full, clear, and exact description.

The invention relates to lifting, hauling, and pulling devices; and its object is to provide a new and improved lever device which is simple and durable in construction and applicable for various purposes, but more especially designed for use in the oil-fields to enable a single operator to draw broken and separated pump-rods together.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is a like view of the same with parts in a different position. Fig. 3 is a similar view of the same with parts in a still different position, and Fig. 4 is a perspective view of the actuating-lever and its link.

A chain A of suitable length is secured at one end to a fixed support, and its other end passes over a pulley B' of a sheave B, attached to the article C to be pulled in the direction of the length of the chain A—that is, in the direction of the arrow *a'*. The free end of the chain A is connected with a grappling-hook D, connected by a pivot E with a link F, fulcrumed on a clip G, adjustably secured near one end of the hand-lever H, adapted to be taken hold of by the operator and having a grappling-hook I similar to the grappling-hook D. The grappling-hook D is formed with an enlarged portion D', through which passes loosely the chain A, and the said grappling-hook has a reduced portion D², adapted to engage a link of the chain A, so as to lock the grappling-hook D temporarily in position on the chain A. The grappling-hook I also has an enlarged portion I' for the passage of the chain A and a reduced portion I² for en-

gagement with a link of the chain A, so as to form a fulcrum for the lever H when swinging the same in the direction of the arrow *b'* from the position shown in Fig. 1 to the position shown in Fig. 2.

When the several parts are in position, as illustrated in Fig. 1, the grappling-hook D is locked to the chain A, and when it is desired to draw the sheave B and the article C forward in the direction of the arrow *a'* the operator pushes the lever H upward, so as to move the chain A out of the enlarged portion I' to engage the reduced portion I² with one of the links of the chain. The operator now swings the lever H, with the engaged link in the reduced portion I² as a fulcrum, in the direction of the arrow *b'*, so as to exert a pull on the link F to move the reduced portion D² of the grappling-hook D out of engagement with the link on the chain A and to engage the enlarged portion D' with the said chain. On the further movement of the lever H in the direction of the arrow *b'* the enlarged portion D' of the grappling-hook D passes along the chain A in the direction of the arrow *a'*, thus drawing on the free end of the chain and pulling the sheave B and article C along in the direction of the arrow *a'*. When the lever H has reached the end of its stroke, as indicated in Fig. 2, the operator moves the lever H downward to disengage the reduced portion I² from the corresponding link in the chain A and to allow the free end of the chain to pull the grappling-hook D back into its former position—that is, to engage the reduced portion D² with a link in the chain A, so as to lock the end of the chain by the grappling-hook to the main portion of the chain. The operator can now swing the lever H back in the inverse direction of the arrow *b'* to the position shown in Fig. 1, and then the above-described operation is repeated. From the foregoing it is evident that the free end of the chain is gradually moved along with the chain passing around the pulley B', thus drawing the sheave B and article C along half the distance the free end of the chain has been moved.

When the device reaches the fastened end of the chain and the two parts to be drawn together are still a distance apart and it is desired to draw the article C still farther

along, the following auxiliary devices are brought into use, special reference being had to Fig. 3: Two hooks L L', connected with each other by a few links L², are hooked onto the two runs of the chain A in front of the pulley B' to hold the article C temporarily in place, and then the operator disconnects the grappling-hook D from the pivot E and connects the free end of a short branch chain J with the said pivot, as indicated in Fig. 3. The portion of the chain A between the hook L' and the short chain J has its ends hooked together by an S-hook N to take up the slack contained in the said portion. The connected hooks L L' are used only temporarily to hold the load and to enable the operator to loosen the grappling-hook D from the chain by first removing the pivot E from the hook D and then attaching the chain J to the restored pivot and pulling on the lever H to slacken the chain and disengage the grappling-hook from the chain. The above-described operation is then repeated—that is, the lever H is manipulated, as described, to draw the end of the chain having the tied-up slackened portion along on the main portion of the chain.

This device is especially serviceable in oil-fields in which a central power is connected by pump-rods with the several pumps located a distance from the central power. It frequently happens that one of these pump-rods breaks and the broken ends move distances apart, especially as such pump-rods are usually a distance above the ground, and I find that my device is extremely useful to enable a single operator to draw such parted ends together.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A lever device, comprising a hauling-chain secured at one end, a sheave connected with the article to be moved and around which passes the other end of the chain, a lever removably connected with the chain to form fulcrums thereon at different points of its length, and a link pivotally connected with the lever and connected with the free end of the chain, the link having means for attachment to the chain at different points of its length and alternately with the said lever, as set forth.

2. A lever device, comprising a hauling-chain, a sheave for connection with the arti-

cle to be moved and over which passes the chain, a lever having a grappling-hook for the passage of the hauling-chain and for engaging a link thereof to form a fulcrum for the lever on the chain, a link pivoted at one end to the said lever, and a grappling-hook at the other end of said link and connected with the end of the chain, and adapted to engage a link on the chain to lock the free end of the chain to the main run for moving the lever along the chain to obtain another fulcrum, as set forth.

3. A lever device, comprising a hauling-chain, a sheave for connection with the article to be moved and over which passes the chain, a lever having a grappling-hook for the passage of the hauling-chain and for engaging a link thereof to form a fulcrum for the lever on the chain, a link pivoted at one end to the said lever, a grappling-hook at the other end of said link and connected with the end of the chain, and adapted to engage a link on the chain to lock the free end of the chain to the main run for moving the lever along the chain to obtain another fulcrum, a short branch chain for engagement with the link, and a pair of connected hooks for securing the runs of the chain in front of the said sheave, as set forth.

4. A lever device, comprising a hauling-chain, a sheave for connection with the article to be moved and over which passes the chain, a lever having a grappling-hook for the passage of the hauling-chain and for engaging a link thereof to form a fulcrum for the lever on the chain, a link pivoted at one end to the said lever, a grappling-hook at the other end of said link and connected with the end of the chain, and adapted to engage a link on the chain to lock the free end of the chain to the main run for moving the lever along the chain to obtain another fulcrum, a short branch chain for engagement with the link, a pair of connected hooks for securing the runs of the chain in front of the said sheave, and an S-hook for taking up the slack in the chain, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

ASAHEL CLARK SMYTH.

Witnesses:

W. A. HARDISON,
B. O. NEWTON.