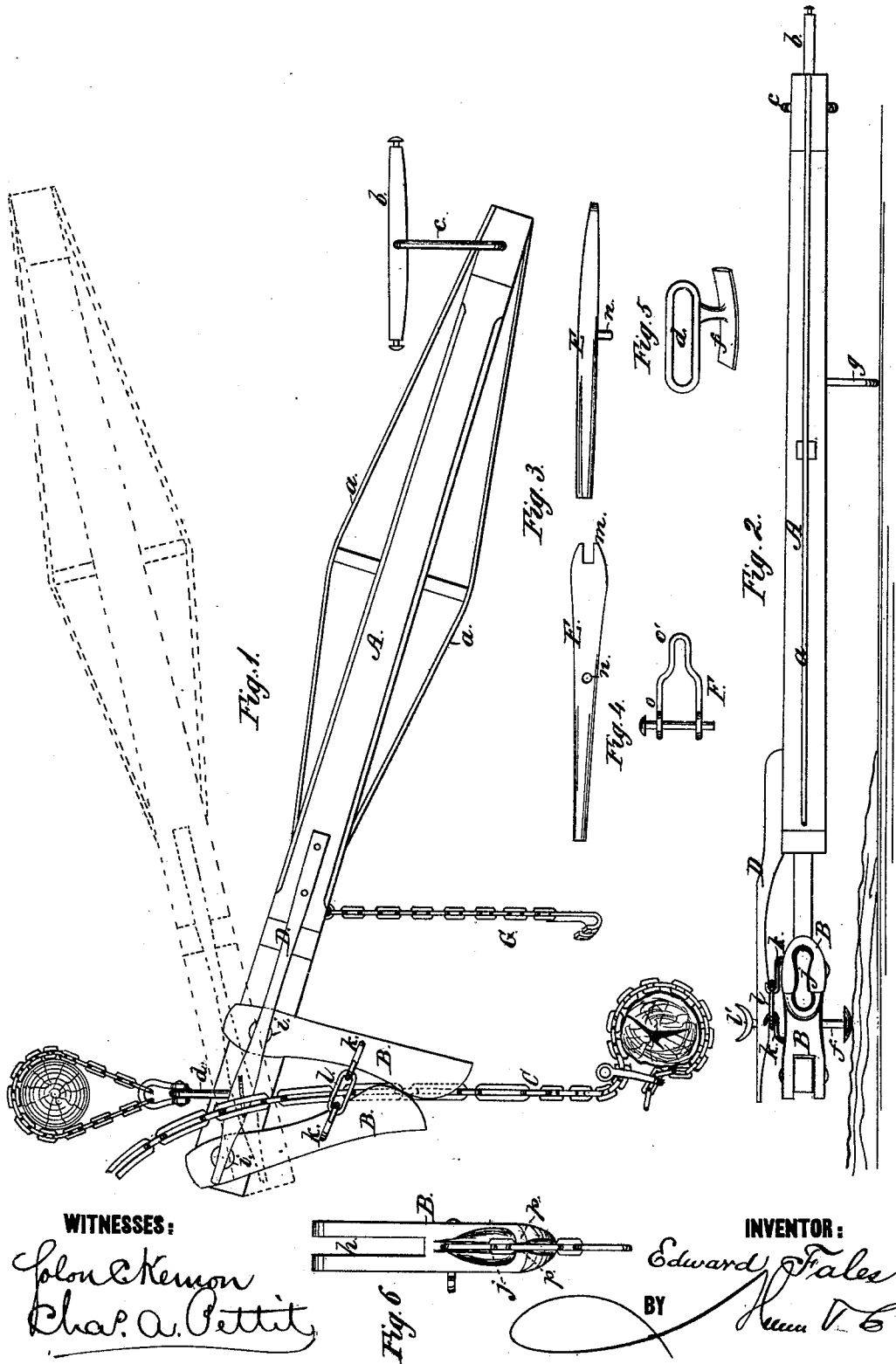


E. FALES.
LEVER-POWER.

No. 175,061.

Patented March 21, 1876.



WITNESSES:

John C. Kemmon
Chas. A. Pettit

INVENTOR:

Edward Fales
BY

ATTORNEYS.

UNITED STATES PATENT OFFICE

EDWARD FALES, OF EDINA, MISSOURI.

IMPROVEMENT IN LEVER-POWERS.

Specification forming part of Letters Patent No. **175,061**, dated March 21, 1876; application filed March 7, 1876.

To all whom it may concern:

Be it known that I, EDWARD FALES, of Edina, in the county of Knox and State of Missouri, have invented a new and Improved Lever-Power; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a plan view of the lever-power as applied to stump-pulling; Fig. 2, a side elevation of the same. Fig. 3 shows two detail views of the releasing-lever; Fig. 4, a detail of the loop or device for fastening the chain; Fig. 5, a detail of the fulcrum-link, with the foot or bearing plate; Fig. 6, an inside view of one of the gripping-arms.

My invention relates to a novel construction of lever-power, which is especially adapted to the pulling up of stumps, but generally applicable also for other uses for which a lever-power may be employed. It consists, mainly, in a long lever having a draft attachment at one end, and at the other two pivoted clutch-arms or grippers. Between these two grippers is a foot or bearing plate, upon which this end of the lever rests, and also an attachment for a chain, which is to pass around an immovable object which holds the lever. The two grippers are held together by a spring, and are adapted, as the lever is worked back and forth, to alternately seize a chain attached to the stump and gradually pull it to one side.

In the drawing, A represents the lever, which is made of heavy strong material, and suitably braced and stiffened by rods *a*. Upon the outer extremity of this lever is pivoted a draft attachment, which consists of a single-tree, *b*, and a long link, *c*, which latter is made of sufficient length to enable the team to pull the lever first in one direction, and then, without being detached, to pass around upon the opposite side of the lever and draw it in the opposite direction, which vibratory motion is necessary for the operation of the devices hereinafter described, and which construction of draft attachment permits the rapid operation of the lever without detaching the team and losing time. To the opposite end of the lever are pivoted the two clutch-arms or grippers B B, and between the grippers, and operat-

ing as a fulcrum for the lever, is a link, *d*, forming an attachment for the chain *e*, which fastens the lever to the immovable object. This link is provided upon the under side with a foot, *f*, which rests upon the ground and operates as a support for this end of the lever during its operation, thus keeping the gripping-arms up above the level of the ground, in a position free to move. The draft end of the lever is also provided with a support, *g*, which holds that end of the lever up in a similar manner. This support *g*, however, is a little longer than the first mentioned in order to hold the draft end of the lever up in convenient position for the attachment of the team. The chain C is the chain forming the loop around the stump to be pulled, which chain is seized and drawn by the gripping-arms. The gripping-arms B are slotted at their ends at *h*, and are attached to the end of the lever upon each side of the fulcrum-link by means of bolts *i*. These arms have their outer extremities cut out at *j*, and provided with notches *p* on both sides of the same, upon the inside, which are adapted to receive and clutch the right angular links of the chain C connected with the stump. These arms alternately reach out and seize the chain, and, drawing it in with the stump, pass by each other and deliver the chain alternately one to the other. The arms B are each provided with hooks *k*, which are connected by a spring, *l*. This spring, as shown, is made of rubber, and holds together the arms B upon the chain to cause them to firmly clutch the same. The ends of the arms are made with curved faces so as to slide easily by each other in grasping the chain and transferring it from one to the other. D is an arm extending over the fulcrum of the lever, and having a fork or guide, *v*, for the free end of chain C, to prevent the same from interfering with the operation of the devices after being taken up by the arms. E is a releasing-lever, having a forked end, *m*, and a stud, *n*. This lever is employed to release the chain C from the gripping-arms, and it is operated by placing its forked end against one of the ends of the hooks to which the spring is attached, with the stud *n* bearing against the inside of the opposite arm. Now, by deflecting lever E the tension of the spring is

overcome and the gripping-arms are separated, so that the chain can be removed.

In operating my lever-power for pulling stumps the chain C, employed in connection therewith, must be made of two different constructions of links. The portion of the chain upon which the arms operate is made with long links, as shown, to enable the arms to take hold of the same. These links would not do to go around the stump, however, as they would bend upon applying the draft. I make, therefore, this portion of the chain of short links, and, as it is impossible to fasten a chain of this kind around the stump by the ordinary hooks on account of the small spaces between the links, I have provided a specially-constructed loop or clevis, F. It is made with a part, *o*, wider than the width of the links, and its bent end, *o'*, narrower than the width of the links, so that the chain readily passes through *o* to take up the slack. The end of the chain is slipped into the part *o'*, and, being held tightly thereby, the other end is passed around the stump and into the part *o*, after which the pin is placed in and the draft may be applied.

G is a supplemental chain and hook, which is employed for hastening the operation of stump-pulling after it has been started. When the device is first applied for pulling a stump, or for other similar purposes, the main lever

is worked as described, first in one direction and then in the other, which causes the arms B to alternately clutch the chain and pull the lever with the looped chain and its contained object with it. After the great strain is over, however, the chain G is connected with chain C by means of its hook, and the leverage here being greater the object may be more rapidly moved.

Having thus described my invention, what I claim as new is—

1. The combination of lever A, the chain C, the pivoted gripping-arms B B, the hooks *k*, and the spring *l*, substantially as and for the purpose described.

2. The combination, with the lever A and the arms B, of the arm D and guide *l'*, as and for the purpose described.

3. The combination, with the lever A, of the fulcrum-link *d*, having foot *f*, for the purpose described.

4. The combination, with the gripping-arms B, of the releasing-lever E, having a forked end and a stud, *n*, as and for the purpose described.

The above specification of my invention signed by me this 6th day of March, 1876.

EDWARD FALES.

Witnesses:

CHAS. A. PETTIT,
SOLON C. KEMON.