

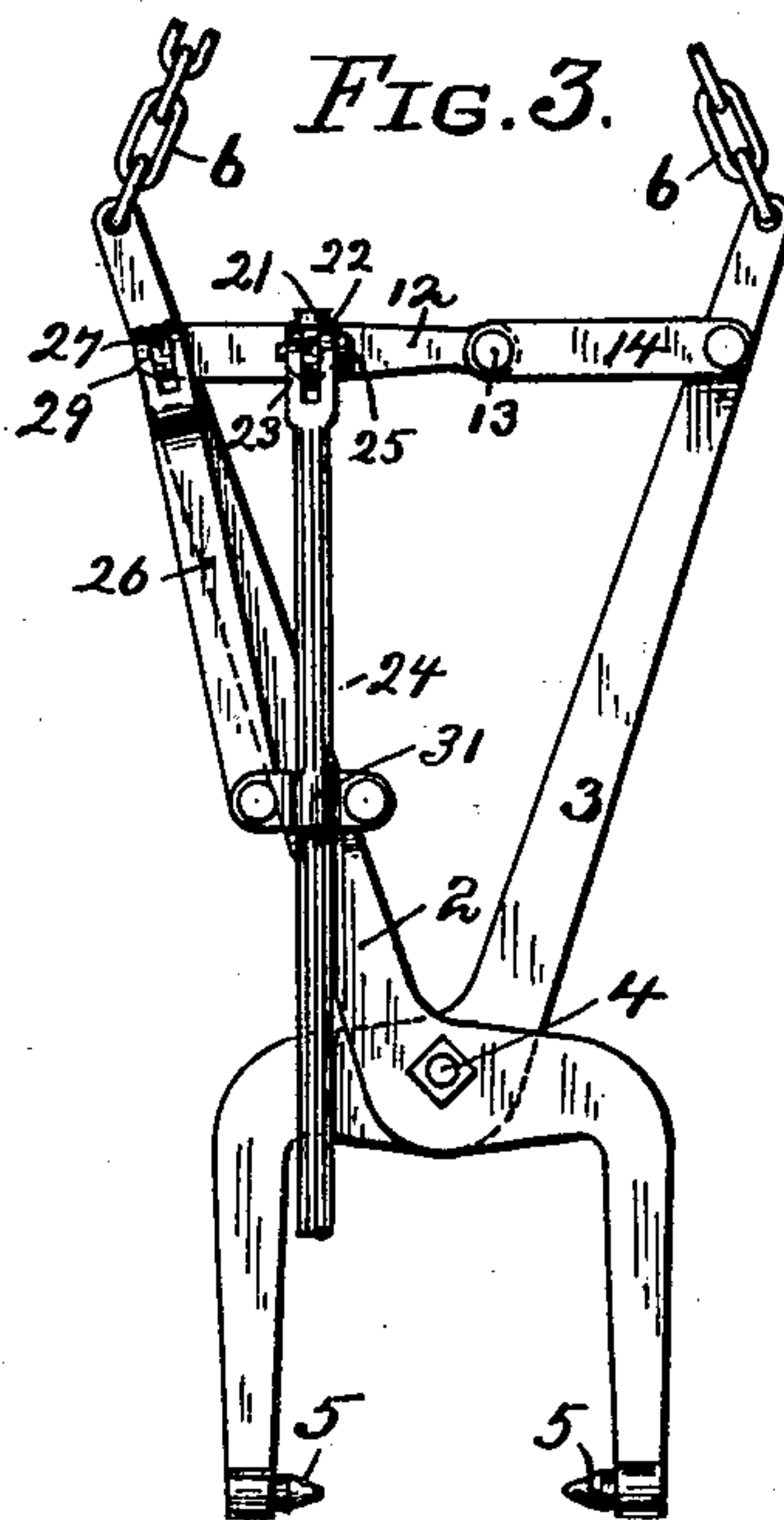
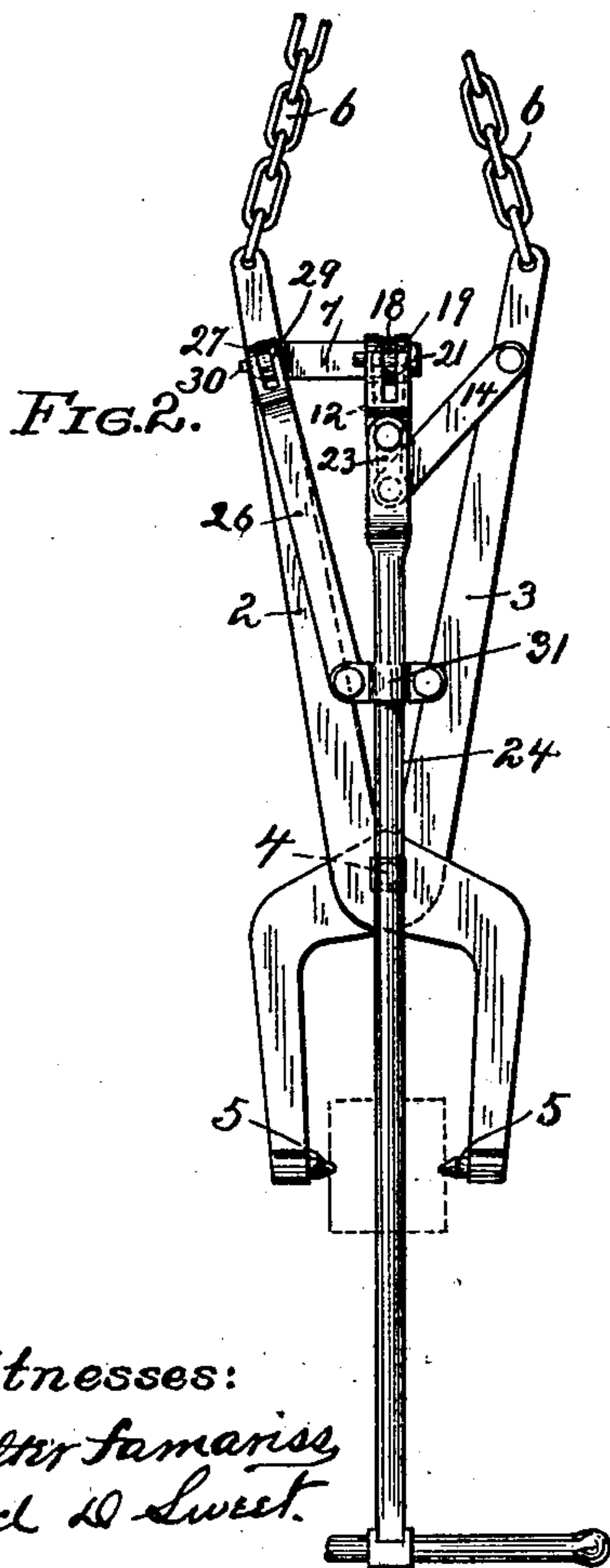
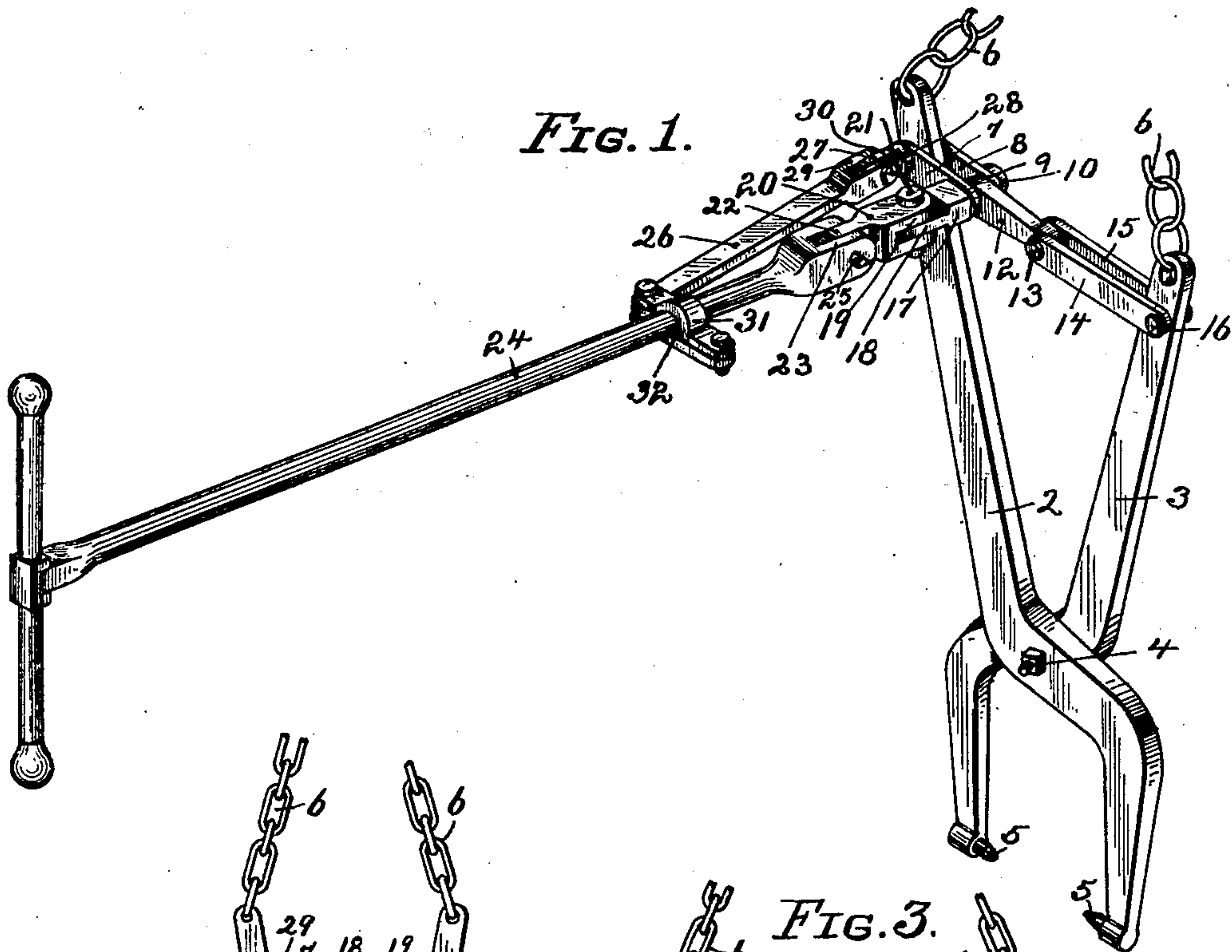
No. 677,616.

Patented July 2, 1901.

L. FREDERICK.
TONGS.

(Application filed Mar. 7, 1901.)

(No Model.)



Witnesses:
Walter Samaris
Fred W. Sweet.

Inventor:
Louis Frederick
By May & Lott
Attorneys

UNITED STATES PATENT OFFICE.

LOUIS FREDERICK, OF BALDWIN TOWNSHIP, PENNSYLVANIA.

TONGS.

SPECIFICATION forming part of Letters Patent No. 677,616, dated July 2, 1901.

Application filed March 7, 1901. Serial No. 50,263. (No model.)

To all whom it may concern:

Be it known that I, LOUIS FREDERICK, a resident of Baldwin township, in the county of Allegheny and State of Pennsylvania, have
5 invented a new and useful Improvement in Tongs; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in
10 tongs for handling steel ingots or any other objects to which it may be found applicable, its object being to provide a strong and durable form of tongs which will be easily operated and compact in form, so that they may
15 be used in places where the space is limited.

To this end my invention comprises, generally stated, tongs consisting of the ordinary lifting arms or levers pivoted together in the customary manner, a rigid support extending
20 out from one of said arms, a link journaled in said support, the opposite end of said link being connected to arms pivoted in the opposite arm or lever of the tongs, and a handle secured to that end of the link which is jour-
25 naled in the rigid support, whereby upon the turning of said handle the said link is thrown into the different positions for opening and closing the tongs.

To enable others skilled in the art to make
30 and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved tongs, the levers or arms being ex-
35 tended to their widest positions. Fig. 2 is a front elevation showing the tongs closed to grasp the ingot or other object to be carried, the handle hanging in a vertical position; and Fig. 3 is a similar view, the tongs being ex-
40 tended.

Like numerals indicate like parts in each of the figures.

The numerals 2 and 3 designate the suitable arms or levers of the ordinary construction
45 employed in such tongs, said arms being pivoted together, as at 4, and the lower ends of said arms being provided with the teeth 5, which are adapted to grip the metal or other object to be handled.

50 Secured to the upper ends of the tong-levers 2 and 3 is the chain 6, a portion of which only is illustrated. Where the tongs are used

in handling of ingots or other large bodies, this chain is connected in suitable manner with a crane which is employed for handling
55 the tongs.

Extending out from the upper end of one of the tong-levers 2 is a rigid support consisting, in this instance, of the bars 7 8, said bars being bolted or otherwise secured to the tong-
60 lever 2 in any suitable manner, so as to be held rigidly in position. At the outer ends of said bars 7 and 8 is the bearing 9, within which is journaled the shaft 10. Keyed or otherwise rigidly secured to the shaft 10 is the
65 link 12, the opposite end of said link being pivotally secured by the pin 13 to the arms 14 15. The opposite ends of these arms 14 and 15 are pivotally secured to the tong-lever 3 by means of the bolt or pin 16, so as to be
70 free to swing thereon.

Formed integral with or secured to the shaft 10, which is journaled in the bearings 9 of the bars 7 and 8, is the extension 17, having the lug 18. This lug 18 fits within the bifurcated
75 end 19 of the connection 20, a pin 21 passing through the bifurcated end of said connection 20 and the lug 18. A lug 22 on the connection 20 is secured within the bifurcated end 23 of the hand-lever 24 by means of the
80 pin 25. This handle 24, so provided with a universal joint, may be of any suitable length, and in order to provide a guide for said handle a rod 26 is connected to the lug 27 on the bolt
85 28, which passes through the tong-lever 2, the bifurcated end 29 of said rod 26 inclosing the lug 27, with a pin 30 for securing said rod thereto. The outer end of the rod 26 is se-
90 cured to the guide 31, said guide having the opening 32, through which the handle 24 passes.

When my improved tongs are in use, they operate in the following manner: With the tongs in their open position (shown in Fig. 1) they are lowered into position to grasp the
95 ingot or other object to be lifted, whereupon the operator lifts the handle 24 into a substantially horizontal position, and by turning said handle in either direction the link 12 moves in the arc of a circle, the shaft 10 upon
100 which it is mounted being turned within the bearings of the rigid support formed of the bars 7 and 8. From this construction it will be apparent that it makes no difference which

way the handle is turned, as the closing of the tong-levers will be effected in either way. When the handle has been turned sufficiently to bring the lower ends of the tong-levers into gripping contact with the ingot, the tongs are lifted by the crane in the ordinary manner and the ingot carried and lowered at the desired place, whereupon the operator by again turning the handle 24 throws the link 12 into such a position as to open the tongs and the ingot is released.

By having the link 12 mounted in the manner described, with one end journaled in the rigid position and the other pivotally secured to the arms 14 and 15, I am enabled to give a wider movement to the tong-levers when operated to open.

By having a rigid support within which the link 12 is journaled only one arm 26, extending from the tong-lever to the guide 31 on the handle, is required, and as a consequence the tongs may be lowered into the soaking-pits to grasp the ingot with greater ease, as there is no such rod on the other side of the tongs, which permits of the tongs being worked in a smaller space.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In tongs, the combination of tong-levers, of a link, a rigid support on one of said tong-levers within which said link is journaled, a swinging support on the other tong-lever, a connection between said swinging support and said link, and a handle connected to

that end of said link journaled in said rigid bearing.

2. In tongs, the combination with tong-levers, of a link, a shaft rigidly secured to one end of said link, a rigid support on one of said tong-levers within which said shaft is journaled, a handle connected to said shaft, a swinging support on the opposite tong-lever, and connection between said swinging support and the other end of said link.

3. In tongs, the combination with tong-levers, of bars rigidly secured to one of said tong-levers, a shaft journaled in the ends of said bars, a link rigidly secured to said shaft, swinging arms on the opposite tong-lever, connection between said swinging arms and said link, and a handle connected to said shaft.

4. In tongs, the combination with tong-levers, of a rigid support on one of said tong-levers, a link journaled in said support, a swinging support on the opposite tong-lever, connection between said swinging support and said link, a handle connected to said link where it is journaled in said rigid support, a guide on said handle, and a rod extending from said tong-lever having the rigid support to said guide on said handle.

In testimony whereof I, the said LOUIS FREDERICK, have hereunto set my hand.

LOUIS FREDERICK.

Witnesses:

ROBT. D. TOTTEN,
ROBERT C. TOTTEN.