

(No Model.)

J. F. LUNDAHL.
TONGS.

No. 510,037.

Patented Dec. 5, 1893.

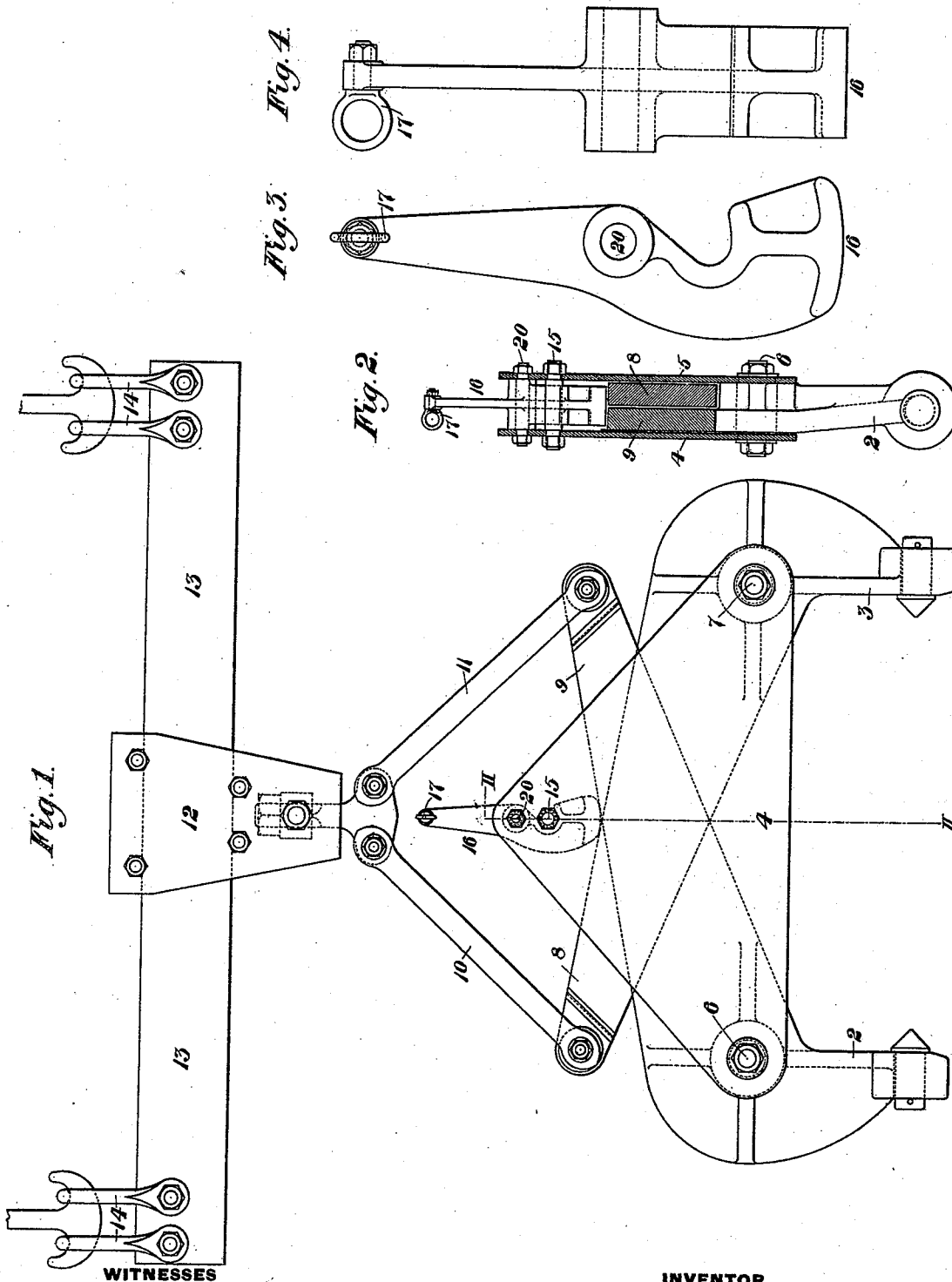


Fig. 1.

Fig. 4.

Fig. 3.

Fig. 2.

WITNESSES

W. D. Corwin
A. L. Gill

INVENTOR

Johan Frisiof Lundahl
by W. B. Russell, Son
his attorneys

UNITED STATES PATENT OFFICE.

JOHAN FRITHIOF LUNDAHL, OF HOMESTEAD, PENNSYLVANIA.

TONGS.

SPECIFICATION forming part of Letters Patent No. 510,037, dated December 5, 1893.

Application filed March 11, 1893. Serial No. 465,605. (No model.)

To all whom it may concern:

Be it known that I, JOHAN FRITHIOF LUNDAHL, of Homestead, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Tongs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved tongs. Fig. 2 is a view, partly in vertical section on the line II—II of Fig. 1; and Figs. 3 and 4 are detached views of the locking-hook.

In large tongs such as are employed in lifting steel ingots, hydraulic rams have been used for controlling the movement of the jaws, the force of the ram being exerted to retain the jaws in their open positions until they are placed in position to seize the ingot. Under some circumstances, however, the use of such hydraulic rams is inconvenient or impossible, owing to the peculiar construction or situation of the tongs, and the object of my invention is to provide a simple and effective device by means of which the heavy jaws of the tongs may be retained in their open positions until they are placed about the ingot ready to seize the same.

I will now describe my invention so that others skilled in the art may manufacture and use the same.

In the drawings, 2 and 3 represent the two jaws of the tongs which are pivotally secured to the frame-plates 4 and 5 by the bolts 6 and 7. The lever-arms 8 and 9 of these jaws, crossing each other, are pivoted at their ends to the toggle-levers 10 and 11, the other ends of which toggle-levers are pivoted to the head 12. Bolted to this head is the cross-bar 13, having eyes 14 which engage with the hooks of the lifting chains of the crane. Passing through and between the plates 4 and 5, above the arms 8 and 9, is the stop-bolt 15, which limits the upward movement of the arms. Situate between the plates 4 and 5, and pivoted thereto by the bolt 20 directly above the bolt 15, is the hooked stop 16, having the lower end weighted or heavier than the upper end, which upper end is extended so as to form a lever-arm having an eye 17 at or near the end thereof. The lower end of this hooked stop

16 rests on the lever-arm 8, the end of the stop being slightly rounded so that it may move easily on the upper edge of the lever-arm, and the hook of the stop is arranged to engage with the stop-bolt 15 when the stop 16 is permitted to drop to a vertical position. The pivotal opening in the stop 16 is made larger in diameter than the diameter of the bolt 20, as is shown by dotted lines in Fig. 2, so that the upward strain exerted on the stop 16 shall be received by the hook bearing against the stop-bolt 15.

The operation is as follows:—The jaws 2 and 3 being extended or open are held in this position by the pivoted stop 16, which, being in a vertical position, the lower end of the stop resting on the upper edges of the two arms 8 and 9, prevents the upward movement of the arms. When the tongs have been lowered so that the jaws embrace the ingot, the arms 8 and 9 are released by pulling the chain or rod connected with the eye 17 on the end of the lever-arm of the stop 16 to one side, which disengages the hook of the stop from the stop-bolt 15, and causes the stop 16 to ride up on the arm 8 which allows the arms 8 and 9 to rise and the jaws 2 and 3 to close on the ingot when the tongs are lifted. When the tongs are lowered and the ingot is deposited at the place desired, the weight of the tongs acts to lower the arms 8 and 9 and spread the jaws 2 and 3 as soon as the jaws are supported, and as the arm 8 descends the hooked end of the stop 16 falls and again engages with the stop-bolt 15, and, when the tongs are again lifted, the jaws, being locked in their extended positions, rise free from the ingot.

The advantages of my improvement will be evident to those skilled in the art. The jaws of the tongs are automatically locked in their extended positions and are readily released when it is desired to seize the ingot or other article to be lifted, and the mechanism of the locking device is simple, yet effective.

I do not desire to limit my improvement to tongs used for lifting ingots, although it is especially adapted for such use. I am aware that tongs having a pivoted locking device are not new, and I do not desire to claim the same broadly.

What I claim is—

1. In combination with tongs, a locking stop pivoted above the arms of the tongs, and having a weighted head adapted to drop over and against the point of intersection of the
5 upper faces of the arms of the tongs, substantially as described.

2. In combination with tongs, a locking stop pivoted above the arms of the tongs and having a weighted head adapted to drop over
10 and against the point of intersection of the

upper faces of the arms of the tongs, a stop bolt, and a hook formed in the weighted head and adapted to engage with the stop bolt; substantially as described.

In testimony whereof I have hereunto set
my hand.

JOHAN FRITHIOF LUNDAHL.

Witnesses:

W. B. CORWIN,

JAMES K. BAKEWELL.