

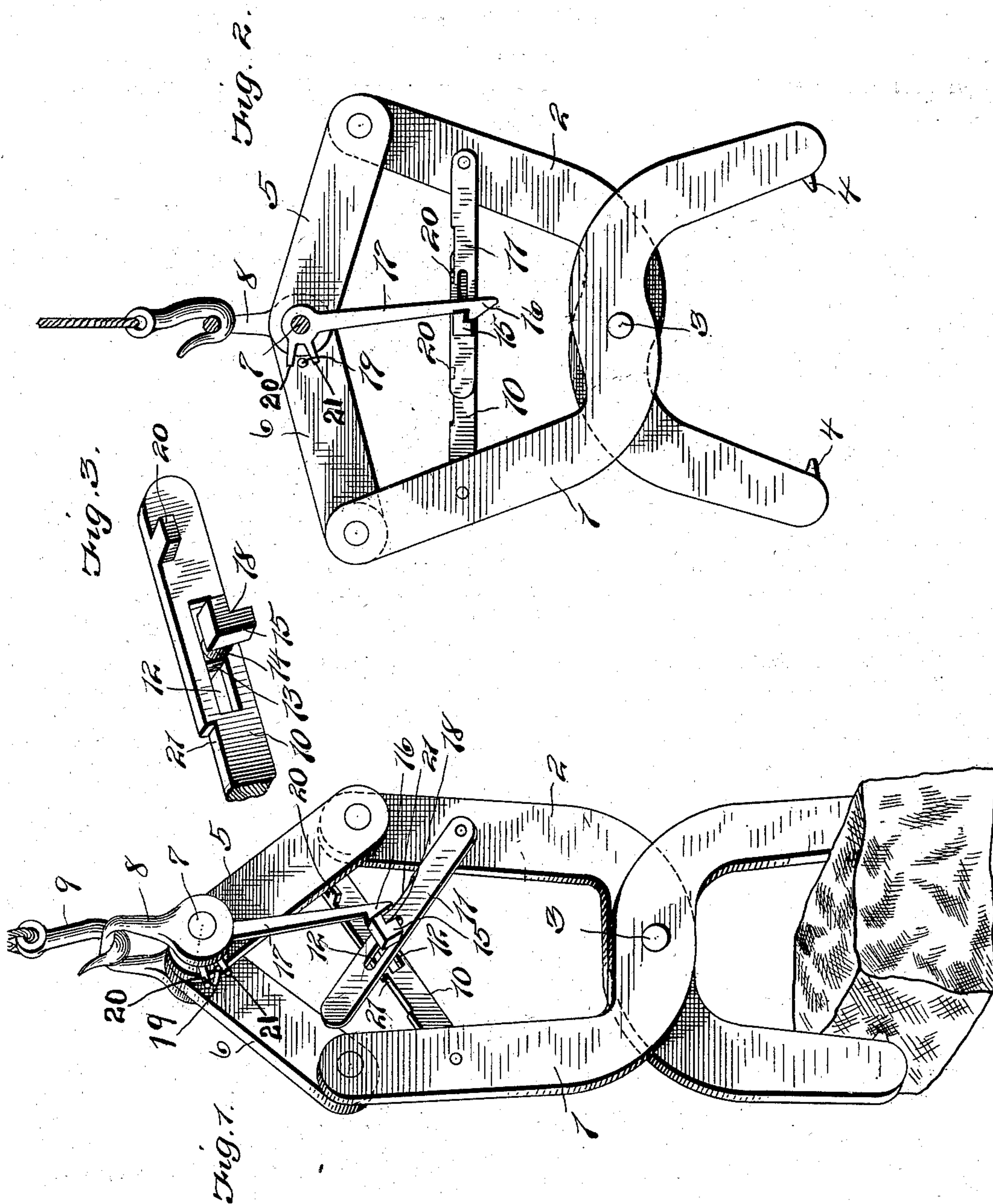
No. 748,222.

PATENTED DEC. 29, 1903.

E. S. SITES.
INGOT TONGS.

APPLICATION FILED JUNE 16, 1903.

NO MODEL.



Inventor

Edwin S. Sites.

Witnesses

R. A. Boswell.
C. S. Frye.

By

W. J. Fitzgerald

Attorneys

UNITED STATES PATENT OFFICE.

EDWIN S. SITES, OF APOLLO, PENNSYLVANIA.

INGOT-TONGS.

SPECIFICATION forming part of Letters Patent No. 748,222, dated December 29, 1903.

Application filed June 16, 1903. Serial No. 161,739. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. SITES, a citizen of the United States, residing at Apollo, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Ingot-Tongs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to hoisting-tackle, and more particularly to tongs or dogs which while primarily designed for lifting heavy ingots will be found very desirable and useful for raising any similar load; and my invention consists of certain novel features of combination and construction of parts, the preferred form whereof will be hereinafter clearly set forth, and pointed out in the claims.

The object of my invention, among others, is to provide an automatically-acting tong or ingot-dog which will reliably grip and secure an ingot of metal or other character of load in such a manner as to insure against casual release thereof.

A further object of my invention is to provide certain interlocking devices adapted to cooperate with the handles of the tongs, whereby when said handles are opened to release the ingot or other substance that may be carried said handles will be securely held in their open position until the tongs again engage a load, and a further object is to provide suitable means for releasing said interlocking mechanism, whereby the handles will be permitted to close and the tongs grasp the load.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, made a part of this application, and in which—

Figure 1 shows a perspective view of my invention complete as applied to use in elevating an ordinary ingot or heavy piece of metal. Fig. 2 is a side elevation of my ingot tongs or dogs in an open position to release its load. Fig. 3 is a perspective detail view showing part of the interlocking mechanism separated from the other parts.

In order to conveniently refer to the various parts of my invention and cooperating accessories, numerals will be employed, the

same numeral applying to a similar part throughout the several views.

In carrying out my invention I provide, as is common, a pair of tong members or gripping-bars proper, 1 and 2, having a common pivot-point 3, by which they are held together and also provided with a gripping-point 4, of hardened steel, and designed to take into the ingot or other object to be lifted.

Designed to cooperate with the members 1 and 2 and pivotally attached to the upper ends thereof are the link-sections 5 and 6, joined together by the pivot point or rod 7, which carries at its free outer ends the clevis-like member 8, designed to receive the hook 9 of the lifting-crane. I also provide for the members 1 and 2 intermediate the pivot-point 3 and the members 5 and 6 the interlocking arms 10 and 11, each having a compensating slot 12 near their free ends, one of said slots receiving the squared portion 13 of the shank 14, said squared portion being designed to slide back and forth in said slotted opening of the member 10, while the round portion of said shank 14 is adapted to move in the slot of the member 11, thereby insuring that the head 15 on the outer end of the shank 14 will properly cooperate with the hook 16 on the lower end of the bar 17, said head having one corner cut away, as indicated by the numeral 18, to insure a more perfect engagement between said part and the hook 16.

When the tongs are set down over the ingot or other load to be raised, the hook 16 will descend, while the slots 12 will permit the jaws of the tongs or dogs to open far enough to receive the ingot or load, when the member 15 will engage the hook 16.

When force is brought to bear upon the dogs through the mediation of the hook 9, the interlocking arms 10 and 11 will be raised at their free ends by the hook 16 engaging the notch 18 in the head 15 and lifting the said arms 10 and 11 from a horizontal position, thus unlocking my ingot-dogs from an open position and permitting the lower ends thereof to move together into engagement with the ingot or load and elevating the same. As the arms 10 and 11 ascend the shank 14 is given a sufficient rotation to allow the hook 16 to freely pass the notch 18. The lateral movement of the bar 17 is controlled by means of

a pin 19, carried by the link-section 6, and suitable lugs or projections 20 and 21, secured to the upper end of said bars 17—that is to say, when the hook 16 has engaged the notch 18 the lug 21 will have engaged the pin 19, and as the bars 1 and 2 move inward the bar 17 will be swung to the right and away from the head 15. The movement of the arm 17 in the opposite direction is controlled by the lug 20, said lug serving to force said arm toward said head 15 as the bars 1 and 2 move outward, said lug 20, however, not engaging the pin 19 until the hook 16 has passed below the head 15, thus insuring that the hook 16 will engage said notch 18 on its upward movement.

In order to prevent the members 10 and 11 from moving down beyond a common horizontal plane, I provide each of the members with the inwardly-directed finger or lug 20, each being designed to be received by the recess 21, formed in a contiguous part of the other member, as fully shown in Fig. 3.

While I have described the preferred combination and construction of parts deemed necessary in materializing my invention, I wish to comprehend in this application such substantial equivalents and substitutes as may be considered as fairly falling within the scope and purview of my invention.

Believing that the advantages and manner of using my improved automatic ingot-dogs or tongs have thus been made fully apparent, further reference to the details is deemed unnecessary.

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

1. The herein-described automatic tongs or ingot-dogs comprising the members 1 and 2 pivotally secured together, whereby the lower ends thereof will form a pair of cooperating jaws, each of said members having pivotally connected to its upper end a link-section, the ends of said link-section being pivotally secured together; a clevis-like member 8 pivoted to said link-sections and designed to receive a rope, hook or the like of the lifting-crane, said members 1 and 2 also having interlocking arms 10 and 11; a hook-like member 15 mounted in compensating slots 12 provided in the members 10 and 11 and an arm

17 provided with a hook at its lower end adapted to cooperate with the member 15, means to control the lateral movement of said arm 17 and additional means to prevent the members 10 and 11 from passing downward below a common horizontal plane, all substantially as specified and for the purpose set forth.

2. The combination with automatic tongs or ingot-dogs, comprising bars 1 and 2 and link-sections 5 and 6, of interlocking arms 10 and 11, said arms having suitable registering slots therein, a shank 14 having a notched head at one end, and means to engage said notch and raise said interlocking arms, substantially as set forth.

3. The herein-described automatic ingot-tongs comprising the combination with suitable gripping-bars 1 and 2 pivotally secured together and having connecting-links 5 and 6 at their upper ends of interlocking arms 10 and 11 having longitudinal slots therein, a shank 14 adapted to take into said slots, said shank having a portion of its surface squared, a notched head at one end of said shank, a swinging bar having a hook adapted to engage said head, and means to regulate the movement of said bar, substantially as set forth.

4. The herein-described automatic ingot-tongs comprising the combination with bars 1 and 2 pivotally secured together and having links 5 and 6 secured to their upper ends, of interlocking arms 10 and 11 also pivotally secured to said bars, said arms having slots 12 at their meeting ends, a shank 14 adapted to enter said slots, said shank having a portion of its surface squared, a notched head at one end thereof, a bar 17 having a hook at its lower end and lugs 20 and 21 at its upper end, and a pin 19 carried by one of said links, adapted to cooperate with said lugs and control the swinging movement of said bar, substantially as set forth.

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

EDWIN S. SITES.

Witnesses:

F. E. WEINEL,
J. B. TOWNSEND.