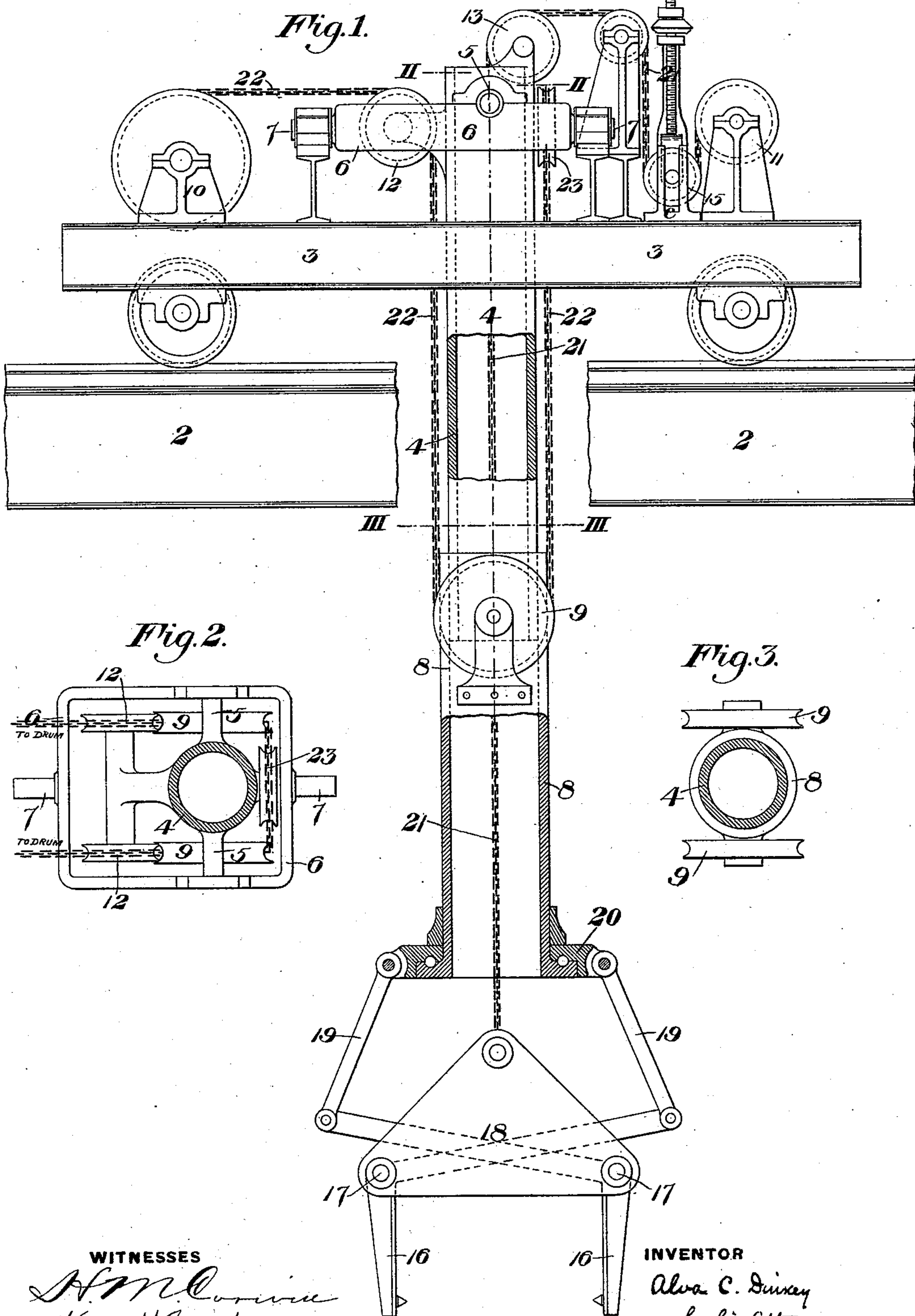


(No Model.)

A. C. DINKEY.  
CRANE TONGS.

No. 542,997.

Patented July 23, 1895.



WITNESSES

*H. M. Corwin*  
*Warren H. Bartz*

INVENTOR

*Alva C. Dinkey*  
*by his Attorneys*  
*W. Baxendell & Sons.*



# UNITED STATES PATENT OFFICE.

ALVA C. DINKEY, OF MUNHALL, PENNSYLVANIA.

## CRANE-TONGS.

SPECIFICATION forming part of Letters Patent No. 542,997, dated July 23, 1895.

Application filed March 15, 1895. Serial No. 541,924. (No model.)

*To all whom it may concern:*

Be it known that I, ALVA C. DINKEY, of Munhall, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Crane-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—

10 Figure 1 is a side elevation of my improved apparatus, shown partly in vertical section. Fig. 2 is a sectional plan view, the section being on the line II II of Fig. 1. Fig. 3 is also a sectional plan view, the section being on the line III III of Fig. 1.

15 In the drawings, 2 represents the jib or bridge of a crane. 3 is a trolley mounted thereon and adapted to be moved back and forth by suitable mechanism. (Not shown.) 20 4 is a hollow upright post forming a head or stock for the tongs or carriers hereinafter described, which post at its upper end is pivotally journaled by trunnions 5 to a frame 6, which in turn is journaled on trunnions 7, 25 supported in bearings on the trolley and extending at right angles to the axis of the trunnions 5.

30 8 is a sleeve mounted telescopically on or within the post 4 and adapted to be moved vertically in either direction thereon.

35 9 9 are sheaves journaled in suitable bearings on the sleeve 8, and 10 11 are drums journaled on the trolley 3 and operatively connected with a common motor, so that they may be driven simultaneously and at the same surface speed.

40 12, 13, and 14 are sheaves journaled in stationary bearings, the bearings of the sheaves 12 and 13 being on the frame 6 and the bearings of the sheave 14 being on the trolley, and 15 is a sheave journaled in bearings, which by a motor (not shown) can be moved in either direction along a line *b c*.

45 The tongs-levers 16 or other metal carrier are pivoted at points 17 to a suitable head 18 and are connected by links 19 to a collar 20, swiveled around the sleeve 8. A trip-chain or flexible connection 21 extends from the tongs-head 18 up through the sleeve 8 and 50 post 4 and around the sheaves 13, 14, and 15 to the drum 11.

A chain or flexible connection 22 extends

from the drum 10 around one of the two adjacent sheaves 12 on the trolley, one of the sheaves 9 on the sleeve around another sheave 55 23 on the trolley, and thence back over the companion sheaves 9 and 12 to the drum 10.

The operation is as follows: To raise or lower the tongs without operating the jaws thereof, the drums 10 and 11 are driven by 60 their motor, and acting at the same rate of speed lift or lower simultaneously and equally the tongs-head and sleeve 8 accordingly as the motor is driven in one direction or the other, the sleeve sliding freely over the post 65 4. If at any position of the tongs it is desired to open the jaws, the operator, by means of the motor above mentioned, moves the sheave 15 in the direction *c*, thus tautening the chain 21, raising the tongs-head, and permitting the 70 jaws to open by gravity. A reverse motion of the sheave 15 will slacken the chain 21 and will cause the jaws to close on the ingot or other object to be grasped.

Other important features are indicated in 75 the claims.

The advantages of my invention will be appreciated by those skilled in the art.

The apparatus is simple, compact, and effective. It is durable and is not apt to get 80 out of order.

Instead of using the apparatus with tongs, it may be applied to the operation of grapples, ladle-carriers, and other similar appliances, although in the drawings I have illus- 85 trated my invention as applied to operating tongs for charging and removing ingots, &c., to and from vertical heating-furnaces. The post of the tongs can swing laterally freely in any direction, and when the trolley is moved 90 on the jib, if the tongs should strike a rigid object, the post will yield.

The apparatus takes up but little vertical space in the building in which it is used.

Other changes will be suggested to those 95 skilled in the art without departure from my invention, since

What I claim is—

1. In hoisting apparatus, the combination of a post forming a head or stock for tongs or 100 carriers, a hollow sleeve sliding telescopically thereon and carrying the tongs or carriers, hoisting mechanism, and flexible connections extending from the hoisting mechanism to

the sliding section and adapted to raise and lower the same; substantially as described.

2. In hoisting apparatus, the combination of a post forming a head or stock for tongs or carriers, a sliding sleeve carrying the tongs or carriers, an elevated jib or bridge on which the post is supported by a double pivotal connection, and hoisting mechanism situate on the jib or bridge and connected with said sleeve; substantially as described.

3. In hoisting apparatus, the combination of a post forming a head or stock for tongs or carriers, a sliding sleeve carrying the tongs or carriers, an elevated jib or bridge on which the post is supported, and hoisting mechanism situate on the jib or bridge and connected with said sleeve; substantially as described.

4. The combination of a post, a sliding sec-

tion thereon, carriers carried by the latter, flexible connections extending around a sheave or sheaves on the sliding section, and to the carriers respectively; and hoisting mechanism; substantially as described.

5. The combination of a hollow post, a sliding section thereon, carriers carried by the latter, flexible connections extending around a sheave or sheaves on the sliding section, and through the post to the carriers respectively; and hoisting mechanism; substantially as described.

In testimony whereof I have hereunto set my hand.

ALVA C. DINKEY.

Witnesses:

THOMAS W. BAKEWELL,

H. M. CORWIN.