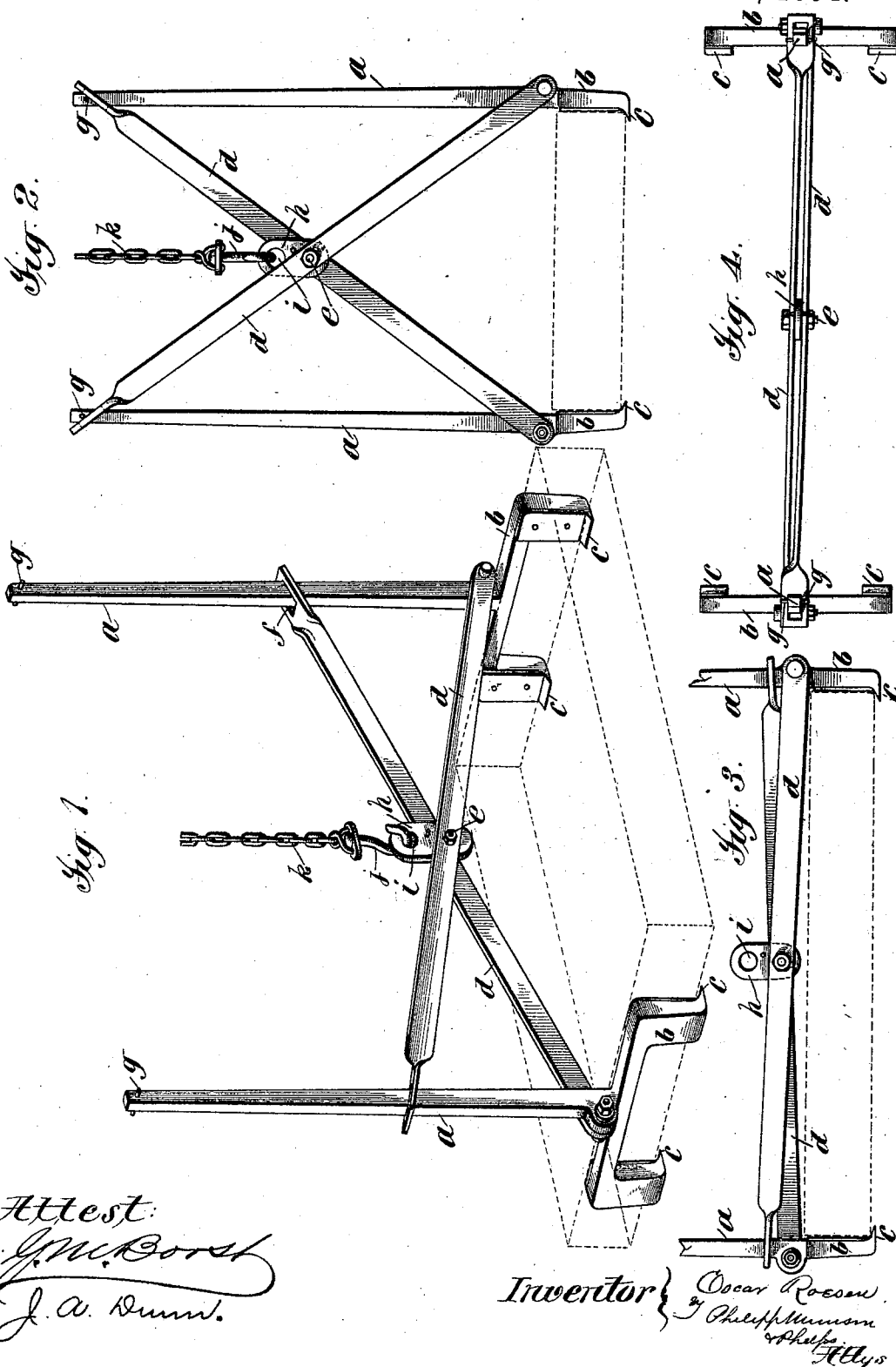


(No Model.)

O. ROESEN.
CLAMPING DEVICE FOR LITHOGRAPHIC STONES.

No. 529,840.

Patented Nov. 27, 1894.



UNITED STATES PATENT OFFICE.

OSCAR ROESEN, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, THEODORE H. MEAD, AND CHARLES W. CARPENTER, OF SAME PLACE.

CLAMPING DEVICE FOR LITHOGRAPHIC STONES.

SPECIFICATION forming part of Letters Patent No. 529,840, dated November 27, 1894.

Application filed June 4, 1894. Serial No. 513,346. (No model.)

To all whom it may concern:

Be it known that I, OSCAR ROESEN, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Clamping Devices for Lithographic Stones, which are fully described and represented in the following specification and the accompanying drawings forming a part of the same.

This invention relates to lifting devices for clamping and raising lithographic stones out of the box bed of a lithographic press or from the floor and depositing them in the box bed. The raising of such stones has heretofore been accomplished by hand, a crow bar being first worked in under the bottom of the stone to raise it onto a roller, the pressmen then inserting their hands beneath the stone, removing it from the press and carrying it to its next destination. The use of a crow bar for raising the stone is objectionable because it chips the edge of the stone with which it comes in contact and thus renders it useless thereafter for a full size design and correspondingly decreases its value. As the size of the stone increases, or more nearly approaches the size of the box bed, the space between the stone and the wall of the box bed in which the crow bar is to be inserted becomes reduced and the operation of raising the stone from the bed consequently becomes more difficult and the injury to the stone by chipping correspondingly increased. In removing stones in this way, moreover, considerable time and labor are consumed. In the case of heavy stones weighing, as they sometimes do, from six hundred to nine hundred pounds, the services of four pressmen are required for their removal. In thus removing stones there is also the liability of the stone while being raised or carried slipping or falling from the hands of the pressmen and injuring them and becoming itself destroyed. It is the object of the present invention to overcome these difficulties and to provide a clamping mechanism for engaging and clamping the stone and which may be connected to any suitable hoisting mechanism or hoisting and transporting mechanism by which the stone may be raised from the bed and transported therefrom to its destination.

In the accompanying drawings:—Figure 1

is a perspective view of a clamping mechanism embodying the invention in its preferred form, showing the same engaging and clamping opposite sides of a stone and connected to a hoisting mechanism. Fig. 2 is a front elevation of the same, applied to a smaller stone. Fig. 3 is a similar view showing the clamping mechanism disconnected from the hoisting mechanism but engaging the stone and ready for connection to the hoisting mechanism. Fig. 4 is a plan view of the clamping mechanism.

Referring to said drawings the clamping mechanism consists of a pair of vertical levers *a* each provided with a jaw *b* at its lower end for engaging the side or end of the stone; these jaws in turn being each provided with a pair of wedge shaped toes *c* for engaging the under side of the stone and aiding the jaws *b* in supporting it. Between the vertical levers *a* are located a pair of tie rods *d*, crossing each other and pivotally connected where they intersect by a bolt or pin *e*. Each of said rods is connected pivotally at one end to one of the vertical levers *a* and is extended toward the opposite lever and provided with a slot *f* which embraces and is adapted to move up and down upon that lever above the point at which the other tie rod is pivoted to said lever, as shown; the purpose of such connection being to always maintain the two levers *a* in positions of parallelism to each other as they are drawn together or spread apart by the tie rods *d* as will presently be described. The upward movement of the slotted ends of tie rods *d* is limited by stops *g* in the upper ends of levers *a*. These levers *a* are made of such length as to adapt the clamping mechanism to take in a large range of different widths of stones. The bolt or pin *e* connecting the tie rods *d* carries a plate *h* provided with an eye *i* adapted to receive a hook *j* swiveled in the end of a chain *k* the opposite end of which connects with any suitable form of hoisting or hoisting and transporting mechanism.

The operation of the mechanism is as follows: When a stone is to be clamped and raised the levers *a* are distended by straightening out the tie rods *d* and their jaws placed upon opposite sides of the stone to be raised, with their wedge shaped toes *c* in line with the bottom of the stone. The chain *k* being then connected to the plate *h* pull-

ing upon the tie rods *d* will draw the levers inwardly toward each other and the jaws *b* into engagement with the sides of the stone and their toes *c* in under the stone as shown in the drawings. The stone thus clamped is then raised from the box bed or floor and, suspended from the chain, is transported to its next destination, the weight of the stone locking the clamping mechanism securely against outward movement while the stone is thus suspended and thereby preventing any liability of the stone slipping from the grasp of the clamping mechanism. When the stone is again lowered to the ground or into the box bed the chain relaxing permits the levers *a* to be spread apart to disengage the jaws *c* from the stone. The toes *c* are then withdrawn from under the stone. The elongation of the levers *a* in addition to the advantage heretofore referred to of capacitating the clamping mechanism for a wide range of stones is of further advantage, particularly in the case of very heavy or wide stones, in that it enables the levers *a* to be manipulated by hand for the withdrawal of the toes from under the stones, the upper ends of the levers being rocked inwardly toward each other upon the tie rods *d* as their fulcrum.

The clamping jaws *b* will preferably be of the form shown to provide a wide bearing surface for engaging the sides of the stone and the toes *c* will also preferably be located as shown at both ends of the jaws to engage the under side of the stone on opposite sides of the levers *a*, thereby preventing any tendency of the stone to rock thereon while suspended from the chain.

What I claim is—

1. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers provided with clamping jaws at their lower ends for engaging opposite sides of the stone and with wedge shaped toes below the clamping jaws for engaging the under side of the stone, a pair of tie rods pivotally connected together and to said levers, and connections between the tie rods and hoisting mechanism, substantially as described.

2. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers provided with clamping jaws at their lower ends projecting outwardly on both sides of said levers, for engaging opposite sides of the stone, and each provided with a pair of wedge shaped toes below the clamping jaws for engaging the under side of the stone on opposite sides of the lever, a pair of tie rods pivotally connected together and to said levers, and connections between the tie rods and hoisting mechanism, substantially as described.

3. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers provided with clamping

jaws at their lower ends for engaging opposite sides of the stone and with wedge shaped toes below the clamping jaws for engaging the under side of the stone, a pair of tie rods pivotally connected together at their centers and each connected pivotally at one end to one of said levers and having a sliding connection to the opposite lever, and connections between the tie rods and hoisting mechanism, substantially as described.

4. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers provided with clamping jaws at their lower ends projecting outwardly laterally on both sides of said levers, for engaging opposite sides of the stone, and each provided with a pair of wedge shaped toes below the clamping jaw for engaging the under side of the stone on opposite sides of the lever, a pair of tie rods pivotally connected together at their centers and each connected pivotally at one end to one of said levers and having a sliding connection to the opposite lever, and connections between the tie rods and hoisting mechanism, substantially as described.

5. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers *a*, clamping jaws *b* carried by said levers at their lower ends and provided with wedge shaped toes *c*, a pair of tie rods *d* pivotally connected together at their centers, and each at one end pivotally connected to one of said levers, and provided with a slot *f* embracing the opposite lever, and connections between said tie rods and hoisting mechanism, substantially as described.

6. The combination with a hoisting mechanism for stones or other similar bodies, of a pair of vertical levers *a*, clamping jaws *b* carried by said levers at their lower ends and provided with wedge shaped toes *c*, a pair of tie rods *d* pivotally connected together at their centers, and each at one end pivotally connected to one of said levers, and provided with a slot *f* embracing the opposite lever, stops *g* for limiting the upward movement of the slotted ends of the tie rods, and connections between said tie rods and hoisting mechanism, substantially as described.

7. The combination of vertical levers *a* provided with clamping jaws *b* and wedge shaped toes *c*, tie rods *d* pivotally connected at their centers and each at one end pivotally connected to one of said levers and provided with a slot *f* embracing the opposite lever, plate *h*, and chain *k* detachably connected to said plate, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OSCAR ROESEN.

Witnesses:

OTTO L. RAABE,
JOHN C. McCAUSLAN.