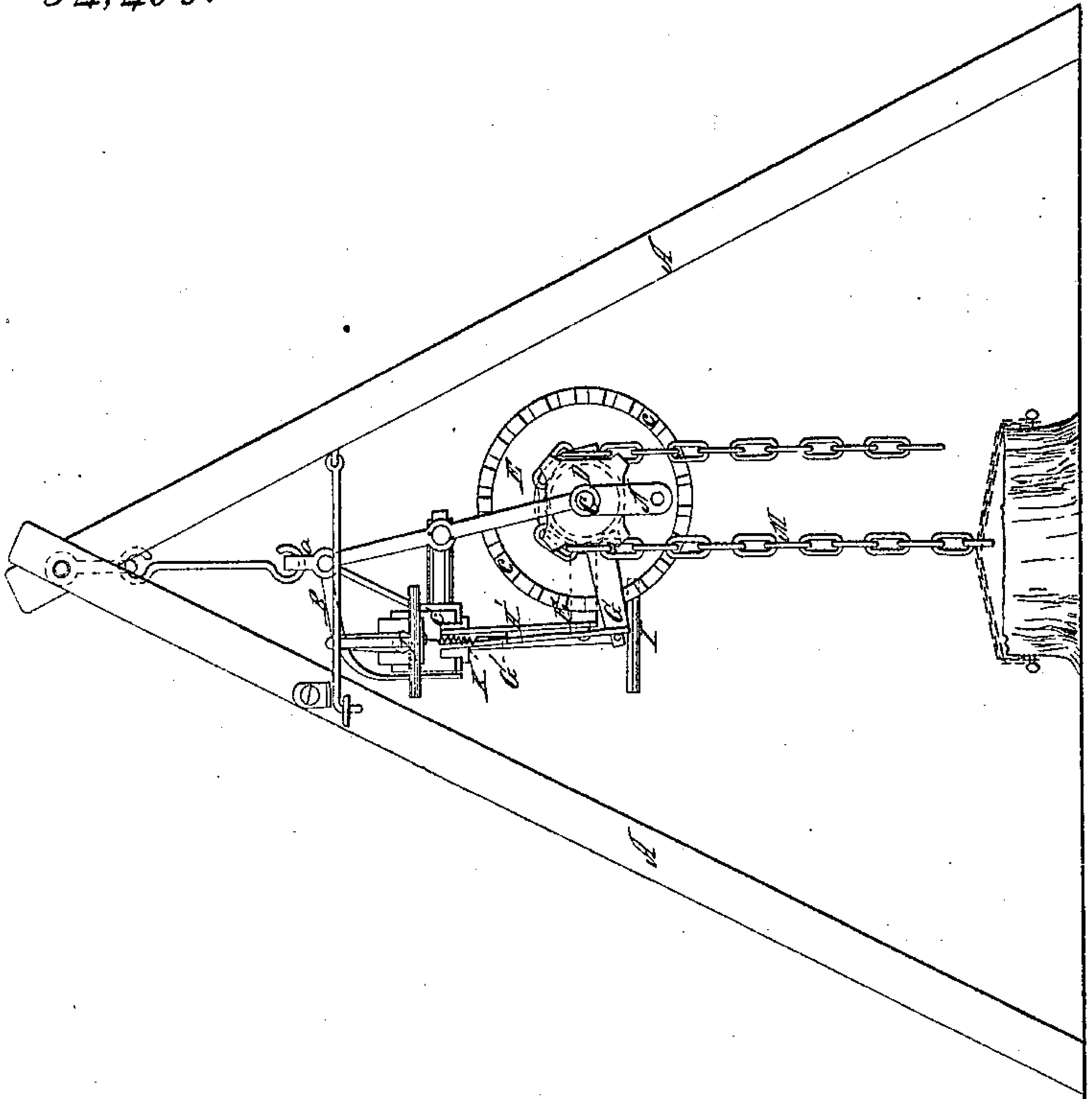
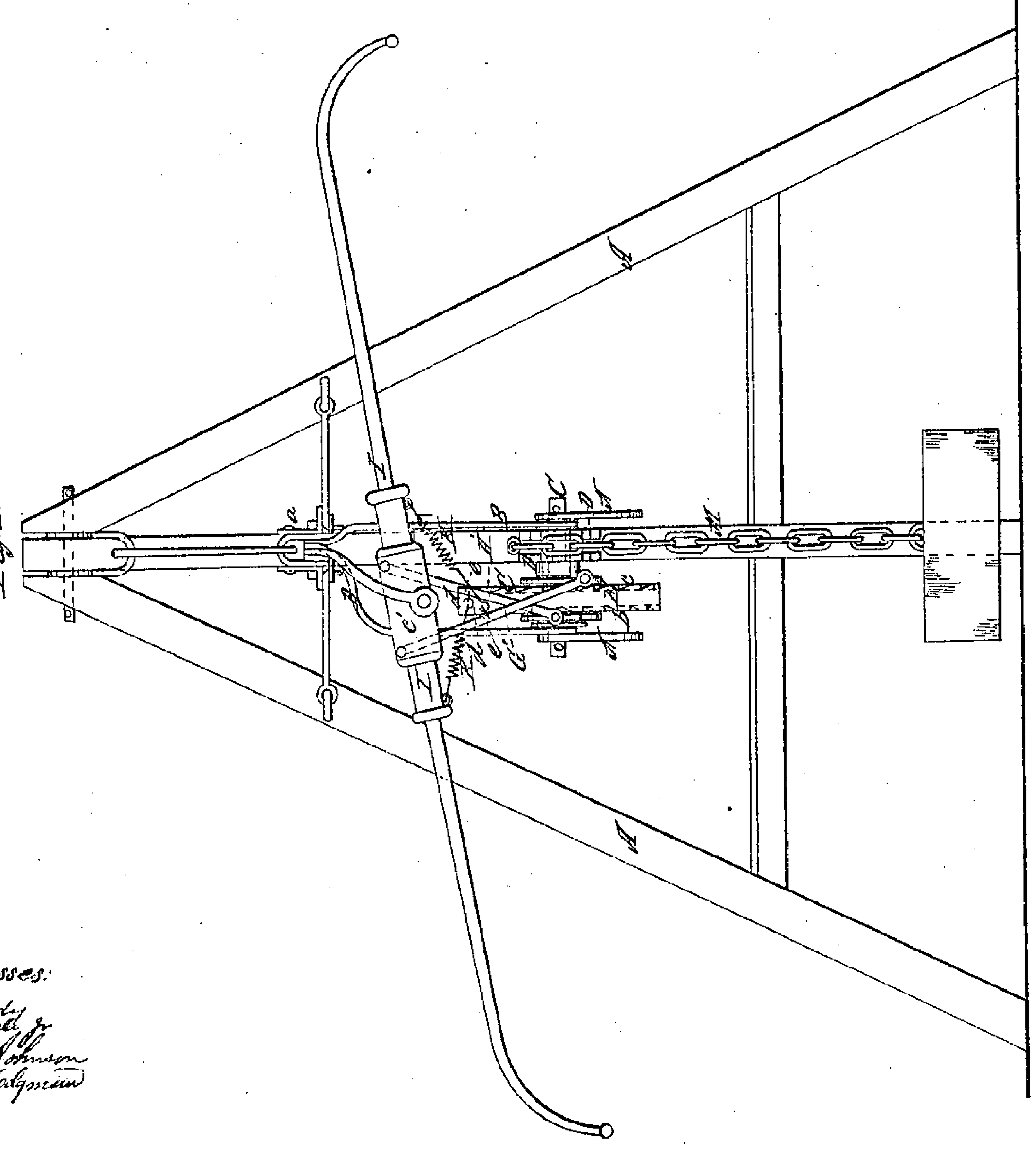
T. & C. C. Newcomb,
Stump Elevator.

No. 34,466. Patented Feb. 18, 1862.





Witnesses:
R. Holley
O. Hall Jr
Albert Johnson
Sam. L. Halgman

Inventor.
Thomas Newcomb
Charles C Newcomb

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

THOMAS NEWCOMB, OF KINGSTON, MASSACHUSETTS, AND CHARLES C. NEWCOMB, OF WARREN, MAINE; SAID CHARLES C. NEWCOMB ASSIGNOR TO SAID THOMAS NEWCOMB.

IMPROVED STUMP AND ROCK EXTRACTOR AND ELEVATOR.

Specification forming part of Letters Patent No. **34,466,** dated February 18, 1862.

To all whom it may concern:

Be it known that we, THOMAS NEWCOMB and CHARLES C. NEWCOMB, citizens of the United States, the former being a resident of Kingston, in the county of Plymouth and State of Massachusetts, and the latter being a resident of Warren, in the county of Knox and State of Maine, have invented an Improved Machine for Elevating Stumps or Rocks; and we do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a side view, of the said machine.

The nature of said improvements consists in an improved arrangement of detaching springs or devices with respect to pawl-bars and the brake; also, in a combination of pulley-hangers with the sprocket-wheel, the supporting-frame, and the mechanism for operating the sprocket-wheel; also, in the arrangement of the hanging staple with respect to the sprocket-wheel and its rotative machinery.

In the drawings, A denotes a tripod derrick for supporting the frame of the operative mechanism while the latter is in the act of raising a heavy body, such frame being suspended by means of a staple or hanger *a*, affixed to its upper end.

The lower part of the frame carries a shaft C, upon which a sprocket-wheel D and a double ratchet E are fixed. Two pawl-levers F G turn on the shaft as a fulcrum, and are arranged on opposite sides of the ratchet and so that the said levers may respectively operate with the two series *b c* of ratchet-teeth of the wheel E.

Two crossed bars or links G′ H′ are jointed to the outer ends of the pawl-levers and to the rocker-head *c′* of a brake I. Two detaching-springs K K, provided with hooks *d d*, are suspended from the brake-head at or near its outer extremities, and when in use the said hooks are to be hooked into eyes or staples *e e*, projecting from the crossed bars G′ H′. In consequence of the peculiar arrangement of the detaching springs or devices, each, while being lifted by the brake, operates to draw the next adjacent pawl-lever away from and out of engagement with its ratchet, such pawl-lever being applied to its fulcrum or shaft loosely, so as to be able to move laterally sufficiently as well as vertically. The advantage of our arrangement of the springs of the detachers is that such springs are not likely to become set, as is the case with a spring when placed between the covered pawl-bars. Beside, the peculiar action of the detachers on the bars insures the detachment of a pawl from its ratchet.

The suspension-hanger *a* is arranged directly over the middle of the sprocket-wheel, or so that while the machine is in use the hanger, the sprocket-wheel, and the center of gravity of the weight to be lifted may be in a vertical line. The ratchet-wheel and its spawls, as well as the fulcrum of the brake, are all arranged aside of the said line. We employ a sprocket-wheel instead of a windlass, because the chain M, in passing around the wheel, will be caught by its teeth and work only over the upper half of the wheel, whereas, were a windlass used, the chain would have to wind and coil on it, in which case the coils are apt to override one another, and so as to strain and frequently injure the links.

From each end of the shaft C a hanger or arm N is extended nearly down to the level of the bottom of the ratchet-wheel. These arms serve to support one end of the chain whenever it may be desirable to employ a pulley in connection with the sprocket-wheel, in which case the chain, after being slung from the arms, would be forced downward and through the pulley, and thence go upward and over or about the sprocket-wheel. The arms serve to keep the chain free of the wheel.

In operating with our machine, after its chain has been attached to a body to be raised, the operators have only to work the brake up and down. This movement will cause the pawls to be alternately raised and depressed, so as to produce a continued intermittent revolution of the double ratchet-wheel and the sprocket-wheel, whereby the body to be elevated will be raised. To lower the said body at any time we have only to attach the detachers to their pawls, and when the brake

is put in operation a reversed motion of the sprocket-wheel, such as will gradually lower the weight, will be produced.

Our machine is an improvement on the stump-extractor patented April 17, 1860, by Caleb Bates, our invention being designed to avoid several difficulties incident to the working of the latter. We therefore do not claim such machine of the said Bates; but

What we do claim is as follows:

1. The above-described improved arrangement of the detaching springs or devices K K with respect to the pawl-bars G′ H′ and the brake I.

2. The combination of the pulley-hangers N N with the sprocket-wheel D, the supporting-frame B, and the mechanism for operating the sprocket-wheel.

3. The arrangement of the hanger or staple *a* with respect to the sprocket-wheel and its rotating machinery.

THOMAS NEWCOMB.
CHAS. C. NEWCOMB.

Witnesses to signature of Thos. Newcomb:
R. H. EDDY,
F. P. HALE, Jr.

Witnesses to signature of C. C. Newcomb:
ALBERT JOHNSON,
SAML. L. HODGMOND.