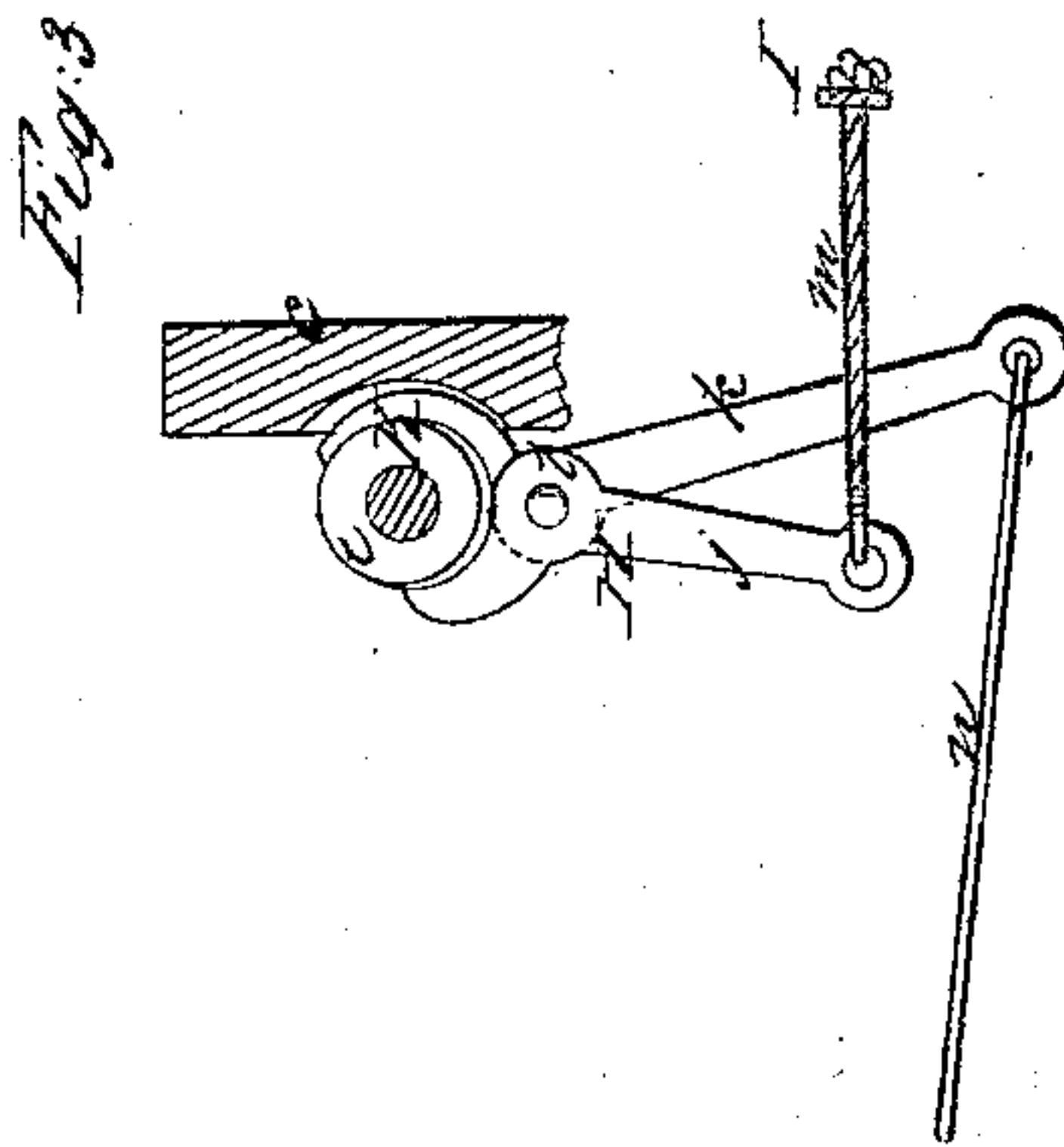
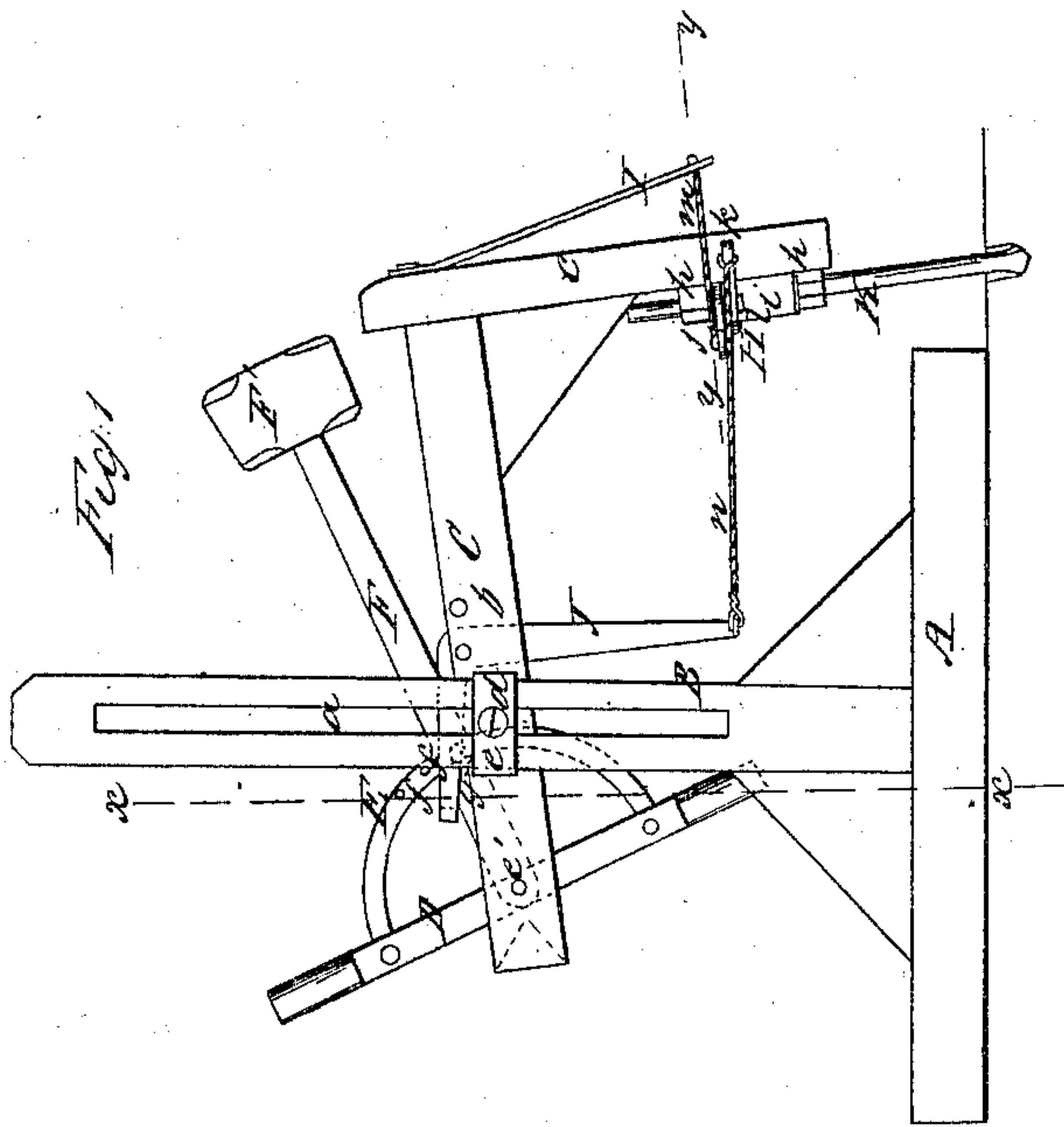
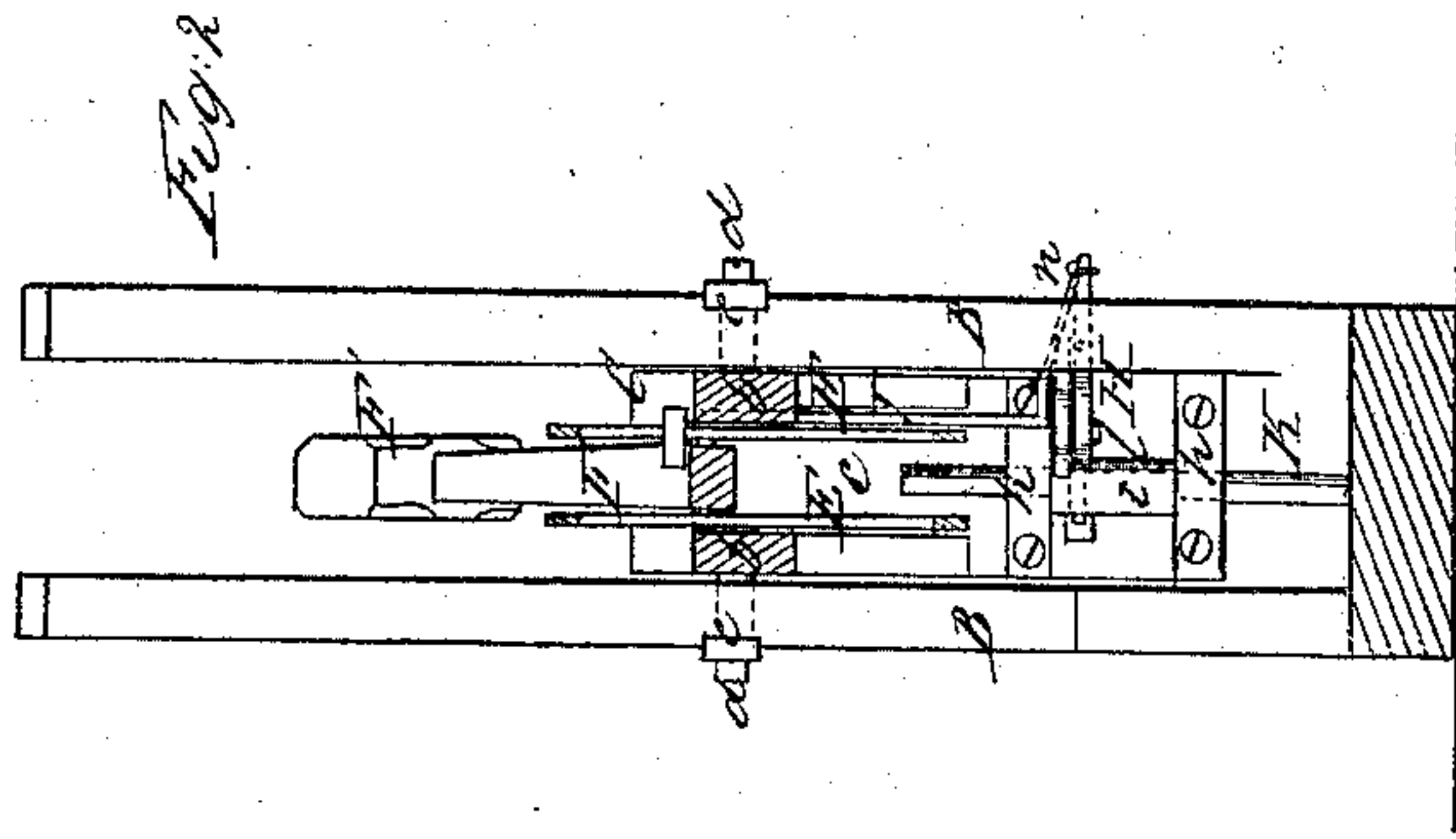


T. CROSSETT.  
ROCK DRILL.

No. 32,963.

Patented July 30, 1861.



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# UNITED STATES PATENT OFFICE.

TRUMAN CROSSETT, OF NORTH SAN JUAN, CALIFORNIA.

## IMPROVEMENT IN MACHINES FOR DRILLING ROCKS.

Specification forming part of Letters Patent No. 32,963, dated July 30, 1861.

*To all whom it may concern:*

Be it known that I, TRUMAN CROSSETT, of North San Juan, in the county of Nevada and State of California, have invented a new and Improved Machine for Drilling Rocks in Tunnels, Quarries, Ditches, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a section of the same, taken in the line  $\alpha \alpha$ , Fig. 1; Fig. 3, a section of a portion of the same, taken in the line  $\gamma \gamma$ , Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a simple and efficient rock-drill that may be used in all cases where machine-drills can be applied and be capable of being operated manually or by other power.

The invention consists in placing an adjustable hammer-shaft within a swinging or adjustable frame and giving the drill, which is also fitted in said adjustable frame, a rotating movement from the hammer-shaft, all the parts being arranged, substantially as hereinafter described, to effect the desired result.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a platform or base, to each side of which an upright B is secured. These uprights B are slotted nearly their whole length, as shown at  $a$ , and between the uprights a swinging or adjustable frame C is placed, said frame being formed of two bars  $b b$ , the front ends of which are attached at right angles to a bar  $c$ . The back ends of bars  $b b$  are connected by a cross-bar.

The frame C is suspended or hung between the uprights B B by pins  $d d$ , which pass through plates  $e e$  and into the bars  $b b$ , the plates  $e e$  serving as clamps to hold the frame C at any desired height. In the back part of the frame C there is secured, by a pivot or fulcrum pin  $e'$ , a bar D, which is allowed to work freely on pin  $e'$ . This bar D has a semi-circular bar E secured to each side of it. These bars are perforated with holes  $f$ , as shown clearly in Fig. 1.

F is a hammer-shaft, the back end of which is secured by pin  $e'$  in bar D at about its center. The hammer-shaft F is secured between the bars E by a pin  $g$ . The hammer F' may be of any desired weight.

To the bar  $c$ , at the front end of frame C, there are two bars  $h h$  attached, between which a collar  $i$  is placed and allowed to rotate freely. This collar  $i$  is grasped by a clamp II, which is formed of two jaws  $j k$ , connected by a pivot  $l$ . (See Fig. 3.) One jaw  $j$  is connected by a chain or cord  $m$  to a spring I, which is secured to the bar  $c$ , and the other  $j k$  is connected by a chain or cord  $n$  with a bent lever J, which is secured in the frame C, and has its back end projecting over hammer-shaft F.

K represents the drill, which passes through the collar  $i$  and is allowed to slide loosely therein. The drill may be connected with the collar by a feather and groove.

The platform or base A may be fitted on any suitable frame or base and arranged in any proper way to admit of being turned and adjusted in any desired position, as the work may require. The frame C also, it will be seen, may be adjusted at any required angle, so that the drill K may be in a proper relative position with the work. The bar D may be operated manually or by any other convenient power, and each time the hammer descends it acts upon the drill, forcing the same into the rock. Each time the hammer is raised the shaft F actuates lever J, and the jaw  $k$  of clamp II and also the jaw  $j$  will be made to grasp the collar  $i$ , and the latter partially turned, so that each time the hammer strikes the drill its bit or cutting end will act in a fresh spot. The jaws  $j k$  relax as the hammer descends under the action of spring I. The hammer-shaft F may be set in any proper relative position with bar E, so that the different degrees of adjustment of frame C will not interfere with a proper working position of bar E.

From the above description it will be seen that a very simple rock-drill is obtained, and one that may be operated with the greatest facility and readily applied to its work.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—



1. The swinging or adjustable frame C, suspended between the uprights B B, and having the hammer-shaft F and bar D fitted in it and arranged with the clamp H and drill K, to operate as and for the purpose set forth.
2. The connecting of the hammer-shaft F to the bar D by a pivot or pin e', and securing the shaft F at any suitable angle with bar D by means of the pin g and semicircular bars E E, as and for the purpose specified.

TRUMAN CROSSETT.

Witnesses:

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WILLIAM D. HILL.