

E. C. BAST.
Drag-Saw Machine.

No. 224,987.

Patented Mar. 2, 1880.

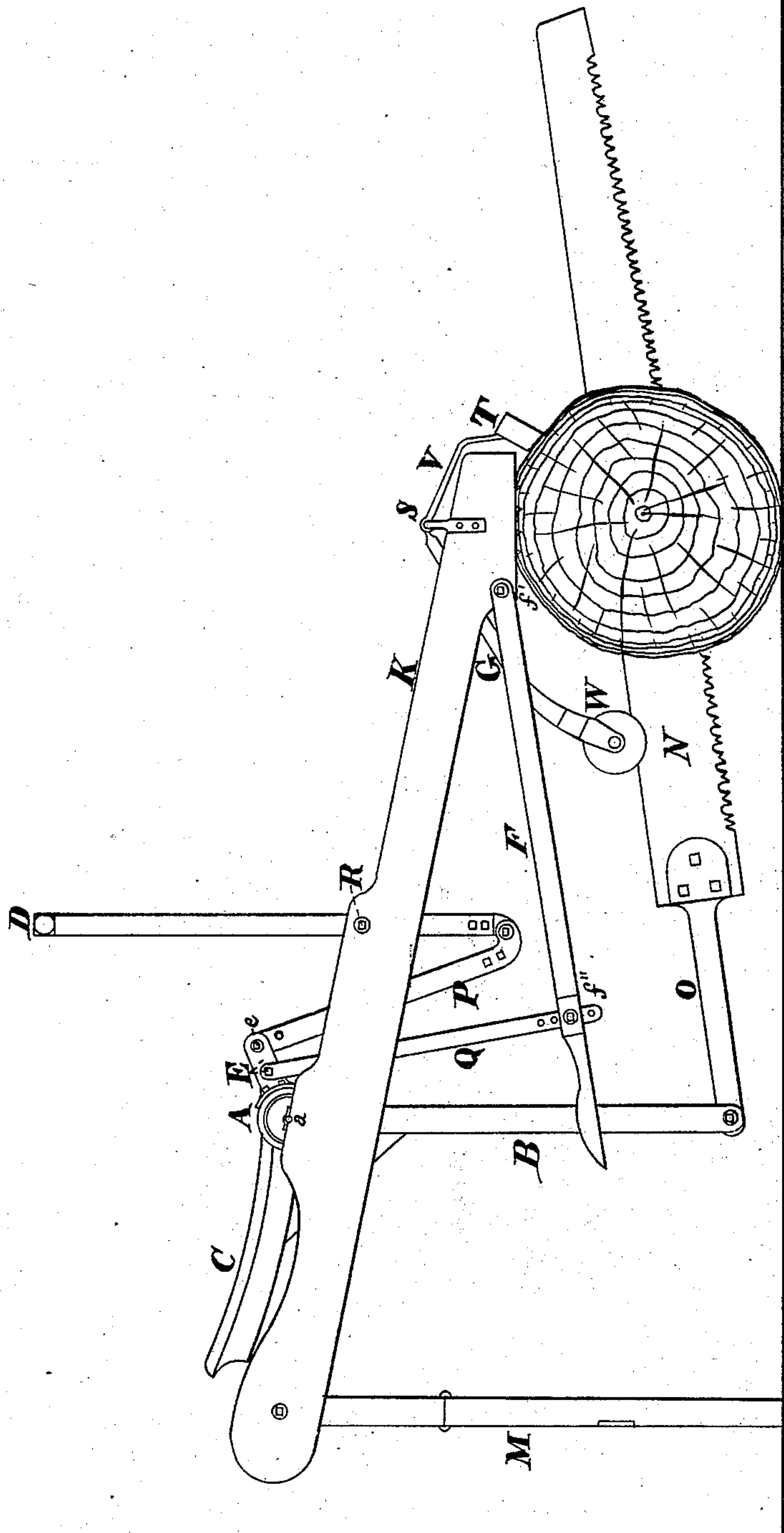


FIG. 1.

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Edward C. Bast

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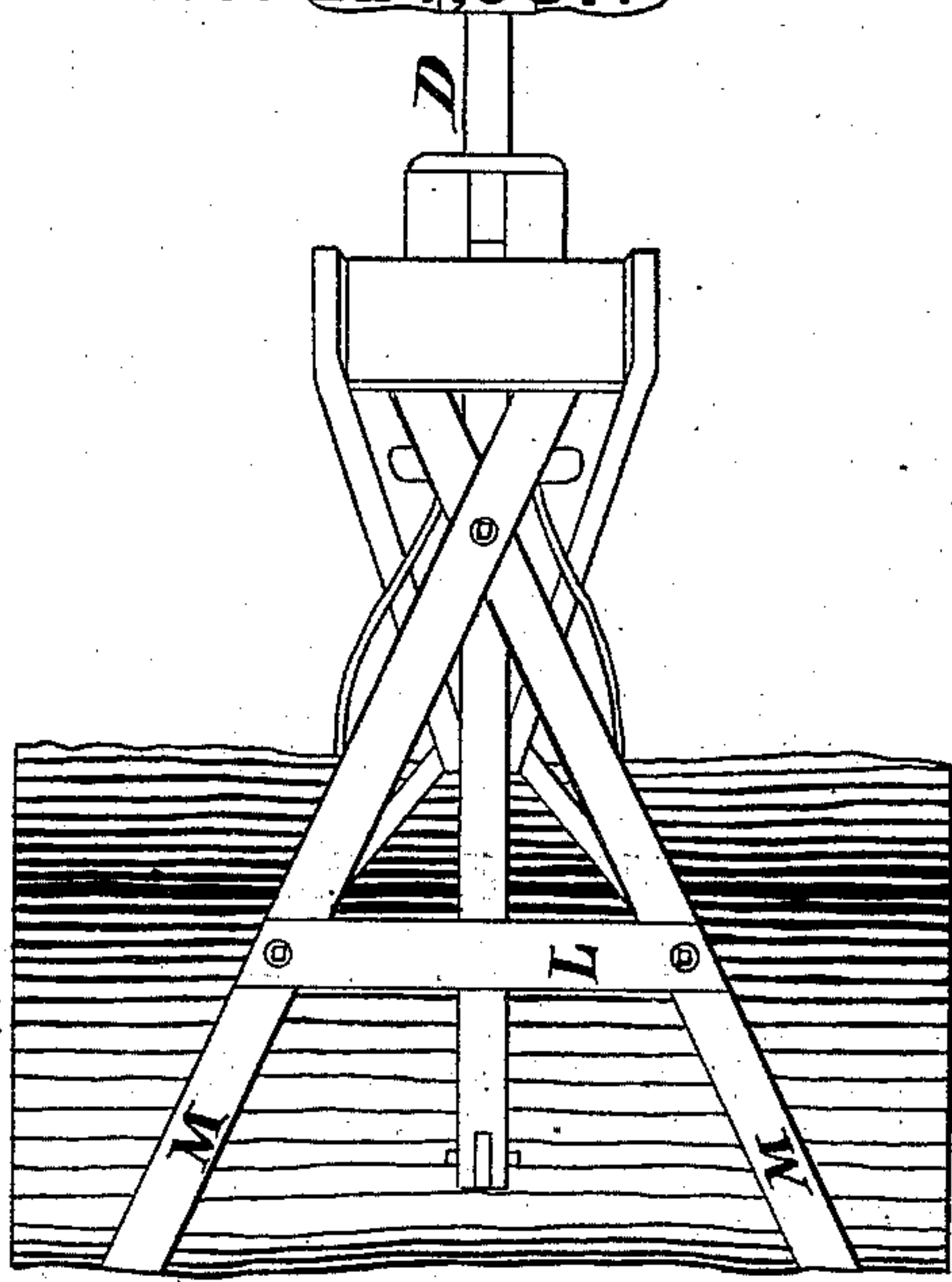


FIG. 2.

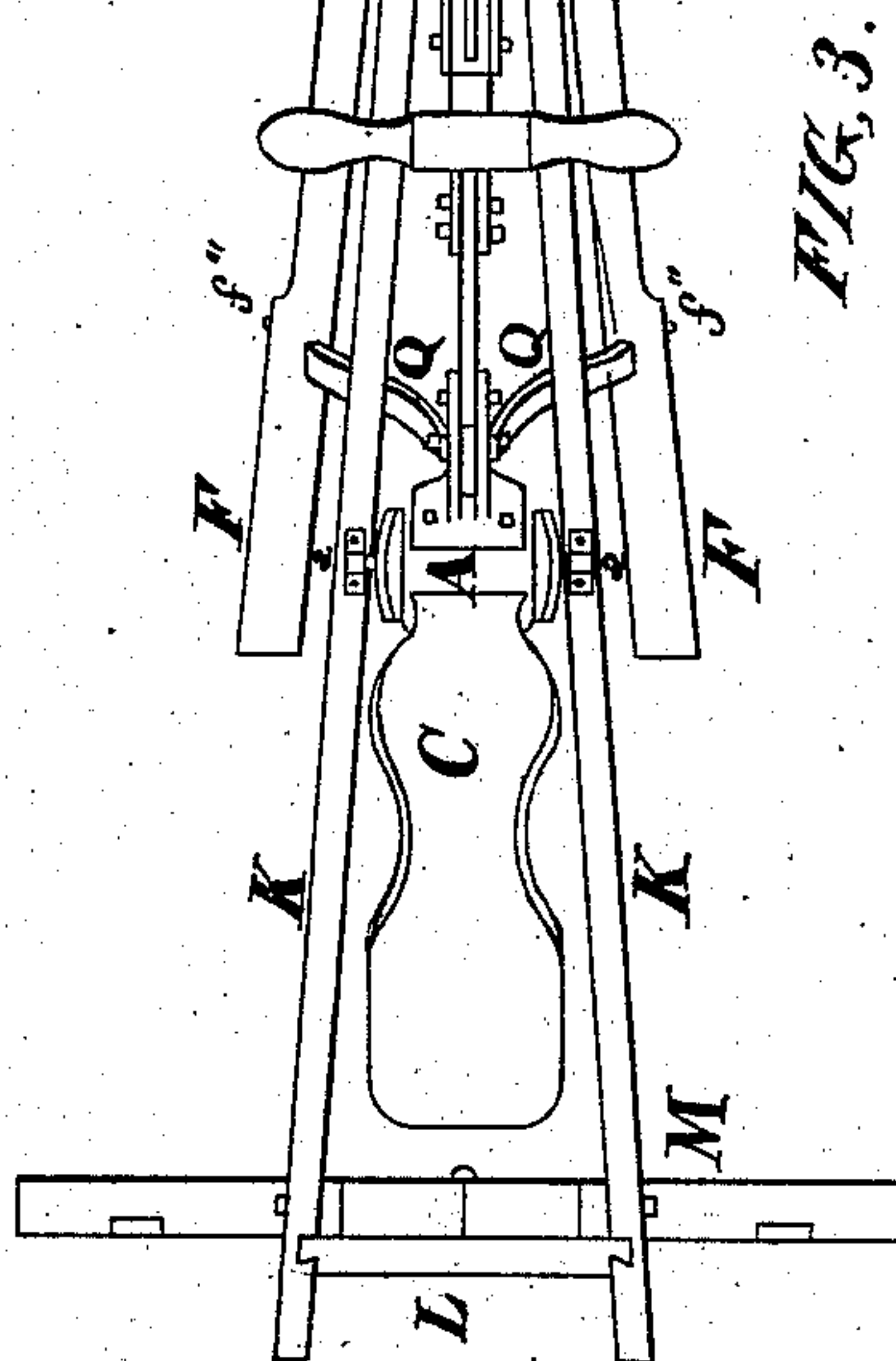
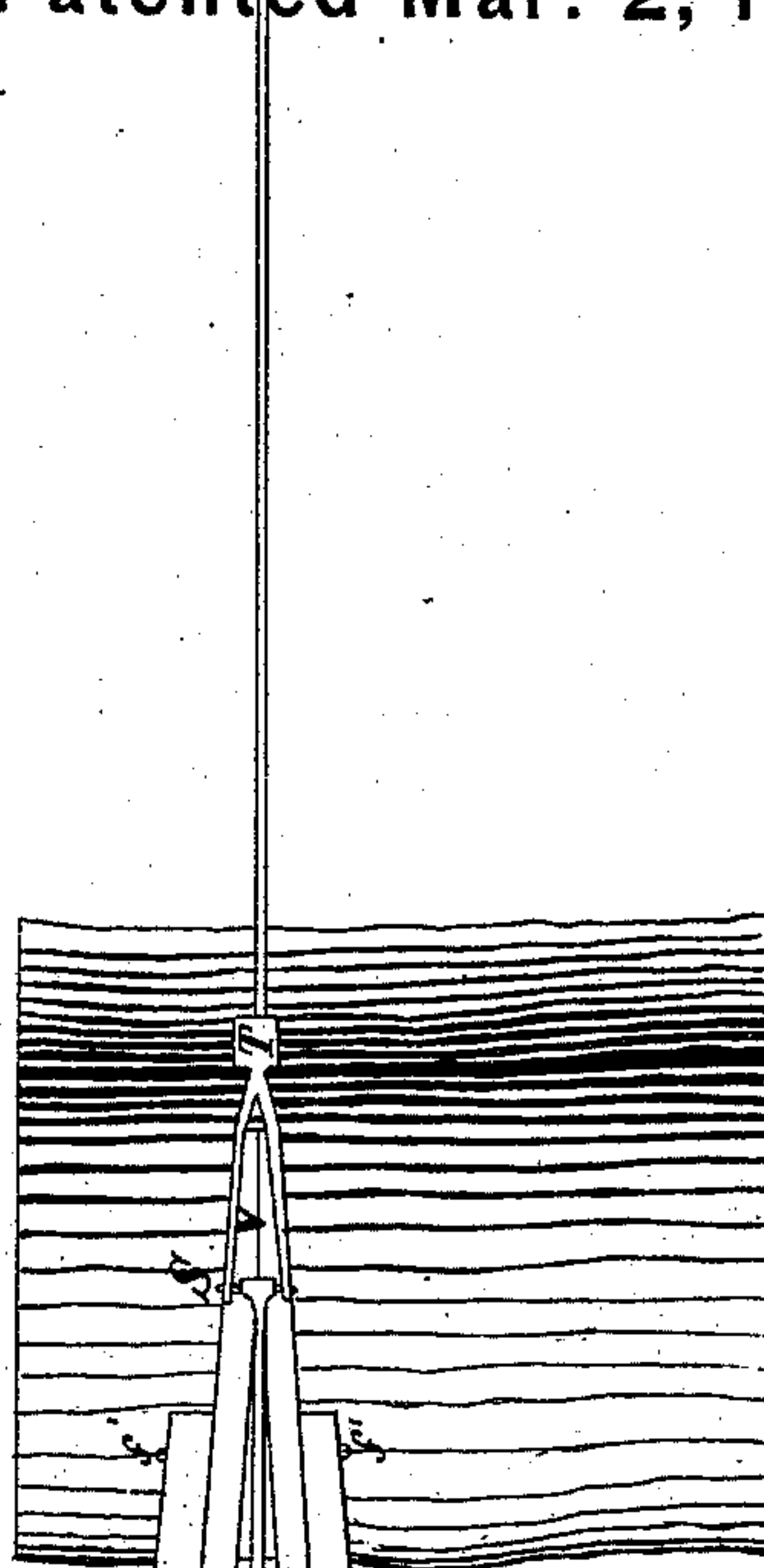


FIG. 3.

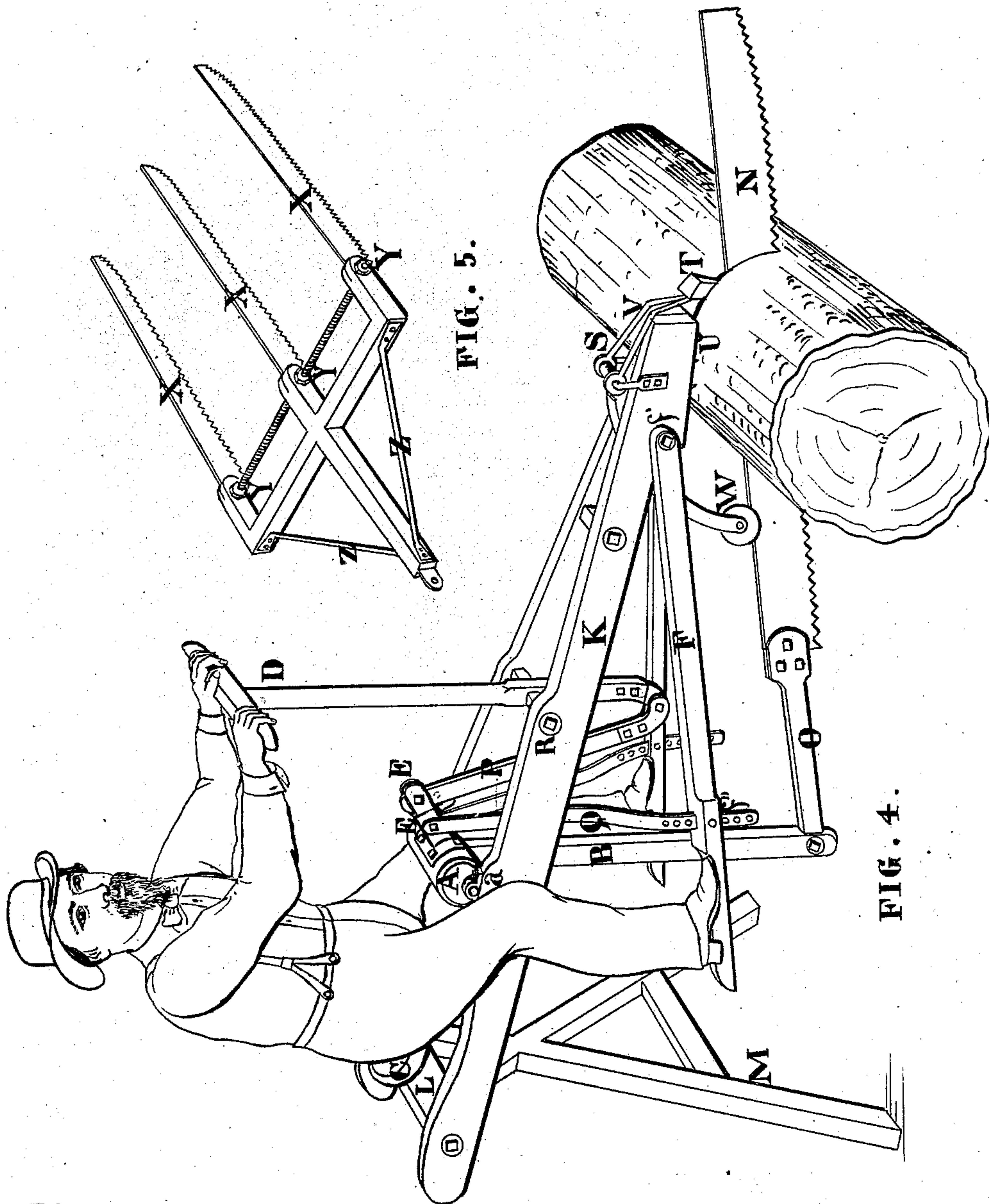
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UNITED STATES PATENT OFFICE.

EDWARD C. BAST, OF ST. LOUIS, MISSOURI.

DRAG-SAW MACHINE.

SPECIFICATION forming part of Letters Patent No. 224,987, dated March 2, 1880.

Application filed August 14, 1879.

To all whom it may concern:

Be it known that I, EDWARD C. BAST, of St. Louis, Missouri, have made a new and useful Improvement in Drag-Saw Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, of which—

Figures 1 and 2 show an elevated side and rear view; Fig. 3, a plan, and Fig. 4 a perspective view, with a figure of an operator on the saddle-tree in the act of operating the machine. Fig. 5 represents an attachment for sawing stove-wood.

This invention, as will be seen, relates to that class of sawing-machines operated by human power alone, utilizing the full weight of the operator in pushing or pulling the saw in either direction.

In driving the saw I apply the whole weight of the operator to a short arm of the saw-lever, thus sending the saw through rapidly and with great force. This force can be greatly increased by a slight pressure of the hands against the hand-lever, which reverses the action of the eccentric and causes the long arm of the saw-lever to move forward.

In drawing the saw toward the operator this invention renders it unnecessary to apply the power upon the same side of the fulcrum where the saw is attached, and thus produce a jam in the eccentric; but by pivoting the arm carrying the saw to the long arm of the saw-lever, and connecting the shorter end of the hand-lever with the eccentric on the forward side I apply the power directly upon the saw-lever and produce uniform, steady, and easy action.

This improved device is very useful for sawing cord into stove wood, but relates more particularly to sawing heavy timber, stone, or ice where a long stroke has to be made.

Referring to the drawings, A represents the hub, to which the principal arms of the machine are attached; and *a a*, the pivots sustaining the weight of the operator.

B represents the long arm, which has the arm carrying the saw pivoted to it, and is of sufficient length to give the saw a long stroke.

C represents another arm of the hub, and is used only in giving the forward stroke of the

saw. It has a saddle tree fastened to it, which the operator uses as his seat.

D represents a lever pivoting beyond the middle on a pin. It has a curved tenon at one end, and terminates with a handle at the other end.

E represents a short slotted arm of the saw-lever. It is fastened to the hub A, and has a bar and two links pivoted to it.

F F represent foot-levers, which, at their forward ends, *f' f'*, are pivoted to the frame, and near their other ends, *f'' f''*, are pivoted to links. These levers F F, at their rear ends, are shaped appropriately to serve as foot-rests for the operator.

K represents a frame, consisting of two bars meeting and connected at one end by a clamp, and at the other end separated by a cross-piece, L. This frame supports the machinery used to operate the saw.

M M represent crossed bars used as legs to support one end of the frame.

N represents the saw, having a movement back and forth. It is attached to an arm, O. When not in operation the saw is raised into a slot made in the frame, and is held there by means of a peg.

P represents a bar with a curved slot at one end, pivoted to the lever D, and having pin-holes at the other end, by means of which it is pivoted to the slotted arm E, and adjusted at *e* to regulate the length of stroke desired.

Q Q represent links, pivoted at one end to the arm E and at the other end to the levers F F at *f'' f''*. By means of the holes in the lower ends of these links the treadles may be adjusted to suit the length of the operator's legs.

R represents a pivot upon which the lever D turns. This pivot also serves to secure the frame K together at its center.

S represents a clamp to hold the frame K together at its forward end. It also serves as a pivot for the saw-guide and wedge-bridles.

T is a common wedge driven into the kerf made by the saw.

U represents claws clutching the wood upon which the forward end of the frame K rests, said claws serving to hold the wood firmly while being operated upon.

V represents bridles which are joined at one

end and riveted through the wedge T, and at the other end pivoted to the clamp S.

W represents a sheave, and G an arm to guide the saw and prevent a lateral vibration.

5 This attachment also serves as a weight on the back of the saw and gives it the proper pressure.

X Y Z of Fig. 5 represent an attachment by which more than one saw is used for the purpose of sawing cord or stove wood, and to cut off more than one length of timber at the same time.

X X X represent three saws which can all be used at the same time, or the one in the middle may be detached if but two are required.

Y Y Y represent nuts on the threaded bolt, for the purpose of tightening the saws in the slotted arms, or permitting the removal therefrom of either saw, as described.

20 Z Z represent braces to sustain the pressure and draft of the two outside saws.

When it is desired to make more than one cut at a time the saw N, with its arm O, is detached from the arm B, and this attachment

25 X Y Z pivoted to it.

The method of operating the machine will be clearly understood by reference to Fig. 4.

The forward end of the frame is placed upon the object to be sawed. The operator grasps

30 the handle of the lever D, places one foot upon the end of the foot-lever F nearest to him, vaults into the saddle-tree, and rests his other foot upon the other foot-lever F. The weight

upon the feet and the power exerted by the hands pulling back the handle cause the arm

35 E to descend, and this movement, acting through the arm B, causes the saw to be drawn backward. The weight of the operator is then transferred to the arm C, whereon the operator

40 is seated, and the power is thus transmitted to the arm B by means of the fulcrum α , and the saw is moved forward again. This latter movement can be greatly assisted and the power increased by the operator shifting his

body out toward the end of the arm C. Both 45 these movements can be aided by first pulling and then pushing the handle of the lever D. Repeating this movement the operation of sawing is continued.

The arm E is short and on an angle with the 50 arm B, and through the double motion exerted thereon communicates a quick motion to the saw.

When desired the guide and weight G W can be drawn up and suspended between the 55 bars of the frame K and levers F, and the wedge turned back on its pivots upon the frame.

Instead of pivoting the levers F F to the forward end of the frame, they may be pivoted to 60 the legs M M and terminate at $f'' f''$. I however prefer to have the fulcrum at f' and the foot-rest open, as the power exerted through the heel of the foot is less tiresome.

Having thus described my invention, what I 65 claim, and desire to secure by Letters Patent, is—

1. The hub A, downwardly-extending lever B, saw-arm O, lever C, slotted arm E, links Q, pivoted to said arm E, treadles or foot- 70 levers F, vertically adjustable in the links Q, hand-lever D, and bar P, pivoted to the lower end of the hand-lever D and to the slotted arm E, all in combination with any suitable frame, for the purpose set forth. 75

2. The combination of the hub A, slotted arm E, frame K L M, hand-lever D, pivot-pin R, acting as a brace for the longitudinal sides of the frame, bar P, pivoted at its lower end to the lower end of the hand-lever D and at 80 its upper end to the slotted arm E, lever B, and saw-arm O, substantially as and for the purpose set forth.

EDWARD C. BAST.

Witnesses:

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