

(No Model.)

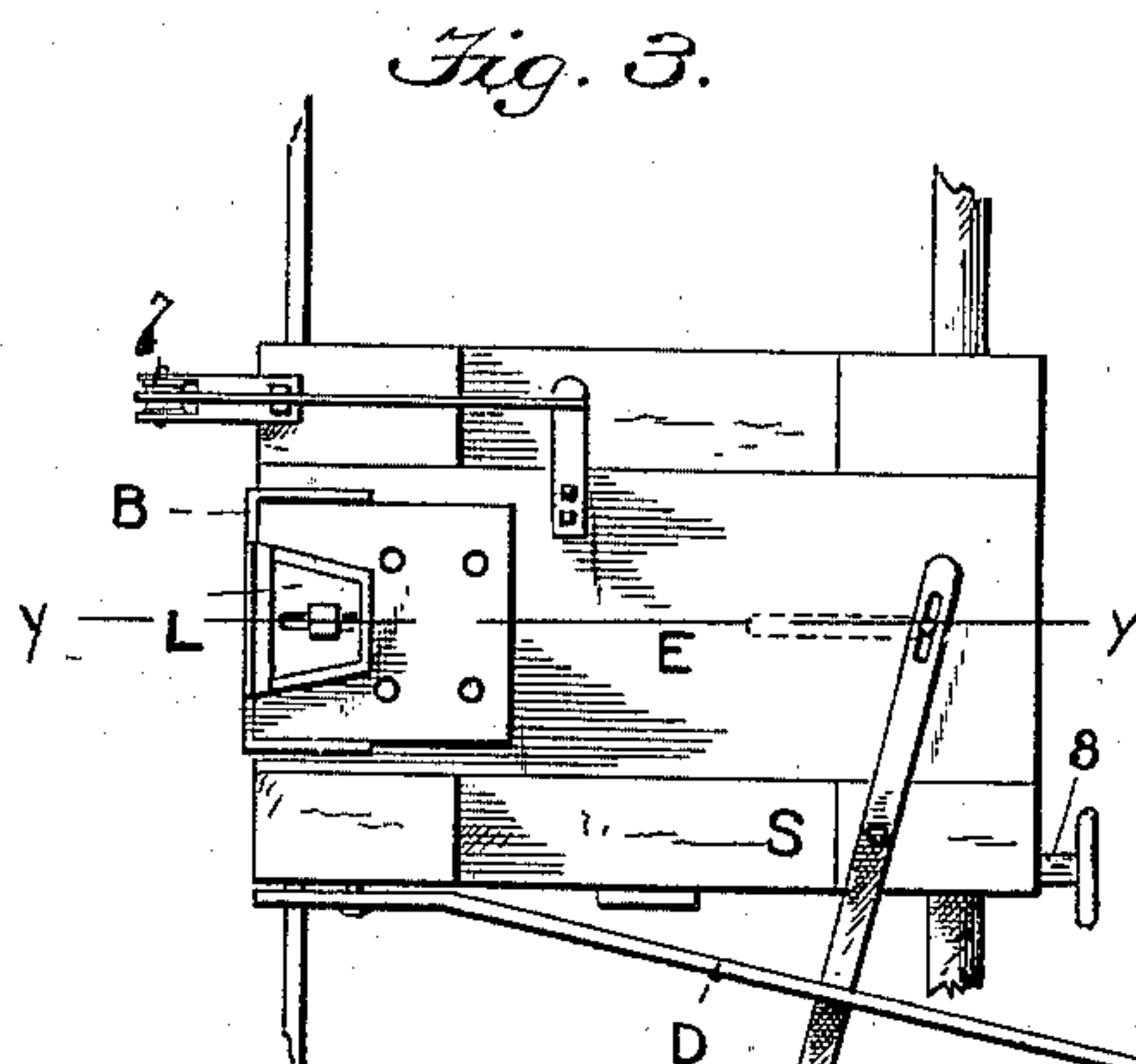
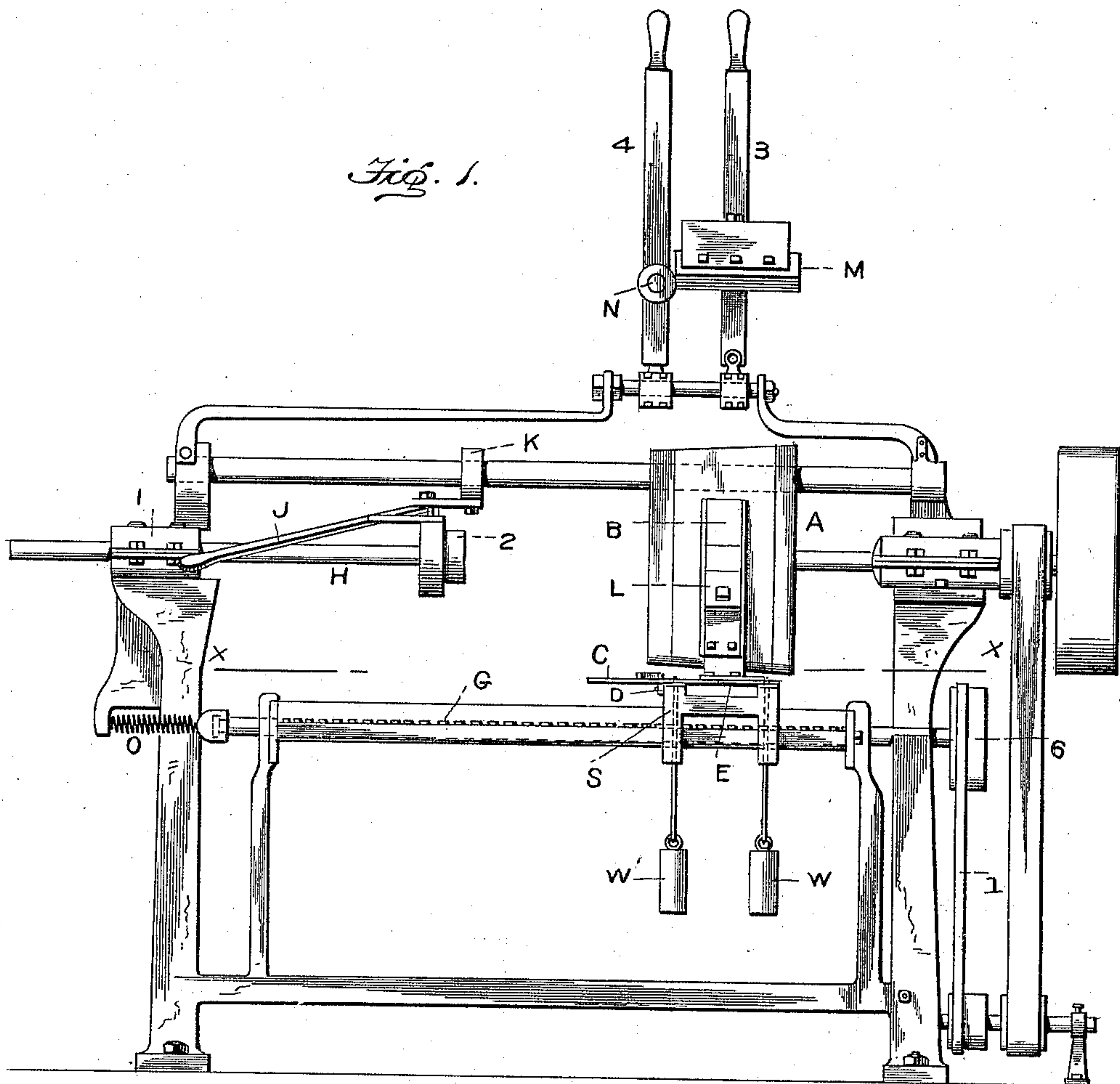
2 Sheets—Sheet 1.

C. D. AMES.

MACHINE FOR SMOOTHING AND FINISHING EXTERIORS OF CASKS, &c.

No. 535,477.

Patented Mar. 12, 1895.



Witnesses:

C. C. Burdine
Horace A. Dodge

Inventor.

-c Charles W. Ames
by J. E. Mianahan
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

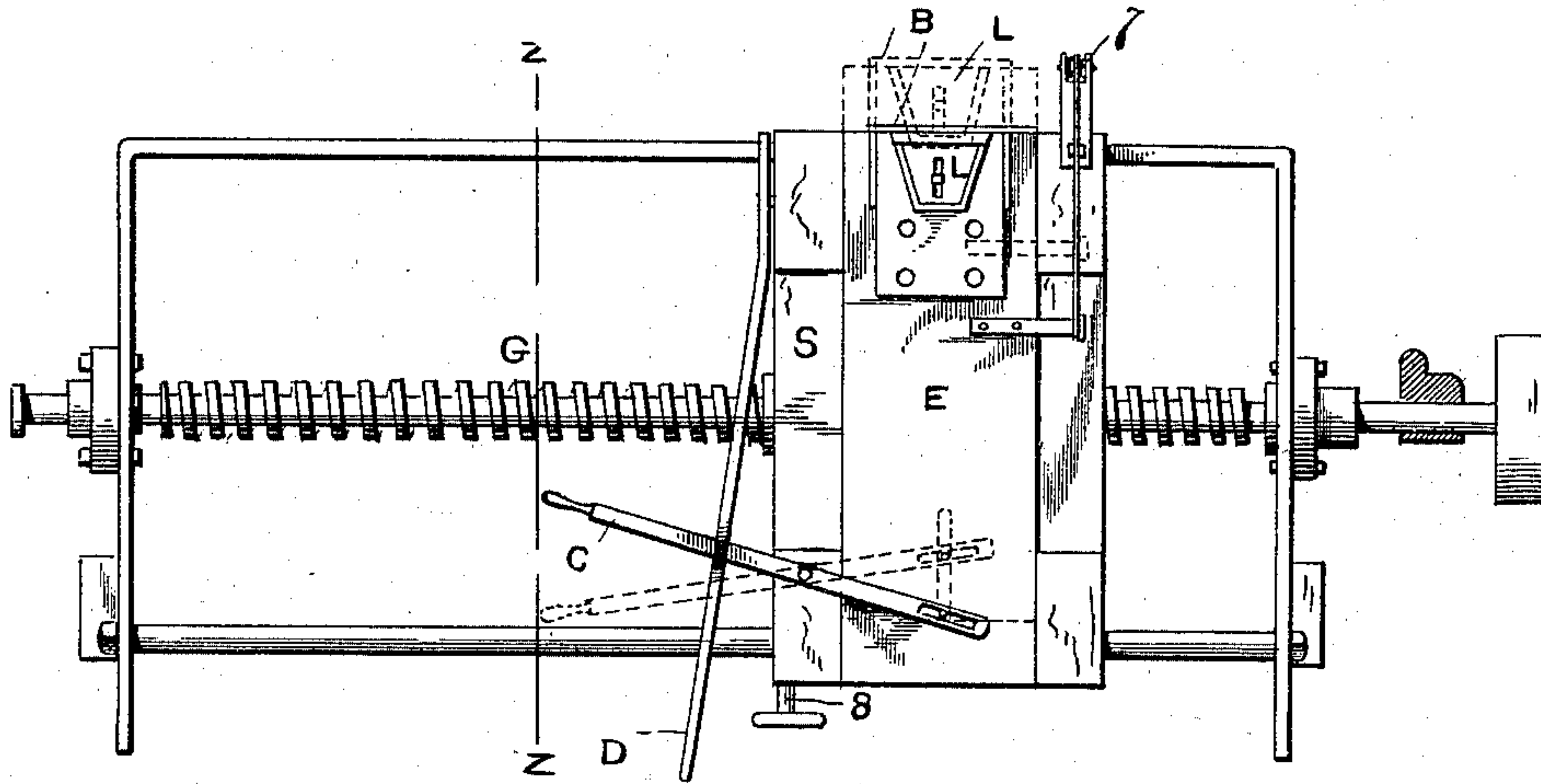


Fig. 5.

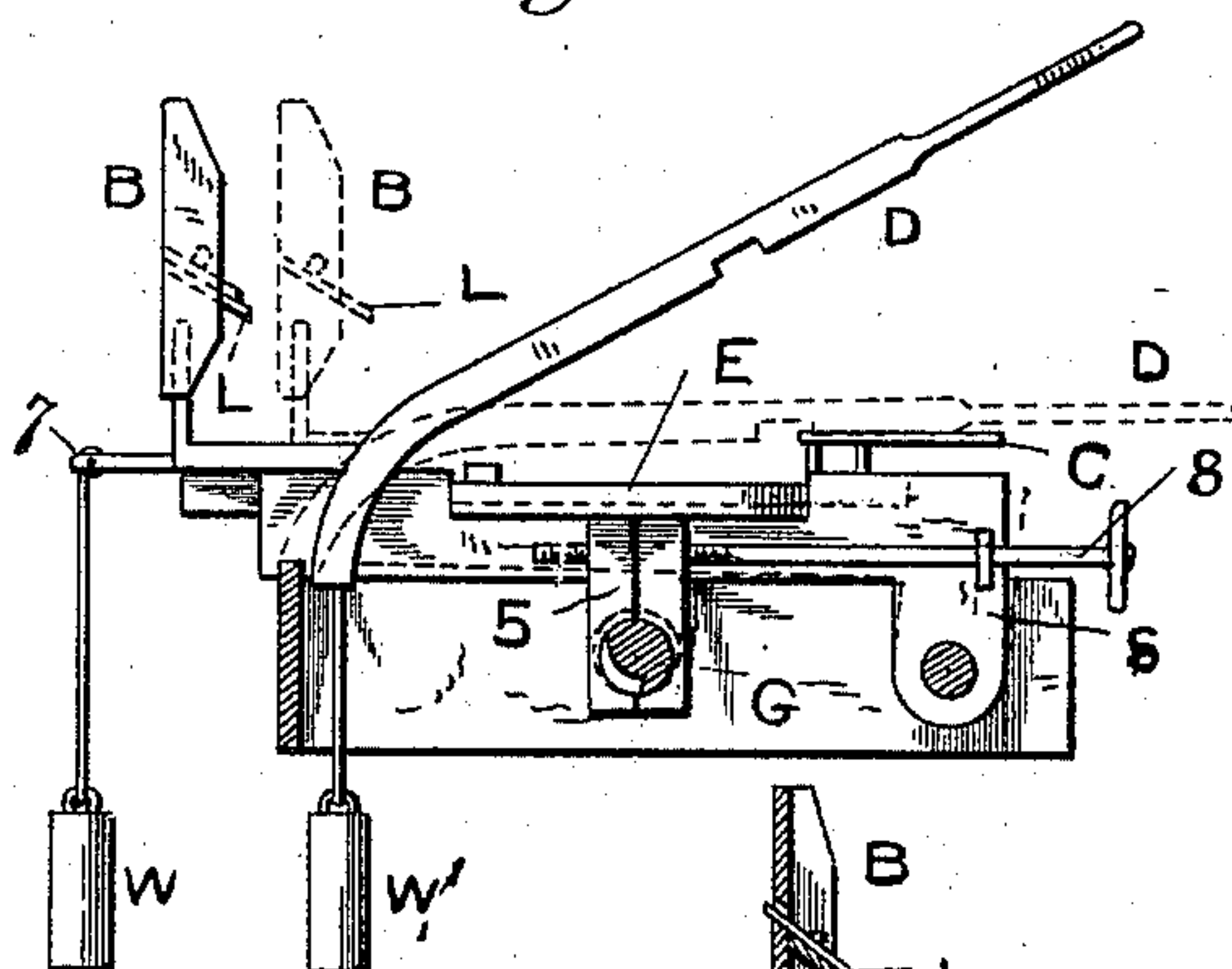
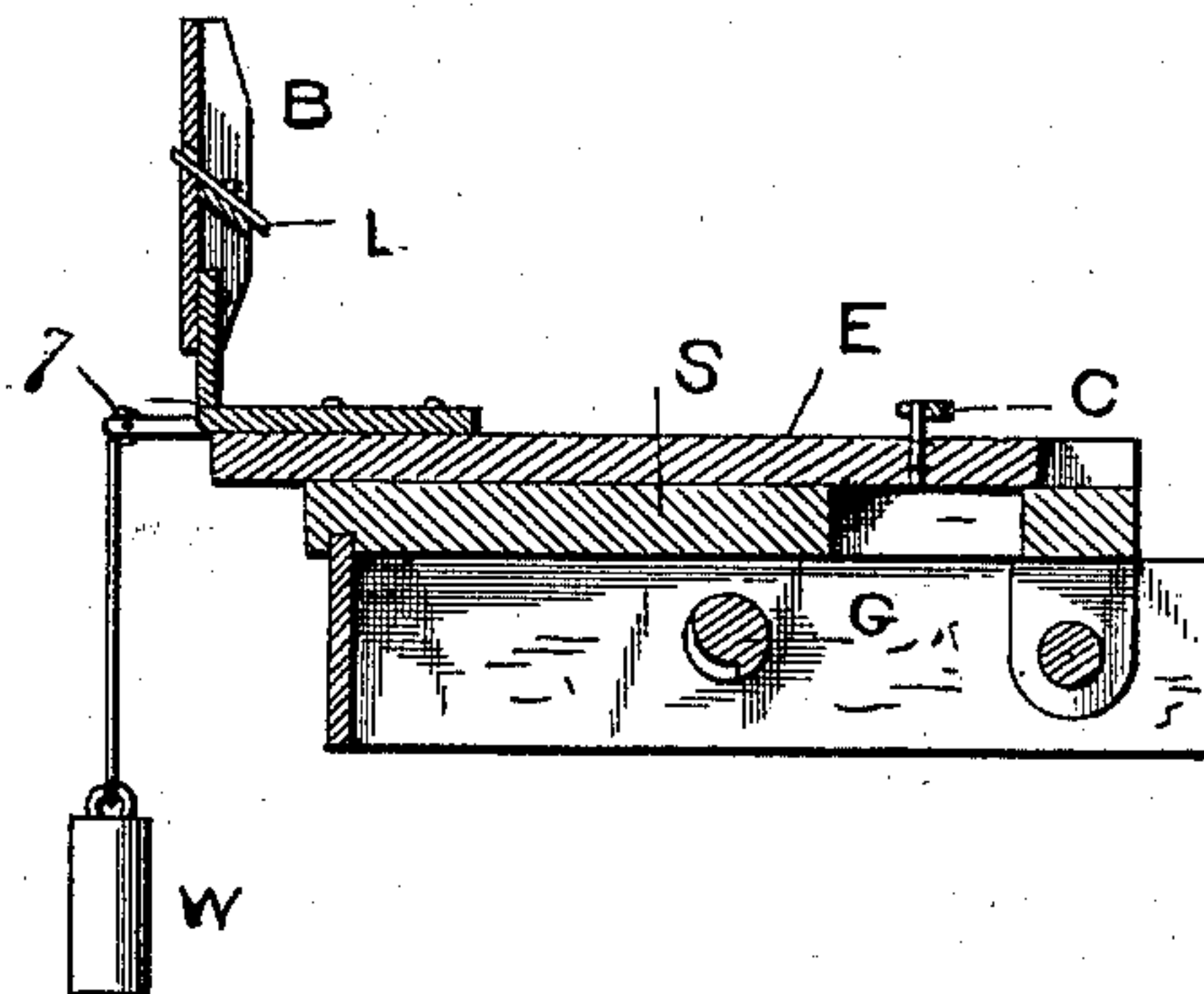


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES D. AMES, OF PORTLAND, INDIANA, ASSIGNOR TO THE CREAMERY
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MACHINE FOR SMOOTHING AND FINISHING EXTERIORS OF CASKS, &c.

SPECIFICATION forming part of Letters Patent No. 535,477, dated March 12, 1895.

Application filed April 19, 1894. Serial No. 508,118. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. AMES, a citizen of the United States, residing at Portland, in the county of Jay and State of Indiana, have invented certain new and useful Improvements in Tub or Pail Making Machinery; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has reference to a machine for smoothing and finishing the exterior of casks and tubs, and is more especially adapted to be used in completing the exterior surface of butter tubs.

The machine in this specification is intended as supplemental to that for which, on February 7, 1893, United States Letters Patent No. 491,157 were granted to me for improvements in tub or pail-making machinery.

The machine described in the patent last referred to had the function of finishing the inside of the tub, cutting the croze, and beveling and leveling the mouth of the tub.

The machine in this specification succeeds the other in order of operation, and finishes the outside of the tub.

The mechanism involved in this specification consists of a rotating chuck inserted within the tub, and upon which the latter is carried; an adjustable knife block adapted to carry the knife over the exterior of the cask during the rotation of the latter, the knife block being supported on a sliding block, and the latter seated in ways on a longitudinally sliding saddle, and held adjustably by weights, and thus adapted to carry the knife block to and from the axis of the chuck to suit the variations of the exterior of the tub, and also the provision of further levers and appliances, by which the above purposes are effected.

I attain the results aforesaid by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a front elevation one of the parts being omitted. Fig. 2, is a detail plan

view, on line $x-x$ of Fig. 1. Fig. 3, is a detail of the saddle and cutter block. Fig. 4, is a detail sectional view of the saddle on line $y-y$ of Fig. 3. Fig. 5, is a sectional view on line $z-z$ of Fig. 2.

Similar letters and figures refer to similar parts throughout each view.

A is a rotating chuck, suitably journaled on the frame of the machine, and rotated in any desired mode. The package to be turned is held together only by the mouth and bottom catch rings at the respective extremities of said package, so that all of the exterior of the latter, between said extremity rings, is open at the first to the operation of the smoothing knife. A suitable smoothing knife L is seated in the upright knife block B, the latter being seated upon the sliding block E. The sliding block E is seated in suitable transverse ways in a saddle S on the frame of the machine, so as to be movable thereon transversely of the machine, to enable the knife L to conform to the variant exterior of the rotating tub, and also to be adapted to tubs of variant diameters. The knife L is held to its work adjustably by means of two weights W, each of the latter being attached to the respective sides of said sliding block E, and supported by intermediate pulleys 7, or suitable springs may be substituted for said weights.

A hand lever C, fulcrumed on the saddle S and connected to the sliding block E, enables the operator to move said block back and forth, at his will. A lock cross lever D, seated on the side of said saddle, and provided with notches to receive lever C, holds the latter in any desired position, thus carrying the knife and knife-block away from the tub; but when the lever C is released from the notches of cross lever D, the action of the weights pulls the knife L down against the exterior of the package. A weight W' raises the outer end of the lever when it is released from engagement with the lever C.

The saddle S is adapted to be moved forward and back, lengthwise of the machine, by means of the screw feed G, which latter is rotated by a belt 1 from a counter shaft at the base of the machine. The screw feed G is adapted to be operated or suspended, at the will of the operator by means of an open and

closed nut 5, formed on the under side of saddle S, and optionally caused to engage or disengage feed G, by means of a screw 8, or any other means and the saddle S carrying the sliding block E and knife L, is thereby moved as the operator may desire. The knife begins at the top, or largest end of the tub, and works toward the bottom of the latter.

At the outer end or left of Fig. 1, the screw feed G is attached, through the medium of the coil spring O, to the frame of the machine. The screw feed pulley 6 is wide enough to permit a slight endwise movement of the feed G without throwing off belt 1. As G begins to rotate, the resistance of spring O is less than that of nut 5, and feed G moves somewhat endwise toward belt 1 without moving saddle S until the resiliency of spring O is exhausted, when the latter arrests the end movement of feed G, and the saddle S is carried toward said spring, so that at the initiate of the movement, the elasticity of the spring postpones for a short period, the movement of the saddle S, which enables the knife L to make sufficient transits around the upper end of the tub before it is started down the tub by said feed. This is essential to enable the knife to smooth the upper end of the surface operated on, before it is moved therefrom; otherwise it would be drawn by the feed before the said upper ends were finished and thereby the knife is permitted to reduce the upper end of the portion of the tub operated upon to a uniform and smooth condition before it is withdrawn from from that locality.

A horizontal shaft H is loosely seated in a box I, attached to the machine, and provided with a head 2, adapted to press against the bottom of the tub, and hold the latter in position. The shaft H is reciprocated in the box I by means of a hand lever J, adjustably attached to the machine by means of a link j and collar K, and intermediately attached to the shaft H, within the head 2 the link permitting the shaft to move in a straight line. The free end of the lever J extends outwardly, in position for the operator to press against it with his body, and hold the head 2 securely against the base of the tub, thereby holding the latter properly on the chuck A. After the exterior smoothing has been accomplished, the knife block B is thrown to one end of chuck A, and the exterior of the tub further smoothed by

means of sand paper M, attached to a hand lever 3, suitably fulcrumed at one end to the frame of the machine and provided intermediately with the sand paper M, in position to be brought down, at the will of the operator, upon the exterior of the tub. For cut-stave tubs, this completes the process on this machine, as the end hoops cover the portion of the exterior of the tub not smoothed thereby; but with machine made sawed stave tubs, when the knife has been run down close to the lower catch hoop, it is stopped by the operator, and held at that point until after the sanding is done. Then, while the tub is still on the chuck, the operator puts a hoop on the tub from the lower end, and drives the same some distance up the side of the tub by means of the roller N, pivotally seated on the hand lever 4, which latter lever is also fulcrumed at one end of the frame of the machine, and adapted to be drawn down by the operator into such position that the roller N may be forcibly pressed against the lower edge of said hoop, when, by the rotation of the chuck A, said hoop is rigidly seated. The end catch hoops can then be removed, and the process of exterior smoothing continued over the entire exterior surface of the tub.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a tub smoothing machine, in combination with a sliding block E carrying the knife block B and the smoothing knife L, the screw-feed G, and a coiled spring O forming one extremity of said feed, whereby the yielding of said spring permits said sliding block to remain temporarily stationary at the initiate of the action of said feed; substantially as shown, and for the purpose described.

2. In a tub smoothing machine, the combination of the screw feed G, spring O connecting said feed to the frame of the machine, the saddle S provided with nut 5 and adapted to carry the knife L and suitable means to rotate said feed, substantially as shown and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES D. AMES.

Witnesses:

S. A. D. WHIPPLE,

CHAS. W. McLAUGHLIN.