

Philip Nichols' Improved Clothes-Washer.

PATENTED JUL 18 1871

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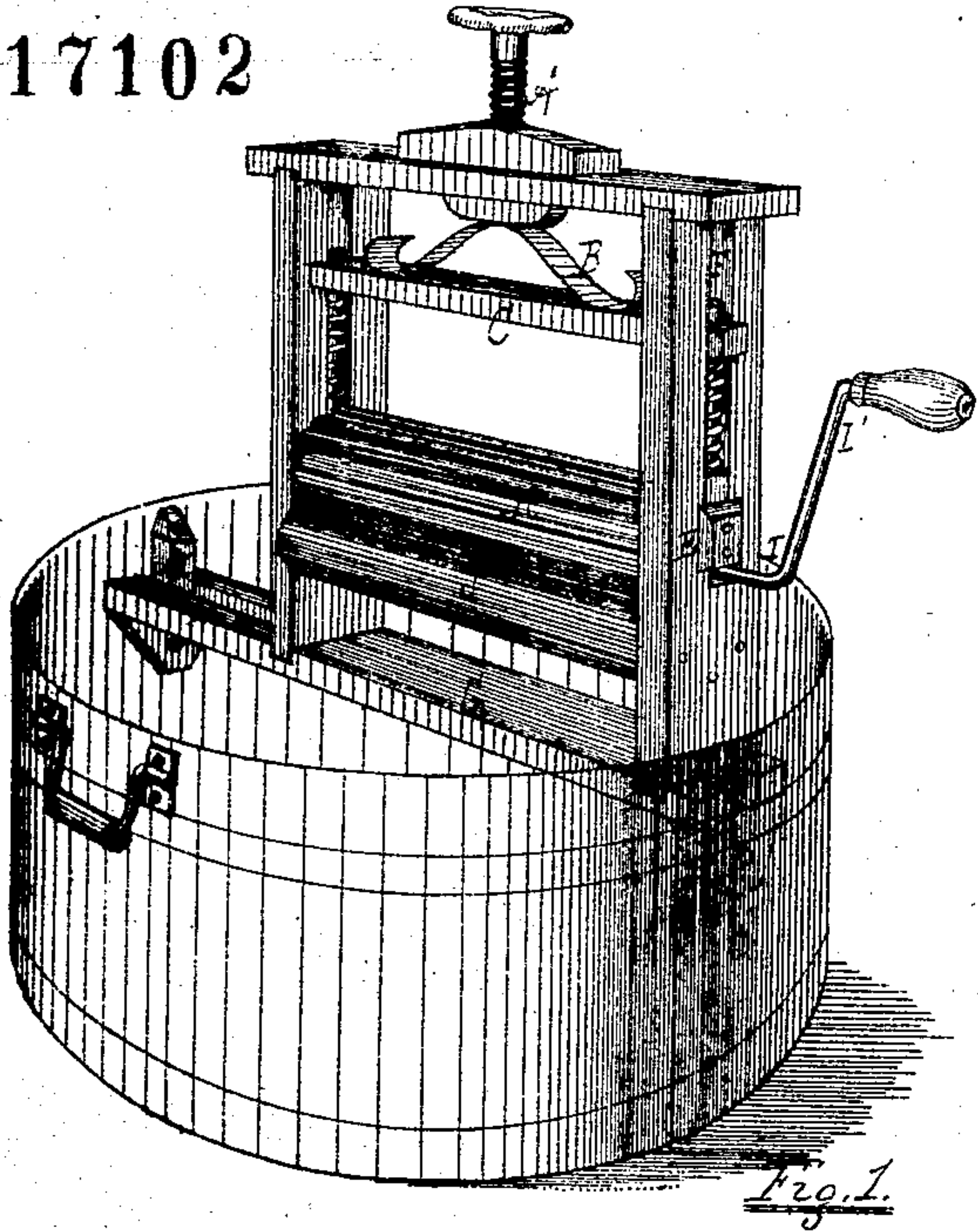


Fig. 1.



Fig. 2.

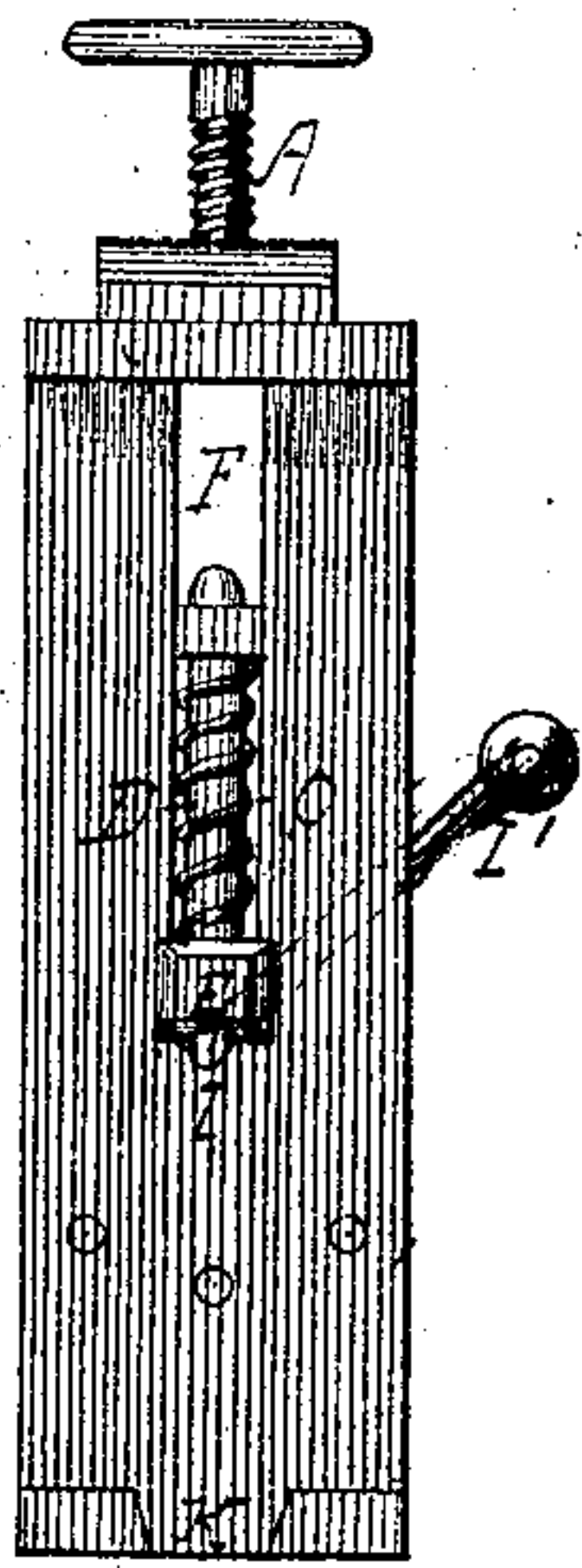


Fig. 4.

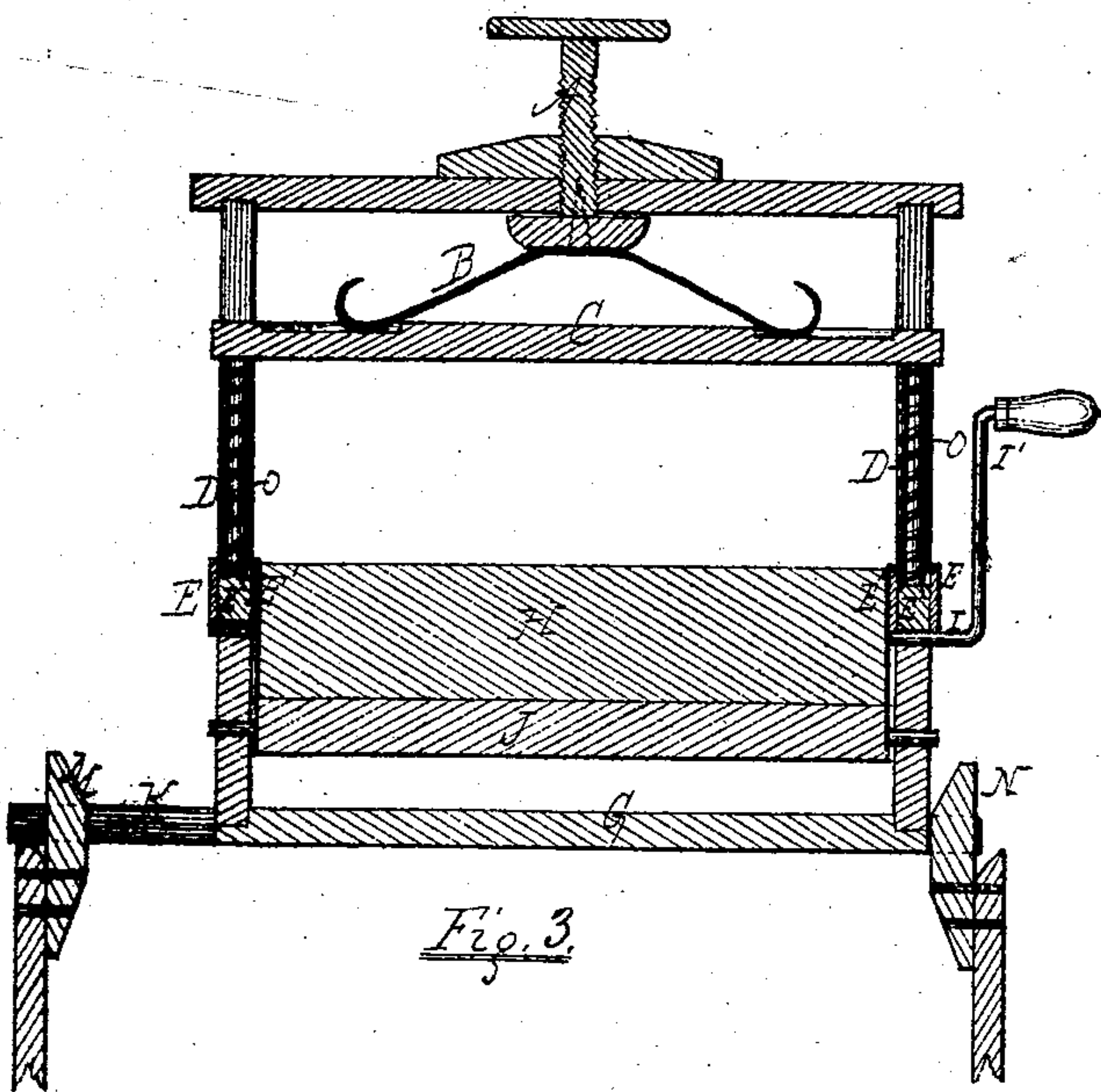


Fig. 3.

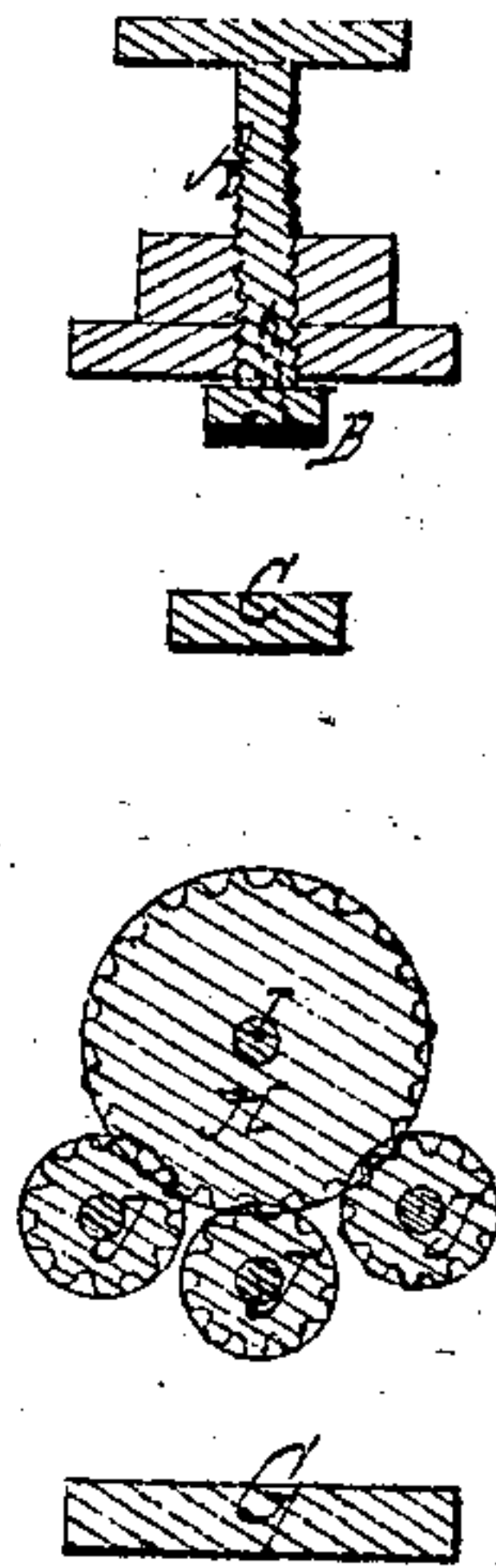


Fig. 2'.

Witnesses.

J. Schermerhorn
J. Albert Lippert

Inventor.

Philip Nichols

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Improved
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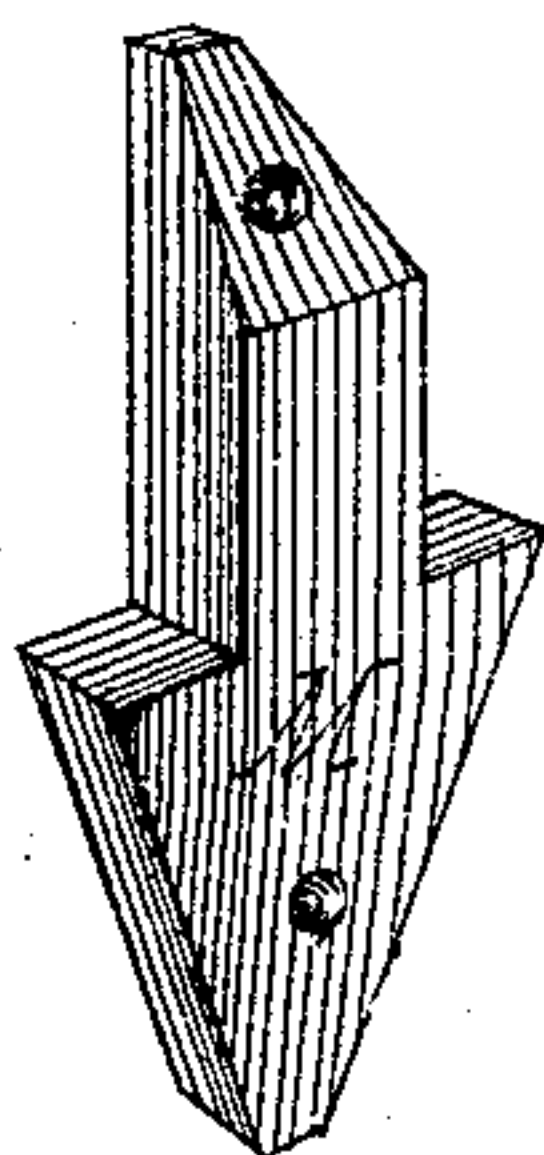


Fig. 5.

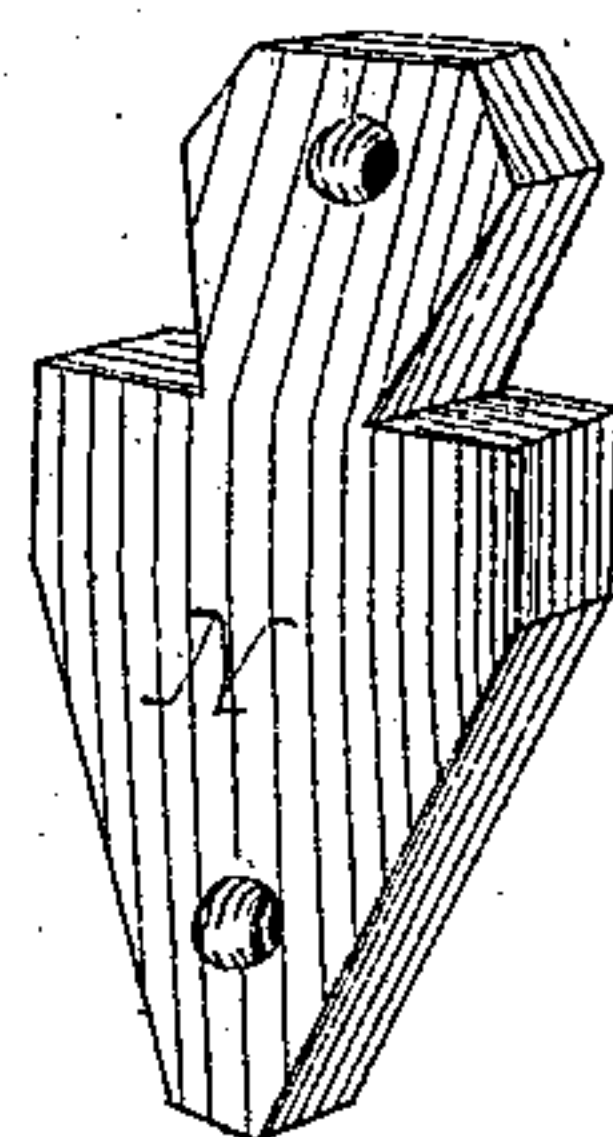


Fig. 6.

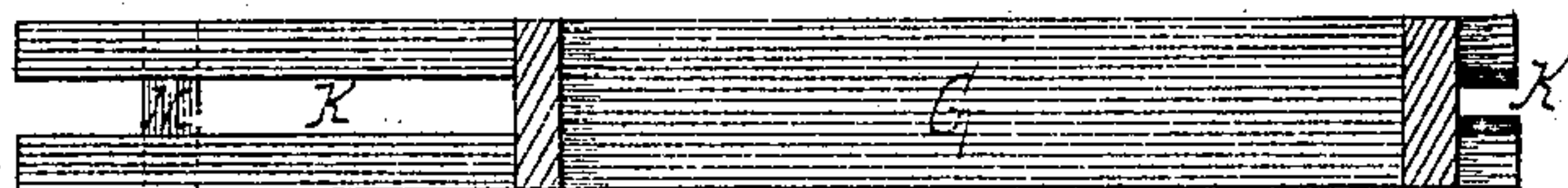


Fig. 7.

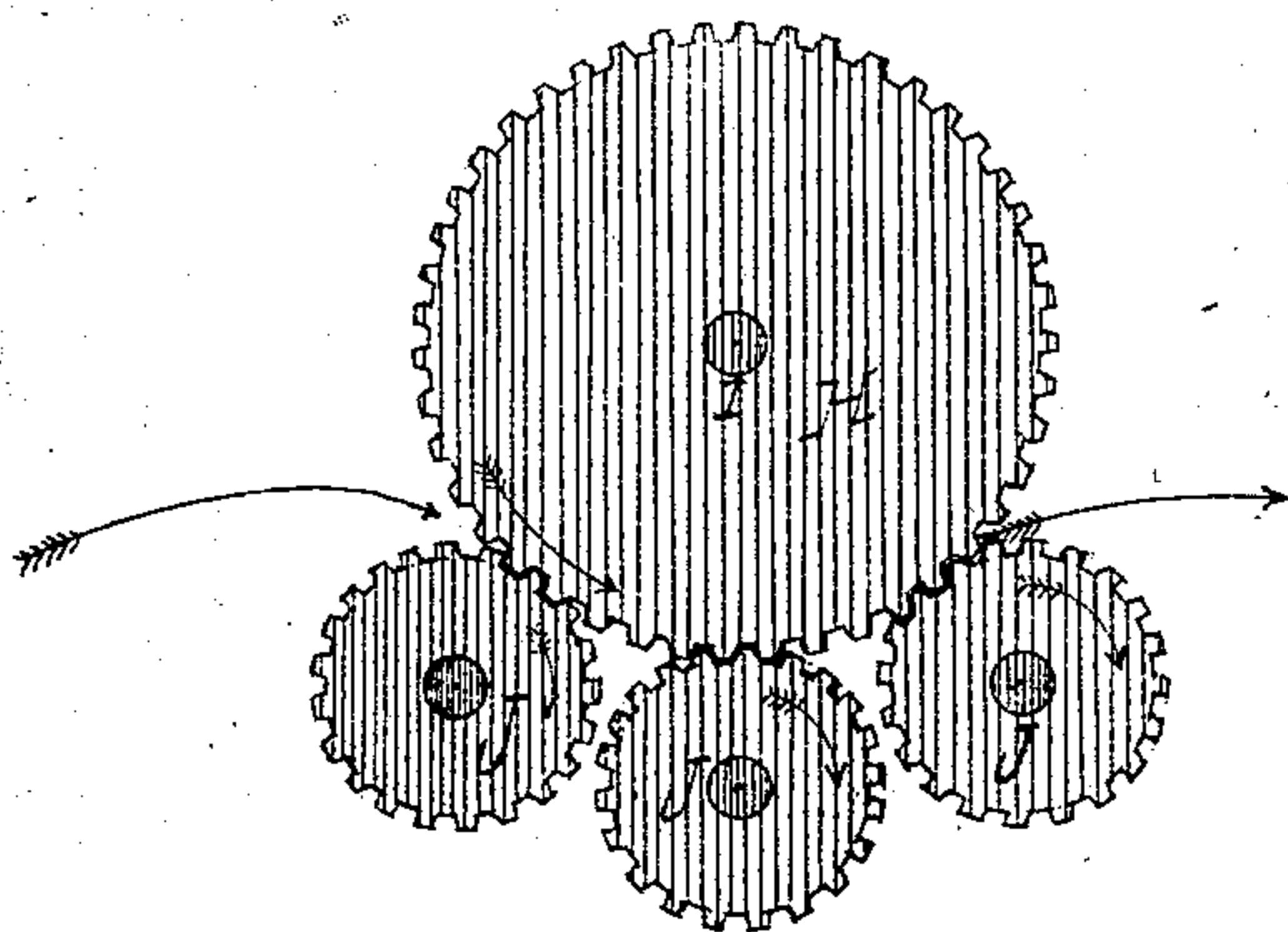


Fig. 8.

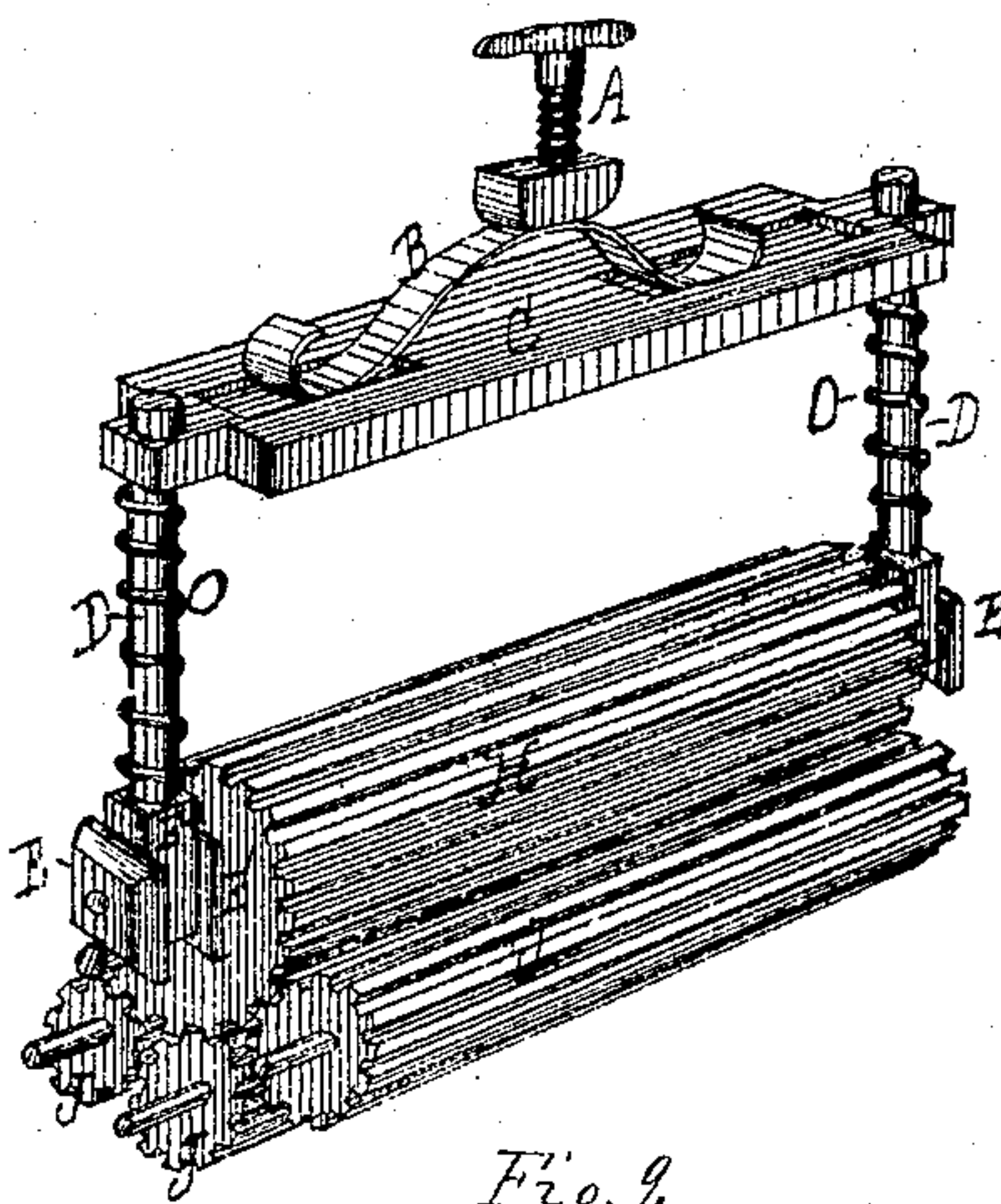


Fig. 9.

Witnesses.

J. Schermerhorn

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Inventor.

Philip Nichols

UNITED STATES PATENT OFFICE.

PHILIP NICHOLS, OF TROY, NEW YORK.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 117,102, dated July 18, 1871.

To all whom it may concern:

Be it known that I, PHILIP NICHOLS, of the city of Troy, county of Rensselaer and State of New York, have invented certain Improvements in Washing-Machines, of which the following is a specification:

By the peculiar construction and arrangement of the respective parts, spring, spirals, vertical-bearing movable arms, and rollers, all acting in combination within the outer frame of the machine I make a more compact and efficient machine, and produce better results than with machines heretofore in use.

By my arrangement the bearing-spring at the top, acting by means of the screw upon the movable cross-piece, and that again upon the spirals on the vertical arms, all within the frame, an increasing or decreasing pressure at will is brought to bear upon the projecting shafts or axes of the large cylinder, to which, by means of the crank, a reciprocating motion is given, which, in turn, by action of the grooves in the interlocking ribs of the smaller cylinders or rollers imparts, by the grooved gearing, a like revolving motion to each of the smaller cylinders corresponding with that of the larger roller or cylinder, and at the same time a downward pressure is given by the spring and spirals to the material which is being washed or cleansed as it is fed or discharged from the fluted rollers into or from the tub.

Figure 1 is a general perspective view of the machine in tub. Fig. 2 is a vertical transverse section. Fig. 2½ is a vertical transverse section of the parts separate, shown in Fig. 2. Fig. 3 is a longitudinal section through the center. Fig. 4 is an end elevation. Fig. 5 is a perspective of one form of the catch-blocks to be fastened to the tub. Fig. 6 is a perspective of the other catch-block. Fig. 7 is a horizontal section of the machine just above or on the upper line of the bed-plate. Fig. 8 is a vertical transverse section of the rollers. Fig. 9 is a perspective view of the working parts of the machine separate from the frame.

A is the bearing-screw to act upon the spring. B is the curved spring. C is the cross movable bar with openings at or near extremities. D are upright movable arms, with shoulders at lower ends which rest upon the end shaft or axes, extended, of the large roller. E is an armature fastened on the outside of the shoulder; E¹, an armature

attached on the inside of the shoulder E², by which, and the end openings in the cross-bar C, the vertical arms are kept within the openings or slots in the upright frame. G are vertical slots extending from near the bottom to the top of the side frames. F is the bed-plate. H is a large driving fluted roller. I is the shaft of the large roller. I' is the crank attached or continued from one end of the shaft of the driving roller. J J J are equal small longitudinal grooved rollers whose end shafts or axes pass through the frame work of the machine. K K are openings in the bed-plate. M, Fig. 5, is a catch-block to be fastened at one side of the tub. N is another catch for the opposite side. O is a spiral on each of the vertical arms.

The screw A is made of wood or other suitable material, and passes through a brace-block fastened on the top of the frame, through which, and at or near the center, a worm or thread is made to fit the screw. To the top of the spring B is fastened a block, and from the center of this extends upward a small pointed iron screw which enters the bottom of the screw A and holds the spring in position. The spring B is made of steel or its equivalent. The spirals O are made of brass or other suitable material. The rollers are of maple or other material best adapted to the purpose; and the smaller rollers, of which I do not limit the number, though I show and prefer three equal rollers, J J J, are grooved lengthwise, and so as to gear or match with the grooves of the larger roller, the shafts of which may work up and down in the upright slot or opening F; and one end of the shaft extended forms a part or continuation of the crank I' by which motion is given to the large driving-roller. The bed-plate may be of a length corresponding with the diameter of the tub, and have openings to match or spring upon catch-blocks in such manner as the manufacturer desires, although I prefer forms shown by Figs. 5 and 6, and the machine in its respective parts, or as a whole, may be of any size required.

The machine having been fastened or sprung into the catch-blocks fastened within or on the sides of the tub, and the suds prepared, I set the screw A at such height as the thickness of the clothing may require; then, on revolving the large roller to or from the operator by the crank, the clothing is drawn or fed from the hand or tub

into and between the parallel grooves of the respective rollers, and by the grooved gearing of the smaller rollers matching with the larger the clothes are pressed and rubbed in their whole passage back and forth, as the backward and forward motion of the crank causes the large roller to revolve, and its grooved gearing, interlocking with like grooves on the smaller rollers, keeps up continued motion of all the rollers or cylinders in the same direction, while the combined action of the screw A, spring B, and spiral O, all working together or in combination within the frame and upon the end shafts of the roller H, give any desired pressure, the upright shoulders and arms being kept in position by the outer and inner armature E and E¹, and the spirals O being confined on such arms by the shoulders and the cross-bar C through the ends of which the vertical arms respectively work, while said cross-bar is held in position by the spring, the block of which is supplied by an upward-projecting small-pointed screw, which enters the down-bearing screw A in the manner as set forth. I thus give a combined and efficiently continuing pressure by the bearing-screw, the spring, and cross-bar, which,

operating on the spirals on each side and within the frame-work of the machine, gives a continued pressure to the extremities of the shaft of the large roller which in motion by the grooved gearing of the smaller rollers imparts the necessary feed-motion to the machine, while the pressure is ample to rub and press the clothing as it is drawn or discharged from suds in the cleansing process, and when sufficiently cleansed the machine may be placed on or near the top of the tub, as shown in Fig. 3, when it may be used for further cleansing or washing the clothing, or as a wringer, as may be desired.

I claim—

The bearing-screw A, curved spring B, cross-bar C, in connection with the working spirally covered arms D, armatures E and E¹, shaft I, interlocking rollers H and J, all constructed, arranged, and operating within the outer frame of the machine as described and set forth.

PHILIP NICHOLS.

Witnesses:

JACOB SCHERMERHORN,
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