

No. 610,272.

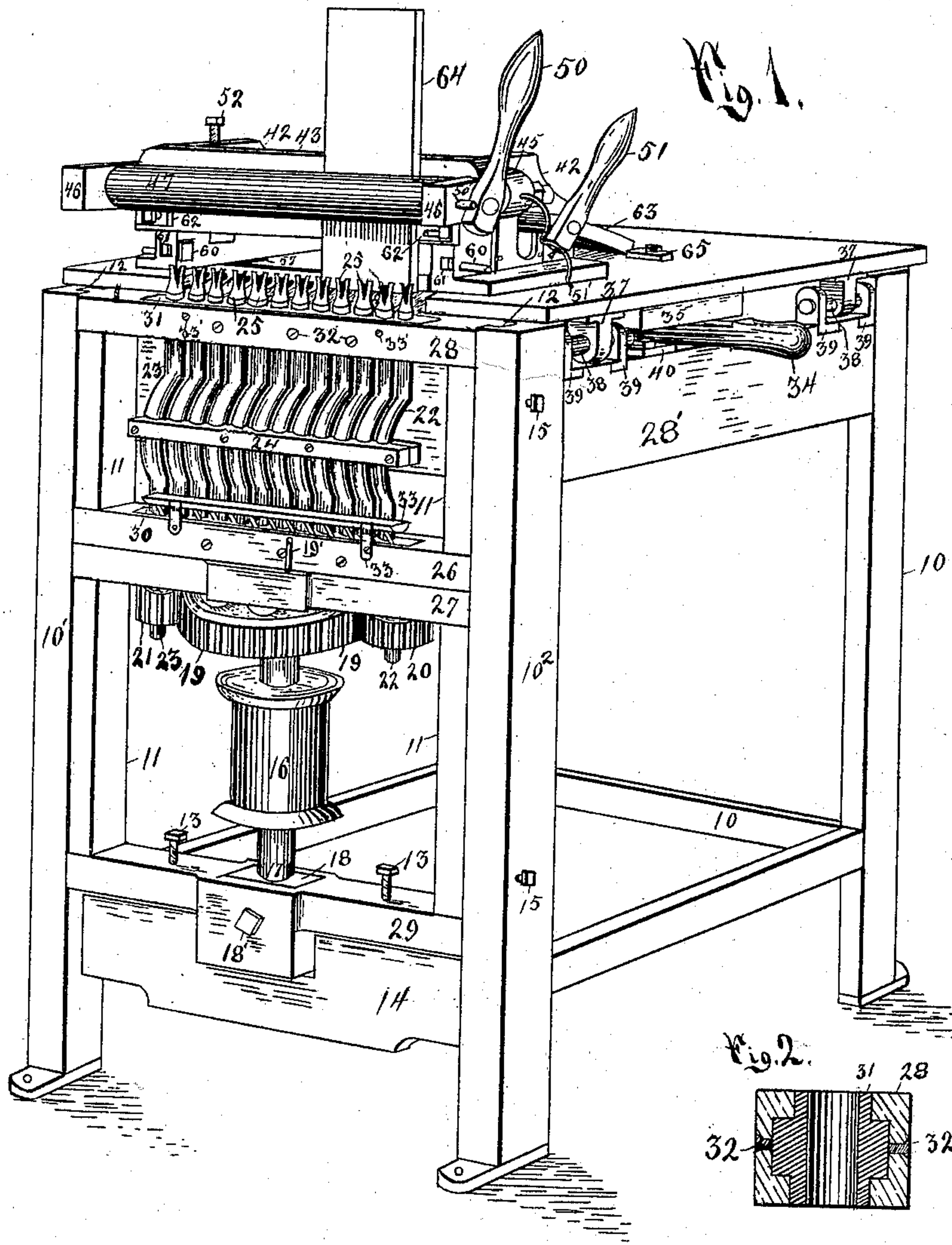
Patented Sept. 6, 1898.

E. L. LINDWALL.  
DOVETAILING MACHINE.

(Application filed Oct. 23, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses—

H. H. Warren

E. E. Carpenter

Inventor—

Erick L. Lindwall

By his attorneys—

Harris & Baldwin

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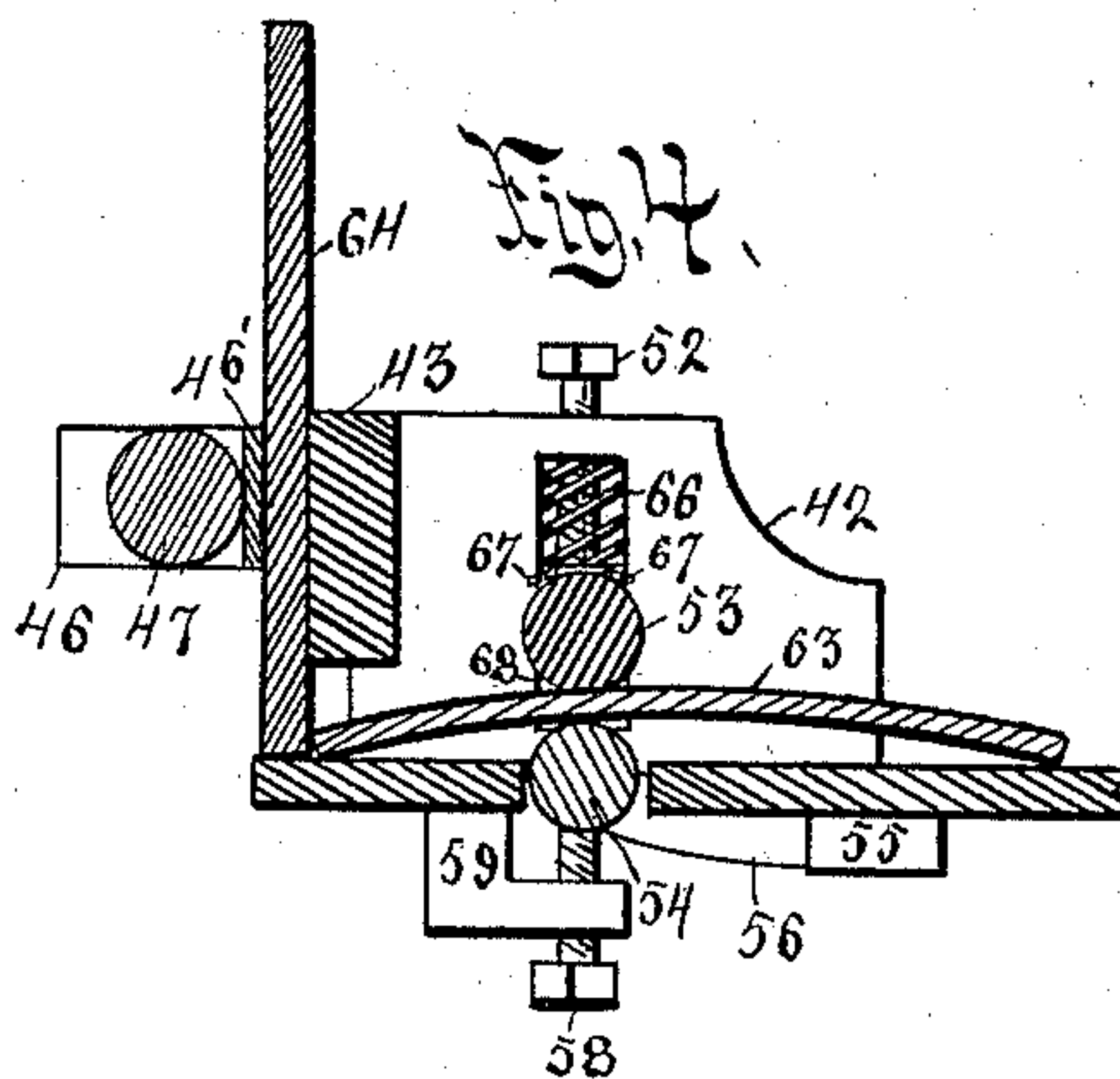
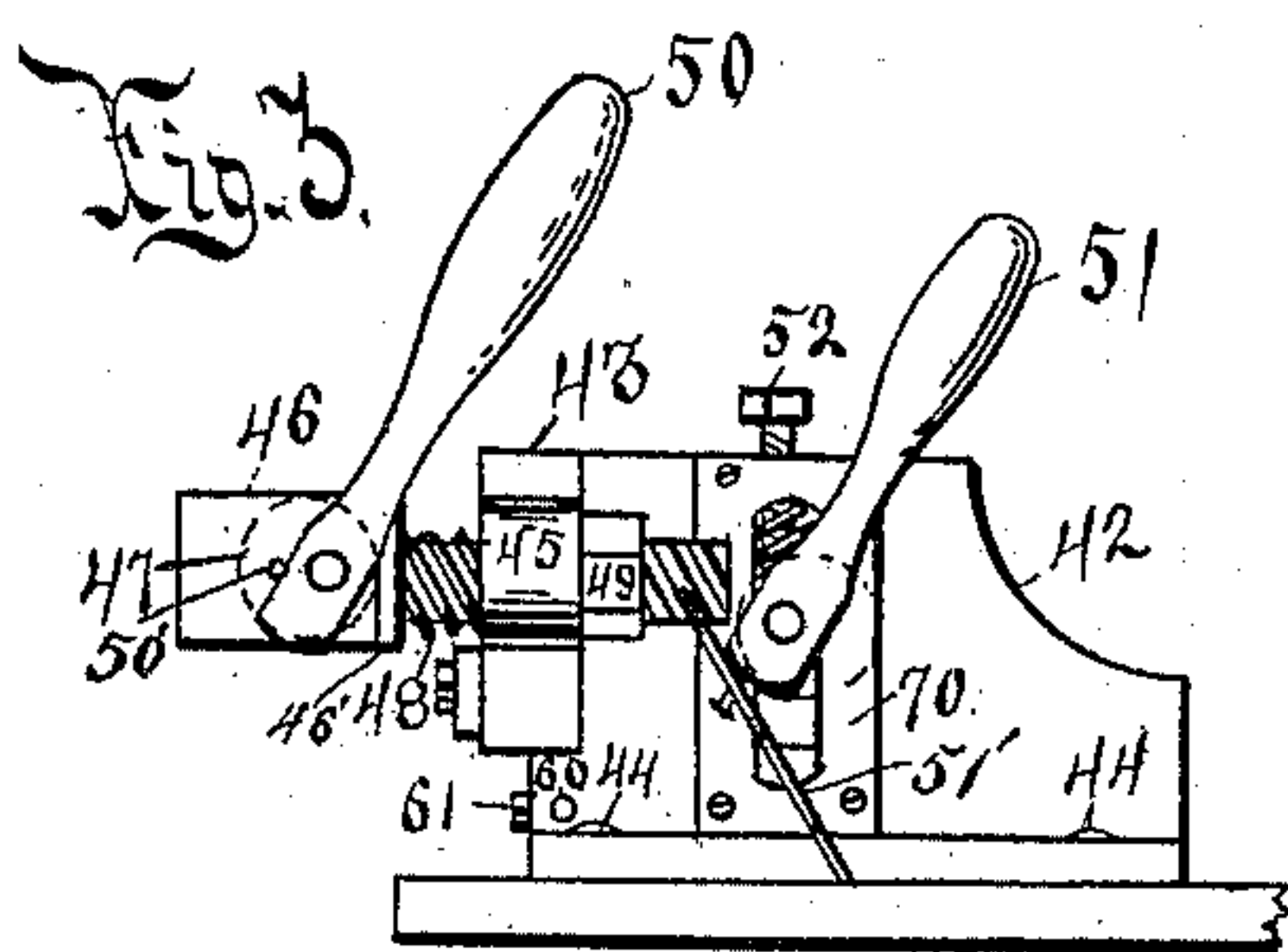


Fig. 5.

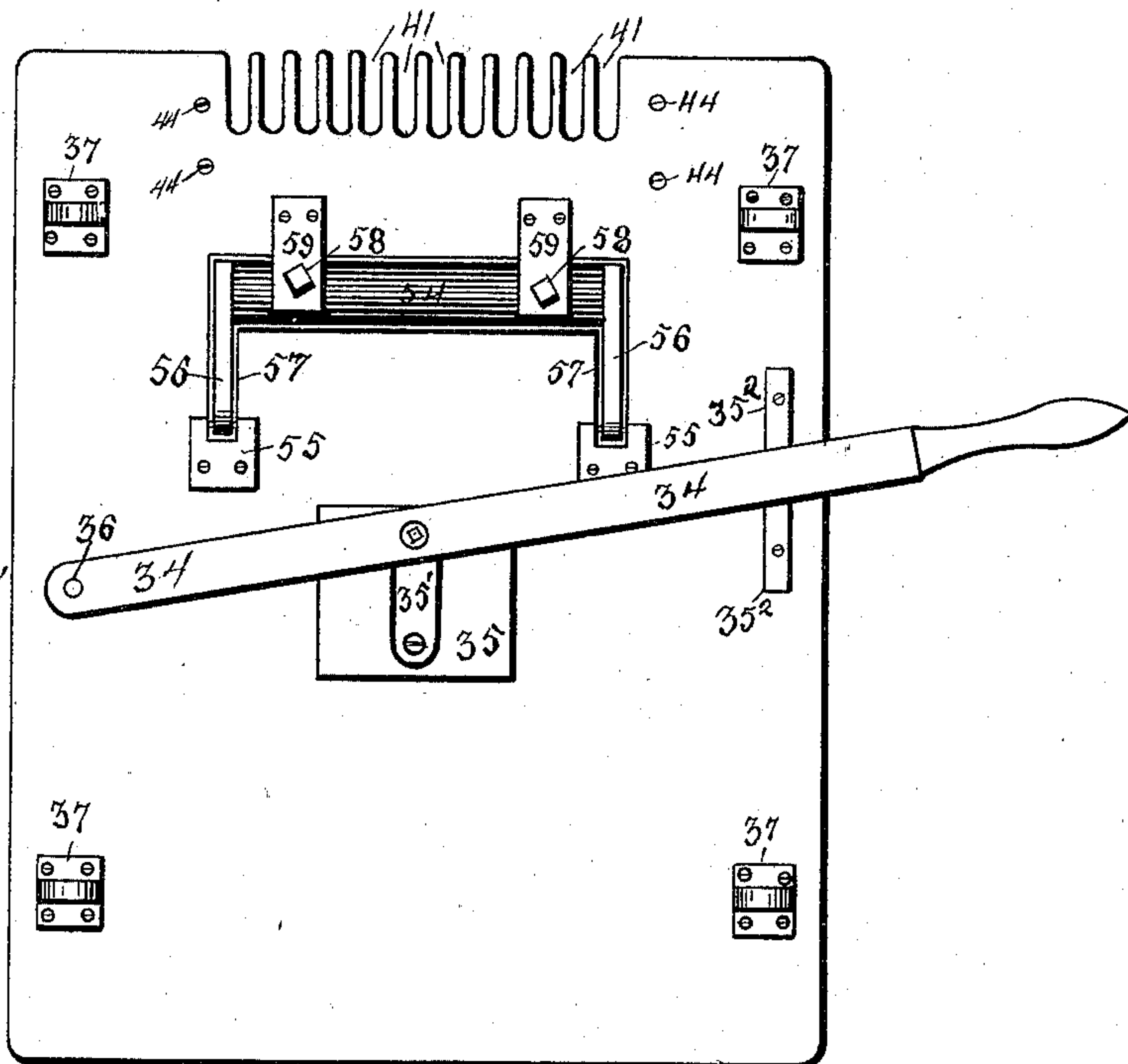


Fig. 7.

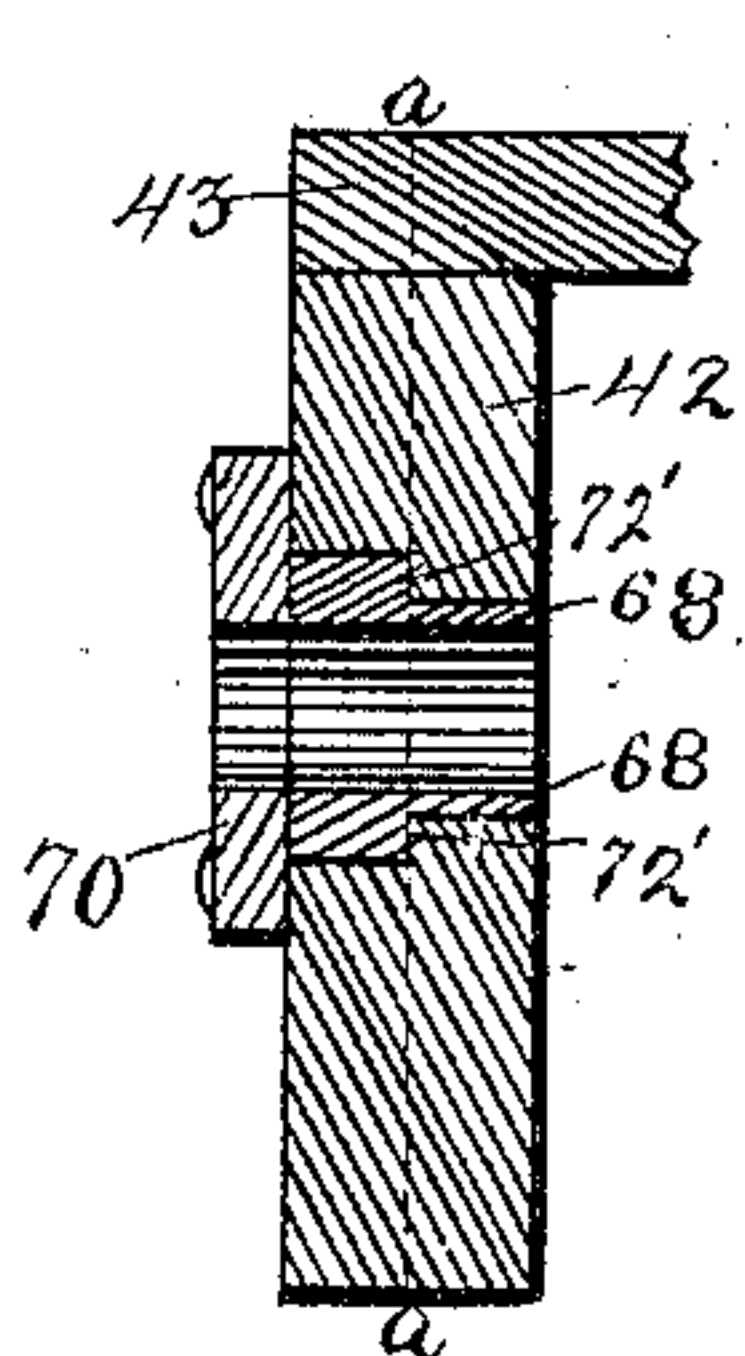
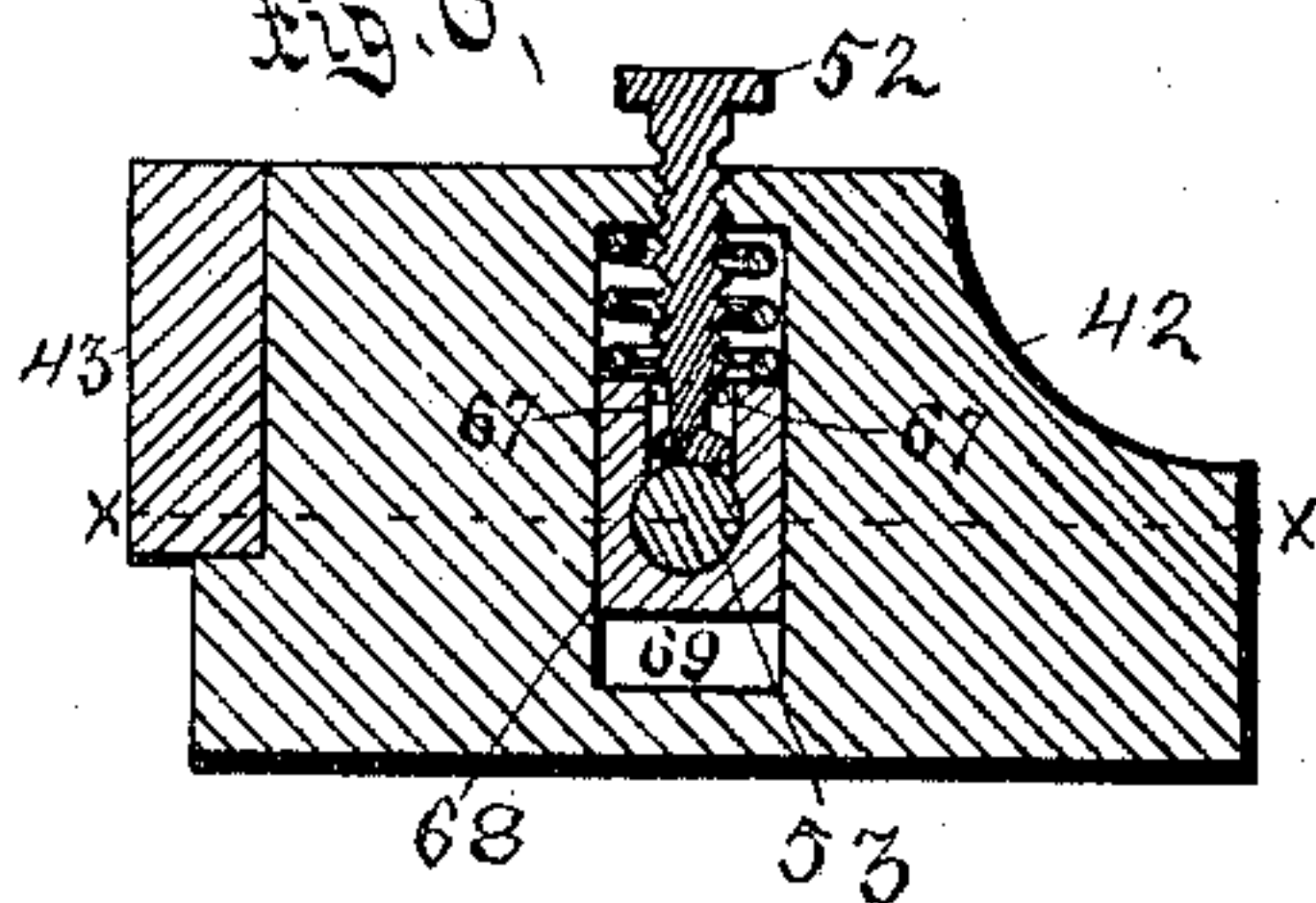


Fig. 6.



Witnesses

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# UNITED STATES PATENT OFFICE.

ERICK LEANDER LINDWALL, OF KENNEDY, NEW YORK.

## DOVETAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,272, dated September 6, 1898.

Application filed October 22, 1897. Serial No. 656,026. (No model.)

*To all whom it may concern:*

Be it known that I, ERICK LEANDER LINDWALL, a subject of the King of Sweden and Norway, residing at Kennedy, in the county of Chautauqua and State of New York, have invented a new and useful Dovetailing-Machine, of which the following is a specification.

The object of my invention is to make a simple, practical, and durable dovetailing-machine wherein the tongue and groove of both boards for a corner may be clamped and cut at the same time, even though one be a curved and crooked drawer-front, the curved board being held from both upper and under sides, thus preventing the board springing out of shape and the consequent non-fit of tongue and groove, the chucks or conical cutters are formed into a gang and made to operate as one and made adjustable, so as to make any depth of cut. This adjustment and guiding mechanism of the movable top is simple, yet accurate and powerful, all of which will be fully understood by this specification and the accompanying drawings, in which—

Figure 1 is a perspective view of my machine with boards in position. Fig. 2 is a sectional view of cross-piece containing box for curved-shaft bearing. Fig. 3 is a detail view of end of clamping mechanism with hand-levers. Fig. 4 is a sectional view of clamping mechanism with boards in position. Fig. 5 is a plan view of under side of table-top, showing lugs, lever, and roll for curved work. Fig. 6 is a sectional lengthwise view of end piece of clamping mechanism at *a a* in Fig. 7. Fig. 7 is a sectional view of said end piece at *x x* in Fig. 6.

In the drawings, 10 is a strong frame, which may be made of any suitable material.

11 is a movable frame containing pulley, gearing, curved shafts, and chucks, which frame is made with a tongue 12 12 on each side to slide up and down in a corresponding groove in posts 10' 10<sup>2</sup> of frame 10. Frame 11 is adjusted by set-screws 13 13, which bear upon cross-piece 14 and raise or lower the entire frame, as desired, and when brought to position frame 11 is secured by set-screws 15 15, which bear against the tongue in the side of the frame.

Within the lower part of frame 11 pulley

16 on shaft 17 drives gears 19 20 21. The lower end of shaft 17 rests in box 18, which box is set in the enlargement in cross-piece 29 and is made adjustable for wear by set-screw 18'. The chucks or conical cutters 25 25 are driven in a manner resembling a common carpenter's brace and bit by a gang of curved shafts. The two outside ones 22 23 extend down through cross-pieces 26 27 and carry pinions 20 21 on their lower ends, which pinions are driven by large gear-wheel 19. The gang of curved shafts are united at the center of the curve by bar 24, which bar is made in two pieces and bolted together around the shafts. By this connecting-bar the two end shafts 22 23 impart motion to all the other shafts and the gang works as one. The gang works in boxes 30 31 set in cross-pieces 26 28 and are constructed as shown in Fig. 2, the box projecting out into the cross-piece and is secured and adjusted in position by set-screws 32 32 from each side, and the boxes can be trued up at any time by these screws on each side. There are also boxes in cross-piece 27 for the extension on shafts 22 23 where they extend down to pinions 20 21.

33 is an oil-tray, with feeding-tube to each shaft-bearing. A like oil-tray has been removed from cross-piece 28 for the upper bearings in order to better show the chucks, the screws 33' 33' for attaching to cross-piece being shown. The chucks are made in the usual form.

My table-top slides back and forth on bearings formed by lugs 37 37 37 37, attached to the under side of the table-top, as shown in Figs. 1 and 5, the lugs having holes sufficiently large to receive and slide back and forth on bolts 38 38 38 38 when rigidly held by bearings 39 39 at each corner, as shown in Fig. 1 on one side. The table-top is moved back and forth by lever 34, which is bolted loosely to piece 35', so as to give play at the center as the top moves back and forth. Piece 35' is fastened to block 35 by a screw. A bolt through hole 36 and through the side piece on the opposite side from cross-piece 28' in frame 10 fastens that end of lever. Near the lever-handle is piece 35<sup>2</sup>, which holds lever 34 on a level and guides it to work true. Adjustable stop 40 on cross-piece 28' regulates the depth of cut, as desired. Slotted



openings 41 41 receive the chucks when the table-top is sent forward. My clamping device is supported upon and firmly secured to this top by screws 44 44 in the two end supports 42 42. Each end of cross-piece 43 is extended out, as at 45, to receive the round end of supports 46 46 for roller 47. These supports have springs like 48 at each end holding roller 47 and flat piece 46' away from cross-piece 43 for convenience in clamping. Adjusting-nuts on the ends of supports 46 46 like 49 allow of quick adjustment.

Hand-levers 50 51 are journaled to rollers 47 and 53 at an eccentric, as shown in Fig. 3 by dotted lines for rolls, and when the boards are in position a quick downward push of these levers brings the eccentric portion of the rolls against the boards and holds them securely in position. Pin 50' and curved wire 51' catch the levers when thrown back and hold them in position ready to be used at once. The journal of roll 53 works in box 68, which is adjusted by screw 52 at each end. Spring 66, around screw 52, bears down on box 68, and the lower end of screw 52 is made, as shown in Fig. 6, with pins 67 67 on each side of the smaller portion of screw. Box 68 slides up and down in slot 69, which slot is made with angles 72' 72', which prevent the box from slipping out of place toward the inside, and piece 70 on the outside completes the slot, holding the box secure, yet letting it have room to slide up and down.

For curved or crooked work it is necessary in order to make perfect joints to have a support underneath the curve, since the curve is pressed down and out of regular form without such support, also the curved piece would press back and break when cut. To prevent this, I cut a slot in my table-top between roller-supports 42 42 and hang a roller 54 by hinges 55 55 and curved end bearings 56 56, so that the roller just works in the long slot and slots 57 57 for the curved end pieces 56 56. To hold roll 54 in position and adjust the same up against a curved drawer-front, I use set-screws 58 58 in holders 59 59. For

straight work roll 54 rests on holders 59 59 down and out of the way.

60 60 are gages for the lower board, which are set by set-screws 61 61, and 62 62 are movable gages to adjust the upright board. 65 is an additional gage for the lower board. Pin 19' on cross-piece 27 is to lock large gear-wheel 19 when it is desired to adjust the cutters, thus avoiding all danger from the machine starting.

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

1. In a dovetailing-machine, a main frame containing an adjustable upright frame supporting a gang of two or more curved upright shafts with conical cutters, said shafts united at their curved centers, gear-wheels and a pulley to drive the same, in combination with a table-top supported and sliding on bolts at each corner, an adjustable roll hinged to the underside of said top, eccentrically-journaled rolls and levers, a frame on said top, a lever attached to the under side of said top and to the main frame to operate said top, substantially as shown and described and for the purpose set forth.

2. In a dovetailing-machine, main frame 10, upright frame 11, adjusting-screws 13 13, pulley 16, gears 19 20 21, curved upright shafts 22 23, conical cutters 25 25, boxes 30 31, bar 24, oil-tray 33, lever 34, lugs 37 37 37 37, bolts 38, on lugs 39 39, at each corner, adjustable stop 40, clamping-frame 42 43, supports 46 46, eccentrically-journaled roll 47, clamping-piece 46', springs 48, levers 50 51, set-screws 52 52, eccentrically-journaled roll 53, hinged roll 54 and adjusting-screws 58 58, in holders 59 59, all made to operate in the manner and for the purpose set forth.

In testimony that I claim the foregoing I subscribe my name in the presence of two witnesses.

ERICK LEANDER LINDWALL.

In presence of—

CHAS. J. G. NELSON,  
E. CRANDALL.