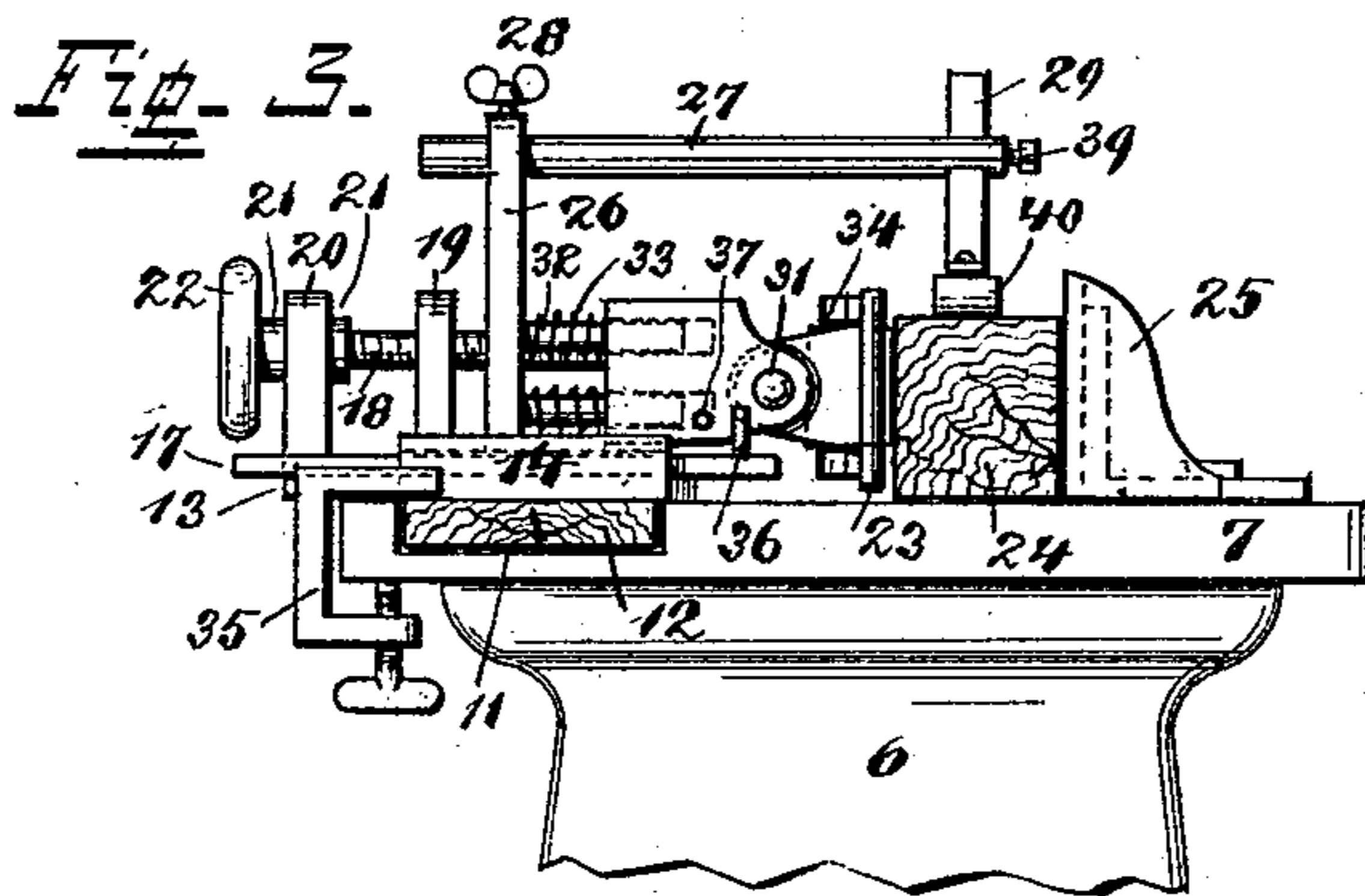
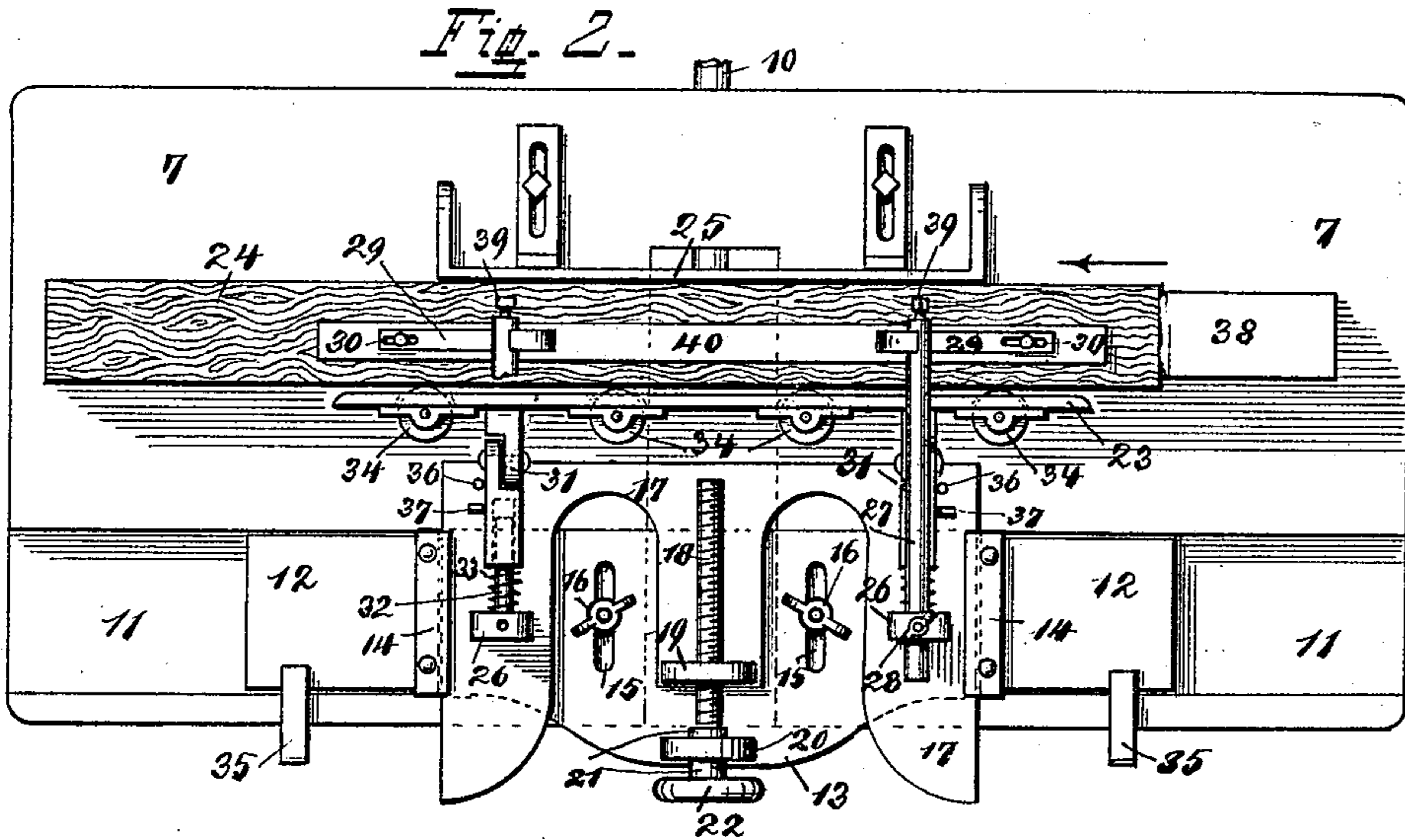
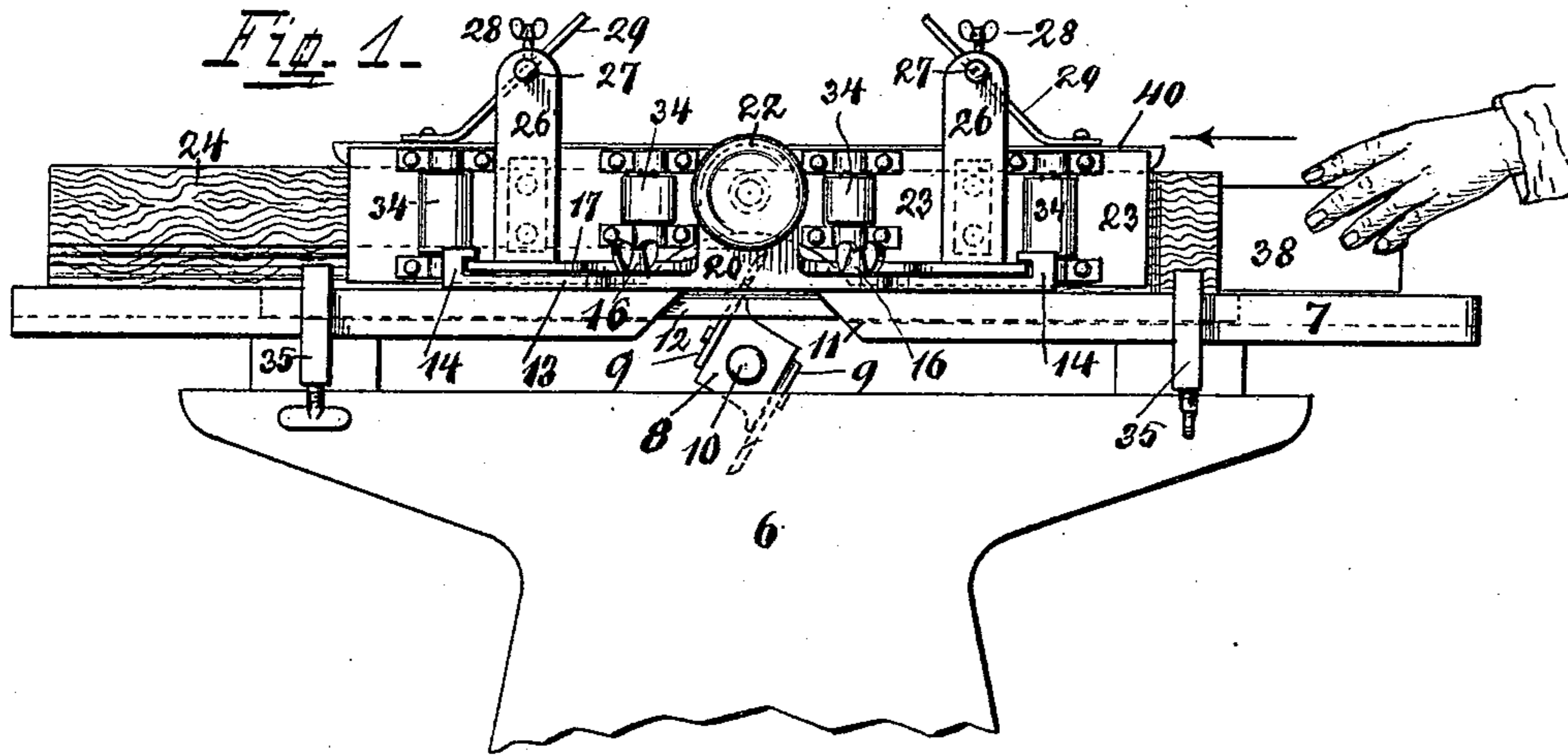


(No Model.)

J. C. THOM.
WORK HOLDER AND SAFETY GUARD FOR UNIVERSAL WOODWORKERS.
No. 481,983. Patented Sept. 6, 1892.



Attest
Samuel M. Quinn
John Minkam

Inventor
John C. Thom
by Chas. Spengel Atty.

UNITED STATES PATENT OFFICE.

JOHN C. THOM, OF CINCINNATI, OHIO.

WORK-HOLDER AND SAFETY-GUARD FOR UNIVERSAL WOODWORKERS.

SPECIFICATION forming part of Letters Patent No. 481,983, dated September 6, 1892.

Application filed February 12, 1892. Serial No. 421,285. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. THOM, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Work-Holder and Safety-Guard for Universal Woodworkers; 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 figures of reference marked thereon, which form a part of this specification.

This invention relates to a device to be used in connection with so-called "universal woodworkers," for the purpose of holding the work while acted upon by the cutter-head, said device obviating the necessity of the operator getting his hands too close to the rapidly-revolving cutter-head, and thereby forming a protection against accidental injury. In such machines a horizontal cutter-head is revolved by a shaft below the table, on top of which latter the stuff to be worked is supported. The circular path of the knives of the cutter-head projects above the table, so as to enable said knives to act upon said stuff while it is fed over the table. In the operation of these machines the function of the attendant is twofold: First, he has to hold the work down against the table and knives, and, secondly, he has to advance and feed it across the table.

The operation is very dangerous owing to the great rapidity with which the knives or bits revolve, and in cases of unequal feeding, where the operator permits the bits to take too large a bite it often happens that they, being unable to make a complete cut, take a hold of the wood and pull it away from under the operator's hand with such suddenness that he, pushing and feeding, as he is, toward the knives, is unable to resist and recover quickly enough, and as a result at least one of his hands is drawn within the path of the rapidly-revolving bits, causing generally the most serious consequences.

To prevent such accidents is the object of my invention, and I accomplish it by providing a device for holding the work down to the table, and which obviates the necessity

of the operator passing his hands with the work directly over and past the cutter-head, and thereby enabling him to feed the work over the cutter-head by merely pushing against the end of it.

To this end my invention consists of adjustable means acting upon the work from top and side for the purpose of holding the same in position, without interfering, however, with the feeding of the same across the table. The construction of these means is more particularly described in the following specification, pointed out in the claims concluding it, and illustrated in the accompanying drawings, in which—

Figures 1, 2, and 3 show front, top, and side views, respectively, of the principal parts of a universal woodworker having my invention attached to it.

6 is the frame, 7 the table, 8 the cutter-head, 9 the knives, and 10 the driving-shaft, of a universal woodworker.

The tables of the machines have near their front a groove 11, running through their entire length, and which is provided to accommodate certain kinds of work. This groove does not enter into my invention any further than to receive the base 12 of my attachment, which base is so proportioned in width as to fit this groove.

13 is a guide-plate having guides 14 and slots 15, and is adjustably secured to base 12 by thumb-screws 16.

17 is a slide resting upon plate 13 and held in position thereon by guides 14. It may be adjusted on plate 13 by means of a screw 18 passing through a nut 19 on slide 17. This screw is held by collars 21 on an upright lug 20 on guide-plate 13, which confine this screw longitudinally, but do not interfere with its rotary movement. A hand-wheel 22 is provided, whereby said screw is turned.

23 is a pressure-bar moving with slide 17 and by this latter and screw 18 may be caused to bear sidewise against the work 24, holding the same with the aid of fence 25, found on all woodworkers, laterally in position.

26 are standards also connected to slide 17 and having arms 27, which may be adjusted on said standards and held in their adjusted positions on them by means of screws 28. These arms 27 have other arms 29, preferably

of spring-steel, secured to them by nuts 39. To the lower ends of these arms connects a pressure-foot 40, which by means of the elastic arms 29 and arms 27 may be caused to bear
 5 on top of the work 24 for the purpose of holding said work vertically against the table. The vertical adjustment of pressure-foot 40 to accommodate work of different thicknesses is obtained by turning arms 27 in their bear-
 10 ings on standards 26, whereby the degree of inclination of arms 29 is varied, and the pressure-foot either raised or lowered. Inasmuch as during the vertical adjustment of the pressure-foot the position of the lower ends of
 15 arms 29 changes slightly on the former, said ends must be connected to the pressure-foot in a manner to permit such change, and which is accomplished by providing slots 30 in the lower ends of said arms. In order to cause
 20 bar 23 to bear fully and evenly against the sides of such work which is beveled, for instance, said bar is secured to slide 17 by hinges 31, which permit said bar to adjust itself to different angles.

25 In putting the work 24 in position the same is put against fence 25, and bar 23 is brought up against the side of it by means of slide 17 and screw 18, which is operated by hand-wheel 22. In cases where screw 18 is not
 30 sufficient to accommodate the complete adjustment of bar 23 the limit of such adjustment may be extended by changing the position of guide-plate 13 on base 12 through the intervention of slots 15 and screws 16. Such
 35 change in position of plate 13 carries with it all parts above it, including bar 23. After the work is thus laterally secured the pressure-foot 40 is brought over the same by moving arms 27 either in or out on standards 26,
 40 and then the same is caused to bear down on the work by turning arms 27 so in their bearings as to lower pressure-foot 40 down onto the work, in which position the former is held by arms 27, which are rigidly secured now in
 45 their adjusted position by screws 28.

In order to have the lateral impingement of bar 23 against the work 24 constant, but sufficiently yielding to permit the ready feeding of the latter, the hinges which hold said bar
 50 are not rigidly secured to slide 17, but rest loosely on pins 32, which extend from standards 26 and partly occupy sockets in the rear ends of these hinges. Springs 33 are supported on pins 32 and interposed between
 55 standards 26 and the rear parts of the hinges 31.

In adjusting bar 23 up against the work 24 by means of screw 18 the hinges of said bar move back upon pins 32 and compress the
 60 springs on them. In their compressed state springs 33 exert constantly a certain pressure against hinges 31 of bar 23, whereby the latter is closely held against the work, yielding sufficiently, however, so as not to interfere
 65 with the feeding of the same. Care has to be exercised during this adjustment with a view

to prevent slide 17 being moved up so close against bar 23 and the work 24 as to cause pins 32 to reach the ends or bottoms of the sockets which they occupy, in which event
 70 the elastic force of the springs would be deadened and the pressure of bar 23 caused to be a direct and unyielding one.

To facilitate the feeding of the work, rollers 34 have been provided on bar 23, which
 75 reduce the friction. The device may be secured to table 7 by any suitable means which permits its quick attachment or removal. In the present case clamps 35 have been shown
 80 for this purpose.

To prevent bar 23 with its hinges from dropping off of slide 17 when no work is in position, pins 36 on this latter, acting in conjunction with pins 37 on hinges 31, prevent this.
 85 As will be seen, pressure-bar 23 and pressure-foot 40, coacting with the old fence 25, completely hold the work in position and against the knives, dispensing thereby with the use of the hands of the operator for doing such. All
 90 the latter has to do is to push against the work so as to move and feed the same across the cutter-head. To prevent his hands from getting too close to this latter when the end of the work has reached it and is about ready
 95 to pass over it, he may interpose a suitable piece of wood 38 between his hands and the end of the work, whereby he is enabled to push the latter completely over the cutter-head without having to pass his hands over
 100 the same. Without the aid of bar 23 and pressure-foot 40 such manner of feeding would be impossible and the hands of the operator would have to stay with the work and follow with it clear across and over the cutter-head for
 105 the purpose of holding the same down in position. Such operation, as already stated, is extremely dangerous and more so in cases where the work is narrow and thin.

While this device has been described as being connected to a universal wood-worker, it
 110 may of course be used in connection with any other similar machine.

Having described my invention, I claim as new—

1. In a work-holder and safety-guard for
 115 universal woodworkers, the combination, with the table of the latter, of pressure-foot 40, arms 29, of elastic material, to which it is secured, arms 27, to which arms 29 are adjustably secured, and standards 26, to which
 120 arms 27 are secured in a manner to make them capable of a lateral as well as of a rotary adjustment, the latter adjustment being for the purpose of raising or lowering the pressure-foot, all substantially as shown and described.
 125

2. In a work-holder and safety-guard for universal woodworkers, the combination, with fence 25, of a pressure-bar 23 to hold the work against the fence, hinges to which this bar is secured, means to support the hinges, springs
 130 interposed between the hinges and their supports, a slide to which said supports are se-

cured, and means to adjust the slide on the table of the machine, all substantially as shown and described.

3. In a work-holder and safety-guard for universal woodworkers, the combination, with fence 25 and the machine-table, of pressure-bar 23 and pressure-foot 40 for holding the work against the two former, a slide to which pressure-bar 23 and pressure-foot 40 are adjustably secured, and means to adjust the slide on the machine-table, all substantially as shown and described.

4. In a work-holder and safety-guard for universal woodworkers, the combination, with fence 25 and the machine-table, of pressure-bar 23, hinges to which it is secured, supports on which the hinges rest, springs between said supports and the hinges, a pressure-foot 40, arms 29 and 27, which hold this pressure-foot adjustable, a slide on which all the parts are supported, and means to adjust this slide on the machine-table, all substantially as shown and described.

5. In a work-holder and safety-guard for universal woodworkers, the combination, with fence 25 and the machine-table, of a slide adjustably secured to this table, means to ac-

complish such adjustment, standards secured to the slide, pins extending out from the standards, hinges supported on these pins, springs between the standards and hinges, a pressure-bar secured to these hinges, arms 27, supported on the standards mentioned before, elastic arms 29, secured to arms 27, and a pressure-foot 40, secured to these latter arms, all substantially as shown and described.

6. In a work-holder and safety-guard for universal woodworkers, the combination, with fence 25, of a pressure-bar 23 to hold the work against the fence, hinges to which this bar is secured, means to support the hinges, springs interposed between the hinges and their supports, a slide to which said supports are secured, stops to prevent the hinges from becoming disengaged from the slide, and means to adjust the slide on the machine-table, all substantially as shown and described.

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

JOHN C. THOM.

Witnesses:

SAMUEL M. QUINN,
CHAS. SPENGEL.