

No. 887,103.

PATENTED MAY 12, 1908.

J. H. LANE.

WOODWORKING CLAMP.

APPLICATION FILED AUG. 17, 1906. RENEWED SEPT. 28, 1907.

2 SHEETS—SHEET 1.

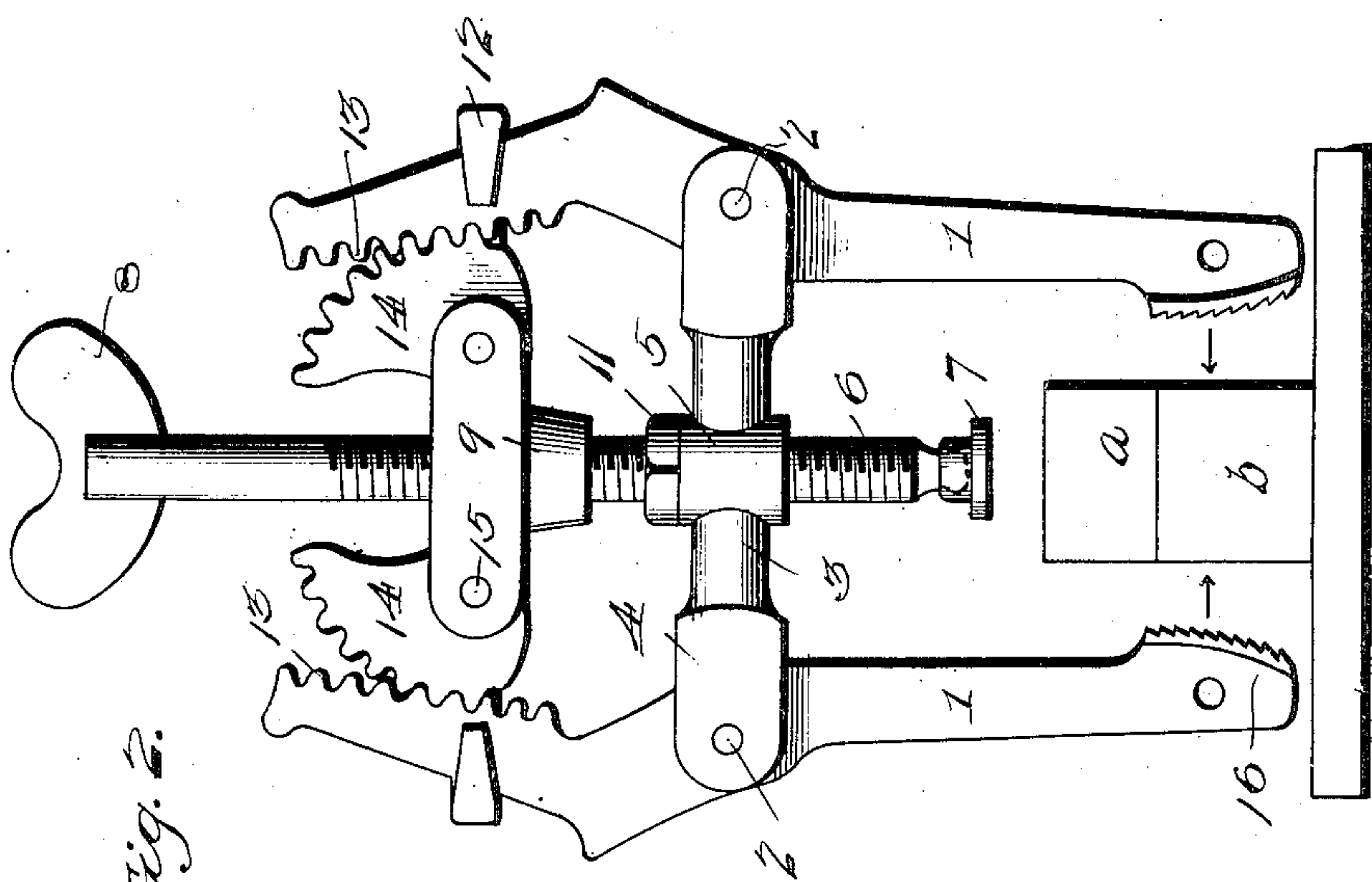


Fig. 2.

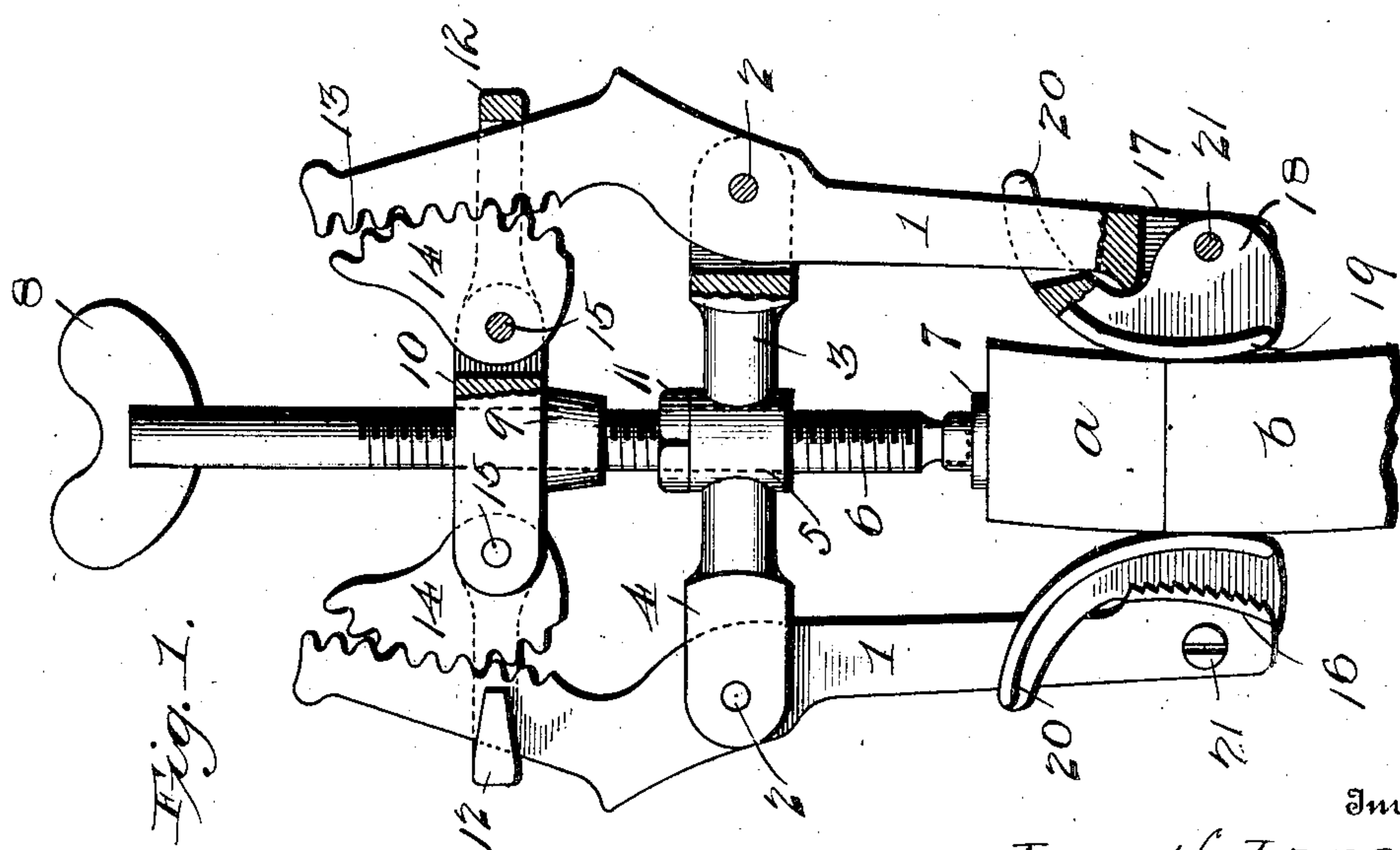


Fig. 1.

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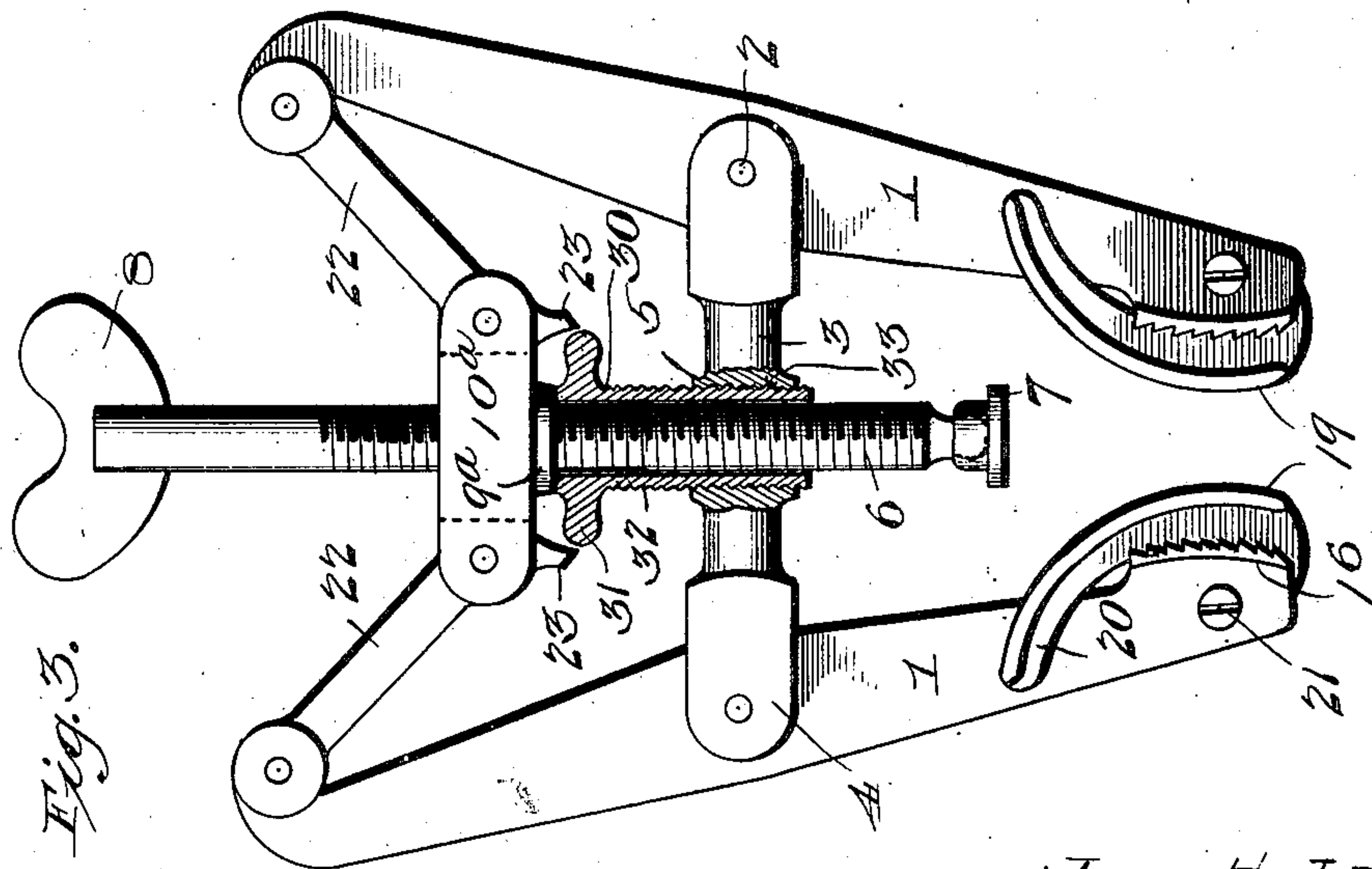
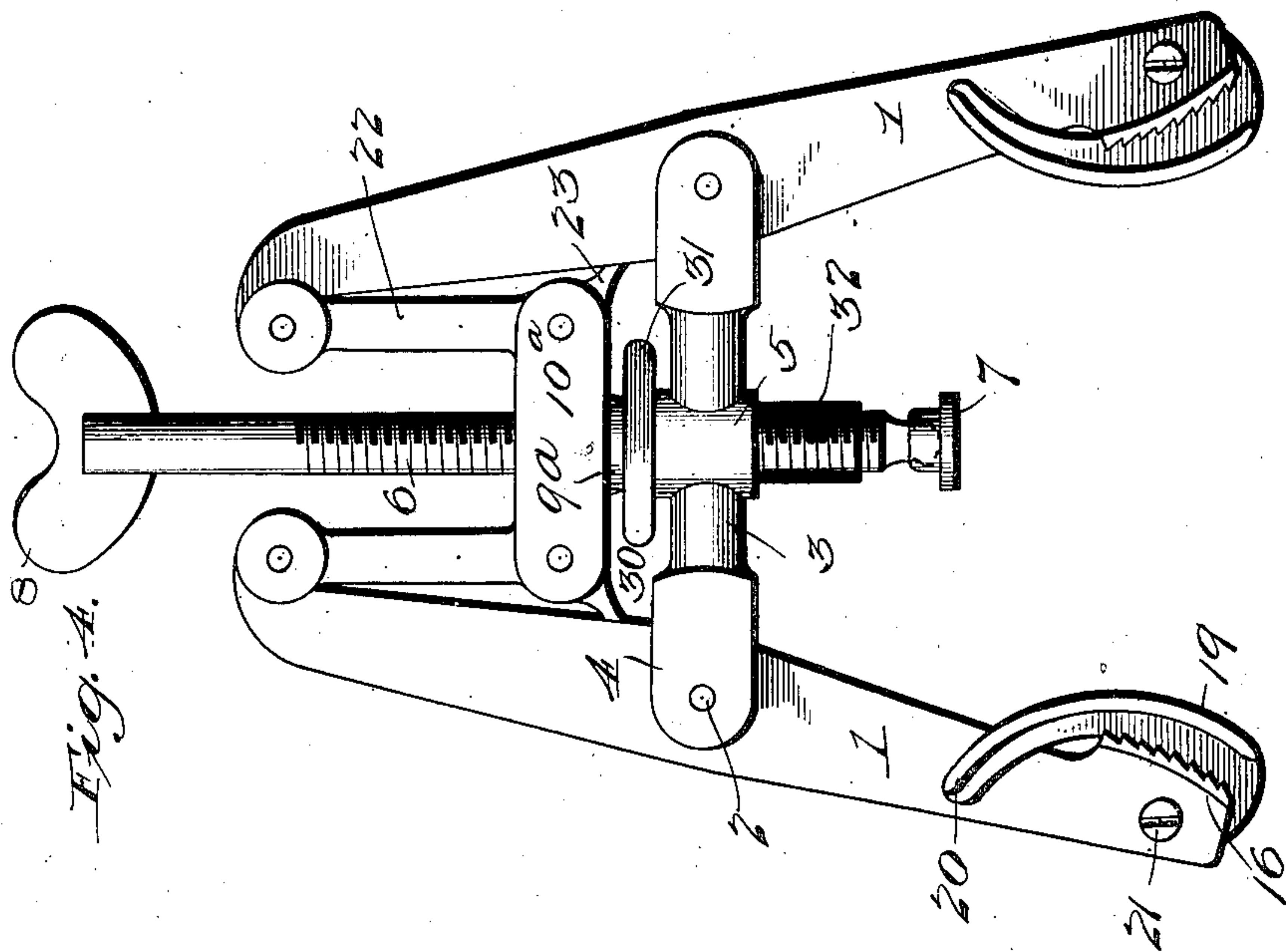
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# UNITED STATES PATENT OFFICE.

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## WOODWORKING-CLAMP.

No. 887,103.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed August 17, 1906, Serial No. 331,087. Renewed September 28, 1907. Serial No. 395,035.

*To all whom it may concern:*

Be it known that I, JOHN H. LANE, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Woodworking-Clamps, of which the following is a specification.

This invention relates to wood working and has special reference to a practical and novel construction of wood working clamp capable of general application as a clamp for wood workers' use, though possessing special utility as a gluing clamp for effecting a uniform and perfect glue joint between separate pieces of wood.

To this end the invention primarily contemplates a clamp providing simple, practical and effectual means for clamping together sections or blocks of wood which are designed to be glued up on curved or circular lines, thereby obviating the common expedients of nailing or utilizing pattern-makers' dogs for that purpose.

In pattern making it has been found that a good glue joint cannot be satisfactorily made by utilizing the expedients referred to, nor without uniformly pressing the wooden sections firmly together to insure a uniform distribution of the glue, while at the same time maintaining a tight joint at all points until the glue has set, as provided for by the present invention.

Also, the invention has for its object the provision of a clamp capable of adjustment to material of largely varying width, while at all times securing the novel result of applying a direct pressure at three distinct points, which pressure is exerted in directions for not only rigidly holding the sections to be matched or glued, but at the same time drawing and binding these sections together to maintain a perfect joint until the glue has set.

With these and many other objects in view it will be readily apparent to those familiar with the art, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described and illustrated in the claims.

The essential feature of the invention involved in the novel arrangement of parts for

securing a direct pressure upon the work from three points, is necessarily susceptible to structural modification without departing from the scope of the invention, but preferred practical embodiments thereof are shown in the accompanying drawings in which

Figure 1 is a side elevation partly in section of a wood working clamp constructed in accordance with the present invention, and showing the clamp members closed upon two sections of wood for gluing purposes. Fig. 2 is a similar view showing the clamp open and illustrating the use thereof with the eccentric or scroll gripping dogs removed. Figs. 3 and 4 are elevations of the modified form of the clamp illustrating the use of another form of lever actuating means.

Like references designate corresponding parts in the several figures of the drawings.

In carrying out the invention, the same includes in its general organization, the oppositely arranged swinging lever arms 1—1, pivotally supported or fulcrumed intermediate their ends by the fulcrum pins 2, upon the opposite extremities of an interposed fulcrum bar 3. The bar 3 is provided with the bifurcated end heads 4, receiving therein the fulcrum portions of the lever arms 1, and at a point centrally between its ends, the said fulcrum bar is provided with a central guide opening 5, designed to receive and guide there-through the central screw rod 6, which performs the dual function of an operating rod and a central clamping member as will hereinafter more particularly appear.

The central screw rod 6, is fitted at its lower extremity with a swiveled clamp foot 7, adapted to impinge on and press against what may be termed the second wooden block or section, *a*, arranged upon another wooden block or section, *b*, for gluing or other purposes. At its upper extremity the screw rod is provided with a hand or finger grip 8, for purposes of manipulating the same and between said grip and the transverse fulcrum bar 3, the threaded portion of the screw rod engages the central nut 9, of a shiftable cross head 10. Also between the cross head and the fulcrum bar 3, the screw rod engages a jam nut 11, which is adjusted to find an



abutment against one side of the fulcrum bar 3.

In the form of the invention shown in Figs. 1 and 2 of the drawings, the cross head 10 is provided at its outer extremities with the keeper hooks 12 receiving therein one end of the lever arms 1, and these ends of the lever arms are provided with rack teeth 13 meshing with the teeth of eccentric or scroll gears 14, pivotally mounted at 15 upon the cross head 10 respectively at opposite sides of the central nut 9 thereof. Each of the swinging lever arms 1, is provided at the end opposite its toothed portion with an inner widened clamp foot 16, which under some conditions directly engages the work to be clamped. In addition to the clamp foot 16, each lever arm is bifurcated at that end as at 17 to receive therein the pivoted ear 18 of an eccentric or scroll gripping dog 19, having a forked inner end 20 adapted to work astride the lever arm above its bifurcation 17. For finished work it is preferable to have the engaging or bearing faces of the dogs 19 perfectly smooth although in some classes of work these faces may be slightly roughened or corrugated as well as the face of the clamp feet 16. The pivoted ears 18 receive the pivoted screws 21 which provide for detachably holding the rocking gripping dogs upon the ends of the clamp levers.

From the construction described, and shown in Fig. 1 of the drawings, it will be observed that when the screw rod 6, is tightened down to bring its clamp foot 7, in engagement with the second wooden block, *a*, the continued movement of such rod will necessarily re-act to shift the cross head 10 with the result of rocking the eccentric or scroll gears 14 in a direction for spreading the toothed ends of the lever arms, and moving the other ends thereof inward. This inward movement of the gripping ends of the lever arms results in carrying the dogs 19 against the sides of the first wooden section, *b*, and by reason of the eccentric or scroll form of these dogs, the same will rock on their pivots, and this rocking, though slight, will be in a direction tending to draw the wooden section, *b*, toward the wooden section, *a*, while the latter is moved in the reverse direction by the clamp foot 7. This results in holding the wooden sections or blocks in a perfect joint until the glue is set.

In some classes of work, such for instance as gluing the pieces across the end of a wide board to prevent it from warping, instead of using a long clamp, the present invention may be utilized as shown in Fig. 2 by omitting the gripping dogs 19. Also, as shown in Figs. 3 and 4 of the drawings, the novel clamping action herein described may be carried out in connection with different lever actuating means. For instance, as shown in

said figures of the drawings, I may employ a cross head 10<sup>a</sup>, with its central nut 9<sup>a</sup>, but having an adjusting link connection 22, between each end and one of the extremities of one of the lever arms 1. The links 22 are pivotally connected with the lever arms and the shiftable cross-head, and when the clamp foot 7 reaches the work, the upward movement of the cross head 10<sup>a</sup> will spread said links and thereby effect the inward movement of the gripping or clamping portions of the lever arms. Stop projections 23 may be provided on the end portions of the cross-head 10<sup>a</sup> for preventing the cross-head moving to a dead center position.

In connection with the modification above described, and illustrated in Figs. 3 and 4 of the drawings, it will be observed that there is shown a modified type of locking device. This locking device is designated in its entirety by the reference character 30 and takes the place of the jam nut 11 shown in the other figures of the drawings. The said locking device 30 may be characterized as a lock nut consisting of a knob or hand wheel member 31 and an exteriorly threaded sleeve 32 engaging threads 33 within the bore of the guide opening 5 through the fulcrum bar 3. The knob or hand wheel member 31 at the upper end of the sleeve 32 lies beneath the cross head 10<sup>a</sup> and when screwed backwards and upwards as shown in Fig. 3, abuts against the nut portion 9<sup>a</sup> of the cross head 10<sup>a</sup> thus locking the lever arms against the side of the work. When screwed down to the position shown in Fig. 4, the locking device 30 permits full play for the fulcrum bar 3.

From the foregoing it is thought that the construction, operation and many advantages of the herein described clamp will be readily apparent without further description.

I claim:

1. A clamp of the class described, comprising a fulcrum bar, lever arms fulcrumed to said bar, eccentric gripping dogs mounted on one end of the lever arms, a cross head operatively connected to one end portion of the lever arms, and a centrally arranged rod extending through the cross head and fulcrum bar and carrying a clamp foot, said dogs and clamp foot being arranged to exert a direct pressure upon the rail from three points to a center.

2. A clamp of the class described comprising lever arms having rack teeth at one end, eccentric rocking gripping dogs pivotally mounted on the opposite ends of the lever arms, a cross-head, rocking scroll gears pivoted to said head and engaging the teeth of the lever arms, and a central rod carrying a clamping foot and arranged to shift or move the cross-head.

3. A clamp of the class described comprising



ing a fulcrum bar having a central guide  
opening, lever arms fulcrumed to the ends of  
said bar, eccentric or scroll gripping dogs  
pivotaly and detachably mounted on one  
5 end of the lever arms, a shiftable cross-head  
having a central nut and operatively con-  
nected with one end portion of the lever  
arms, and a screw rod extending through the

cross-head and fulcrum bar and carrying a  
clamp foot.

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

JOHN H. LANE.

Witnesses:

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