I. W. LETNER.

MORTISING PLANE.

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914,962.

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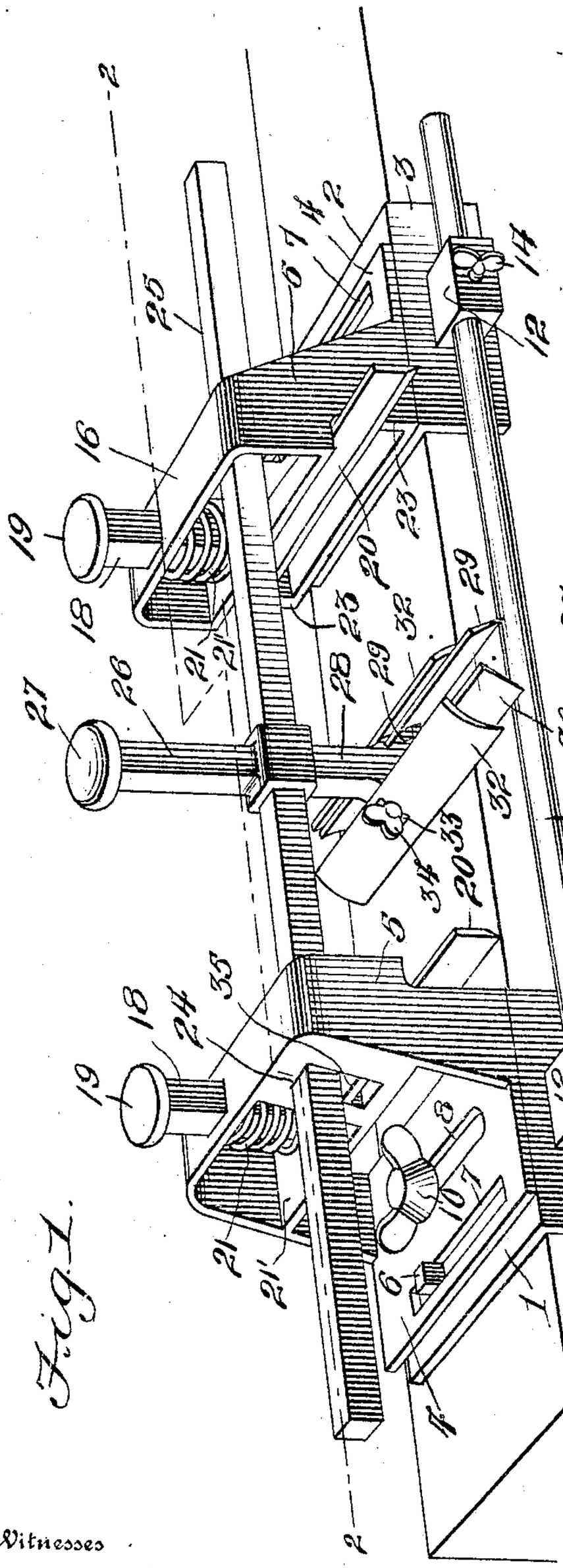

Fig. 1.

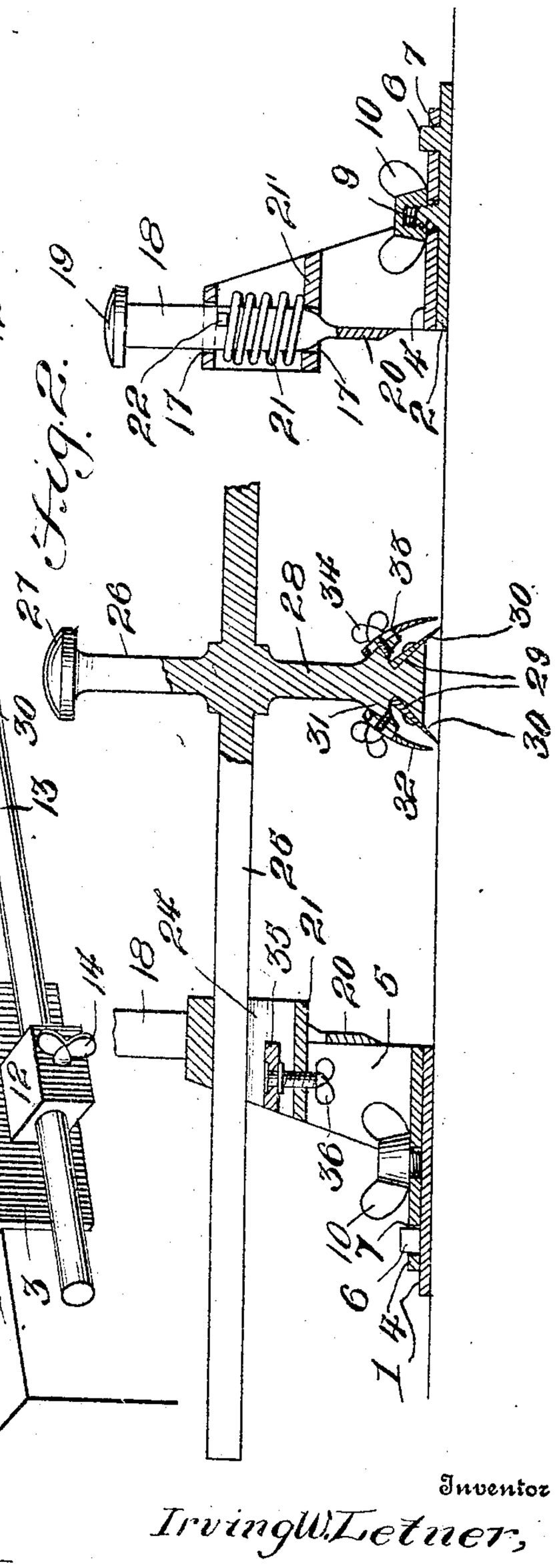

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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MORTISING-PLANE.

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To all whom it may concern:

Be it known that I, IRVING W. LETNER, a citizen of the United States, residing at Grants Pass, in the county of Josephine and State of Oregon, have invented new and useful Improvements in Mortising-Planes, of which the following is a specification.

This invention relates to mortising planes, the object being to provide a plane which is especially designed for mortising doors or jambs to receive the door hinges, the plane embodying means for chiseling the gains in the door and jamb and planing out the wood between the gains to a predetermined depth which is regulated by a gage provided for that purpose.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawing:—Figure 1 is a perspective view of a mortising plane embodying the present invention. Fig. 2 is a vertical longitudinal section through the same on the line 2—2 of Fig. 1.

The plane contemplated in this invention comprises essentially a pair of base plates 1 and 2 each of which is provided at one side with a guide flange 3 adapted to slide in contact with the side of the door or jamb as the case may be to properly position the plane, as a whole, relatively to the work.

On each of the base plates 1 and 2 is the bed plate 4 of a guide frame or frame piece 5, the plates 4 and 1 being connected for relative sliding movement by providing the plate 1 with a stud 6 which is received in a slot 7 in the plate 4. The plate 4 is provided with an additional slot 8 running parallel to the slot 7 and receiving a threaded stud 9 on the base plate 1, the stud being provided with a winged nut 10 by means of which the relative positions of the plates 1 and 4 may be fixed after they have been adjusted.

Projecting from the flanges 3 are lugs 12 having openings therethrough for the reception of a connecting rod 13 which admit of the adjustment of the base plates 1 and 2 toward and away from each other to regulate the distance between the chiseled blades hereinafter described. When the base plates 1 and 2 have been adjusted to the desired distance from each other, they are held fixed relatively to each other by thumb-screws 14 which are threaded into the lugs 12 and bind against the connecting rods 13. Each frame piece comprises a slotted head 16 having openings 17 therein through which slides a plunger 18 having at its upper end a head 19 while secured to the lower end of the plunger is a chiseled blade 20 movable up and down with the plunger 18. The plunger 18 and the chisel blade 20 are normally upheld as shown in Figs. 1 and 2 by means of a coiled return spring 21 which is interposed between a cross bar 21′ of the frame piece and a stop shoulder 22 on the plunger 18, said stop shoulder being adapted to come in contact with the lower side of the upper cross bar of the frame piece to limit the upward movement of the plunger and chisel blade. The blade 20 rests at or near its opposite ends against vertical guide shoulders 23 formed by the upright portions of the frame pieces 5 as shown in Figs. 1 and 2.

The frame pieces or guide frames 5 are further provided with guide slots 24 through which a slide 25 is adapted to be reciprocated, the said slide being preferably in the form of a straight bar or squared or rectangular in shape in cross section, the width of the bar being slightly less than the width of the guide slots 24 so as to permit of a free lengthwise movement of said slide. Extending upward from the central portion of the slide 25 is a handle bar 26 provided with a head piece 27 while extending downward from the slide 25 and preferably in line with the handle bar 26 is a shank 28 the lower end of which is substantially web-shaped or provided with a reversely inclined shoulder 29 upon which are fastened correspondingly inclined planing bits 30 adapted to operate in opposite directions as the slide 25 is moved back and forth. Just above the planing bits 25, the shank 28 is provided with overhanging lugs 31 to which are secured gages 32 which overhang the planing bits 30 and are provided with slots 33 for the reception of thumb-screws 34 which pass through the slots into the lugs 31 and provide for adjusting the gages 32 relatively to the planing bits 30.

In order to limit the depth of cut of the planing bits 30, depth gages 35 are provided in connection with each frame piece 5, said depth gages consisting of plates arranged in the lower portions of the guide slots 24 and being adjustable up and down by means of thumb-screws 36 having a threaded engagement with the frame pieces as shown in Fig. 1 and a

swiveled engagement with the gages 35. In the operation of planing the work the slide 25 finally comes in contact with the depth gages 35 and thus limits the depth of cut of the planing bits.

In use, the mortising plane as a whole is applied to the door or jamb in the manner illustrated in Fig. 1. The heads 19 of the plungers 18 are struck with a hammer or mallet to form the cross cuts and end walls of the mortise. The slide 25 is then reciprocated by means of the handle bar 26 and in this part of the operation, the planing bits 30 act alternately to remove shavings from the work until the operation is terminated by the slide 25 coming in contact with the depth gages 35. This provides a mortise of the requisite length and depth to receive the hinge. It will be understood that the frame pieces are adjusted to a distance apart equal to the length of the leaf of the hinge, which is to be applied to the work operated upon and also that the depth gages 35 are adjusted to permit the planing bits to plane away the work between the gains to a depth commensurate with the hinge leaf. It will thus be seen that the mortising plane as a whole may be adjusted to suit hinges of various size and thickness and that after the plane has been properly adjusted the work may be performed with great rapidity enabling the mechanic to apply a number of hinges in the same time ordinarily required to apply a single hinge.

Having thus described the invention, what is claimed as new, is:—

1. A mortising plane comprising oppositely arranged guide frames, a connecting rod on which said guide frames are adjustable toward and away from each other, means for clamping said guide frames to the connecting rod, chisel blades carried by the guide frames and movable relatively thereto in parallel planes, and a plane connected with said guide frames and comprising reversely inclined bits movable toward and away from the planes in which the chisel blades move and operable independently of the chisel blades.

2. A mortising plane comprising oppositely arranged guide frames each embodying relatively movable and adjustable sections, means for adjusting the sections relatively to each other and clamping the same together, means for adjusting the distance between the guide frames embodying a connecting rod, and clamps on the guide frames, independently operable chisel blades carried by the guide frames, and a planing element having a sliding engagement with said guide frames and embodying reversely inclined bits movable in a plane perpendicular to the cutting edges of the chisel blades.

3. A mortising plane comprising oppositely arranged guide frames, means for adjusting the guide frames toward and away from each other, chisel blades carried by the frame pieces and movable independently relatively thereto, a slide bar movable on the guide frames independently of the chisel blades, a planing bit carried by said slide bar and movable in a plane perpendicular to the cutting edges of the chisel blades, and means coacting with said slide bar to limit the movement of said slide bar toward the work.

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

IRVING W. LETNER.

Witnesses:
N. REYNOLDS,
MARCUS W. ROBBINS.