

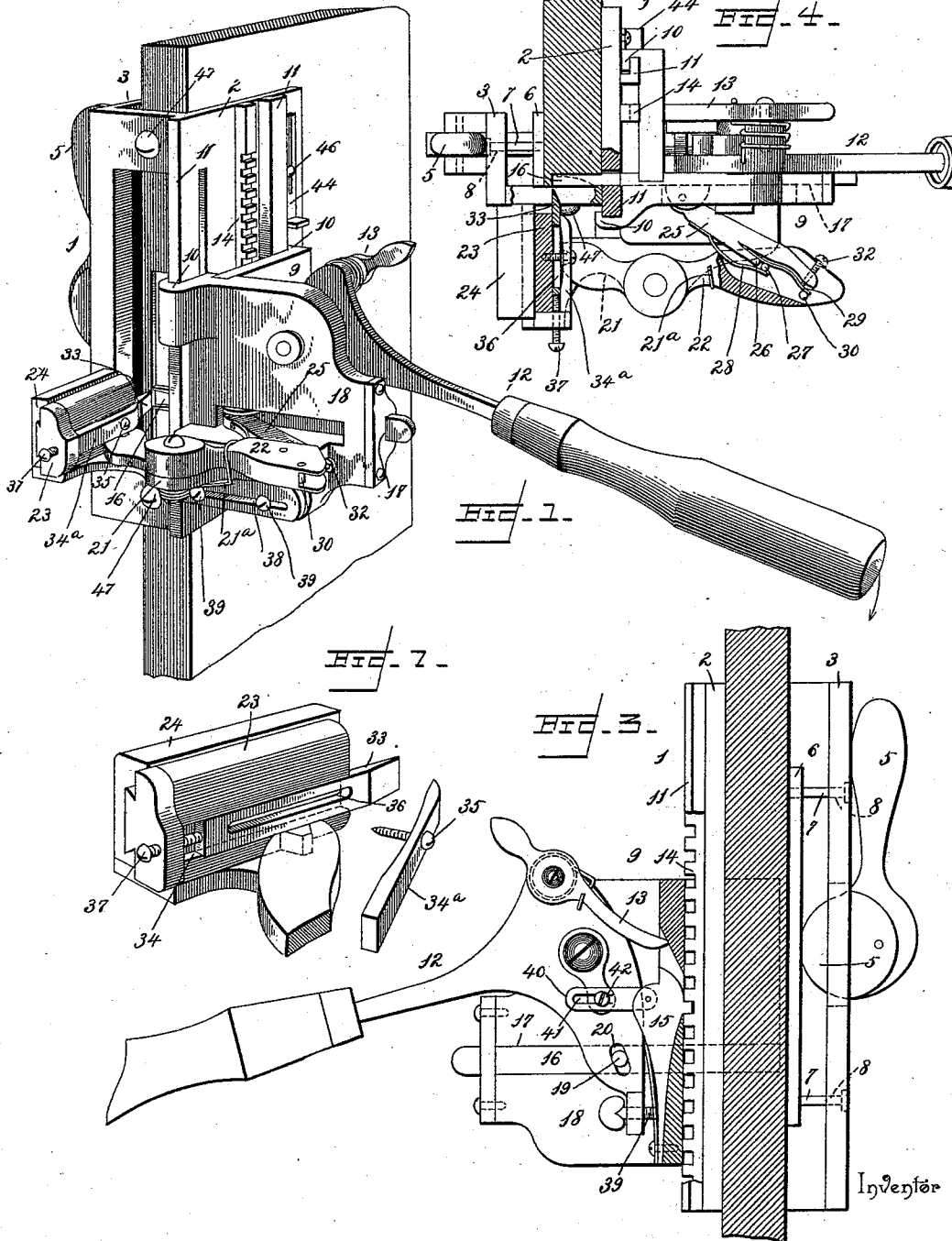
(No Model.)

2 Sheets—Sheet 1.

W. R. WILLIAMS.
HINGE SEATING DEVICE.

No. 526,826.

Patented Oct. 2, 1894.



Witnesses

Edw. Swall
E. J. Hall

By his Attorneys.

William R. Williams.

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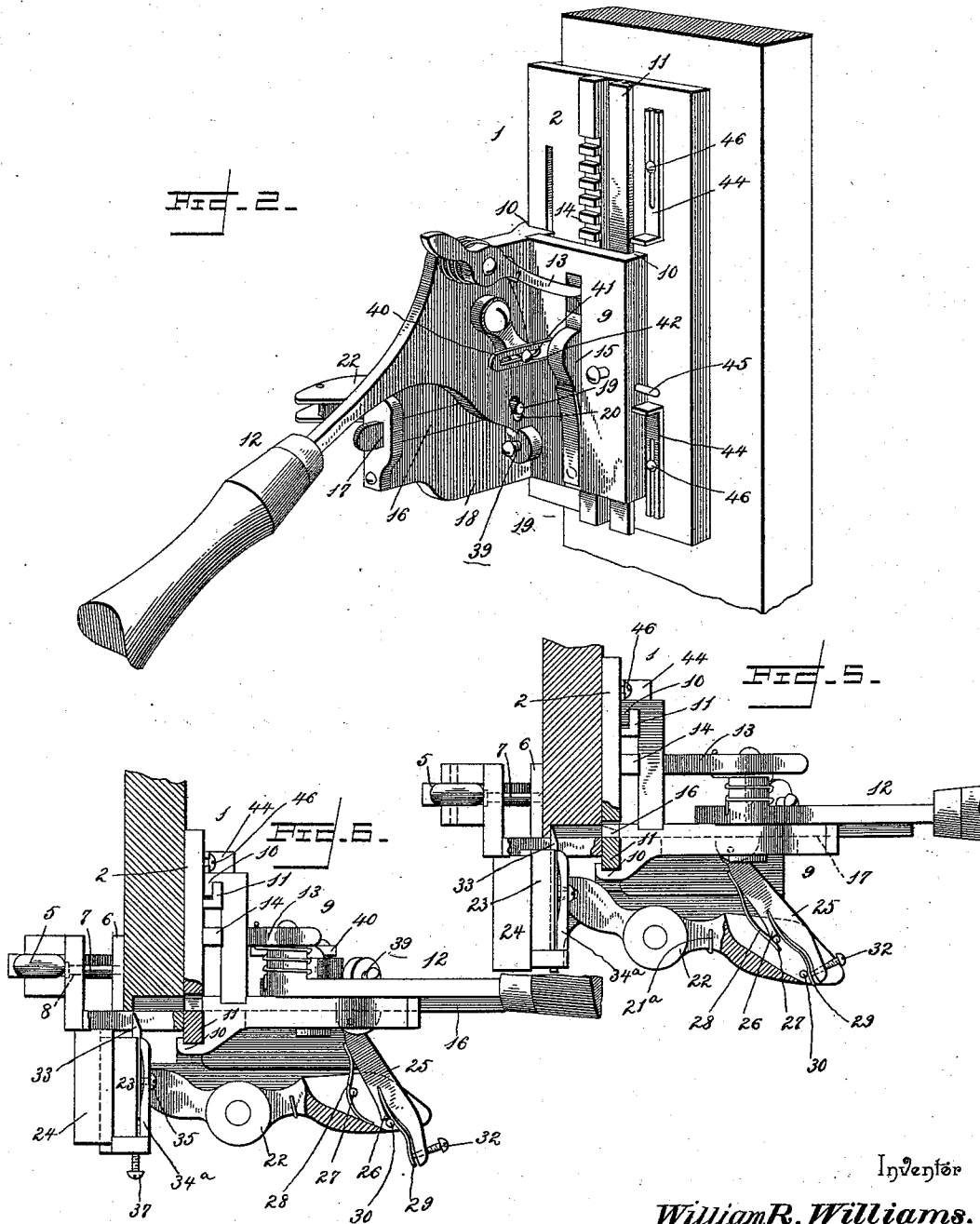
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Inventor

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Edw. S. Dwyer
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UNITED STATES PATENT OFFICE.

WILLIAM R. WILLIAMS, OF PHILIPSBURG, PENNSYLVANIA.

HINGE-SEATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 526,826, dated October 2, 1894.

Application filed January 2, 1894. Serial No. 495,412. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. WILLIAMS, a citizen of the United States, residing at Philipsburg, in the county of Centre and State of Pennsylvania, have invented a new and useful Hinge-Seating Device, of which the following is a specification.

My invention relates to hinge seating or gaining machines, and it has for its object to provide an efficient and durable device provided with width and depth cutting chisels so connected as to be operable by a single lever, in addition to a feeding device whereby the carriage upon which such chisels are mounted is moved longitudinally to form the desired length of seat or gain, said seating devices being operated by the lever controlling the cutting devices.

A further object of my invention is to provide simple and efficient means for adjusting the movement and throw and the location of the parts to vary the length, width and depth of the seat or gain to adapt the same to receive hinges of different sizes; and means for adjustment to take up wear, lost motion, &c.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of a hinge-seating machine embodying my invention, applied in the operative position to the edge of a door. Fig. 2 is a similar view, looking at the rear side of the machine. Fig. 3 is a rear elevation, partly broken away, to show the feeding mechanism for the carriage. Fig. 4 is a plan view, partly broken away to show the push-bar and trip device for actuating and releasing the rocking lever which carries the depth-cutting chisel-block, the parts being shown in the positions which they occupy when the width-cutting chisel is extended and at the limit of its forward movement. Fig. 5 is a similar view, showing the parts in the positions which they occupy when the width-cutting chisel is retracted and the depth-cutting chisel is extended, and just before the tilting lever is released by the trip. Fig. 6 is a similar view, showing the parts in the positions

which they assume after the trip has released the rocking lever. Fig. 7 is a detail view, in perspective, of the depth-cutting chisel-block and co-operating parts disassembled to show the means for taking up wear in the depth-cutting chisel.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the frame by which the machine embodying my invention is secured to the article to be gained, and it consists essentially of a bed 2, adapted to bear against one side of said article or object, and a parallel bar 3, which is adapted to be arranged upon the opposite side of said article and carries an eccentric locking lever 5, whereby the frame is secured in place.

6 represents an adjustable bearing-strip, which is arranged contiguous to the inner surface of the bar 3 and is provided with terminal guide-pins 7, fitted in guide-perforations 8, in said bar, and the eccentric or cam locking lever bears against the center of this strip and forces it against the surface of the door to avoid marring the door. Mounted slidably upon this frame is a carriage 9, provided with guides 10, engaging the ways 11, and fulcrumed upon the carriage is the operating lever 12, carrying a spring-actuated feeding pawl 13, which is arranged to engage a rack 14, upon the bed. The carriage is provided, furthermore, with a spring-actuated locking pawl 15 to engage the rack and hold the carriage stationary during the operation of the cutting chisels.

16 represents the width-cutting chisel slide which is fitted for reciprocation in a guide 17 upon the perpendicular portion 18 of the carriage, and the operating lever is arranged to convey motion to the said slide by means of the slotted connection, comprising a pin 19 on the slide, fitting in a slot 20 in the lever.

Upon a bracket 21, forming a part of the carriage, is fulcrumed a rocking or tilting lever 22, which is pivotally connected at its front end to a depth-cutting-chisel block 23, mounted upon a dove-tailed guide 24, carried by said bracket; and connected at its rear end to the width-cutting-chisel slide by means of a push-bar 25, whereby, as the slide

is retracted, the tilting lever is operated to move the depth-cutting-chisel block inward or toward its work. The connection between the push-bar and the tilting lever consists of a trip mechanism to cause the release of the lever before the operating lever reaches the limit of its movement; and this trip mechanism consists of a shoulder 26 upon a push-bar, which is arranged to engage a transverse pin 27, located in the bifurcated end of the tilting lever, a retaining spring 28 being carried by the push-bar with its free end arranged adjacent to the shoulder 26 to prevent the accidental disengagement of the shoulder 26 and pin 27. At the extremity of the push-bar is arranged a trip finger 29, which is adapted to engage a stop 30, in the bifurcation of the tilting lever just before the operating lever reaches the limit in the direction opposite to that indicated by the arrow in Fig. 1, said engagement of the trip finger and stop being shown clearly in Fig. 5. Therefore, as the width-cutting-chisel slide continues its outward movement the pressure of the trip finger upon the stop 30 causes the pin 27 to repress the retaining spring 28 and allow the pin to pass between the spring and the push-bar, thus releasing the tilting lever and allowing the return spring 21^a to repress the rear end of the tilting lever and remove the depth-cutting chisel-block from the gain, as shown clearly in Fig. 6. The trip finger is preferably formed of a steel plate spring, and is provided with an adjusting screw 32 whereby its projection from the push-bar may be varied to cause it to engage the stop at any desired point during the stroke of the operating lever to vary the throw of the depth-cutting chisel-block, and thus vary the depth of the cut formed by the chisel carried by said block. The depth-cutting chisel 33 is fitted in a seat 34 in the chisel block, and a bowed clamping plate 34^a is arranged in contact with the outer side of the chisel and is secured in place by means of a set-screw 35, which extends through the chisel, the opening 36 in the chisel for the reception of said set-screw being elongated to permit of longitudinal adjustment of the chisel. An adjusting-screw 37 is arranged in the end of the chisel-block and impinges against the extremity of the chisel, whereby the latter may be adjusted to take up wear. The bracket 21 is adjustably mounted upon the carriage to permit of the adjustment of the depth-cutting devices to suit different widths of gains, said adjustment being longitudinal with relation to the movement of the width-cutting chisel slide and being accomplished by means of a slot 38 and set-screws 39, which engage the body-portion of the carriage.

The throw of the operating lever in the direction indicated by the arrow in Fig. 1, is limited by means of the adjustable stop 39^a, which impinges against the body-portion of the carriage, and which may consist, as shown

in the drawings, of a screw. By means of this adjustable stop the extent of movement of the width-cutting chisel slide is regulated to form the desired width of cut.

The operating lever is connected, by means of a slotted link 40, with the locking pawl 15, the slot 41 in said link being engaged by the pin 42 on the lever, whereby the lever operates independently of the locking pawl until after the tilting lever has been released from the push-bar by means of the trip mechanism above described, when said locking pawl is withdrawn from engagement with the rack and immediately thereafter the feeding pawl engages the rack and moves the carriage forward in position to form the succeeding cut.

The length of the gain or seat is controlled by means of the adjustable gages 44, secured to the bed of the frame and adapted to be engaged by a stud 45 on the carriage. These gages are slotted and are held in their adjusted positions by means of set-screws 46.

The depth of cut of the width-cutting chisel is regulated by the set-screws 47 carried by the frame and adapted to impinge against the edge of the door or other object to be gained. Thus, the depth of cut of the width-cutting chisel is regulated by the placement of the frame, or the position in which it is arranged upon the door.

The operation of the various members comprising the improved hinge-seating device will be readily understood from the foregoing description, and it will be seen that the various parts are adjustable to vary the length, width and depth of the gain to fit a hinge-leaf of any ordinary size. It will be understood, furthermore, that the width and depth cutting chisels, and the feeding mechanism are operated by a common lever, the depth-cutting lever following the width-cutting lever in movement and being retracted by the release of its tilting lever before the width cutting lever reaches the limit of its backward stroke, in order to allow time for the locking pawl to be disengaged from the rack and the feeding pawl to advance the carriage a step in the direction of the length of the seat or gain.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a hinge seating or gaining machine, the combination of a width-cutting chisel slide, means for operating said slide, and a depth-cutting chisel block, of a tilting or rocking lever connected at one end to said block, connections between the said lever and the slide, and a trip mechanism to release the lever near the limit of the backward movement of the slide, substantially as specified.

2. The combination with a width-cutting

chisel slide, and means for operating the same, of a depth-cutting chisel block, a tilting or rocking lever connected at one end to said block, a push-bar to communicate motion from the slide to the said lever, and a trip mechanism to release the lever from the push-bar near the limit of the backward movement of the slide, substantially as specified.

3. The combination with a width-cutting chisel slide, and means for operating the same, of a depth-cutting chisel block, a spring-actuated tilting lever connected at one end to said block, a push-bar carried by said slide and having a shoulder engaging a pin on the tilting lever, and a trip mechanism for disengaging said pin from the shoulder to release the tilting lever, substantially as specified.

4. The combination with a width-cutting chisel slide and means for operating the same, of a depth-cutting chisel block, a tilting lever connected at one end to said block and provided with an actuating spring, a push-bar carried by said slide and provided with a shoulder to engage a pin on the tilting lever, a retaining spring to hold the pin in engagement with said shoulder, and a trip finger carried by the push-bar to engage a step on the tilting lever and disengage said pin from the shoulder of the push-bar, substantially as specified.

5. The combination with a width-cutting chisel slide, and means for operating the same, of a depth-cutting chisel block, a spring-actuated tilting lever connected to said block, a push-bar carried by the said slide and having a shoulder engaging a pin on the tilting lever, a trip finger adapted to engage a stop to disengage the pin from the said shoulder, and means for adjusting said trip finger to vary the point of disengagement of the slide and tilting lever, substantially as specified.

6. The combination with a slide, and a lever for operating the same, of a chisel block, connections between said slide and block whereby the latter is advanced as the former is retracted, trip mechanism for releasing said block before the slide reaches the limit of its backward movement, means for returning said block when released, and feeding de-

vices operatively connected to said lever, substantially as specified.

7. The combination with a frame, and means for securing the same to a door, of a carriage slidably mounted upon said frame, a chisel-bearing slide, an operating lever connected to said slide, a chisel-bearing block operatively connected to said slide, and feeding devices between the carriage and the frame and operatively connected to said lever, substantially as specified.

8. The combination with a frame provided with means for securing the same to a door, a carriage mounted upon said frame, a chisel-carrying slide, and means for limiting the movement thereof, of a bracket adjustably fixed to the carriage, a chisel block mounted upon said bracket and operating connections between the block and the slide, substantially as specified.

9. The combination with a frame, a carriage slidably mounted upon said frame, a width-cutting chisel slide, and means for limiting the movement thereof, of a bracket secured to said carriage, means for adjusting said carriage longitudinally of the width-cutting chisel slide, and a depth-cutting chisel block mounted upon said bracket and operatively connected to said slide, substantially as specified.

10. The combination with a frame, of a carriage mounted thereon, a chisel slide mounted upon said carriage, an operating lever connected to said slide, a rack on the frame, a feeding pawl carried by said lever to engage the rack when the slide is retracted, a locking pawl arranged to normally engage the rack, and a slotted connection between the locking pawl and the lever whereby the pawl is disengaged from the rack when the slide is retracted, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM R. WILLIAMS.

Witnesses:

ROBT. MONTGOMERY,
JOHN KENYON.