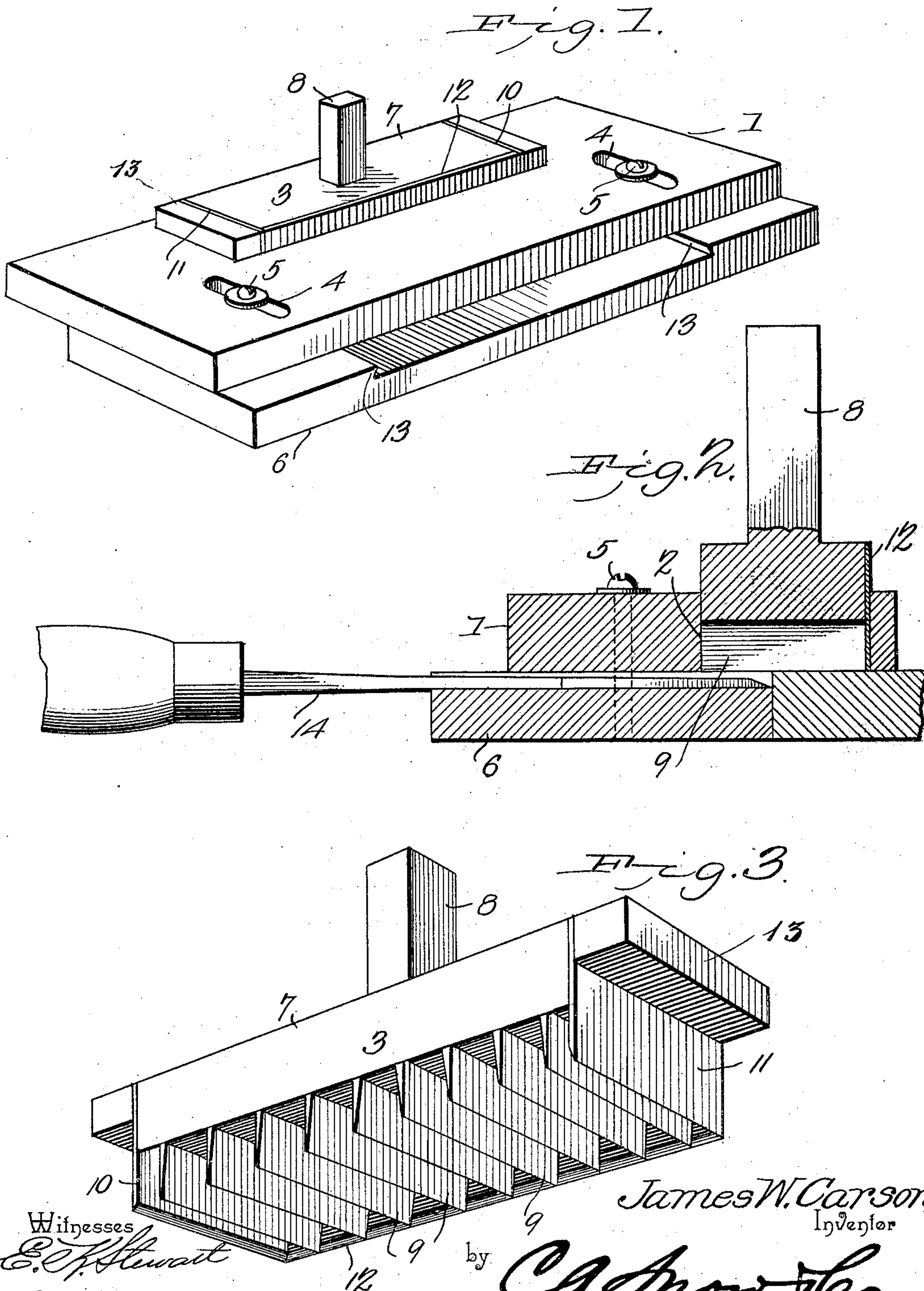


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PATENTED SEPT. 20, 1904.

J. W. CARSON.
HINGE MORTISING MACHINE.
APPLICATION FILED JULY 31, 1903.

NO MODEL.



Witnesses
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JAMES W. CARSON, OF RICHBURG, NORTH DAKOTA.

HINGE-MORTISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,261, dated September 20, 1904.

Application filed July 31, 1903. Serial No. 167,787. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. CARSON, a citizen of the United States, residing at Richburg, in the county of Bottineau and State of North Dakota, have invented a new and useful Hinge-Mortising Machine, of which the following is a specification.

This invention relates to hinge-mortisers.

The object of the invention is to provide a hinge-mortiser of simple construction, which is adapted to withstand the strain of constant use and which is adapted to facilitate the cutting of hinge-mortises at a more rapid rate than the hinge-mortisers now in general use.

A special object of the invention is to provide a hinge-mortiser of such construction that the cutting of the mortises may be accomplished with very few blows of the mallet and which is adapted for use by unskilled persons with the production of mortises of uniform dimensions and neat appearance.

With the objects above stated and others in view my invention consists in the construction and combination of parts of a hinge-mortiser hereinafter fully described and claimed, and shown in the accompanying drawings, forming part of this specification, it being understood that various changes in the form, proportions, and exact mode of assemblage of the elements therein exhibited may be made without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings, Figure 1 is a view in perspective of the hinge-mortiser with the chip-removing chisel removed from its seat to show the construction of the seat. Fig. 2 is a view in vertical section through the hinge-mortiser, showing the same in operative relation to the edge of a block upon which it is desired to form a mortise. Fig. 3 is a detail view in perspective from below of the cutter-head removed from the base-plate.

Referring in detail to the drawings, in which corresponding parts are designated by the same characters of reference throughout, 1 designates the base plate or block of the hinge-mortiser, provided near one margin with an oblong rectangular opening 2 for the vertical reciprocation of the cutter-head 3 and having adjacent to the ends thereof transverse slots

4 for the passage of adjusting-screws 5, which extend into a gage-bar 6, which may be secured positively in any suitable relation to the base-plate 1 by means of the screws 5.

The cutter-head 3 consists of a block 7, provided on top with an upwardly-projecting head or stem 8 and having on the under side thereof a plurality of transversely-arranged chisels 9, arranged at approximately equal distances apart, as shown, and having the inclined faces thereof disposed toward the middle of the cutter-head. On three sides of the block 8 are secured in any suitable manner thin blades 10 11 12 for defining the ends and sides of a hinge-mortise, as will be hereinafter explained. The block 7 with the chisels 9 and the blades 10 11 12 form a mass of such size that it will just move freely up and down in the opening 2 in the base-plate. In order to prevent the chisels and the blades at the margin of the block from cutting too deeply, there are provided at the ends of the block the two stops 13, which are of such dimensions that they contact with the upper surface of the base-plate 1 and prevent any further downward movement of the cutter-head 3 after the mortise has been cut to the desired depth at the periphery and the chip to be removed has been divided by the blades 9 into small and easily-removable portions.

The gage-bar 6 is adjustable transversely of the base-plate 1 by means of screws 5, as already explained, and when it is desired to use the mortiser to cut mortises of any desired size the width of the mortise to be cut will be determined by setting the gage-bar at the desired point and securing it there by means of the screws 5.

In order to facilitate the removal of the chip after the cutter-head has been driven downward far enough to form the marginal cuts of the mortise, there is mounted in ways formed on the guide-bar 6 by cutting away a suitable portion of its upper surface a broad-bladed chisel 14, which lies in a plane at right angles to the plane of movement of the cutter-head 3 and is adapted for the ready removal of the chips formed by the operation of the cutter-head.

In using the hinge-mortiser the size of the

mortise to be cut will be determined at first and then the gage-bar will be set so that when the device is placed upon the door-jamb or upon the margin of the door itself and the gage-bar is seated against the edge thereof the cutter-head will be in proper position for forming the outline of the mortise and breaking up the chip therein. This will be done by striking upon the upper end of the stem 8 with a mallet or similar implement. No particular care is required in this operation, as the downward movement of the cutter-head is positively limited by the blocks on the ends thereof, and when the blades on the under side of the cutter-head have reached their full depth the stops at the ends of the block will contact with the upper surface of the guide-plate and prevent any further downward movement. A few blows upon the broad-bladed chisel 14 will at this time result in the removal of the broken chip from the hinge-mortise. Inasmuch as hinge-mortises vary but little in depth, while varying considerably in length and width, means for varying the depth of cut of the chisels and other blades on the cutter-head have not been devised. The stops at the end of the block 7 positively limit the downward movement of the cutter-head when the proper depth has been reached, and that having been done no care is necessary in removing the chip from the mortise, as the hinge-mortiser rests firmly upon the surface of the work, and a few blows upon the broad-bladed chisel 14 will remove the chip entirely.

As many door-hinges are of substantially the same size, so that the same-sized cutter-head may be successfully used to cut them, the adjustments in the device which forms the subject-matter of this application are made as few as possible, and the possibility of any slipping of movable adjusted parts is thereby prevented.

If desired, several different sizes of the hinge-mortiser of the design above described may be kept for use in forming mortises of different sizes, and, except for mortises of unusual dimensions, no difficulty will be experienced in forming a complete mortise with a very few blows from a mallet.

The principal variation in the dimensions of hinge-mortises is found in the width thereof, and therefore I have provided an adjustable gage-bar by means of which the mortiser may be readily adjusted for the formation of

hinges of different widths; but for making mortises of different lengths no adjustment is necessary, because the whole device may be readily shifted after cutting one end of the mortise to cut the other.

From the foregoing description and accompanying drawings it will be seen that with a mortiser constructed in accordance with my invention it will be easy for an unskilled workman to produce hinge-mortises very rapidly and at the same time to turn out entirely satisfactory work, as the device may be brought positively into position over the seat for the mortise, and a few blows with a mallet upon the stem 8 will drive the cutter-head home and leave the mortise in condition to have the chip removed by a few blows upon the broad-bladed chisel 14, which projects from its ways in the gage-bar in a plane at right angles to the plane of the stem 8.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination in a device of the class described, of a base having a rectangular opening therein for the reception of a vertically-movable cutter-head and having transversely-arranged slots for the reception of adjusting-screws, a gage-bar disposed beneath said base, adjusting-screws mounted in said gage-bar and extending through said slots, said gage-bar being provided on its upper surface with a channel for a chisel, and a cutter-head arranged in the rectangular opening in the base, said cutter-head being provided on either of its sides with mortise-defining chisels and having a plurality of transverse chisel-blades arranged at intervals between the mortise-defining chisels at the ends of the said cutter-head, the cutter-head being also provided at the end with projections forming stops adapted to contact with the upper surface of the base and positively limit the downward movement of the cutter-head in the opening provided in the base.

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

JAMES W. CARSON.

Witnesses:

GUY L. SCOTT,
EVA SCOTT.