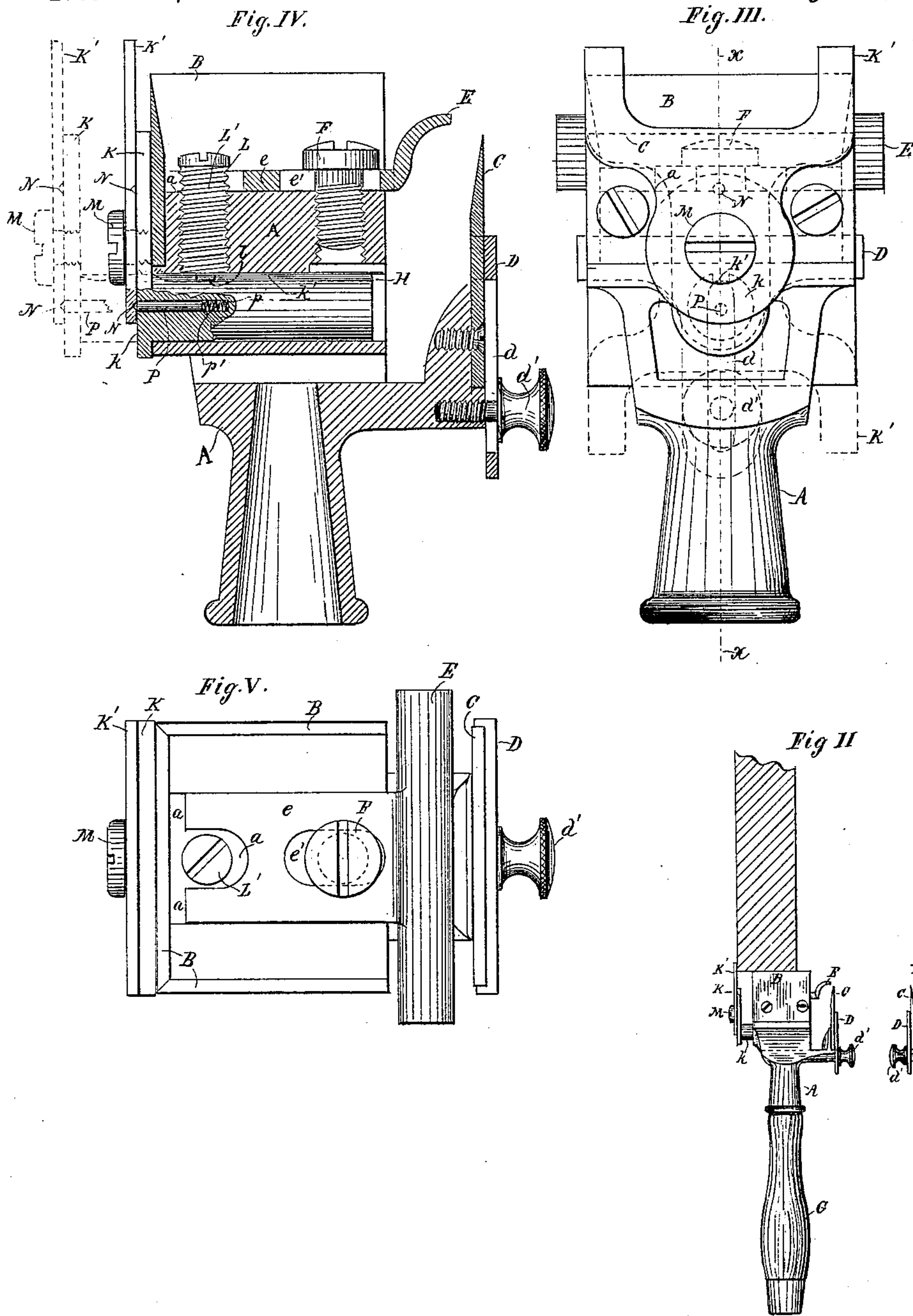


(No Model.)

W. COOPER, A. MILLIKEN & G. W. BISHOP.
HINGE MORTISER.

No. 403,518.

Patented May 21, 1889.



Witnesses.

A. H. Opsahl.

Marie S. Elmore.

Inventors,
William Cooper
George Milliken
George W. Bishop
By their Attorney
Jas. F. Williamson

UNITED STATES PATENT OFFICE.

WILLIAM COOPER, ALONZO MILLIKEN, AND GEORGE W. BISHOP, OF MINNEAPOLIS, MINNESOTA, ASSIGNORS TO THE NORTHWESTERN TOOL AND IMPLEMENT COMPANY, OF SAME PLACE.

HINGE-MORTISER.

SPECIFICATION forming part of Letters Patent No. 403,518, dated May 21, 1889.

Application filed November 2, 1888. Serial No. 289,784. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM COOPER, ALONZO MILLIKEN, and GEORGE W. BISHOP, citizens of the United States, residents of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented a certain new and useful Improvement in Hinge-Mortisers, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to hinge-mortisers; and it has for its object to provide an instrument which shall be simple in construction, reliable in its measurements, convenient of application, and efficient in its work.

It consists of the construction or constructions disclosed in the following description and claims.

In the drawings, like letters referring to like parts throughout, Figures 1 and 2 are plan views of our improved tool, illustrating, respectively, the manner of applying the gage to the door-jamb and the door, the door and jamb being shown in section. Fig. 3 is a side elevation or plan view looking at the mortising-gage side of the tool. Fig. 4 is a vertical cross-section through the head of the tool, some of the parts being shown in side elevation and some parts being broken away. Fig. 5 is a plan view looking down on the edges of the knives and gages.

A is the stock or knife supporting block, having a rectangular head for attachment of the mortising-chisel, a projecting bracket for the chip-knife, and a handle-socket.

B is the rectangular mortising-chisel, consisting of three independent knives secured to the three adjacent faces of the rectangular head uniting with each other by mitered joints and projecting to a proper distance below the outer end of the head. The fourth face of the rectangular head is thus knifeless, leaving an opening into the space between the chisel-edges, which for convenience will hereinafter be called the "mouth of the chisel."

C is the chip-knife, rigidly secured to the projecting bracket of the stock opposite the chisel-mouth.

D is an adjustable stop adjustably secured

to the outer face of the chisel C, as shown, by the slot *d* and thumb-screw *d'*. The edge of the chip-knife is preferably on a level intermediate the levels of the mortising-chisel and the chisel head or stock. In the top face of this rectangular head is cut a groove or guideway, *a*, wherein is mounted the stem *e* of an adjustable chip-gage, E. The stem *e* of this guide is provided with a slot, *e'*. F is a set-screw working through this slot into the body of the stock, having a head larger than the slot for securing the chip-gage in any desired position. The body of this chip-gage sets substantially at right angles to the stem, and is preferably made convex on its upper and concave on its under surface. G is the tool-handle, adapted to fit the socket in the stock. With the exception of a slight difference in this chip-gage, the construction so far described is substantially like that in the old Mathews tool.

The improvement will now be described.

Transversely from front to rear through the body of the stock below the level of the heels of the mortising-knives extends a hole, H, which serves as a seat for the stem of the chisel-gage. K K' *k* is this chisel-gage, of which K K' represent the two sections of the face-plate and *k* the stem or shaft, which is adapted to fit and move within the seat H. This stem is provided with a longitudinal slot, *k'*, from end to end of the top surface of its periphery. At right angles to the seat H through the stock from the space between the mortising-knives is a screw-threaded hole, L, terminating in the seat H. In this hole L fits a set-screw, L', having a projection or nipple, *l*, on its end adapted to fit the groove *k'*. By means of this set-screw the gage-stem *k* may be secured in any desired position within the seat H. One section, K, of the face-plate K K' is fixed to the outer end of the stem *k*, and the other section, K', is movable on the fixed section to form an extension thereof on the same face-line. As shown, the movable section is pivoted to the fixed section by the pivot-pin M, so as to reverse thereon in the vertical plane, being thus adapted to turn down to give a measuring-face below the level

of the chisel and to turn up out of the road of the measuring-face of the fixed section, which terminates above the level of the chisel-edges. To secure the movable section in its proper
 5 respective positions on the fixed section, the inner face of the movable section is provided with depressions N at points diametrically opposite the axis of the pivot-pin M, and a spring-actuated catch, P, is mounted in a
 10 suitable adjacent support for engaging with either of the depressions N when brought into line therewith. As shown, this catch P is mounted in a bored-out seat, p, within the gage-stem k, and is operated by a spring, p',
 15 located in said seat behind the heel of the catch. The forward end of the catch is made conical, so as to be operated as a cam when turning the movable section of the gage by hand. The spring may be of rubber, and the
 20 catch P may be otherwise mounted.

It will be readily understood that the movable section of the face-plate of the gage may be otherwise connected to the fixed section. Any construction will answer which will make
 25 the face-plate extensible in the same vertical plane, so as to permit the measurement to be made from the same vertical line in opposite directions from levels below and above the edges of the chisel.

30 The operation is clear from the description and the illustration given in Figs. 1 and 2.

To get the space behind the hinge on the jamb, the movable section K' of the face-plate is turned up out of the road. The outer
 35 face of the fixed section is placed against the back shoulder of the door-jamb and the jamb-mortise is cut, as shown in Fig. 1. To get the same space outside the hinge on the door, the movable section is turned down and its
 40 inner face placed against the outer edge of the door, thus measuring backward from the identical plane used to measure outward from the shoulder of the jamb, and the door-mortise is cut. Of necessity the two spaces must
 45 match. The chip-knife is then used to remove the chip and the two parts of the hinge-mortise are made.

What we claim, and desire to secure by Letters Patent of the United States, is as follows, viz:

1. In a hinge-mortiser, the combination, with the mortising-chisel, of a transversely-adjustable gage provided with an extensible face-plate, whereby the same gage is adapted
 55 to gage in opposite directions from two different levels, one above and the other below the cutting-edge of the chisel, substantially as described.

2. In a hinge-mortiser, the combination,

with the mortising-chisel, of a transversely-adjustable gage provided with a face-plate in two sections, one fixed and the other movable thereon to form an extension in the same plane for measuring in opposite directions from levels above and below the edges of the
 60 knives, substantially as described.

3. In a hinge-mortiser, the combination, with the mortising-chisel, of a transversely-adjustable gage provided with a face-plate in two sections, one fixed and terminating above
 70 the edge of the chisel, the other pivoted to the fixed sections and reversible thereon to form an extension in the same plane for measuring from a level below the edge of the chisel, substantially as described.

4. In a hinge-mortiser, the combination, with the mortising-chisel, of a transversely-adjustable gage provided with a face-plate in two sections, one fixed and the other movable thereon, to form an extension thereof in the
 80 same plane, and a locking device for locking the movable to the fixed sections, substantially as described.

5. In a hinge-mortiser, the combination, with the mortise-chisel, of a transversely-adjustable gage provided with a face-plate having two sections, one fixed and terminating above the level of the knives, and the other pivoted to the fixed section and reversible thereon to form an extension in the same
 90 plane to a level below said knives, and having depressions in its inner surface at diametrically-opposite points, and a spring-actuated catch mounted in the gage-shaft, adapted to engage said depressions and lock the movable
 95 to the fixed plate in the two different positions, substantially as described.

6. In a hinge-mortiser, the combination, with the head or stock, of a three-sided rectangular mortising-chisel secured thereto, a chip-removing knife secured to said stock opposite and slightly removed from the mouth of said chisel, a transversely-adjustable chip-gage mounted in the top of said stock or head between the knives of said chisel, an outside
 100 horizontally-adjustable gage having its stem mounted in said stock, provided with a face-plate in two sections, one fixed and the other movable thereon, to form an extension thereof, and an adjustable stop mounted on the face
 105 of the chip-knife for limiting the thrust thereof, substantially as described.

WILLIAM COOPER.

ALONZO MILLIKEN.

GEORGE W. BISHOP.

In presence of—

JAS. F. WILLIAMSON,

A. H. OPSAHL.