H. B. SMITH.

MORTISING STILES OF WINDOW BLINDS.

No 6,343. Patented Apr. 17, 1849.

Fig. 5.

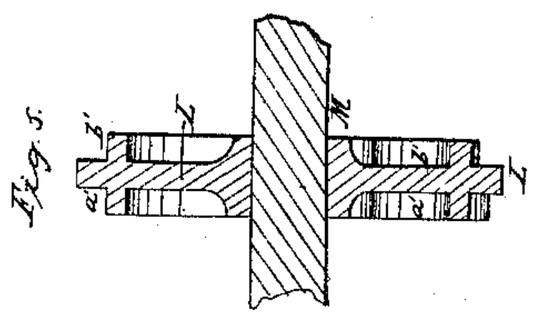

Fig. 6

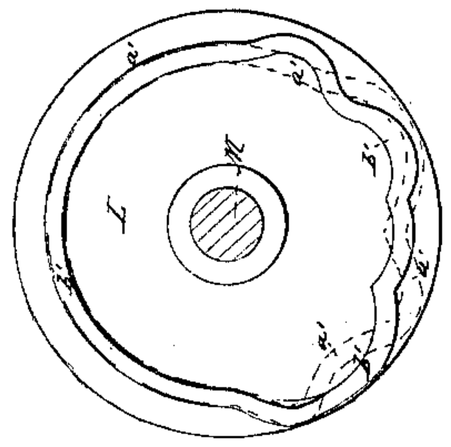

Fig. 2.

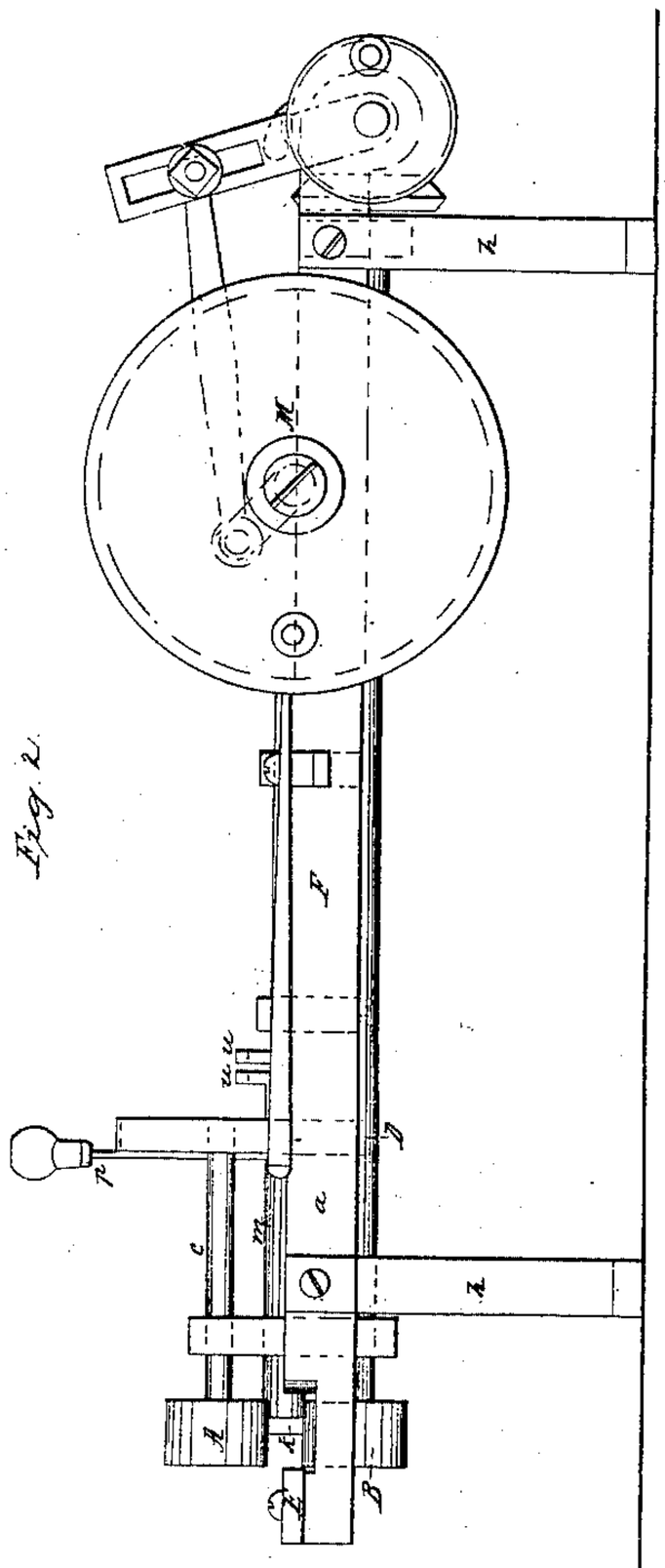

Fig. 1.

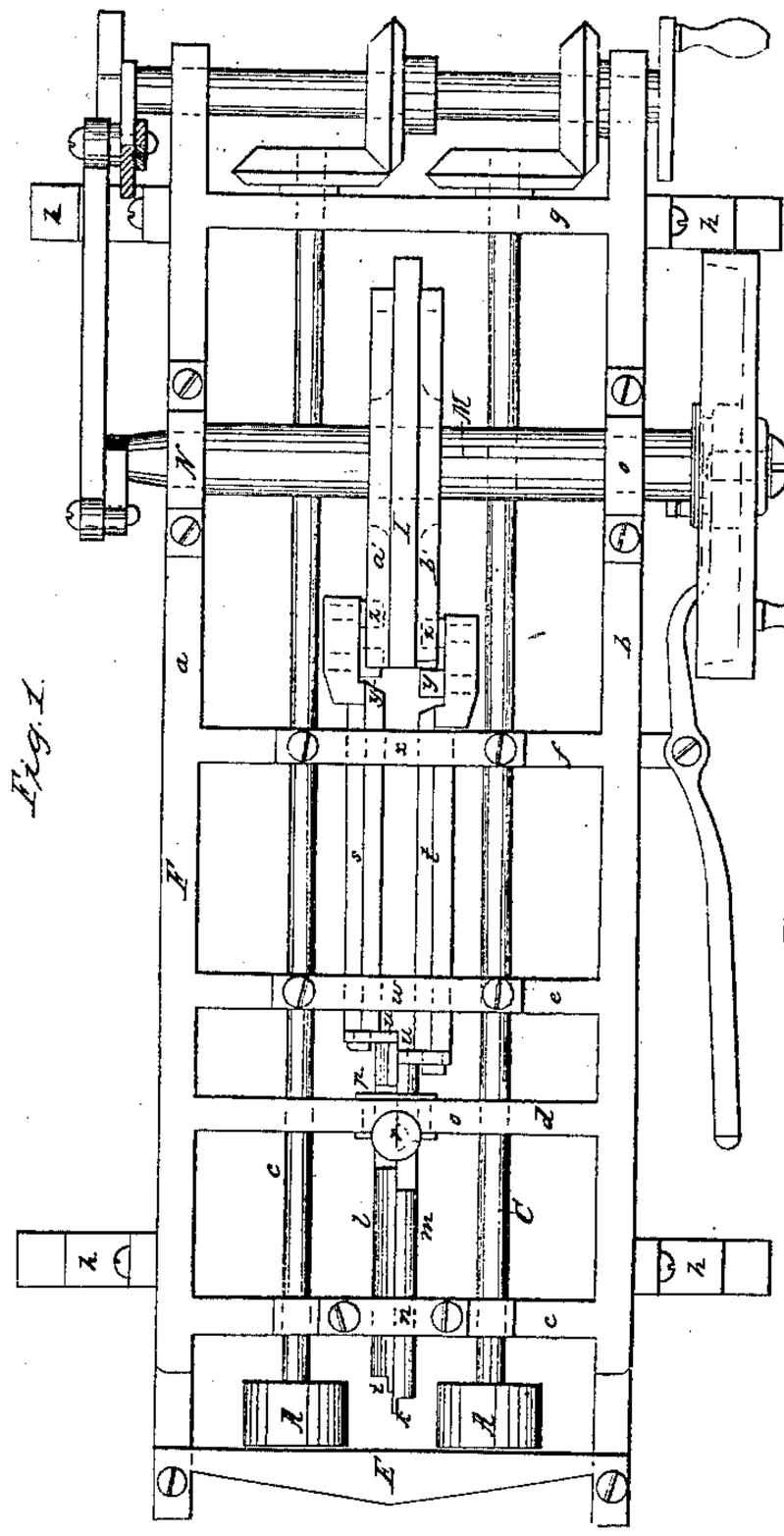

Fig. 4.

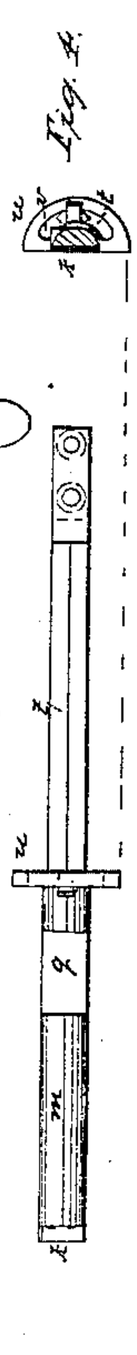

Fig. 3.

UNITED STATES PATENT OFFICE.

H. B. SMITH, OF MANCHESTER, NEW HAMPSHIRE.

MORTISING-MACHINE.

Specification of Letters Patent No. 6,343, dated April 17, 1849.

To all whom it may concern:

Be it known that I, HEZEKIAH B. SMITH, of Manchester, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Machine for Mortising the Stiles of Blinds in Order to Enable Them to Receive the Ends of the Slats; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, denotes a top view of my machine. Fig. 2, a side elevation of it. Fig. 3, a side elevation of one of the chisel holders and its chisel. Fig. 4, an end elevation of the said chisel and its holder.

The peculiar or main feature of novelty of my machine consists in a combination of two chisels arranged and operated together in such manner as not only to be capable of cutting into the wood to the necessary depth for a mortise, but of removing from the mortise the chips or pieces of wood separated by them the said chisels.

The stile or bar of wood to be mortised is placed horizontally between two sets of feeding or supporting rollers, two of which are seen at A, A, in Fig. 1, and at A, B, in Fig. 2. Each roller A, has another roller B, arranged directly under it and at a distance from it equal to the thickness of the stile of the blind. Each of the upper rollers A, A, is supported on the end of a short horizontal shaft C, while each of the lower ones is placed on the end of a long horizontal shaft D; the journals of the said shafts being sustained by suitable boxes which will admit of the necessary revolutions of the shafts. The said stile while being mortised rests against a transverse bar E, screwed to and made to rest on the frame F; the said frame being composed of two longitudinal and parallel bars *a*, *b*, and certain cross bars, *c*, *d*, *e*, *f*, *g*, connecting said parallel bars, all as seen in Fig. 1. The frame so constructed is supported by legs *h*, *h*, &c.

The two chisels are represented at *i*, and *k*, as affixed respectively to the chisel holders *l*, *m*, which are semicylindrical or semitubular rods, arranged with their diametric sides in contact. They are disposed horizontally and supported by such boxes or bearings, as will not only admit of their respective movements in longitudinal directions, but of their being moved or partially rotated in transverse directions, to the extent sufficient to carry the chisels into the inclined positions necessary to enable them to cut diagonally across either of the two stiles of a blind.

The front bearing *n*, is an ordinary box such as is used for supporting a cylindrical journal. The rear bearing *o*, is also a similar box, but is made larger than the first, and adapted to receive a short cylinder *p*, which rests and turns in it like an ordinary journal; the said cylinder being made with flanches or projections to keep it in place, and with a square passage through it for the reception of the two chisel holders, which for some distance are made square in section, as seen at *q*, Figs. 3, 4. A lever *r*, is made to extend from the movable cylinder *p*. By applying the hand to said lever and moving the same the chisel holders may be revolved so as to dispose the chisels in either of their two inclined positions at pleasure. In order to enable the chisel holders to be so moved while being respectively attached to two connecting cam rods *s*, *t*, each of said holders has a semicircular head *u*, affixed to its rear end as seen in the drawings. The said head has a curved slot *v*, made through it as seen in Fig. 4, through which the end of one of the connecting cam rods *s*, *t*, is made to pass, and to be secured from coming out by suitable shoulders or other contrivances. The two rods *s*, *t*, are supported by and slide through boxes *w*, *x*, so made as to allow a reciprocating longitudinal motion only to the said connecting rods. The rear end of each connecting rod has two friction rollers *y*, *z*, affixed to its inner side, which rollers receive between them one of two cam flanches *a'*, *b'* made to project respectively from the two opposite sides of a circular wheel or plate L, affixed on a horizontal and transverse shaft M, which is supported and revolves in suitable boxes N, O.

A vertical section of the wheel L, and its flanches *a'*, *b'* is seen in Fig. 5, and a side view of it in Fig. 6. In this latter figure the cam flanch *b'*, is represented in black lines while the other cam flanch *a'* is exhibited in red lines, their positions in regard to each other being also seen. These cam flanches are so formed or shaped as to produce the following movements of the two chisels and in the order set forth; that is to say, one chisel is first driven forward and

caused to enter the stile. It is next withdrawn from the stile and the other chisel advanced in a similar manner, and forced into the stile. In entering the same it will not only cut to a certain depth but will at the same time split off or separate from the stile the chip or piece of wood intervening between the two cuts. This being done the first chisel is advanced and made to enter the wood a second time and to the same depth as it did at first. This being effected both chisels are withdrawn together, and while so doing hold the chip between them and draw it out of the mortise.

Instead of making the cam flanches so as to cause the mortise to be wholly formed by each chisel being made at one stroke to cut to the whole depth of the mortise, the said cam flanches may be so made as to cause the said mortise to be formed by a succession of operations such as above described the chisels being driven into the wood at each operation, only a portion of the depth of the mortise the piece of wood corresponding to such depth being moved by the chisels at each operation.

By inspection of Fig. 4, it will be seen that one of the chisels, viz, the chisel *k*, is exhibited in end view. In this it will be seen that said chisel has not a perfectly straight cutting edge, but is formed with one long cutting edge, and two short ones, arranged at right angles or thereabouts to the said long edge, each of the two short edges being in length equal or about equal to one half the width of the mortise to be formed. The other chisel is made in a similar manner but with its short cutting edges projecting towards those of the first one.

In the drawings I have represented certain mechanism which I use for advancing or moving the stile, after each mortise is formed, the distance requisite for the cutting of a succeeding mortise. As I herein intend to lay no claim to such machinery either by itself or in connection with that above specified, I do not describe it but leave it to be understood from the drawings.

What I claim as of my invention is—

The aforedescribed combination of the two chisels and mechanism for operating them so arranged constructed and operated as not only to cut into the wood or stile in the manner necessary to form the mortise, but by their combined action to remove the chip or refuse wood therefrom essentially as specified.

In testimony whereof I have hereto set my signature this twenty second day of June A. D. 1848.

H. B. SMITH.

Witnesses:
R. H. EDDY,
F. GOULD.