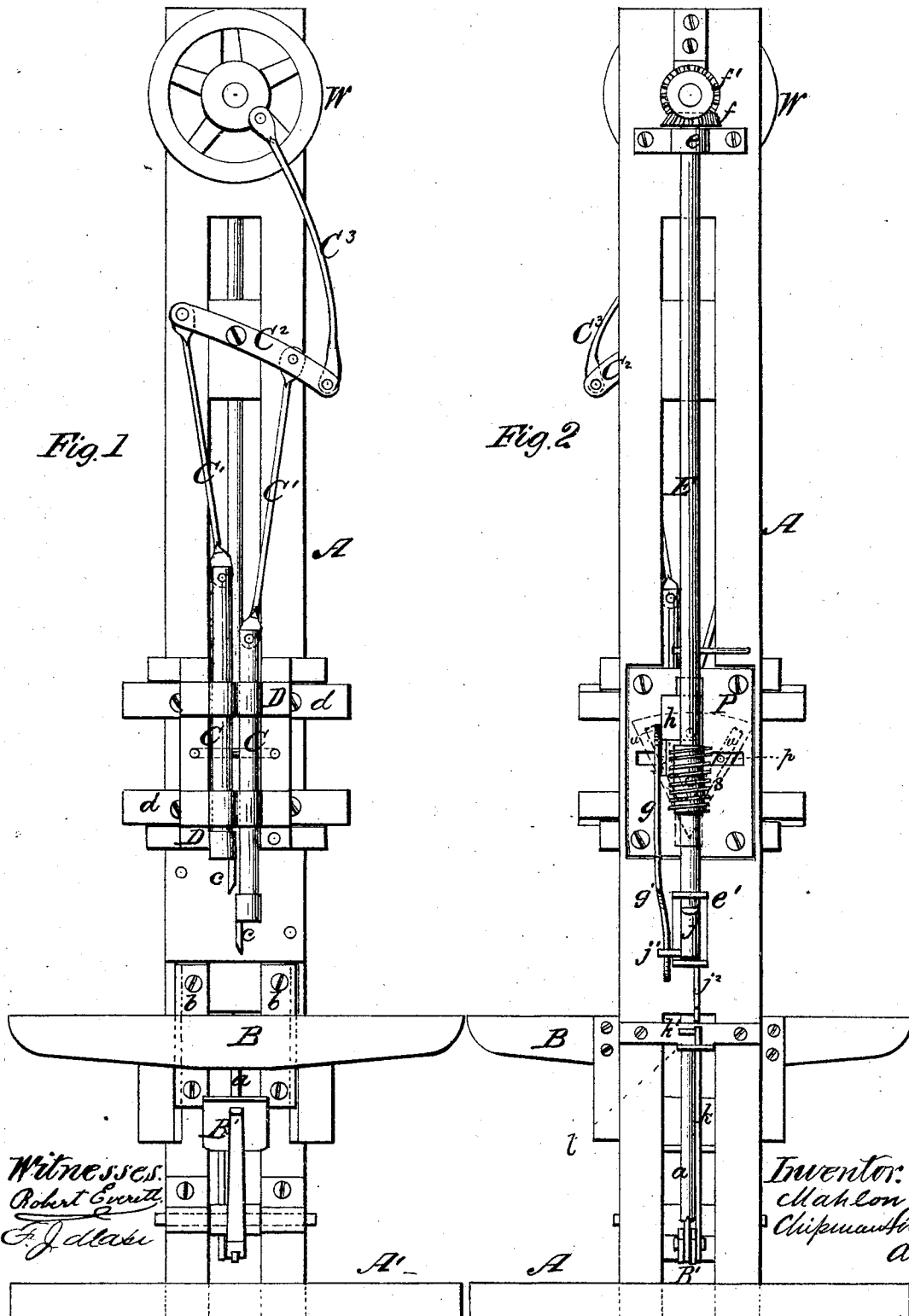


M. W. COLLINS.
Mortising-Machines.

No. 152,079.

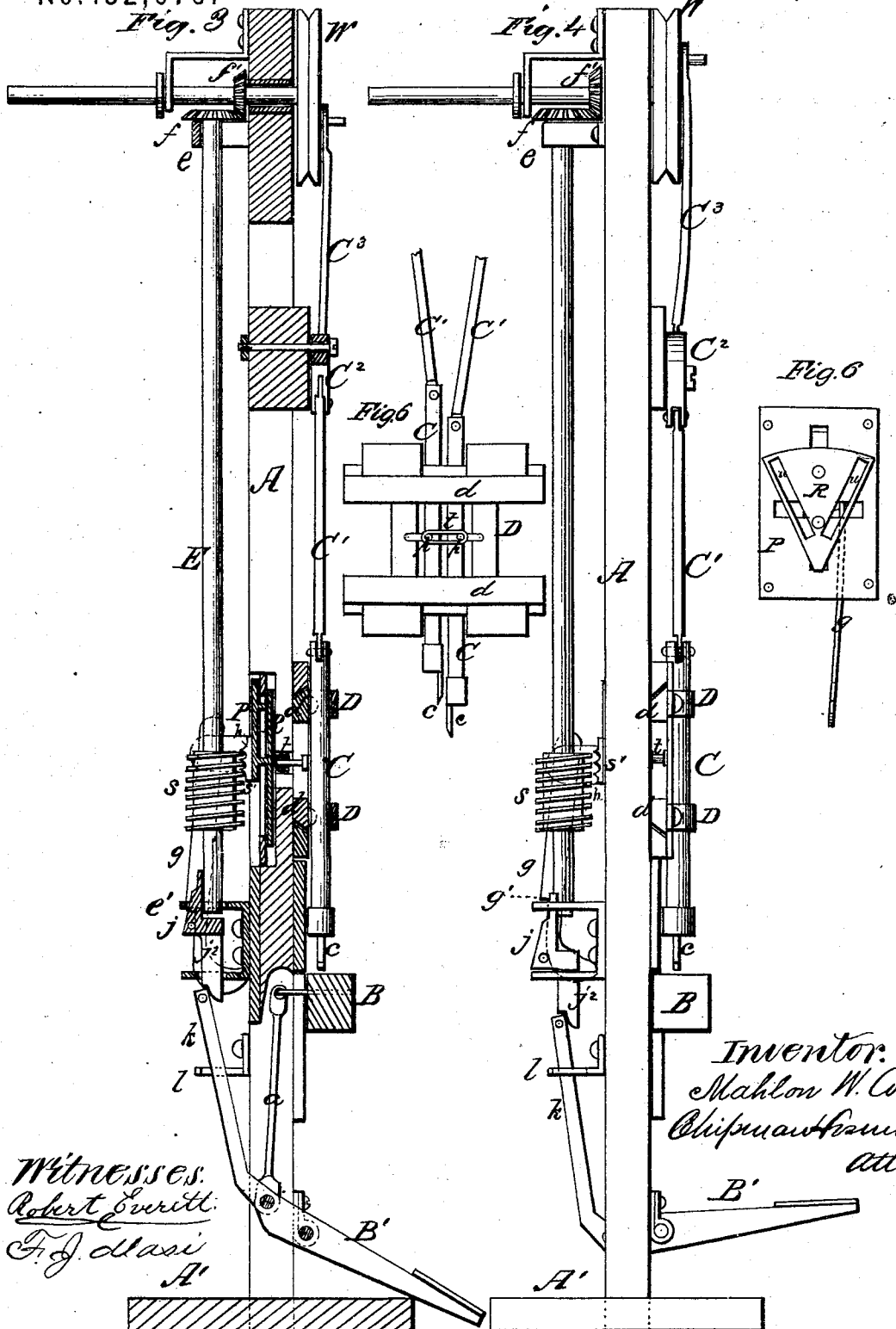
Patented June 16, 1874.



M. W. COLLINS.
Mortising-Machines.

No. 152,079.

Patented June 16, 1874.



Witnesses.
Robert G. Smith.
F. J. Davis.
A'

Inventor.
Mahlon W. Collins
Chapman & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

MAHLON W. COLLINS, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. 152,079, da'cd June 16, 1874; application filed May 2, 1874.

To all whom it may concern:

Be it known that I, MAHLON W. COLLINS, of Lebanon, in the county of Grafton and State of New Hampshire, have invented a new and valuable Improvement in Mortising-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a front view thereof. Fig. 2 is a rear view thereof. Fig. 3 is a vertical sectional view thereof. Fig. 4 is a side view, and Figs. 5 and 6 are details.

This invention has relation to mortising-machines; and it consists in a double self-feeding power mortiser, wherein the chisels are applied back to back in vertically-movable stocks, which stocks are both automatically fed up to the work of lengthening the mortise, as will be hereinafter explained. It also consists in a novel device for releasing the chisel-stocks after each mortise is made, and allowing them to come together for repeating the work. It finally consists in a device for throwing into gear the mechanism which separates the chisel-stocks, as will be hereinafter explained.

In the annexed drawings, A designates a standard or frame, which rises perpendicularly from a base, A'; and B designates a table, on which the stuff to be mortised is supported. B' is a treadle, which is arranged below the table B, and connected to it by means of a rod, a, for raising and depressing this treadle in suitable guides b b. Above this vertically-movable table are two vertical stocks, C C, which have chisels c c applied to their lower ends, and arranged back to back, so that they cut in opposite directions. D D designate independent laterally-movable bearings for the chisel-stocks C C, which are allowed to work in parallel guides d d, secured horizontally to the standard A. To the backs of the two laterally-movable bearings studs p p are secured, which are connected together by means of a spring, t, and which play freely in angular slots u u, made through a vertically-movable plate, R. This plate R is secured to a slide, h, which passes through a vertical slot made through a fixed plate, P, secured to the back

of the standard A. The slide h has teeth s' formed on it, which engage with a worm-screw, s, on a vertical shaft, E, and to this slide h an arm, g, is pivoted, which is constructed with a rounded lower end, and a shoulder, g', above such end. The upper end of the shaft E is supported by a bearing, e, and carries a bevel-wheel, f, which engages with another bevel-wheel, f', on the shaft of a balance-wheel, W, which wheel communicates alternate reciprocating movements to the chisel-stocks C C by means of pitman-rods C³, a lever, C², and two connecting-rods, C¹ C¹. The lower end of the shaft E passes freely through the upper angular end of a bracket, e', which end of the latter is also adapted to receive the upper wedge-shaped end of a vertically-movable shifter, j, on which a stud, j¹, and a tail-extension, j², are formed. When the shifter j is down it rests upon the lower angular end of the bracket e', as shown in Fig. 4, and releases the worm s from the teeth s' on slide h; and when the shifter j is up, it engages said worm s with the teeth s', as shown in Fig. 3. The shoulder on the arm g is arranged over the stud j¹ on the shifter, for the purpose of depressing the latter, and releasing the worm s from the teeth s' when a mortise has been made the required length. Beneath the shifter is a lifting-rod, k, which is pivoted to the treadle B', and arranged so that when the treadle is depressed this rod will engage with the lower end of the shifter, and raise it to the position shown in Fig. 3. On one side of the rod k, near its upper end, is a stud, k', which, when struck by the lower rounded end of the arm g by the descent of this arm, will throw back the rod k and release the shifter j, allowing it to drop and release the worm s from the teeth s'. The rod k plays through a slotted bracket, l, which keeps it in proper position.

The operation is, briefly, as follows: A piece of stuff to be mortised is put upon the table B, and securely held. The treadle is then depressed and the table raised, which movement will at the same time cause the rod k to raise the shifter j and engage the worm s with the teeth on slide h. Motion is then given to the shaft of wheel W, and the work of cutting the mortise commences. During the progress of this work the worm s slowly depresses the slot-

ted plate R and moves the chisel-stocks from each other, thereby enlarging the mortise without moving the stuff. When the mortise is complete, the shifter *j* is depressed and the worm *s* disengaged from the teeth on slide *h*, thus allowing the spring *t* to bring the chisel-stocks together and raise the slotted plate R, ready to repeat the operation.

It will be seen that I automatically move the chisels, and keep the stuff stationary while making a mortise.

In practice, the chisel-stocks will be applied in yielding bearings, in order to compensate for the continuous lateral feed while they are cutting into the wood.

What I claim, and desire to secure by Letters Patent, is—

1. The alternate reciprocating chisel-stocks C C, combined with the laterally-movable frames D D, which are separable by means substantially as described.

2. The frames D D, carrying chisel-stocks, and held together by means of a spring, *t*, applied on pins *p*, in combination with the slotted plate B, toothed slide *h*, and a worm, *s*, substantially as and for the purpose described.

3. The shouldered arm *g* on slide *h*, in combination with the shifter *j*, its stud *j'*, and the rod *k*, with its stud *k'*, and the treadle B', substantially as and for the purpose described.

4. The worm-shaft E, receiving rotation from the shaft of wheel W, in combination with laterally-movable chisel-stocks and a shifting device, substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MAHLON W. COLLINS.

Witnesses:

EDWARD J. DURANT,
CARRIE L. COLLINS.