

(No Model.)

L. A. BELMONT & A. C. CLOAD.
MORTISING MACHINE.

No. 482,224.

Patented Sept. 6, 1892.

Fig. 1.

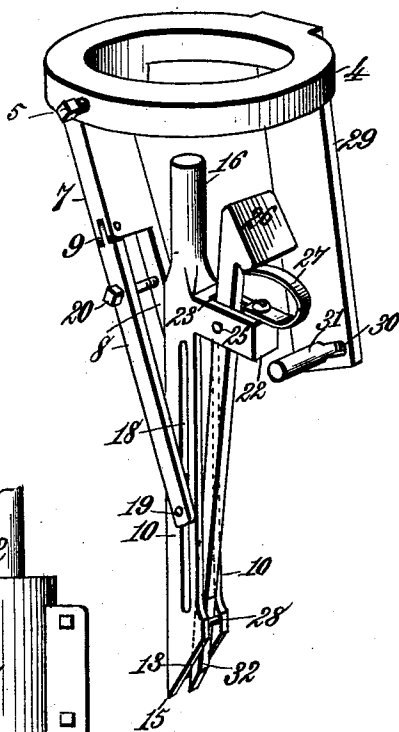
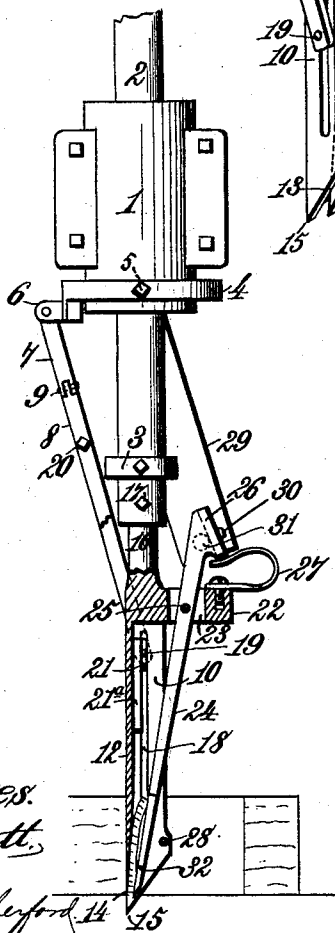
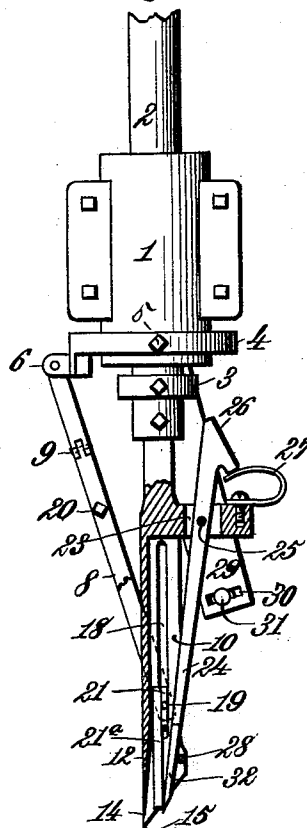


Fig. 2.



Witnesses:
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Fig. 3.



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UNITED STATES PATENT OFFICE.

LOUIS A. BELMONT AND ALFRED C. CLOAD, OF NEW ORLEANS, LOUISIANA.

MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 482,224, dated September 6, 1892.

Application filed February 15, 1892. Serial No. 421,632. (No model.)

To all whom it may concern:

Be it known that we, LOUIS A. BELMONT and ALFRED C. CLOAD, citizens of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Mortising-Machines, of which the following is a specification.

Our invention relates to mortising-machines; and the purpose thereof is to provide an attachment for machines of this type whereby simple and inexpensive devices are made part of the mortising mechanism and are so constructed and combined that the mortise-recess is trimmed or cored with rapidity and accuracy, while the chips or cuttings formed by each cut of the mortising chisel or tool are automatically removed from the mortise at each withdrawal of said tool.

It is our purpose, also, to provide automatic devices whereby a channel or recess in the cutting and trimming tool or chisel shall be automatically opened to receive the cuttings or chips as they are formed and to retain them in said recess as the parts are withdrawn from the mortise, said recess being traversed by a clearing-traveler, by which the chip or core is discharged from the recess as the tool withdraws from the mortise after each operative stroke.

It is our purpose, also, to combine with the cutter or chisel a plunger attachment pivotally connected to a suitable support and carrying upon its end a cross-head, to which the traveler is connected, whereby the parts are enabled to accommodate themselves automatically to any variation in their relative position.

The invention consists to these ends in the novel features of construction and in the new combinations of parts hereinafter fully explained, and then definitely pointed out in the claims which conclude this specification.

To enable those skilled in the art to understand and to make, construct, and use our invention, we will proceed to describe the same in detail, reference being had for such purpose to the accompanying drawings, in which—

Figure 1 is a perspective view showing our invention, the attachment being shown as re-

moved from the machine. Fig. 2 is a sectional elevation, the section plane passing longitudinally through the chisel or cutter from front to rear, the parts being shown at their lowest limit of movement. Fig. 3 is a similar section, the parts being shown at the extreme upward limit of motion, the means for connecting the attachment to a mortising-machine being indicated in both the figures last mentioned.

In the said drawings the reference-numeral 1 denotes a box or bearing of suitable construction, having permanent and rigid attachment to a mortising-machine in the usual manner. This box provides a bearing for a vertical mandrel 2, which is reciprocated by any of the means usually employed for such purposes, such mandrel being provided at its end with a socket to receive the end of the chisel or cutter and having the usual collar 3.

Upon the lower end of the box 1 is mounted a ring 4, secured in place by a clamping set-screw 5. From one side of this ring projects a lug 6, to which is hinged or pivotally connected the end of a plunger attachment 7. The latter element consists of a rigid bar divided through its lower portion into two parallel bars or strips 8, one of which is rigid, and the other hinged at 9.

The chisel or cutter is of peculiar form, and consists of two side plates or side pieces 10, parallel with each other and united at their rearward edges by a web of metal 12, which is preferably integral with the side plates 10. At the cutting end of the chisel the side plates are beveled off toward the rear, forming two cutting-edges 13, which are inclined downwardly and rearwardly and intersect the vertical plane of the web 12, said web being diminished in thickness as it approaches the cutting-edge formed by its lower extremity. This diminution in thickness is produced by removing a portion of the face of the web lying between the side plates, Fig. 3, whereby the cutting-edge 14 is caused to coincide, substantially, with cutting-edges 15, formed by the edges of the side plates. The lower edge of the web 12 is usually removed in such manner that its cutting-edge 14 is somewhat above two cutting-edges 15. By the construction

set forth a longitudinal chamber or recess is formed, inclosed by the two side plates and the web 12, but open or uninclosed along its front.

5 The chisel is provided with any convenient form of shank 16 to enter a socket in the mandrel 2, where it is secured by a set-screw 17. In each side plate 10 of the chisel is formed a slot 18, parallel with the axis of the mandrel 2, and in these slots lies a bolt 19, the ends of which project outside the side pieces 10 and enter the extremities of the bars 8, forming part of the plunger attachment, said bars being prevented from spreading by a bolt 20. 15 The bolt 19 passes through a block or cross-head 21, lying in and substantially filling the longitudinal recess inclosed between the side plates 10. To this block or cross-head is attached a clearer or traveler 21^a, extending 20 from its point of attachment downward for a short distance, Fig. 12, and lying flat against the inner face of the web 12.

Projecting from the front of the chisel, just below the lower end of the shank, is a bracket-piece 22, having a slot or opening 23, within which is placed a snapper-bar consisting of a straight rigid strip 24, supported in the recess or slot 23 by a pivot-pin 25 and extending downward so far that its lower extremity 30 is preferably a little below the edge 14 of the web. The bar gradually diminishes in thickness from the pivotal point 25 downward, but is of substantially uniform width, this latter dimension being such that the bar may easily 35 move within the recess in the chisel between the side pieces 10. It projects a short distance above its pivotal point, and upon its upper and somewhat heavier end is formed or mounted a cam-plate 26, projecting upon one 40 side of the end of the snapper-bar, as shown in Fig. 1, and inclined at an angle of forty-five degrees or less therewith.

Upon the end of the bracket-piece 22 is mounted a leaf-spring 27, its free end engaging the lower edge of the cam-plate 26, whereby the upper end of the snapper is normally thrown toward the chisel, thereby bringing its lower extremity against a cross-pin 28, which crosses the space between the side 50 plates 10 at or near the front edges of said plates.

Rigidly mounted upon one side of the ring 4, distant about ninety degrees of an arc from the lug 6, is a depending bracket 29, having 55 a small inclination from a vertical position, its lower end being provided with a transverse slot 30, within which is adjustably mounted a pin 31, projecting inward, or toward the chisel. The length of the depending bracket 60 is such that the pin 31 lies in the path of the cam-plate 26 and engages the under or lower face thereof as the chisel descends, the point of engagement being at or about the moment when the chisel has completed its cut, as shown 65 in Fig. 2. Prior to such engagement the force of the spring 27 holds the snapper-bar in the position shown in Fig. 3, its lower end portion

resting against the cross-pin 28. In this position it is sufficiently removed from the closed side of the recess in the chisel to permit the 70 chip or core to enter said recess without difficulty. In fact, the snapper-bar aids in the production of this result, and it tends to support and retain the chip after it has entered.

The operation of the device is substantially 75 as follows: As the chisel descends into the mortise the plunger attachment holds the clearing-traveler motionless, thereby leaving the longitudinal recess unobstructed to receive the chips, as in Fig. 3. As the cut of 80 the chisel is completed, or substantially so, the cam-plate on the upper end of the snapper-bar engages the pin 31, throwing the lower end against the chip or core and crowding and packing it in the recess in the chisel. The 85 chisel now rises, raising the cam-plate off the pin 31, allowing the snapper-bar to move outward and rest against the pin 28, the chips being so compacted in the recess in the chisel that they do not fall out to any material extent. 90 The upward movement of the chisel causes the clearing-traveler 21^a to ride to the lower end of the recess in which it lies, thereby removing the chip or core from the recess in the inferior of the chisel. 95

We provide the lower end of the snapper-bar 24 with a removable point 32, having any ordinary construction by which it may be temporarily made part of said bar. The tip 100 or end of the point is beveled to an edge to enable it to readily sever any fibers which may adhere to the bottom of the mortise. As considerable wear falls upon this edge, it is a matter of convenience to render the point replaceable by a duplicate from time to time. 105

What we claim is—

1. An attachment for mortising-machines, consisting of a recessed chisel, a plunger attachment having one end pivotally attached to a rigid support on the machine, a cross-head lying in the recess in the chisel, to which the lower end of the plunger attachment is pivotally connected, a clearer carried by said cross-head, and a spring-actuated snapper-bar having a cam-plate adapted to engage a 115 cam-pin on the downward stroke of the chisel, substantially as described.

2. In a mortising-machine, the combination, with a cutter or chisel having a longitudinal recess or channel, of a snapper-bar 120 pivotally mounted upon said chisel and having its point lying in the lower end of the recess therein, means for automatically vibrating said snapper-bar to pack the detached chip or core, and a clearer traversing 125 the slot or channel as the chisel is withdrawn from the mortise, substantially as described.

3. In a mortising-machine, the combination, with a reciprocating chisel having a longitudinal channel or recess, of a snapper-bar 130 having its point lying in the lower end of the slot or channel and capable of a limited vibration therein and means for automatically forcing said point inward in said chan-

nel to compact the chips therein, substantially as described.

4. In a mortising-machine, the combination, with the chisel-mandrel and with a box
5 within which said mandrel moves, of a cutter or chisel mounted in the mandrel and having a longitudinal channel open upon the front edge and extending nearly to the back of the
10 cutter, a cross-head lying in said channel between the side pieces of the chisel, a plunger attachment hinged to a ring mounted on the box and having parallel arms between which
15 lies the chisel, said arms engaged by pins on the cross-head, a snapper-bar pivoted on a bracket projecting from the front of the cutter or chisel, the lower end of said snapper-bar lying in the channel of the chisel, a cam-pin supported by an arm rigid on a bracket
dropped from the ring and lying in the path

of a cam-plate on the descending snapper- 20 bar, and a clearer attached to the cross-head, substantially as described.

5. The combination, with a chisel having a longitudinal channel inclosed on both sides and in rear, the sides being beveled down- 25 wardly and rearwardly to form inclined cutting-edges, of a chip-clearer located in the said channel and serving to eject the chips on the upstroke of the chisel, substantially as described. 30

In testimony whereof we have hereunto set our hands and affixed our seals in presence of two subscribing witnesses.

LOUIS A. BELMONT. [L. S.]

ALFRED C. CLOAD. [L. S.]

Witnesses:

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