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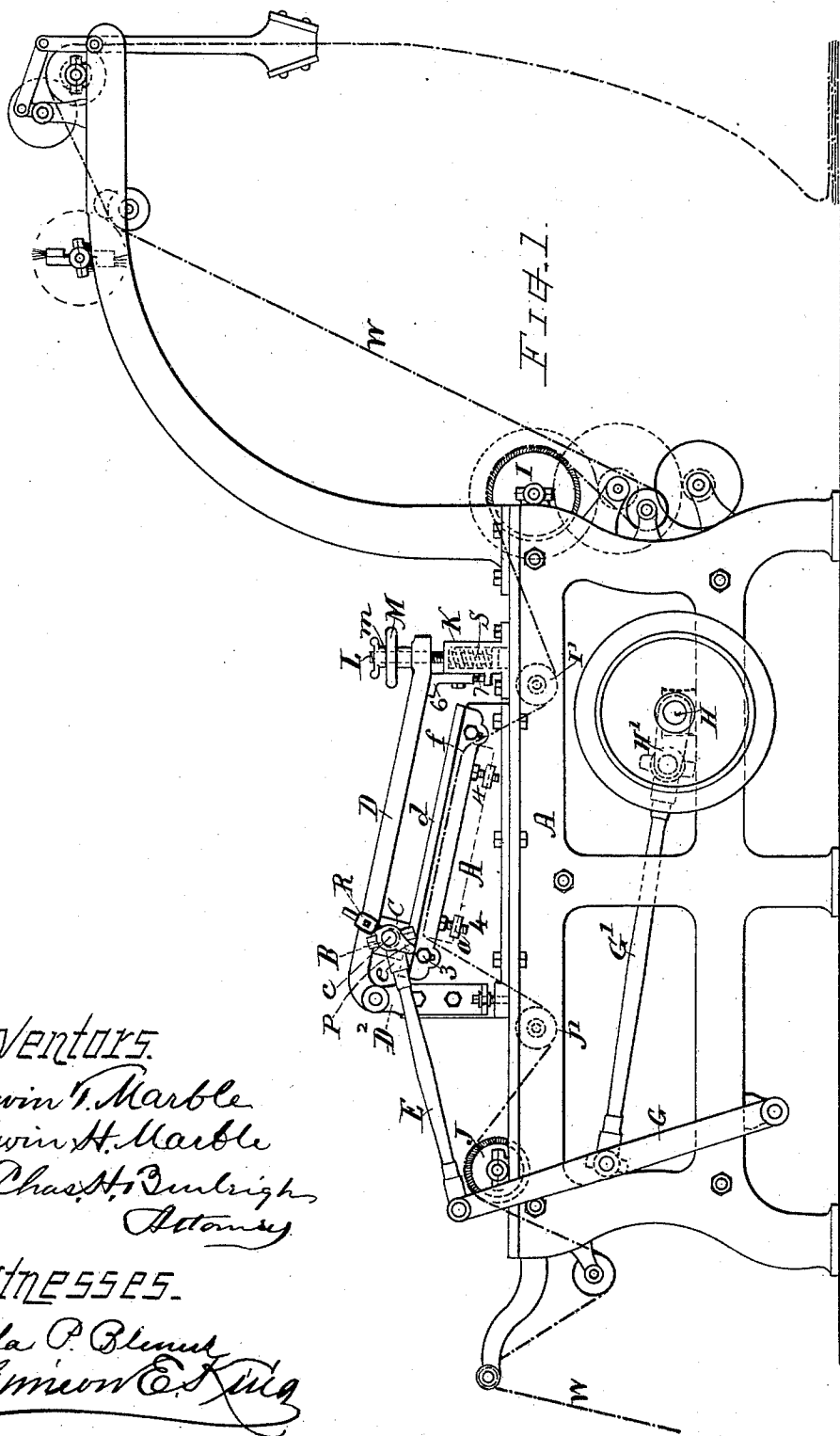
3 Sheets—Sheet 1.

E. T. & E. H. MARBLE.

MACHINE FOR FINISHING VELVETS AND OTHER PILE FABRICS.

No. 474,396.

Patented May 10, 1892.



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Witnesses.
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(No Model.)

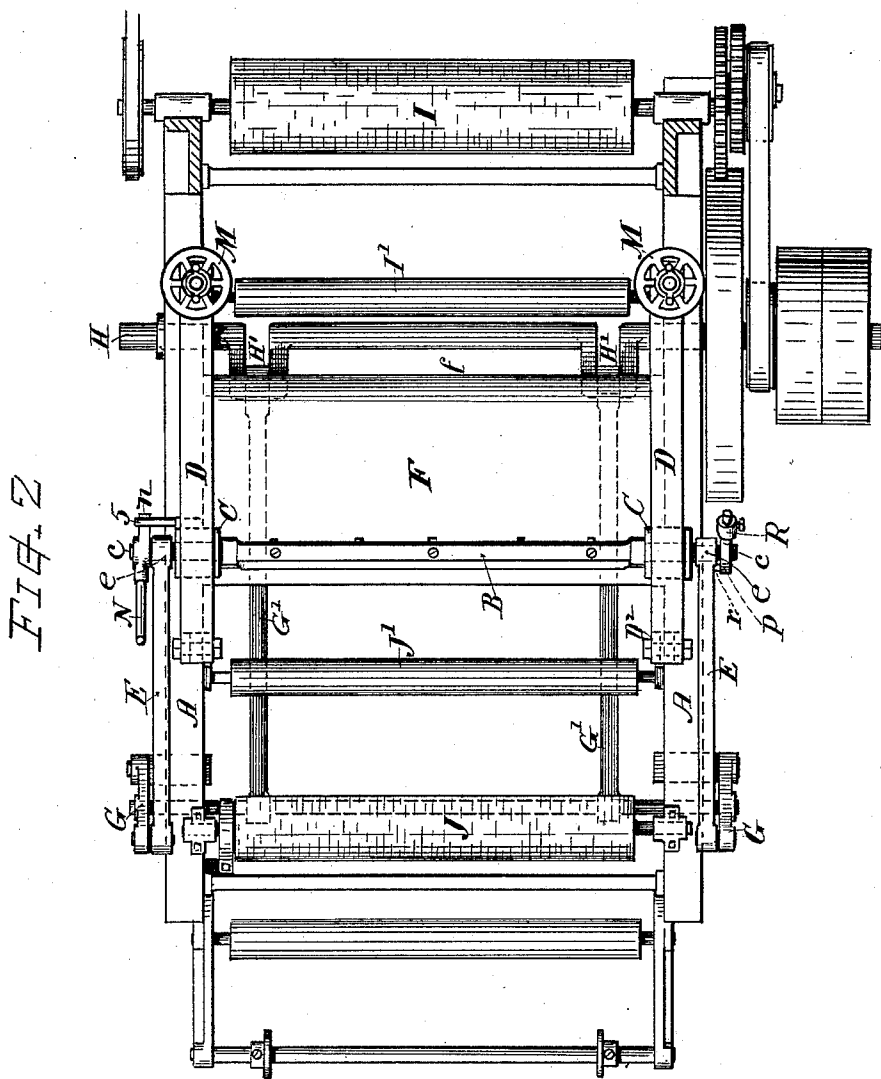
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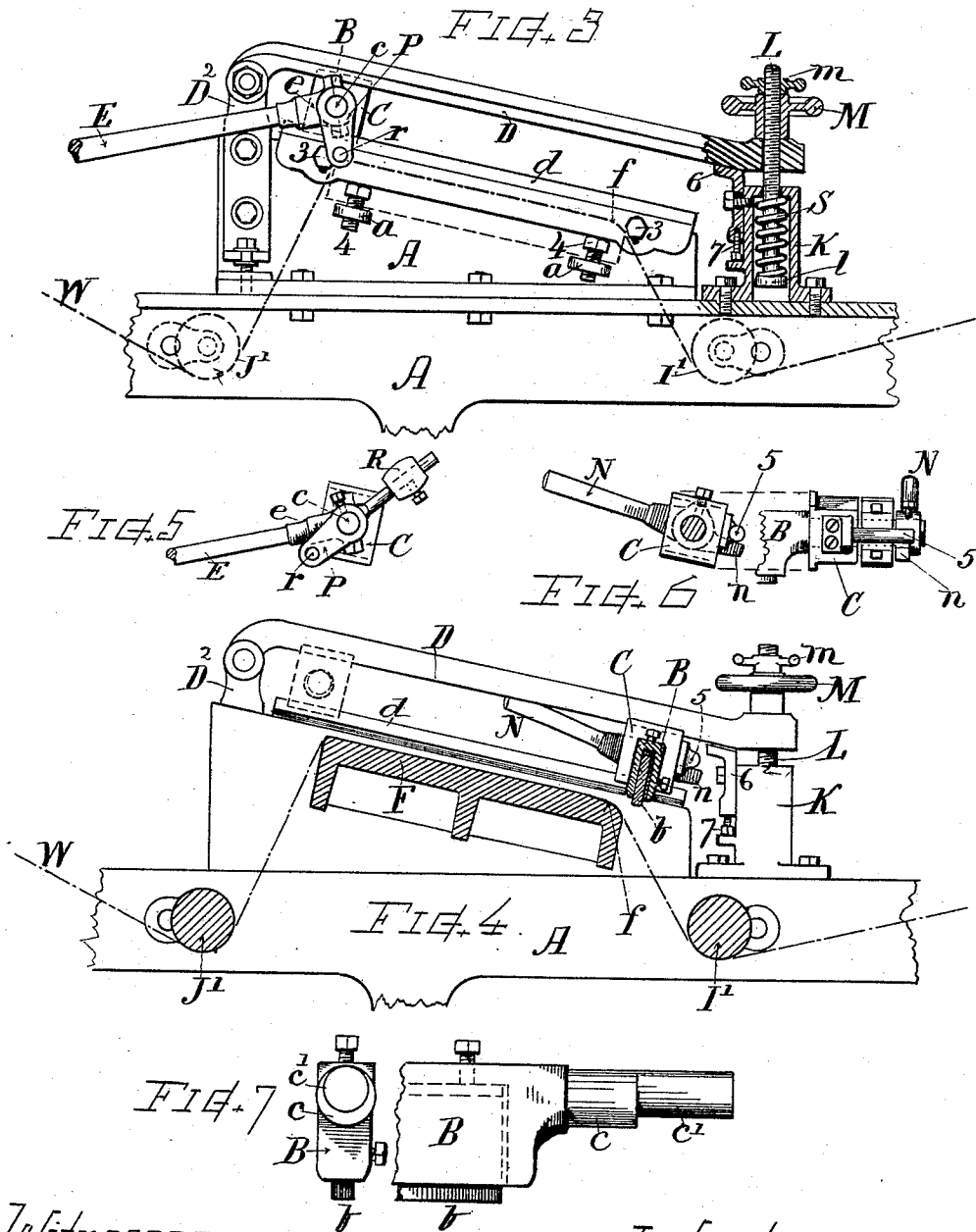
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UNITED STATES PATENT OFFICE.

EDWIN T. MARBLE AND EDWIN H. MARBLE, OF WORCESTER, MASSACHUSETTS.

MACHINE FOR FINISHING VELVETS AND OTHER PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 474,396, dated May 10, 1892.

Application filed January 25, 1892. Serial No. 419,127. (No model.)

To all whom it may concern:

Be it known that we, EDWIN T. MARBLE and EDWIN H. MARBLE, both citizens of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Machines for Finishing Velvets, Velveteens, Plushes, and other Pile Fabrics, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

Our present invention relates to improvements in the construction and arrangement of certain parts of the mechanism in that class of machines employed for performing upon cut pile fabrics the operation called "pegging" the surface or pile; and it consists in the novel features of construction and arrangement of devices as hereinafter explained, and particularly defined in the summary.

The object of our invention is to render the machines more efficient and desirable and to avoid certain objections incident to machines of this class as heretofore constructed.

In the drawings, Figure 1 is a side view of a machine, illustrating our invention. Fig. 2 is a plan view of the same. Fig. 3 is a part side and part sectional view, on a somewhat larger scale, showing the improved guides and pressure mechanism. Fig. 4 is a vertical section through the table, peg-bar, and guide-rolls. Fig. 5 shows the detail of the swing-stops and equipoise devices. Fig. 6 shows the detail of the handle-bar and stop for gaging and sustaining the peg-bar at positive working position in its upward stroke. Fig. 7 shows the peg-bar end as made with eccentric journals.

It will be understood that in general nature and operation our machine is in some respects similar to those now in use, (see English Patents No. 11,254, of 1846, and No. 1,823, of 1860,) and all parts other than the improvements herein specified can be made substantially as heretofore practiced or in any suitable well-known form.

Referring to parts, A denotes the frame; B, the peg-bar carrying the peg *b*; C, the slide-bearings in which the peg-bar journals *c* are mounted; D, the top guides, and *d* the un-

der guides, between which said slide-bearings work.

F indicates the table or pegging-slab for supporting the fabric; E, the connecting-rods for moving the peg-bar; G, the vibrating levers, worked by connections G' and cranks H' on the operating-shaft H, whereby reciprocative action is imparted to the connections E and peg-bar in the usual manner. A feed-roll I and a tension-roll J, both covered with card-clothing, are provided for advancing and straining the fabric in well-known manner, and guide-rolls I' and J' are disposed at front and rear of the table, below the level thereof, for retaining the fabric close and taut upon the surface of the table as it passes over the same on its way from the place of entrance to the place of delivery. The course of the fabric is indicated by the dot-and-dash line W on the drawings.

The table or pegging-slab F is rigidly fixed in the frame, and its top is shaped with a flat working surface, which extends over the greater portion thereof, while its rear edge at *f* is downwardly curved in the peculiar manner shown, the said curved surface approaching and merging into the flat surface by a smooth and gradually-diminishing convexity, the lines of the surface being straight transversely of the machine.

The guides D and *d* are made with straight-line faces and of such length that the slide bearings or boxes C in which the peg-bar is mounted can move therein far enough to carry the peg-bar beyond the limits of the table F at both front and rear, so that said peg-bar will pass the edge *f* and be entirely free from the table when the oscillative action of the bar for bringing the peg to upright position is effected. The lower guides *d* are adjustably secured to the cheek-pieces A' of the frame by means of bolts 3, and setting-screws 4 are provided, fitted in projections *a*, fixed on the cheeks, for effecting accurate adjustment of said guides in relation to the table-surface. These adjustable guides *d* serve to limit the approach of the peg-bar to the table-surface, so that whatever pressure is put upon the mechanism the peg cannot take bearing sufficient to destroy the fabric operated upon; also, to slightly vary the line of peg-action in

relation to the plane of the table-surface. The yielding top guides, against which the boxes C slide and by which the peg-bar is pressed down to the fabric, are made straight throughout their guiding-surface, so that the peg-bar will move in a direct line from one limit of its action to the other, except what slight deviation may be due to its yielding, and for controlling the pressure and yield of said guide we combine with the end of each guide-bar D a spring S, disposed within a socket or case K, fixed on the frame A. An adjusting-screw L, having a shouldered head *l*, on which the spring S is seated, extends up through the coil of the spring and through an opening in the bar D, and a hand-wheel nut M and check-nut *m* are fitted upon the threaded end of said screw in the manner illustrated, whereby the tension of the spring can be readily adjusted by the operator to give the required degree of pressure for bearing the peg *b* firmly upon the work. This arrangement of spring and its adjusting devices affords a more desirable and efficient pressure for the peg-bar, avoids the noise and jumping action, and is more conveniently and perfectly adjustable than the weight devices heretofore employed in this class of machines. The upper end of the guide D may be hinged to the vertically-adjustable bracket D² in the usual manner or otherwise suitably attached.

A stop-guard 6 is adjustably attached to the exterior of the spring-containing socket K and provided with a set-screw 7, which guard prevents the spring from drawing the yielding guide-bar D down sufficiently close to the guide-bar *d* to cramp the sliding box C between them.

By making the guides D for the sliding boxes C straight throughout their length and the table or slab F with the downwardly-curved edge *f* and moving the peg-bar past the edge of the table or slab F, the noise and wear of the mechanism are greatly reduced, a more efficient and rapid action can be effected, and the parts can be easily adjusted or repaired when the surfaces become worn, so that with our improvements it is practical to operate the machine with nearly double the speed and efficiency of former machines.

The handle-bar N, which is fixed to the peg-bar axle *c*, we make an extension or lug *n*, and provide a stop or stud 5, attached to the sliding box C, against which stud said lug *n* engages for arresting the downward oscillative movement of the bar B when the peg *b* is at proper working position and for causing said peg-bar to positively stand at a given fixed angle relatively to the table-surface during the pegging stroke or while the peg is moving upward along the incline of the table in contact with the pile of the fabric.

The peg-bar axles or journals extend through the sliding boxes C and also through the bearings *e* at the ends of the connecting-rods E, and said axles are preferably made with

the journal *c* for the box-bearing and the journal *c'* for the connecting-rod bearing *e* slightly eccentric to each other, (see Fig. 7,) the axis of the journal *c'* being above the axis *c*, so that the force applied through the connecting-rods E for moving the peg-bar will tend to give to said peg-bar an oscillative movement at each end of its stroke as the direction of its motion is changed, swinging the peg downward for the working stroke and upward for the return stroke. The peg-bar is disposed so that its weight is below or out of line with the axis of its supporting-journal *c*, and the weight thus disposed tends to throw the bar over or oscillate it at the change of direction of the reciprocative movement when made without the eccentric axles above described.

To prevent the peg-bar becoming inverted or thrown over too far on its return stroke we provide an arm P, which is fixed upon the end of the axle *c'* and furnished with an offset or stud *r*, that projects under the connecting-bar bearing *e* and engages therewith (or with a stop formed on the bearing-box C, if preferred) when the peg-bar swings upward, limiting its movement to a normal degree, suitable for its clearance of the fabric at the return stroke.

In connection with the peg-bar and preferably on the arm P we provide a suitable supporter and an adjustable weight R, that serves as an equipoise for the oscillative tendency of the peg-bar, and by means of which, by adjusting said weight farther from or nearer to the axis, the oscillative force resultant from change in direction of motion of the bar can be regulated or modified to accommodate any speed at which the machine may be run.

In the operation the fabric passes through the machine on the line indicated, and on its way from the tension-roll J to the feed-roll I is carried beneath the rolls J' and I', that keep the fabric smooth, and is advanced by the feed over the surface of the slab or table F, which is between said rolls, with a constant movement. The bar B, carrying the peg *b*, is moved over the surface of the table and its curved edge *f* in a direct line and is pressed down by the guides D, acted on by the springs S. The bar is oscillated at positions beyond the edges of the table, so that the peg *b* is approximately horizontal on its downstroke and upright on its upstroke, and the working edge of the peg approaches and meets the fabric on the gradually-curved edge surfaces *f*, thereby avoiding shock or strain on the pile when it strikes the fabric. The work of pegging is performed in a thorough and expeditious manner by the passing of the peg over the pile in successive strokes.

It will be understood that we do not broadly claim the general features in a machine for the purpose specified of employing a table and movable bar-peg for finishing cut pile fabrics, as such features are not of our invention, but

that our invention includes the particular features of improvement in structure, arrangement, and operation illustrated and defined.

We claim as our invention herein, to be secured by Letters Patent—

1. The table F, having its surface formed, as shown, with flat central plane and the curved edge *f* merging into said plane, in combination with the straight guides D *d* and the peg-bar B, supported in bearings that travel on said guides and having movement past the curved edge of the table, substantially as and for the purpose set forth.

2. The adjustable bottom guide *d* and means for effecting adjustment thereof, in combination with the peg-bar B, the fixed table F, the yielding top guide D, and pressure devices, substantially as and for the purpose set forth.

3. In a machine for pegging cut pile fabrics, the pegging table or slab having a flat central surface and curved edge surfaces over which the fabric is drawn, in combination with a peg-bar having a direct line of movement across said flat table-surface and past the edges of said table, substantially as set forth.

4. The combination, with the peg-bar carrying the peg, the fixed table, and the yielding top guide, of a pressure-spring arranged within a socket fixed on the frame and a tension-adjusting mechanism for effecting increase or diminution of the spring-pressure to force the peg-bar toward said table, an adjustable stop-guard for limiting the downward movement of said top guide, and an adjustable bottom guide that prevents the peg striking the surface of the table, substantially as set forth.

5. The spring S, its supporting-socket K, fixed upon the frame, the threaded adjusting-bolt L, having a shoulder *l*, whereon said spring is seated and projecting from said socket through the top guide-bar, and the hand-nut M, arranged on said bolt above the guide-bar, in combination with the yielding top guide, the movable peg-bar, and the pegging-table, substantially as set forth.

6. The combination of the peg-bar axle *c*, the sliding bearing-box C, having the stop or stud 5 fixed thereon, and the handle-bar N, secured on said axle and provided with a lug *n*, that engages said stud, substantially as and for the purpose set forth.

7. In combination with the oscillatory peg-bar B, the arm or guard P, fixed to the peg-bar axle and carrying an offset or stud *r*, and a suitable stop on the bearing with which said stud engages to limit the upward oscillation of the peg-bar at its return stroke, substantially as set forth.

8. The peg-bar provided with axles having bearing-journals for the sliding boxes C and for the connecting-bar bearings *e*, the said bearing-journals being eccentric to each other, substantially as and for the purpose set forth.

9. The equipoise-weight R and means for effecting adjustment thereof, in combination with the oscillative peg-bar B, its reciprocating bearings C, operating connections E, and table F, for the purpose set forth.

10. In a machine for the purpose specified, the combination, substantially as described, of the yielding top guide D, having the straight guiding-surface, its end flexibly connected with the vertically-adjustable hinge-bracket, means for effecting adjustment of said bracket on the frame, the adjustable bottom guide *d*, having the straight bearing-surface, the presser-spring S, its supporting-socket K, fixed on the frame, means for adjusting the spring-tension, the oscillating peg-bar B, carrying the peg *b*, the reciprocating boxes C, running on said guides and supporting the peg-bar axles, the fixed pegging-table F, having the flat top surface and curved edge *f*, the connecting-rods E, and stop devices N, 5, and P, for the purpose set forth.

Witness our hands this 22d day of January, A. D. 1892.

EDWIN T. MARBLE.
EDWIN H. MARBLE.

Witnesses:

CHAS H. BURLEIGH,
ELLA P. BLENUS.