

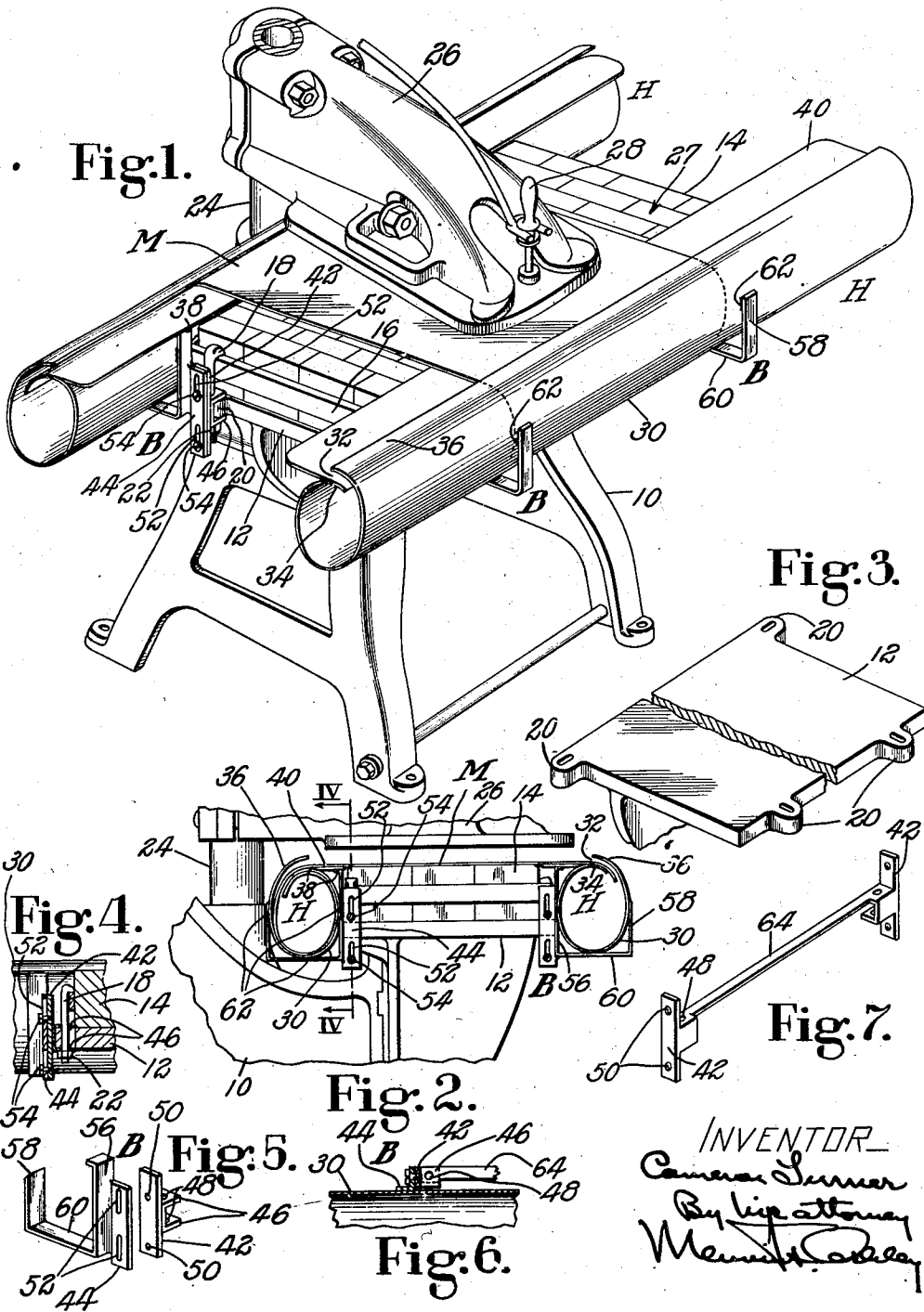
Jan. 2, 1945.

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2,366,296

HOLDER FOR SHEET-MATERIAL

Filed June 16, 1942



UNITED STATES PATENT OFFICE

2,366,296

HOLDER FOR SHEET MATERIAL

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Application June 16, 1942, Serial No. 447,307

8 Claims. (Cl. 242—55)

My invention relates to means by which sheets of material may be delivered to or received from a support upon which they are to be subjected to an operation, one of the several possible applications of the invention being in connection with the presentation of sheets of leather, fabric or the like to the action of dies in the well known clicking machine. It may, however, be utilized whenever material of this character is to be manipulated by an operator upon a supporting surface to place different areas in operating position.

It is an object of this invention to facilitate such operations as above noted, and to protect the material from being marred or soiled. With this end in view, I combine with a material-support, as the cutting block of a clicking machine, a material-delivering tube and a material-receiving tube situated at opposite sides of the support, each of the tubes having a throat extending along the edge of the support and through which the material may pass. The inner wall of the throat is preferably curved downwardly and outwardly from the support, and from it may extend toward the support a material-guiding wall or apron. The outer wall of the throat is shown as curved over the inner wall to provide a guard or shield. A roll of material, drawn from one tube across the support and entering the other tube, is directed between the overlapping curved walls forming the throat and over the extension from the inner wall, in such a manner that it will at all times receive the effective support of smooth surfaces. It will be held rolled within the tubes and between these maintained at the plane of the surface of the support, and at no point will it be abruptly bent or rubbed in such a manner that it will become defaced. It may not only be advanced across the support for the operations upon it at different areas, but may also be shifted longitudinally of the tubes for a similar purpose. The shielding walls of the tubes protect the material from contact with the body of the operator and with certain of the operating elements, as the pressure-post of a clicking machine. Since, because the size of the sheet-material operated upon may be such that its rolled ends project from the open ends of the tubular holders, I increase the resistance of these ends to bending and thus deforming the material, by making the tubes of generally elliptical cross section with the major axis of the ellipse extending in a substantially vertical direction. The unsupported portions are thus stiffened, because of the action of the weight of the material in the

direction of the maximum transverse dimension of the roll. The tubes or holders are readily applied to a machine with which they are to be employed by spaced brackets, which may be secured to the frame of said machine by the same attaching members as join the material-support to the frame. In a clicking machine, these members are the bolts by which the cutting bed is held upon the frame. In some connections it may be important that there be a capacity for accommodation of the material-holding tube to the supporting surface of the machine. In clicking machines, this need arises because of the change in the height of the cutting block, due to resurfacing. I, therefore, provide means for varying the relation of the tube to the support. As herein illustrated, this is accomplished by forming the brackets in sections, one section being attached to the support and the other to the tube, and associating with these sections means for securing them together in different relations.

In the accompanying drawing,

Fig. 1 shows in perspective one embodiment of my improved material-holding means associated with a clicking machine;

Fig. 2 is a partial end elevation, particularly illustrating the cutting block of the machine with the associated holders;

Fig. 3 shows the bed of the machine in broken perspective;

Fig. 4 is a vertical sectional detail on the line IV—IV of Fig. 2;

Fig. 5, a separated perspective of the sections of an attaching bracket;

Fig. 6, a horizontal sectional detail through one of the front brackets, with a portion of its connecting bar; and

Fig. 7, a perspective view of the connected clamping sections of the two front brackets.

Considering that for the purpose of illustration this invention is to be applied to a clicking machine, there is shown at 10 the frame of such an apparatus, this carrying upon its horizontal bed 12 a cutting block 14, which may consist of the customary sections encircled by a retaining band 16. The block is secured to the bed by bolts 18 passing through vertical openings in lugs 20 projecting from said bed. The nuts 22 of the bolts abut against the undersides of the lugs, and draw the upper hooked extremities of the bolts against the band. Arranged to slide vertically through the rear of the frame is a post 24, and extending from it above the block is the usual pressure-arm 26. This arm is swung horizontally by the operator to locate it in the desired rela-

tion to an unillustrated die, interposed between it and a sheet of material M lying upon the work-supporting surface 27 of the block 14. The vertical movement of the arm under the power of the machine, to apply to the die cutting pressure, is controlled by manipulation of a handle 28.

A material-holder H of the present invention is shown as mounted at both the front and rear of the machine, though use might be found for a single holder only, as that from which material is delivered to the block. The side upon which the single holder would be located would depend upon the inclination of the operator, since material may be pushed away from or drawn toward him. The holders may be substantially identical, so but one need be described in detail. It may consist of sheet-metal rolled into an open-ended elliptical or transversely elongated tube 30. The tube is carried with the major axis of the ellipse substantially vertical by two spaced brackets B, B, attached to the frame of the machine in a manner to be described later. The ends of the tube-wall overlap to furnish a throat-opening 32 between an inner wall 34 and an outer wall 36. The higher portion of the inner wall is preferably approximately at the level of the surface 27 of the block 14, while the outer wall curves above this, causing the throat to extend along and just above the edge of the surface 27. Secured to the top of the inner wall 34 and portions of the brackets B at 38, as by soldering or welding, and extending from said inner wall into proximity with the edge of the surface 27, is a guide-wall or apron 40. This bridges the space between the inner curved wall of the tube 30 and the block, giving continuous support for the material passing from or into said tube. The inner wall 34 is curved downwardly and outwardly away from the block 14 and acts as a material support and deflector.

As to the brackets B, each of these includes a clamping section 42 and a carrier-section 44, as may best be seen in Fig. 5. The section 42 is in the form of a vertical plate from which projects a pair of spaced horizontal lugs 46, 46. These lugs fit upon opposite sides of one of the bed-lugs 20, and have vertically alined openings 48, 48 to register with the bolt-opening in the base-lug. The shank of the block-retaining bolt 18 passing through these openings holds the section 42 firmly upon the frame 10 without additional securing means. Through the upper and the lower portions of the plate are threaded openings 50, 50, with which register vertically elongated slots 52, 52 in the attaching plate of the bracket-section 44. Screws 54 extend through the slots and engage the openings 50, permitting the section 44 to be fixed in different positions vertically. Integral with or secured to one side of the plate is a saddle, having spaced inner and outer vertical portions 56 and 58, respectively, and a horizontal connecting portion 60. In this saddle, the tube 30 rests upon the portion 60, retained laterally by the portions 56 and 58 and secured to each of said portions at 62 by soldering or welding. The inner vertical portion 56 is longer than the portion 58, and may have an angular end furnishing the point 38 for the attachment of the guide-wall 40. Since the lugs 20, 20 at the front of the bed 12 project therefrom in the same direction, the clamping sections 42, 42 of the brackets B may here be united by a bar 64, as appears in Fig. 7, so they may be handled as a unit.

In applying the holder of this invention to a

clicking machine, the block-retaining bolts 18 are removed from the bed 12, the clamping sections 42 of the brackets B slipped over the lugs 20, and the bolts passed through the bracket-openings 48 and the lug-openings and tightened to hold both the block and brackets securely in place. With the other sections 44 of the brackets connected to the sections 42 by the screws 54, a tube 30 with its attached apron 40 is laid upon the saddles and fixed thereto at 62 and 38. It is adjusted vertically by the slot-and-screw connections, until the upper surface of the apron is in substantial alignment with the cutting surface 27 of the block 14. This places the throat 32 of the tube at a height to deliver or receive properly the material to be operated upon, either to or from the block. With the holders in place, the operator may take a sheet M of the material, and, forming a roll of the correct transverse dimension, introduce it into one end of the tube 30 with its outer edge projecting through the throat 32. This rolling of the sheet may readily be effected, regardless of irregularities in the contour of the sheet. As has already been pointed out, the delivering and receiving tubes may be situated respectively at either the front or rear of the block, as is most convenient for the operator. The elliptical passage of the delivering tube correspondingly shapes the roll of material, and any portion of said roll projecting at either extremity of the tube, because of the length of the roll or operating changes in its position longitudinally of the tube, will be stiffened by the increased resistance to bending offered by the greater transverse dimension of the roll. With the material thus supplied to the delivering tube, its end may be drawn forward over the gradually curved surface of the wall 34 and its apron 40, this, with the surface 27 of the cutting block, giving a practically unbroken support for the material. As it is operated upon, the sheet may be advanced, it unrolling from the delivering tube, or it may be shifted transversely of the block, the roll moving longitudinally of the tube. When the forward extremity of the sheet reaches the opposite tube, it will be received by the throat 32 and coil itself in the tube, sharing in the longitudinal movement therethrough as the sheet is shifted transversely of the block. The insertion or removal of material from the tube is facilitated by the downwardly and outwardly projecting portion of the inner wall 34, the underside of which engages the material after it has been partially coiled and prevents it from pressing against material in the throat, thus avoiding any likelihood of clogging. At no time will the material be subjected to abrasion by rough surfaces, or allowed to bend over angular projections of the block or its fittings to create irregularities or resist movement. The outer wall 36 of the throat at the front of the machine interposes a guard between the body of the operator and the work, and that at the rear provides a shield which protects the material from the lubricant upon the post 24. The waste material, after the operations upon the sheet have been completed, may be drawn as a roll from the end of the receiving tube. When the block 14 is dressed down to give a smooth cutting surface 27, resulting in the lowering of this surface, the wall 34 and apron 40 of each tube may be brought to the corresponding height by the vertical adjustment of the outer sections 44 of the brackets B through the slot-and-screw connections 52, 54.

Having described my invention, what I claim

as new and desire to secure by Letters Patent of the United States is:

1. The combination with a support for material to be operated upon, of a material-delivering tube and a material-receiving tube situated at opposite sides of the support, each of said tubes having an open end and being generally elliptical in cross-section with the major axis of the ellipse extending in a substantially vertical direction.

2. The combination with a support for material to be operated upon, of a material-delivering tube and a material-receiving tube situated at opposite sides of the support, each of said tubes having a throat extending along the edge of the support and through which the material may pass, brackets by which the tubes are mounted upon the material-support, each bracket being formed in sections, one for attachment to the support and a second for attachment to the tube, and means arranged to secure the sections together in different relations.

3. The combination with a frame, of a support for material to be operated upon, a retaining member by which the support is joined to the frame, a material-holder mounted upon the frame, and a bracket by which the holder is carried and which is secured to the frame by the retaining member.

4. The combination with a frame, of a support for material to be operated upon, a retaining member by which the support is joined to the frame, a material-holder mounted upon the frame, and a bracket by which the holder is carried and which is secured to the frame by the retaining member, said bracket having means arranged to secure the material-holder at different heights.

5. The combination with a frame, of a support for material to be operated upon, a bolt by which the support is joined to the frame, a bracket having a clamping section and a carrier-section, the clamping section being secured in place by the bolt, and a material-holder mounted upon the carrier-section.

6. The combination with a frame, of a support for material to be operated upon, a bolt by which the support is joined to the frame, a bracket having a clamping section and a carrier-section, slot-and-screw connections between the sections of the bracket, the clamping section being secured in place by the bolt, and a material-holder mounted upon the carrier-section.

7. The combination with a support for material to be operated upon, of a holder for the material extending along the support and consisting of sheet-material bent into a tube of generally elliptical cross-section with inner and outer overlapping walls, and means for mounting the holder upon the support with the major axis of the ellipse substantially vertical and with the opening between the overlapping walls above the material-supporting surface.

8. The combination with a support for material to be operated upon, of a holder for the material extending along the support and consisting of sheet-material bent into tubular form with inner and outer overlapping walls and open ends, and a bracket attached to the support and provided with spaced vertical portions and a connecting horizontal portion, the holder resting upon the horizontal portion and retained laterally by the vertical portions.

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