S. BARRILE AND I. L. MARANHAS.

SHEET STRIPPING MACHINE.

APPLICATION FILED JAN. 17, 1919.

1,306,992.

Patented June 17, 1919.

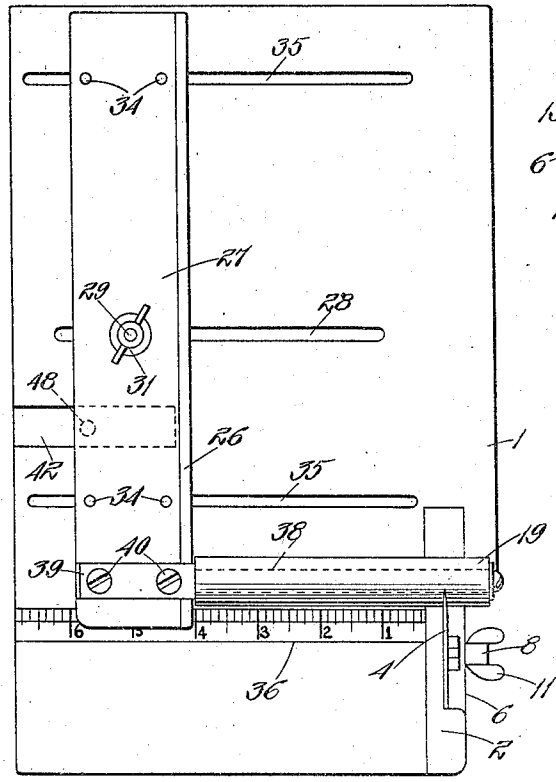


Fig. 1.

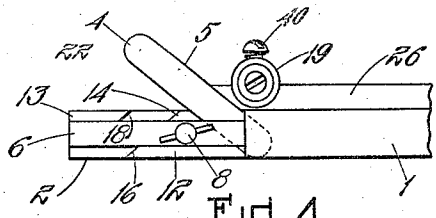


Fig. 4.

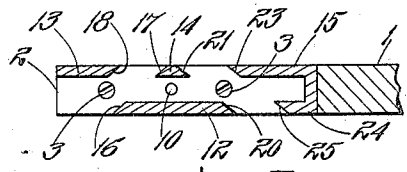


Fig. 5.

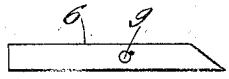


Fig. 6.

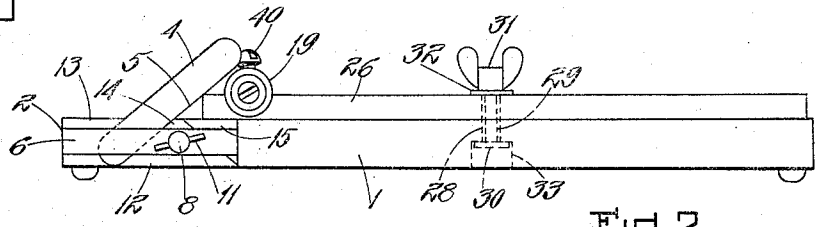


Fig. 2.

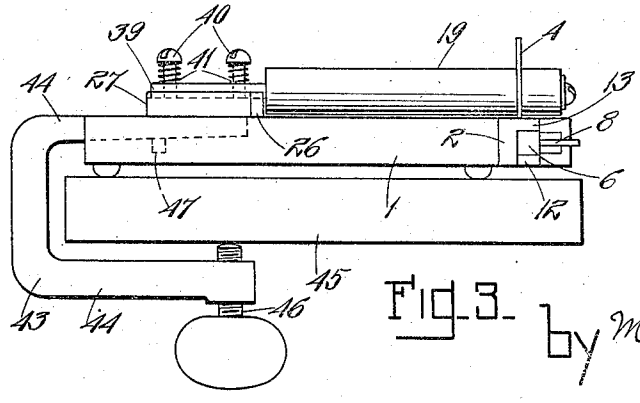


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## SHEET-STRIPPING MACHINE.

1,306,992. Specification of Letters Patent. Patented June 17, 1919.

Application filed January 17, 1919. Serial No. 271,681.

*To all whom it may concern:*

Be it known that we, SALVADOR BARRILE and ILDEFONSO L. MARANHAS, citizen of the United States, and citizen of Portugal, respectively, residing at Boston, in the county of Suffolk, and Somerville, in the county of Middlesex, both in the State of Massachusetts, have invented a certain new and useful Improvement in Sheet-Stripping Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of our invention is to provide a simple device for stripping sheet material into narrower strips for any use. One particular use of a device embodying the invention is to cut sheets of leather into strips of suitable width for the side boxing on chair cushions. Another special use is to cut cloth or silk into strips of any width desired. The invention, however, is broadly useful in construction of machines for cutting any kind of sheet material into strips whether leather, silk, cloth, paper or other material.

One feature of the invention relates to the knife and knife holder.

Another feature relates to the combined presser roll and edge guide and means for adjusting them for varying width of strips to be produced.

Another feature relates to the method of mounting the presser roll on the edge guide so as to secure a yielding movement to allow for varying thicknesses of material or humps in the sheet.

Another feature relates to the bed plate on which the knife, presser roll and edge guide are mounted.

Another feature relates to the means for clamping the bed to a work bench or table and to the connection of the clamp with the bed plate to avoid interference with the adjustment of the edge guide.

Other features will be more particularly set forth hereinafter.

The invention will be fully understood from the following description when taken in connection with the accompanying drawings and the novel features thereof will be pointed out and clearly defined in the claims at the close of this specification.

In the drawings, Figure 1 is a plan view of a device embodying the invention.

Fig. 2 is a side elevation.

Fig. 3 is a front end view.

Fig. 4 is a side elevation partly broken away showing the knife adjusted to a different position from that shown in Fig. 2, this being the preferable position for use in cutting very thin and flexible material like silk or paper, the cutting edge being inclined backwardly while in Fig. 2 it is shown inclined forwardly for use in heavier or stiffer material such as leather.

Fig. 5 is a detail side view partly in section through the bed plate showing the fixed part of the knife holder.

Fig. 6 is a detail view of the removable clamping block portion of a knife holder.

Referring now to the drawings, 1 is a bed plate on which are mounted the other parts of the device and which is intended to be clamped to a work bench or a table. In one edge of the bed plate near one corner is inserted a metallic block 2 which forms a fixed portion of the knife holder and is secured to the edge of the table 1 in any suitable manner as for instance by screws 3. The knife 4 which has a straight cutting edge 5 is clamped to the fixed member 2 by a separable clamping block 6. The knife 4 is held between the fixed member 2 and the movable member 6 of the holder, the movable member or block 6 being secured to the fixed member 2 by a screw 8 which screws through a hole 9 in the movable member 6 and into a hole 10 in the fixed member 2. Preferably the screw is provided with a wing head 11 for convenience in setting up the screw.

The stationary member 2 is formed with a laterally extending flange 12 near its under side on which the movable clamping member 6 is seated. It is also provided at its upper edge with three laterally extending flanges or lugs 13, 14 and 15 all spaced apart from each other, these upper flanges all being in alinement with each other and parallel with the lower flange 12, thus forming a groove between the lower flange and the upper set of flanges of a width substantially equal to the width from the upper to the lower edge of the movable knife clamping member 6, said member 6 having a sliding fit in said groove. The upper middle flange 14 is much shorter than the lower flange 12 and is preferably so located that its median line vertically is in alinement with the median line vertically of the lower flange 12.

The left hand end of the bottom flange 12 as viewed in the drawings is formed with a

bevel 16 and the left hand end of the flange 14 is formed with a bevel 17 at the same angle as the bevel 16 and in the same straight line so that when the knife 4 is clamped within the holder the straight cutting edge 5 may rest on the two beveled edges 16 and 17, the beveled edges thus forming a guide so that the knife may always be positioned at the proper angle with relation to the face of the table 1. Preferably the upper flange 13 has an under-cut bevel end 18 which is parallel with the bevel edge 17 of the flange 14 and spaced apart therefrom a distance equal to or slightly more than the width of the knife blade 4 so as to form a back stop for the knife blade to prevent its wiggling or getting out of angular adjustment if the clamping screw 8 should become slightly loosened.

When the blade is set in this position and as shown in Figs. 1 and 2 the cutting edge 5 inclines upwardly toward the presser roll 19 and the cutting edge of the blade forms an acute angle with the face of the bed plate which serves to give a little better bite of the knife on the sheet as the sheet is drawn toward the knife than if the knife were set perpendicular or at an obtuse angle to the bed plate.

As previously stated, for some classes of material it is preferable to have the blade inclined backward from the presser roll for convenience of handling the material if the character of the material is such that the knife will readily cut it in that position although it does not have such a bite as is given by the acute angle arrangement. To this end, therefore the right hand end of the flange 12 is formed with beveled end 20 inclined at an equal angle to the bed plate as the beveled end 16 but in another direction and the upper middle flange 14 is formed with a bevel 21 at its right hand end in alinement with the bevel 20 of the lower flange thus forming a seat for the back edge 22 of the knife blade as shown in Fig. 4. The left hand end of the upper flange 15 is formed with an under cut bevel 23 and the lower flange 24 is formed with an under cut bevel 25 in alinement with the bevel 23, both of said under cut bevels 23 and 25 being parallel with the bevels 20 and 21 thus forming a grooved way for the blade 4 to fit therein as shown in Fig. 4.

By slightly loosening the clamping screw 8, the blade 4 may be taken out of the holder and shifted from the position shown in Fig. 2 to the position shown in Fig. 4, and clamped in its adjusted position by again setting up the screw 8. When in the position shown in Fig. 2 the cutting edge of the blade rests against the back edge 17 of the flange 14, but when the blade is in the position shown in Fig. 4, the back edge of the blade rests on the bevel edge 21 of the flange 14, the cutting edge being in all cases on the side toward the roller, whichever way it is inclined.

A straight edge guide 26 which lies in a plane parallel with the plane of the knife blade 4 is secured to a slide bar 27 which is slidable and adjustable transversely of the plane of the knife blade so that the straight edge 26 may be adjusted to varying distances from the plane of the knife blade. In order to permit the adjustment of the said slide bar with the straight edge and to clamp it in its adjusted position, the bed plate 1 is formed with a slot 28 extending therethrough and lying at right angles to the plane of the knife and the intended line of the straight edge. A guide pin 29 extends up through said slot 28 and through a hole in the bar 27, the lower end of the said pin having a flange head 30 to prevent its being pulled up through the slot and the upper end of the pin being threaded to receive a nut 31, preferably a wing nut as shown, which may be set up to clamp the bar 27 and the straight edge guide 26 in its adjusted position. Preferably a washer 32 is provided between the head 31 and the upper face of the bar 27 to take up the wear when the nut is set up. Preferably also the under side of the table is formed with a transverse groove 33 of somewhat greater width than the guide slot 28 and into which the guide slot opens, said groove being for the purpose of forming a counter-sink for the head 30 of the guide pin 29.

The bar 27 is also preferably provided with two pairs of guide pins 34, the two pairs being on opposite sides of the center guide pin 29, each pair being in a line parallel with the guide slot 28, and each pair of pins engages with a transverse guide slot 35 in the bed plate 1. These guide pins 34, 34 engaging with the groove 35 prevent the oscillation of the straight edge guide bar 27 on the guide pin 29 and maintain the straight edge always at right angles to the plane of the knife blade. By loosening the wing nut 31 the straight edge bar may be adjusted to any position toward or from the knife blade as permitted by the length of the guide slots.

A measuring scale 36 is set into or marked off upon the bed 1 transversely of the bed, the units of measurement beginning with the plane of the knife blade 4. The straight edge bar may therefore be adjusted to greater or less distances from the blade 4, the distance between the blade and the straight edge governing the width of the strip which will be cut from the sheet.

A yielding presser roller 19 is journaled on a shaft 38, which is provided with a bracket stem 39 secured to the upper face of the straight edge bar 27. The shaft and presser roller project from the mounting on

the straight edge bar over the upper face of the bed plate 1 transversely thereof just back of the edge of the knife blade. The presser roller is long enough so that when the edge guide is set to the extreme width of the widest strip which the device is intended to cut said presser roller will extend across the full width of the strip, so that the same presesr roller is adapted for use in cutting a strip of any width within the range of capacity of the machine as controlled by the range of adjustment of the edge guide.

The presser roller is yieldingly mounted so that it exerts a yielding pressure upon the sheet of material which is fed under it. It will yield to varying thicknesses of the material whether the whole sheet is of uniform thickness or whether there may be varying degrees of thickness in any particular sheet. The preferred yielding means for securing the presser roller to the straight edge bar are as follows: Two pins 40, 40 pass loosely through the bracket 39 and are screwed into the straight edge bar 27 but so as to have upwardly projecting shank portions. Tension springs 41 are coiled around the shanks of the pins 40, 40 above the bracket 39 one end of each spring bearing against the bracket and the other end of the spring bearing against the under side of the head of the pin, thus holding the bracket end of the shaft with a yielding pressure on the straight edge bar. The other end of the shaft is unsupported, but the shaft will be held by means of its bracket connection 39 with the straight edge bar in proper position above the bed plate. The presser roller, which is preferably of rubber, is of sufficient diameter so that its periphery will normally be in contact or nearly in contact with the face of the bed plate so that it will have to yield very slightly to allow the sheet which is to be stripped to be fed under it, thus always maintaining the sheet smooth and flat when it reaches the knife blade and there will also be sufficient drag on the sheet so that it will not slip too freely.

In stripping the sheet it will be fed forward under the roller with one edge against the straight edge 26 and drawn forward until it engages the blade of the knife, then by taking hold of the sheet at each of the two front corners and pulling the sheet against the knife, keeping the sheet flattened down to the surface of the bed plate, it will cut off a strip of a width equal to the distance between the plane of the knife and the line of the straight edge. As will be well understood, the straight edge may be adjusted to cut any width of strip desired within the range of the adjustability, and whatever width it may be the entire width will be engaged by the presser roller.

As previously stated the device is intended to be clamped to the edge of a bench or work table. It is important that the clamping arrangement shall not interfere with the adjustment of the straight edge bar. To this end I have provided a clamping means as follows: The bed plate 1 is formed with a transverse groove 42 extending in from the edge on the opposite side from the edge in which the knife holder is set, said groove extending in beneath the edge guide bar 27. A bracket clamp 43 is provided having one arm 44 which fits into said groove 42 and having another arm 44 which extends beneath the table 45. A clamping screw 46 is provided which may be set up to engage the under side of the table 45 to hold the clamp firmly to the table and clamp the bed plate to the table. In order to properly position the clamp with relation to the bed plate the upper arm 44 is provided with a lug or stud 47 which engages in a hole 48 in the bottom of the groove 42. The groove 42 forms a counter-sink for the arm 44 of the clamp so that the arm of the clamp will lie flush with or at least not extend above the surface of the bed plate. This allows the straight edge bar to be adjusted the full width of the bed plate and slide over the arm 44 of the clamp.

Preferably the arm 44 is somewhat wedge shaped, the taper however being on the under side as shown in Fig. 3 so that the upper side will be parallel with the face of the bed plate. The groove 42 will be of varying depth, that is have a slanting bottom to correspond with the angle of inclination of the lower face of the arm 44.

What we claim is:

1. A machine for cutting sheet material into strips having a bed plate, a knife and a holder for the knife, said holder comprising a fixed member secured to one side of the bed plate, and a movable clamping block, the fixed member being formed with two sets of grooved guide slots having inclined seats for the knife, whereby the knife may be supported in either of said grooved slots at a fixed angle of inclination with relation to the face of the bed plate, one set of said guide slots holding the knife with the cutting edge inclined forwardly toward the sheet as the sheet is drawn toward the blade, and the other set of guide slots holding the knife with its cutting edge inclined backwardly from the sheet at an obtuse angle thereto.

2. A machine for cutting sheet material into strips having a bed plate, a knife and a holder for the knife, said holder comprising a fixed member secured to one side of the bed plate, and a movable clamping block, the fixed member being formed with two sets of grooved guide slots having inclined seats for the knife, whereby the knife may be supported in either of said grooved slots at a fixed angle of inclination with relation

to the face of the bed plate, one set of said guide slots holding the knife with the cutting edge inclined forwardly toward the sheet as the sheet is drawn toward the blade, and the other set of guide slots holding the knife with its cutting edge inclined backwardly from the sheet at an obtuse angle thereto, a groove in the side of the fixed member of the holder to form a guideway and seat for said clamping block and means for binding the said clamping block in said groove in the fixed member and clamping the knife between the said block and fixed member.

3. A machine for cutting sheet material into strips having a bed plate, a knife and a holder for the knife, said holder being formed with two sets of inclined guides for the knife, one set of guides being inclined in such a direction that the knife blade when positioned in said guides will have its cutting edge inclined at an acute angle to the upper face of the bed plate and to the sheet as it is drawn against the knife edge, the other set of guides being inclined in a direction so that when the knife is positioned properly with relation to said guides the cutting edge of the knife will be inclined at an obtuse angle to the upper face of the bed plate, and to the sheet as the sheet is drawn against the knife edge, and means for clamping the knife blade to its seat in said holder.

4. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, said straight edge guide being adjustable transversely of said bed plate so as to vary the distance between the line of the straight edge and the plane of the cutting edge of the knife, said presser roll being secured to the said straight edge guide and movable therewith.

5. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, said straight edge guide being connected to a slide which is adjustable transversely of the bed plate so as to vary the distance between the straight edge guide and the plane of the knife, said presser roll having an extension member at one end which is secured to said slide thereby holding the presser roll transversely of the bed plate, the other end of said presser roll being free, said presser roll being carried by the said slide when the said slide is adjusted.

6. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, a slide to which said straight edge guide is connected and which is adjustable transversely of the bed plate and so as to vary the distance between the straight edge guide and the plane of the knife, said presser roll having an extension member at one end which is secured to said slide thereby holding the presser roll transversely of the bed plate, said presser roll being carried by the said slide when the said slide is adjusted, the extension portion of the presser roll being secured to the said slide by pins passing loosely through said extension member into the slide and having projecting shank portions and having tension springs which hold the said extension member against the said slide by a yielding pressure thereby allowing the presser roll itself to yieldingly press the sheet against the bed plate when a sheet is fed beneath the presser roll to the cutting knife.

7. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, a slide to which said straight edge guide is connected and which is adjustable transversely of the bed plate so as to vary the distance between the straight edge guide and the plane of the knife, said presser roll having an extension member at one end which is secured to said slide thereby holding the presser roll transversely of the bed plate, said presser roll being carried by the said slide when the said slide is adjusted, the said bed plate being formed with a transverse guide slot and the said slide being secured to the bed plate by a screw pin passing up through said slot in the bed plate and through the said slide, the said pin being formed with a head on its lower end and a binding nut which screws onto the upper end of said screw pin to bind the said slide in its adjusted position to the bed plate.

8. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, a slide to which the straight edge guide is connected and which is adjustable transversely of the bed plate so as to vary the distance between the straight edge guide and the plane of the knife, said presser roll having an extension member at one end which is secured to said slide thereby holding the presser roll transversely of the bed plate, said presser roll being carried by the said slide when the said slide is adjusted, the said bed plate being formed with a transverse guide slot and the said slide being secured to the bed plate by a screw pin passing up through said slot in the bed plate and through the said slide, the said pin being formed with a head on its lower end and a binding nut which screws onto the upper end of said screw pin to bind the said slide in its adjusted position to the bed plate, the bed plate having a counter-sink on its under side on both sides

of the guide slot to receive the head of said screw pin.

9. A machine for cutting sheet material into strips having a bed plate, a presser roll above the bed plate, a straight edge guide, a knife and a holder for the knife, a slide to which the straight edge is connected and which is adjustable transversely of the bed plate so as to vary the distance between the straight edge guide and the plane of the knife, said presser roll having an extension member at one end which is secured to said slide thereby holding the presser roll transversely of the bed plate, said presser roll being carried by the said slide when the said slide is adjusted, the said bed plate being formed with a transverse guide slot and the said slide being secured to the bed plate by a screw pin passing up through said slot in the bed plate and through the said slide, the said pin being formed with a head on its lower end and a binding nut which screws onto the upper end of said screw pin to bind the said slide in its adjusted position to the bed plate, said slide being provided with additional guide pins on two opposite sides of the said first mentioned guide pin and the bed plate being formed with guide grooves to receive said guide pins.

10. A machine for cutting sheet material into strips having a bed plate, a straight edge guide, a slide to which said straight edge is connected and which is adjustable transversely of the bed plate, a presser roll secured to said slide and movable therewith and extending transversely of the bed plate, a knife, a holder for the knife mounted in said bed plate in proximity to the presser roll, a bracket having an upper arm secured to the bed plate and a lower arm adapted to extend under the top of a table, and means for clamping the said bracket to a table, said bed plate being formed with a transverse groove in its upper face to receive said upper arm of the bracket, said groove being of sufficient depth so that it will form a counter-sink for the upper arm of the bracket and permit the slide which carries the edge guide to slide over the top of said upper bracket arm.

In testimony whereof we affix our signatures.

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**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**