

Sept. 15, 1925.

1,553,529

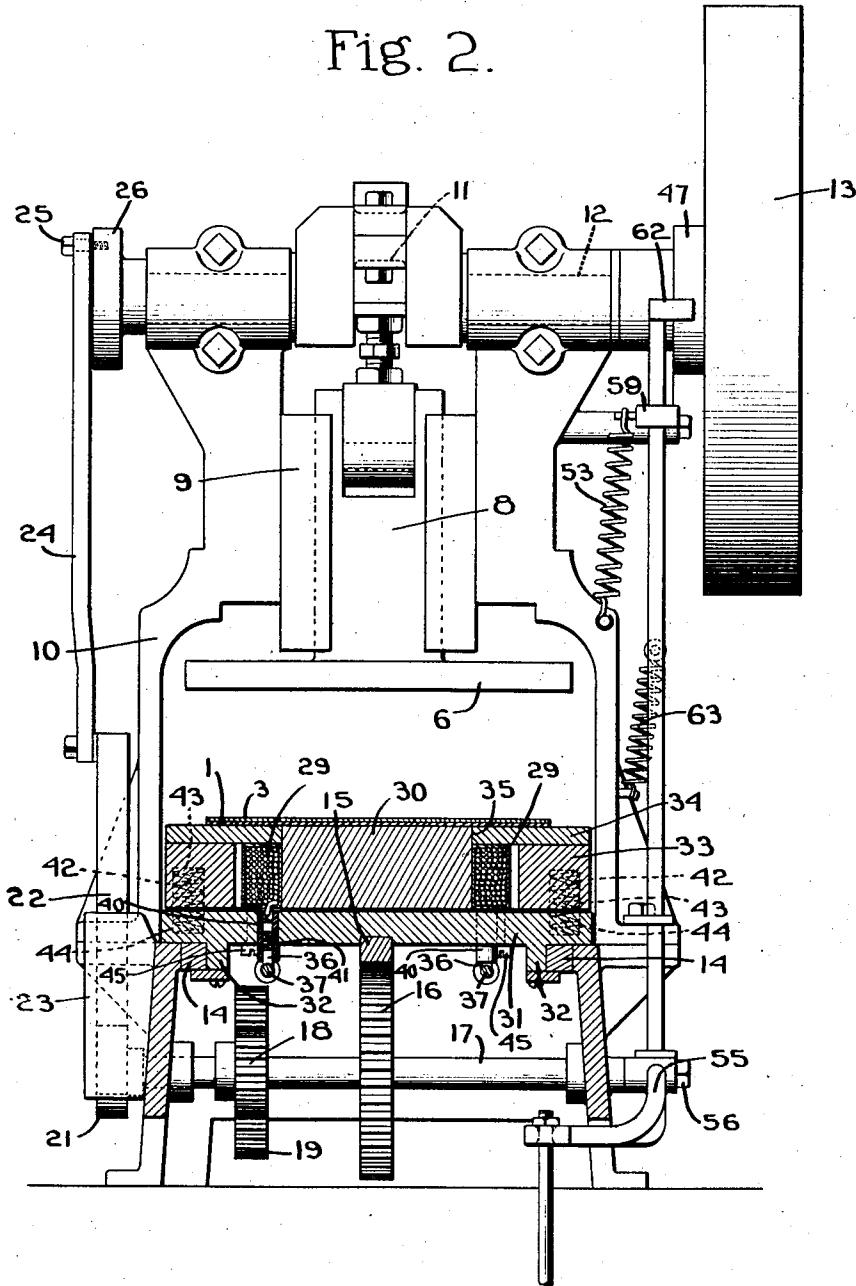
C. C. HAYDEN

MACHINE FOR MARKING LEATHER

Filed Nov. 13, 1924

4 Sheets-Sheet 2

Fig. 2.



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Fig. 3.

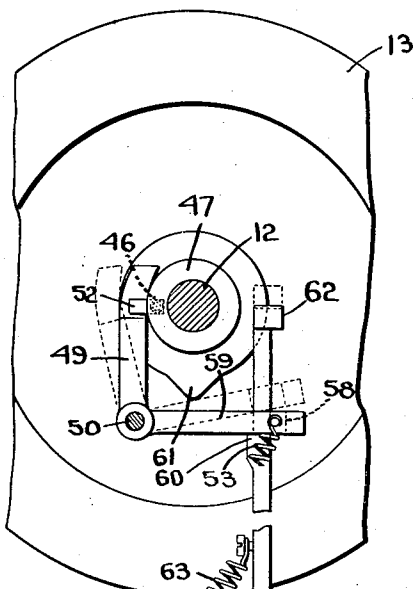


Fig. 4.

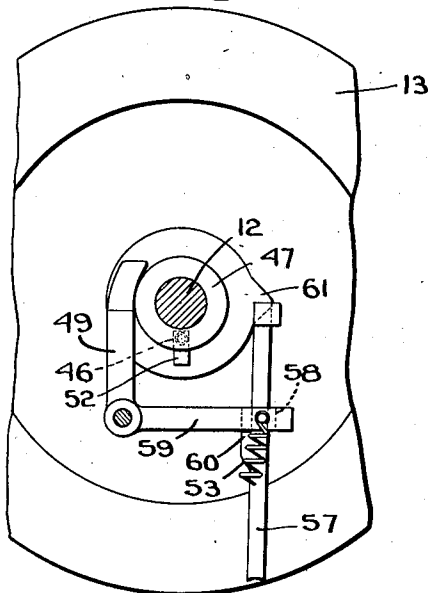


Fig. 10.

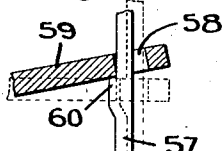


Fig. 5.

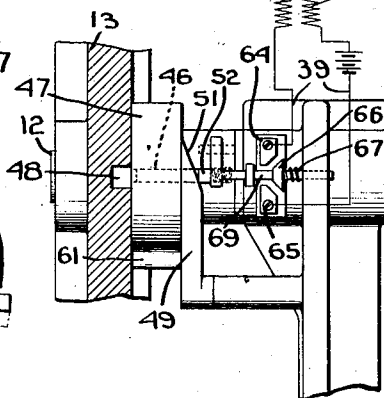


Fig. 6.

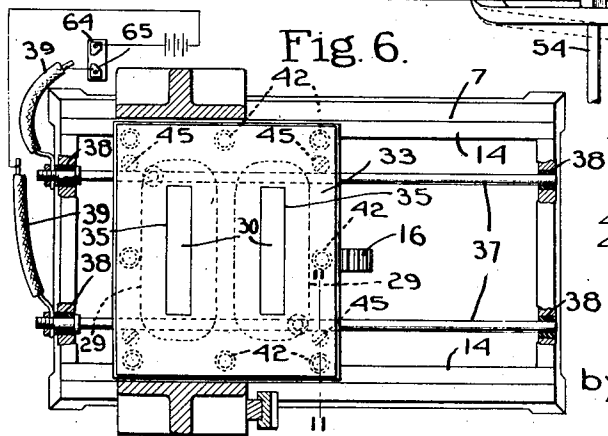
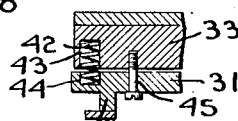


Fig. 11.



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4 Sheets-Sheet 4

Fig. 7.

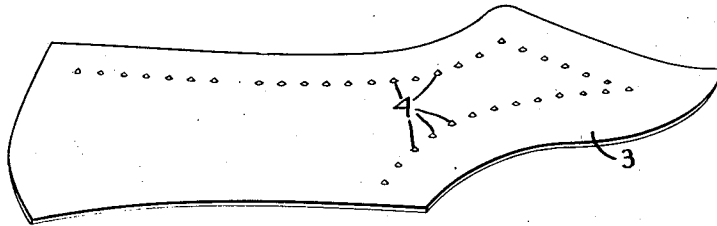


Fig. 8.

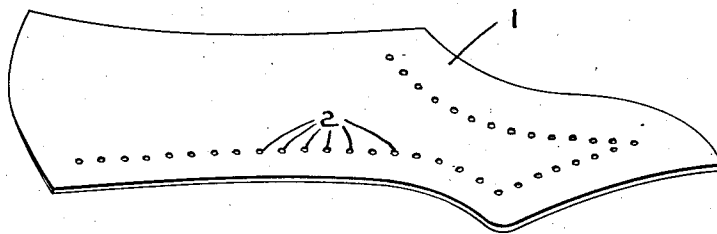
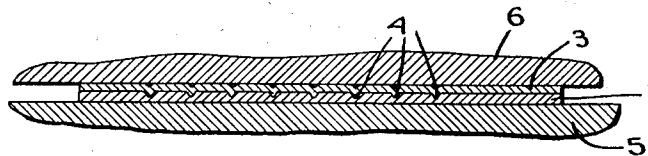


Fig. 9.



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MACHINE FOR MARKING LEATHER.

Application filed November 13, 1924. Serial No. 749,632.

To all whom it may concern:

Be it known that I, CARL C. HAYDEN, a citizen of the United States, and resident of Manchester, county of Hillsborough, State of New Hampshire, have invented an Improvement in Machines for Marking Leather, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to a machine for marking leather or other sheet material for the purpose of providing the latter with guide points or guide lines.

As illustrating one use to which the invention may be put I would refer to the manufacture of shoes. In making shoes of some types it is customary to mark on pieces of upper leather before they are stitched together certain guide indications which may be in the nature of guide lines to indicate where the line of stitching should be placed, or may be in the nature of guide indications to show where buttons should be sewed to the upper or eyelets should be punched.

The present invention has for one of its objects to provide a novel machine by which such indicating marks can be made on the pieces of leather that are used in the manufacture of the shoe, or in fact on pieces of any sheet material, because the invention is not limited in its use to the marking of shoe uppers.

The marking of the leather or other sheet material is accomplished by placing on the leather a marking templet which has marking projections on the face thereof which engages the sheet material and by pressing the templet against the sheet material to cause the projections to make indentations therein. If the sheet material is to be marked to give a guide for a line of stitching, for instance, then the templet will have formed on its operative face a plurality of projections arranged in a line corresponding to the desired line of stitching so that when the templet is pressed against the sheet material the line of indentations formed therein by the projections will give the guide for the line of stitching.

One feature of the present invention relates to a novel manner of retaining the templet and sheet material in position while the templet is subjected to pressure.

The marking will preferably be done in a machine having the nature of a press in

that it is provided with a work support on which the work is supported and a reciprocating presser member movable toward and from the work support and adapted to act on the templet to press it against the work. In accordance with my invention the templet is held in position on the work support by magnetic means, the work support being provided with suitable magnets which by their magnetic attraction hold the templet in position, it being understood that the templet is of a material which is responsive to magnetic attraction.

Other features of the invention relate to a novel construction by which the work support is movable into and out of a position beneath the presser member, said work support when withdrawn from beneath the presser member being in position where the operator can readily place the work thereon and by its movement beneath the presser member carrying the work into position to be marked.

When the machine is set in operation the work support will be carried into a position to bring the work beneath the presser member and then said member will make its operative movement to subject the templet to pressure and cause it to mark the goods after which the work support will be returned to its initial position. As stated above the work is held in position during this movement of the work support by magnetic means.

Other features of the invention have to do with various improvements in machines of this type all as will be more fully hereinafter set forth.

In order to give an understanding of the invention I have illustrated in the drawings a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

In the drawings:

Fig. 1 is a side view of a machine embodying my invention;

Fig. 2 is a section taken on substantially the line 2—2, Fig. 1;

Figs. 3, 4 and 5 are detail views of the clutch by which the machine is operated;

Fig. 6 is a reduced section on substantially the line 6—6, Fig. 1 showing the work support in plan view;

Fig. 7 is a perspective view of a templet embodying the invention such as would be

used in marking a shoe upper to indicate the proper position for a line of stitching;

Fig. 8 is a perspective view of a piece of leather which has been marked with the templet shown in Fig. 7;

Fig. 9 is a sectional view showing the operation of marking the piece of leather.

Fig. 10 is a sectional detail view of the clutch device;

Fig. 11 is an enlarged sectional view on the line 11—11, Fig. 6.

As stated above the operation of marking sheet material according to this invention involves the use of a sheet metal marking templet having marking projections formed on one face thereof and also involves pressing said face of the templet against the sheet material to be marked to cause the projections to make indentions in the sheet material.

It will be obvious that a templet embodying this invention may be used for marking a great variety of articles and as illustrating one such use I would refer to the marking of the quarters of a shoe upper to indicate the line to be followed in stitching the quarter to other parts of the shoe.

In Fig. 8 one of the quarters of a shoe upper is indicated at 1 and the line to be followed in stitching the quarter to other parts of the shoe is indicated by the line of indentations 2. The templet which is used in producing this marking on the sheet material 1 is indicated at 3 in Fig. 7 and it is a piece of sheet metal having preferably the contour of the material 1 to be marked and provided on one face with a plurality of projections 4 which have an arrangement corresponding to the marking which it is desired to produce on the quarter 1.

The marking operation is accomplished by placing the work 1 on a suitable work support 5 superposing the marking templet 3 on the work and then subjecting the templet to pressure by means of a plunger or presser member 6 which forces the projections 4 into the surface of the work 1 and produces the indentions.

The presser member 6 is in the form of a vertically movable plunger and the work support 5 is mounted for movement in a direction transversely to that of the presser member. The presser member has a shank or stem 8 which is movable vertically in guides 9 carried by a suitable frame 10, said presser member deriving its vertical movement from a crank 11 on a drive shaft 12 which is journaled in the frame and is operated by a suitable drive pulley 13.

The frame is shown as provided with a horizontally-disposed slideway 14 on which the work support slides back and forth from the full to the dotted line position Fig. 1. When the work support is in the full line position Fig. 1 it is withdrawn from beneath

the presser member 6 and is in a convenient position for the operator to place the work and the templet thereon. The movement of the work support into the dotted line position carries the templet and work beneath the presser member 6 so that when the latter descends it will press the templet against the work and thus perform the marking operation.

Means are provided for reciprocating the work support in timed relation to the movements of the presser member. Said work support is shown as provided with a rack 15 on its under face which meshes with a gear 16 on a shaft 17 extending transversely of the frame. This shaft 17 has fast thereon a smaller gear or pinion 18 which meshes with another gear 19 fast on a shaft 20. The shaft 20 has a pinion 21 fast thereon which meshes with an actuating rack 22 that is slidable vertically in a guide 23 and is connected by a link 24 to a crank pin 25 formed on a crank disk 26 which is fast on the driving shaft 12. The vertical reciprocating movement of the rack 22 will thus operate to move the work support 5 back and forth horizontally on the ways 14.

The construction of the work support moving mechanism above described is such that during the first part of the downward movement of the presser member 6 the work support will be carried into position beneath said presser member and will remain at rest in such position during the final downward movement of the presser member and while the marking is being accomplished and also during the initial upward movement of said presser member.

For accomplishing this I use a rack 22 of such length relative to the throw of the crank 25 that the rack will run out of mesh with the pinion 21 before the crank 25 reaches its lower dead center and just at the time that the work support 5 has been carried into the dotted line position Fig. 1. In order to prevent overrunning of the work support due to momentum I propose to provide the gear 21 with a stop member 27 which is adapted to engage the face 28 of the guide 23 just at the time that the rack 22 runs out of mesh with the gear 21 as shown by dotted lines in Fig. 1. With this construction it will be seen that during the first part of the downward stroke of the presser member 6 the work support 5 will be carried into the dotted line position and will be brought to rest by the engagement of the stop 27 against the stop face 28. At this time the rack 22 runs out of mesh with the gear 21 so that during the remaining portion of the first half revolution of the crank shaft which carries the presser member to its lower point the rack 22 will simply move away from the gear 21 and the work support 5 will remain stationary.

During the other half revolution of the shaft 12 and when the presser member has been partially elevated the rack 22 will again come into engagement with the pinion 21 and will return the work support to the full line position Fig. 1 by the time the presser member 6 is fully elevated.

As stated above one feature of the invention relates to magnetic means for retaining the templet 3 in place on the work while the work support is moving from the full to the dotted line position Fig. 1 and during the marking operation. This is provided for by constructing the work support with magnets and by making the templet of material which is magnetically responsive so that when the magnets are energized they hold the templet in place by magnetic attraction.

The character of the magnets may vary more or less without departing from the invention. In the drawings there are shown two magnets incorporated in the work support, each magnet having a winding 29 and a core 30. The number of magnets, however, may be varied depending on the size of the templet.

The work support is herein shown as formed with a base member 31 which has guides 32 that engage the ways 14, an intermediate member 33 in which the magnets are placed and a top plate or face plate 34 which will preferably be of fibre or some insulating material. The cores 30 of the magnets are shown as extending above the windings and into openings 35 formed in the face plate 34 so that the top faces of the cores come flush with the top face of the face plate.

The current is delivered to the windings 29 through shoes or brushes 36 which are carried by the base plate 31 and which slidably engage conductor rods 37 that extend longitudinally of the frame and are suitably insulated therefrom as at 38. These conductor rods 37 are connected to the lead wires 39 of a supply circuit.

The brushes 36 are supported in sockets 40 and are acted on by suitable springs 41 which hold them yieldingly against the conductor rods 37. These brushes are electrically connected to the windings 29 in any approved way.

The intermediate member 33 of the work support is preferably yieldingly supported so that the operative face of the work support may yield slightly to accommodate different thicknesses of material and material which varies in thickness from one edge to the other. The yielding support for the member 33 is provided for by means of a plurality of supporting springs 42 which are received partially in recesses 43 formed in the intermediate member 33 and partially in recesses 44 formed in the base member 31. These springs support the weight of the

member 33 and hold it normally slightly separated from the base plate 31 but they permit a yielding movement of the work if such is rendered necessary by the fact that different pieces of work vary in thickness.

45 indicates screws which pass through apertures in the base member 31 and are screwed into the member 33, said screws limiting the expanding movement of the springs 42.

I will preferably employ a one-revolution clutch for connecting the driving pulley 13 to the shaft 12 and the clutch which I propose to use is one which will not repeat even though the treadle is retained in depressed position. The clutch itself may be of the familiar type which includes a spring-pressed clutch pin or dog 46 slidably mounted in a collar 47 that is fast on the shaft 12 and which is adapted when released to engage a notch 48 formed in the driving pulley 13. When the clutch is released the clutch dog is held withdrawn from the notch 48 by means of a controlling member 49 which is shown as pivotally mounted at 50 and which has a wedge-shaped or pointed end 51. The pivotal movement of this controlling member 49 permits it to be swung from the operative position shown in full lines Fig. 3, and in which it is in the position to engage the projection 52 on the clutch dog, to the dotted line position Fig. 3 in which it is withdrawn from the clutch dog thus permitting the latter to operate.

When the controlling arm 49 is swung into the dotted line position Fig. 3 and the clutch dog is released it will automatically engage the notch 48 in the clutch pulley thus clutching the pulley to the shaft.

When the arm 49 occupies the full line position Fig. 3 then during the revolution of the collar 46 the projection 52 will ride up on the wedge surface 51 thus disengaging the clutch. The arm 49 is controlled by a suitable treadle (not shown) and also by a spring 53 which tends normally to swing it into its operative position. The treadle is connected by a link 54 to one end of a rocking lever 55 pivoted at 56. The other end of said lever rests against a thrust rod 57 which extends up through an opening 58 formed in an arm 59 that is rigid with the controlling arm 49. The thrust rod 57 has a shoulder 60 thereon which engages the under side of the arm 59 and with this construction it will be clear that when the treadle is depressed and the lever 55 is rocked into the dotted line position Fig. 3 the thrust rod 57 will be elevated and thereby operating through the shoulder 60 and arm 59 to swing the clutch-controlling member 49 into its dotted line position.

Means are provided whereby the controlling member 49 will be allowed to return to its operative position before the shaft 12

makes a complete rotation even though the treadle is retained in depressed position. To accomplish this purpose the opening 58 of the arm 59 is somewhat larger than the thrust rod 57 so that the latter can move laterally therein and the collar 47 is provided with a cam 61 which is adapted to engage a projection 62 carried by the upper end of the thrust rod. The engagement of the cam 61 with this projection will swing the upper end of the thrust rod to the right Fig. 3 into the dotted line position Fig. 4 thus releasing the shoulder 60 from engagement with the arm 59 and allowing the spring 53 to swing the arm into its operative position. The clutch will, therefore, be disengaged at the end of each revolution regardless of whether the treadle is held depressed or is released.

63 indicates a spring which is connected to the thrust rod 57 and which normally returns it to its lowered position when the treadle is released.

It is only necessary that the magnets should be energized while the machine is operating. In fact, it is not desirable that they should be energized when the operation has been completed as otherwise the operator would be obliged to remove the templet from the work against the magnetic attraction of the magnets. I have, therefore, provided novel means connected with the clutch by which the circuit to the magnets will be opened when the clutch is disengaged and will be automatically closed when the clutch is thrown into engagement. For this purpose I provide a switch in the circuit of the magnet which is closed automatically when the clutch is thrown into engagement and is opened when the clutch is disengaged. While various types of switches may be employed for this purpose that herein shown is one which comprises two contact members 64 and 65 connected to the two sides of the circuit and a bridging contact 66 which is acted on by a spring 67 that normally tends to close it against the contact 64, 65.

This bridging contact 66 is formed with a stem 69 which is situated to be engaged by the clutch pin 46 when the latter is withdrawn, the construction being such that the withdrawing movement of the clutch pin 46 operates through the stem 69 to separate the bridging contact 66 from the other contacts 64, 65. Therefore, when the clutch is disengaged the switch will be opened and the magnets de-energized. The operation of throwing the clutch into engagement by releasing the clutch pin 46 will allow the spring 67 to close the bridging contact 66 against the stationary contacts 64, 65 thus closing the circuit to the magnets. With this construction the magnets will be energized only when the clutch is engaged and the machine is in operation and as soon as

the machine comes to rest at the end of a cycle of operations the circuit of the magnet is opened and the latter is de-energized so that the templet is free to be removed from the work.

I claim:

1. In a machine for marking leather, the combination with a vertically-moving presser member, of a work support to support the work to be marked, means to move said work support transversely to the movement of the presser member to carry the work thereon beneath the presser member and then to withdraw it from the presser member, a templet having marking projections on one face thereof, said templet being pressed against the work by the presser member, and magnetic means for holding the templet in place on the work support.

2. In a machine for marking leather, the combination with a vertically-moving presser member, of a work support to support the work to be marked, means to move said work support transversely to the movement of the presser member to carry the work thereon beneath the presser member and then to withdraw it from the presser member, a templet having marking projections on one face thereof, said templet being pressed against the work by the presser member, and magnetic means carried by the work support for holding the templet in place thereon.

3. In a machine for marking leather, the combination with a presser member of a work support to support the work to be marked, means to produce a relative movement between the presser member and work support, a templet having marking projections on one face thereof which is pressed against the work by the presser member, means to bring the machine to rest at the end of each marking operation, and magnetic means to hold the templet in position during the operation of the machine.

4. In a machine for marking leather, the combination with a work support to support the work to be marked of a presser member, a templet having marking projections on one face thereof which is pressed against the work by the presser member, means to bring the machine to rest at the end of each marking operation, magnetic means to hold the templet in position during the operation of the machine, and means to render the magnetic means inoperative when the machine comes to rest.

5. In a machine for marking leather the combination with a work support to support the work to be marked of a presser member, a templet having marking projections on one face thereof which is pressed against the work by the presser member, a one-revolution clutch by which the machine is operated and which brings it to rest at the end of

each marking operation, magnetic means to hold the templet in position on the work during the operation of the machine, and means actuated by said one-revolution clutch to render the magnetic means inoperative when the machine is brought to rest.

6. In a machine for marking leather, the combination with a work support to support the work to be marked, of a templet having marking projections on one face thereof, a vertically-movable presser member to press the templet against the work thereby to mark the latter, a one revolution clutch by which the presser member is operated, a magnet carried by the work support and operating to hold the templet magnetically in position, a circuit for the magnet, and means operated by the clutch when the latter is disengaged to open the circuit whereby the magnet is de-energized.

7. In a machine for marking leather, the combination with a work support to support the work to be marked, of a templet having marking projections on one face thereof, a vertically-movable presser member to press the templet against the work thereby to mark the latter, means for moving the work support into position beneath the presser member and then withdrawing it therefrom, a one-revolution clutch for operating the presser member and work support, magnetic means to hold the templet in place on the work during the operation of the machine, and means operated by such clutch when it is disengaged to render the magnetic means inoperative.

8. In a machine for marking leather, the combination with a work support to support the work to be marked, of a templet having marking projections on one face thereof, a vertically-movable presser member to press the templet against the work thereby to mark the latter, means for moving the work

support into position beneath the presser member and then withdrawing it therefrom, a one-revolution clutch for operating the presser member and work support, a magnet carried by the work support for magnetically holding the templet in place, a circuit for the magnet, and means operated by the clutch when it is disengaged to open said circuit and thereby de-energize the magnet.

9. In a marking machine, the combination with a frame of a presser member movable vertically thereof, a work support movable horizontally on the frame to carry the work into position beneath the presser member and withdraw it therefrom, a templet having marking projections thereon which is pressed against the work by the presser member, a crank shaft for operating the presser member, and means actuated thereby to give the work support its horizontal movement.

10. In a marking machine, the combination with a frame, of a presser member movable vertically thereof, a work support movable horizontally on the frame to carry the work into position beneath the presser member and withdraw it therefrom, a templet having marking projections thereon which is pressed against the work by the presser member, a crank shaft for operating the presser member, means operative during the first part of the downward movement of the presser member to move the work support into position beneath the latter and during the last part of the upward movement of the presser member to withdraw the work support from beneath the latter, said work support remaining at rest during the last part of the downward movement and the first part of the upward movement of said presser member.

In testimony whereof, I have signed my name to this specification.

CARL C. HAYDEN.