Oct. 14, 1930. J. W. GRIESS 1,778,385

LEATHER WORKING MACHINE

Filed Feb. 17, 1930 2 Sheets-Sheet 1

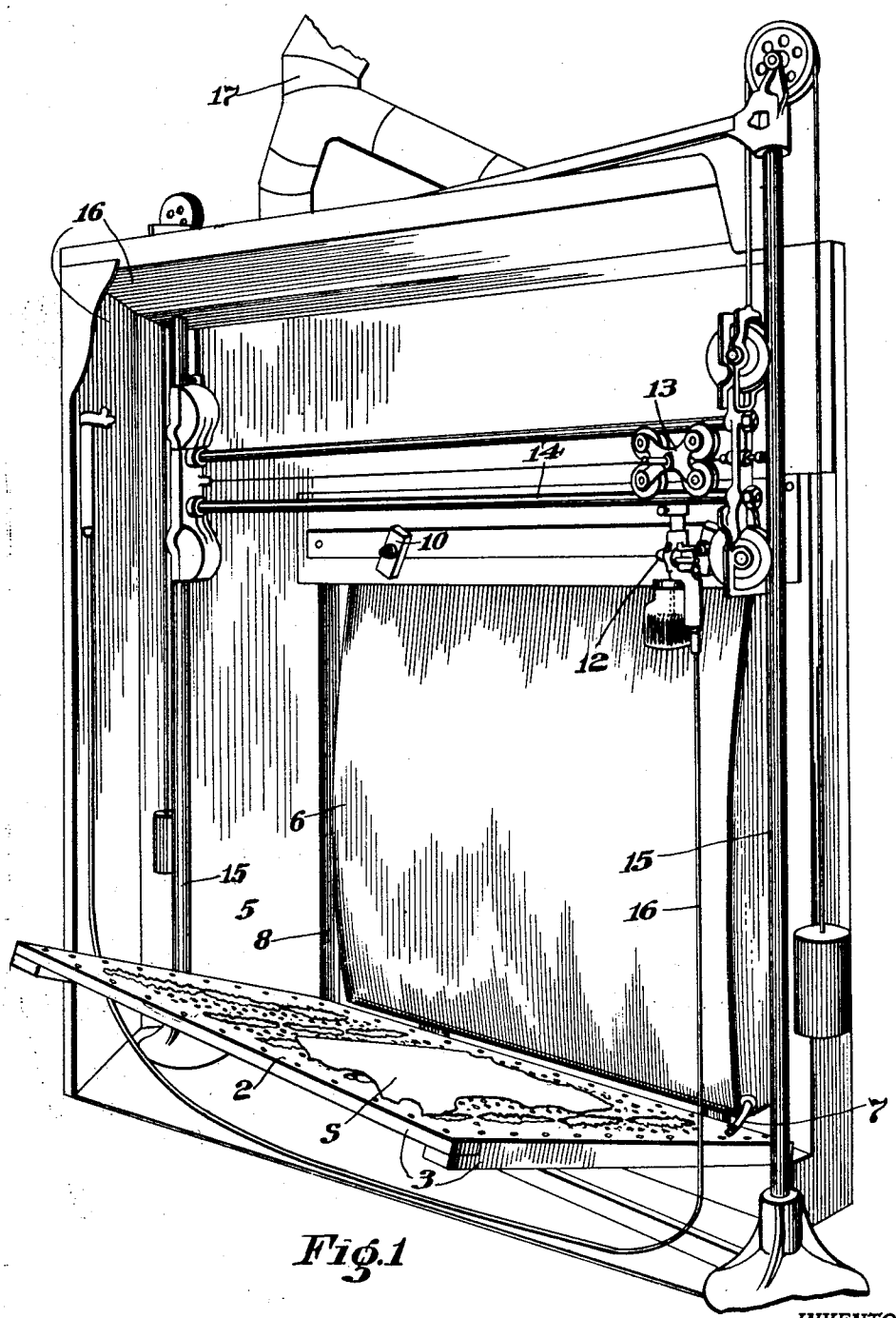


Fig. 1

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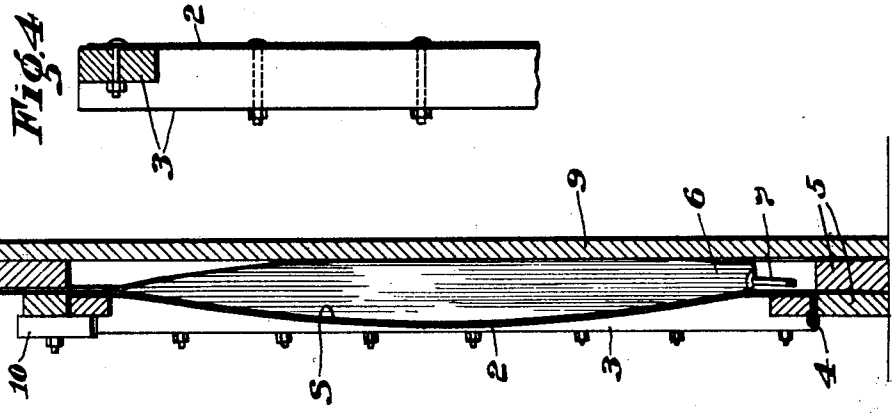


Fig. 4

Fig. 3

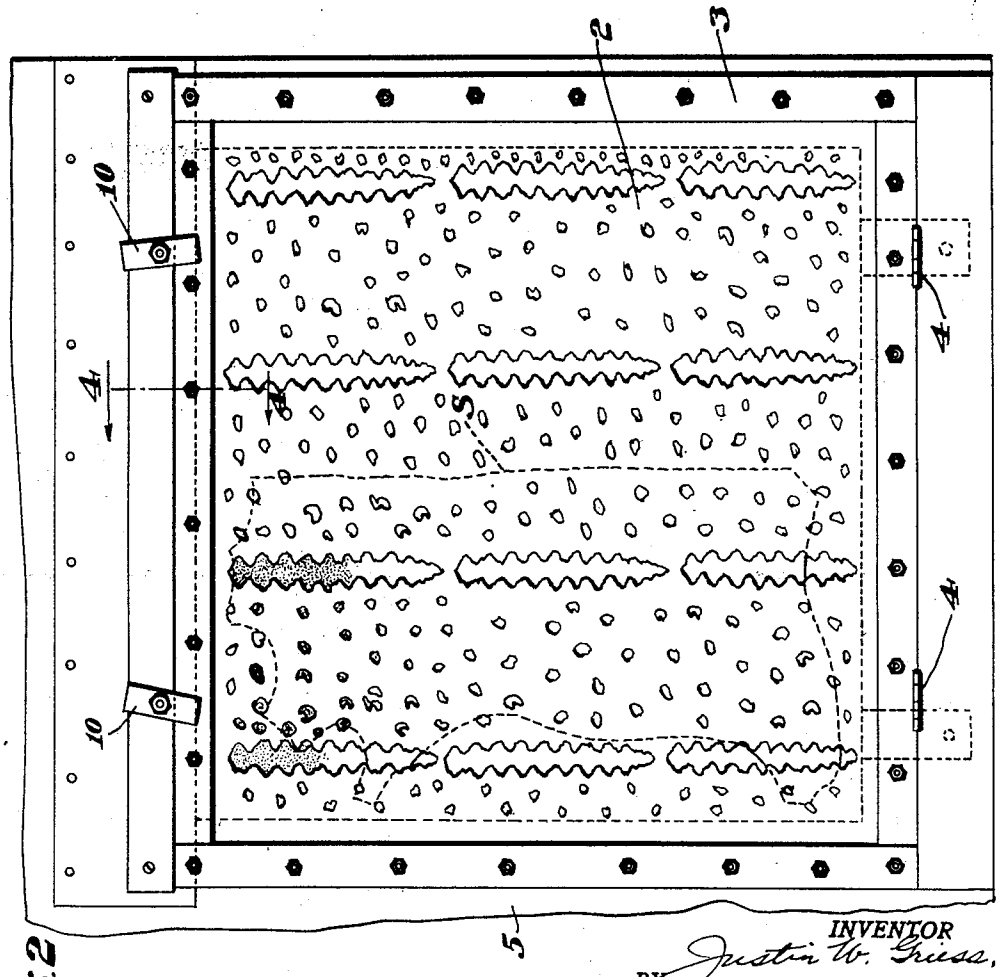


Fig. 2

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Patented Oct. 14, 1930

1,778,385

UNITED STATES PATENT OFFICE

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LEATHER-WORKING MACHINE

Application filed February 17, 1930. Serial No. 429,011.

This invention relates to machines for applying coloring, finishing, or other fluid materials to the surfaces of skins, leather, or the like, through a stencil. For convenience the material being coated will be herein referred to as "skins", this term being used to include skins, hides, sides, or other sheet material which the machine of the present invention is adapted to handle.

It is a common commercial practice to apply lacquer, dyes and coloring and finishing liquids of various kinds to the surfaces of skins through a stencil in order to produce attractive surface effects, designs, and finishes.

A considerable variety of apparatus is used for this purpose, and a very substantial item of expense in the treatment of skins by such processes is involved in the placing of the skins in the apparatus preparatory to applying the coating material. Furthermore, by the stencil methods employed heretofore it has been very difficult to make the stencil lie tightly at all points against the skin, with the result that the dye or other coloring material used is allowed to run underneath the stencil at some points, thus producing a blurred design and making sharp edges impossible.

The present invention deals particularly with these problems. It aims to improve apparatus of the general character above indicated with a view to facilitating the handling of the skins, and to perfect the means for supporting them and holding them tightly against the stencil for the application thereto of the finishing or treating material.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a perspective view of an apparatus constructed in accordance with this invention;

Fig. 2 is a front elevation of the stencil and supporting means therefor;

Fig. 3 is a vertical sectional view of part of the apparatus shown in Fig. 1; and

Fig. 4 is a sectional view approximately on the line 4—4, Fig. 2.

The machine shown includes a stencil 2 usually made of sheet metal and cut to any desired design. This stencil is mounted on a swinging frame 3 which is secured by hinges 4—4 to a part of the main frame 5 of the apparatus.

In order to press the skin S to be treated firmly against the stencil, a pneumatic pad 6 is suspended in the main frame 5 in position to bear against substantially the entire surface of the stencil and to back up the skin or skins. This pad may be made of rubber and should have a smooth front surface to engage the skins. It is provided with a filling tube 7 through which it may be inflated by a pump or the like.

It will be seen from an inspection of Fig. 1 that the pivoted frame 3 which supports the stencil is mounted to swing into and out of an opening 8 formed in the main frame 5, and that the pneumatic pad 6 forms the rear wall of this opening. Also, that the pad itself is backed up by the rigid part 9 of the frame 5.

In using the apparatus the operator swings the stencil forward into a position somewhat like that shown in Fig. 1, places a skin, such as that shown at S, upon the inner surface of the stencil, and holds it with his fingers or with spring clips while he swings the stencil into an upright position where the skin is held firmly between the stencil 2 and the pad 6. The stencil is locked in its upright operative position by turn buttons 10—10 carried by the main frame 5. The operator can readily see through the holes in the stencil whether or not the skin is smooth, and if it is wrinkled he can reach through the holes with his fingers or with an appropriate tool and pull on the skin at those points necessary to smooth it out. The skin is pressed firmly against the stencil by the pad so that there is no danger of it slipping or becoming misplaced.

When the skin has been so positioned the lacquer, dye, or other coating material may

be applied to it and this operation may be performed either by hand or with the aid of suitable machinery. Usually it is preferable to spray the liquid against the surface of the stencil and the portions of the skin exposed through the openings therein, and for this purpose a spraying machine similar to that disclosed in Patent No. 1,696,185 may conveniently be used. Such a machine is shown in Fig. 1 and comprises a spray gun 12 mounted on a carriage 13 which supports the spray gun for traversing movements on a track 14. The track may be adjusted vertically on upright standards 15—15. The machine is so mounted with reference to the stencil that the gun moves in a plane in front of and substantially parallel to the stencil. Air under pressure is conducted to the spray gun through the tube or hose 16.

When the spraying operation has been completed the workman turns the buttons 10—10 to unlock the stencil, swings the stencil forward into the position shown in Fig. 1, removes the skin that has just been treated and replaces it with an untreated skin.

If the coating material includes a volatile solvent it is preferable to partly enclose the entire apparatus in a hood or casing 16 and to connect an exhaust pipe 17 to this casing to carry away the volatile constituents.

This apparatus has been found in practice to effect substantial economies in the handling of the skins. The labor involved in supporting the skins for the application of the coloring material to them is materially reduced and production is correspondingly increased. An even more important advantage, however, is in the superiority of the designs produced in this apparatus due to the fact that the skin is held tightly against the stencil at all points, thus producing sharp outlines and practically eliminating the production of blemished goods which has been a very serious objection to prior processes.

While I have herein shown and described a preferred embodiment of my invention, it will be understood that the invention may be embodied in other forms without departing from the spirit or scope thereof.

Having thus described my invention, what I desire to claim as new is:

1. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of its operative position, and a pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position.

2. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of its operative position, a pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position, and means for locking said stencil in its operative relationship to said pad.

3. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of its operative position, a pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position, and means mounted in operative relationship to said stencil for applying coating material to the stencil and the skin held thereagainst.

4. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of an approximately upright operative position, and a substantially upright pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position.

5. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of an approximately upright operative position, a substantially upright pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position, and a relatively rigid backing for said pad.

6. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for swinging movement about approximately a horizontal axis into and out of a substantially upright operative position, an upright pneumatic pad positioned to back up a skin and to press it against said stencil when the latter is in its operative position, a relatively rigid backing for said pad, and means for locking said stencil in its operative relationship to said pad.

7. A machine for applying coating materials to skins and the like comprising, in combination, a stencil, means supporting said stencil for movement into and out of an approximately upright operative position, a substantially upright pneumatic pad positioned to back up a skin and to press it against said stencil when the stencil is in its operative position, a spray gun, and mechanism supporting said gun for traversing movement in a plane in front of and approximately parallel to said stencil when the latter is in its operative position to direct a spray against said stencil and the skin held thereagainst.

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