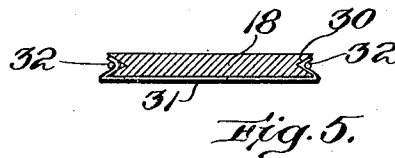
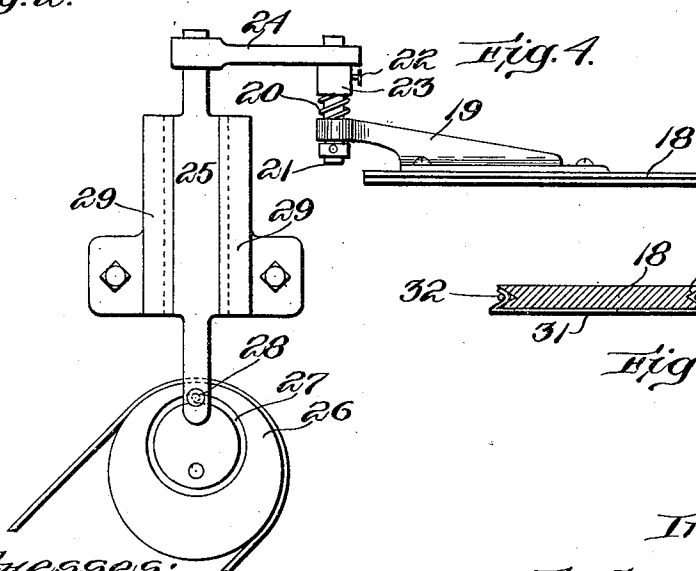
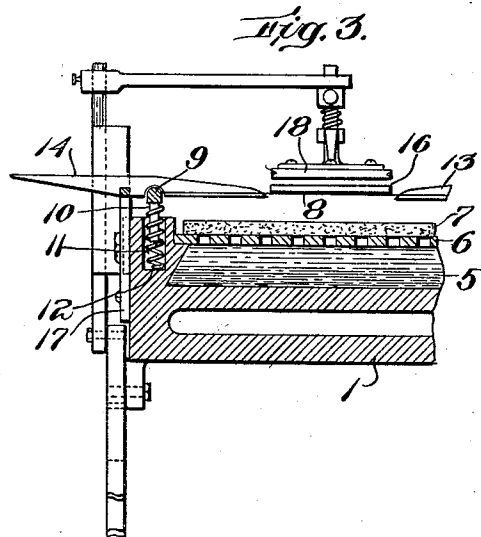
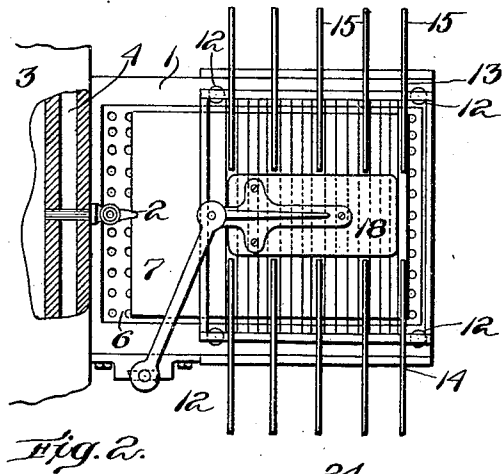
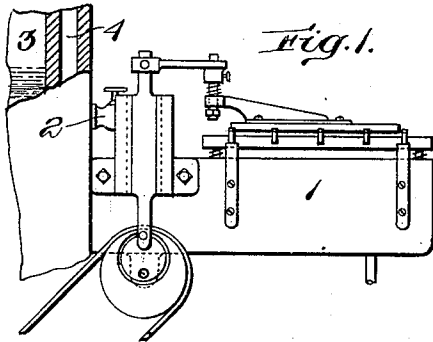


A. THOMA.
 APPARATUS FOR CEMENTING FLAT PIECES OF LEATHER.
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1,005,486.

Patented Oct. 10, 1911.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CEMENTING FLAT PIECES OF LEATHER.

1,005,486.

Specification of Letters Patent.

Patented Oct. 10, 1911.

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To all whom it may concern:

Be it known that I, ANDREW THOMA, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Apparatus for Cementing Flat Pieces of Leather, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In many situations, especially shoe factory work, there is necessity for rapidly and thoroughly coating successive flat pieces of leather and the like with a thin coating or film of cement, and accordingly my invention aims to provide means for accomplishing the desired results with extreme speed and accuracy, my invention being particularly intended for use with soles, taps and the like.

One of the distinguishing characteristics of my invention is the application of the cement perpendicularly to or against the surface to be cemented, as distinguished from a rubbing or smearing action as by a brush and another important characteristic is restricting the cement to an exceedingly thin film under the absolute control of the operator, as to amount of cement, area and outline of the cement delivery, speed and pressure. This makes possible the practical use of very sticky cement which could not otherwise be used in connection with leather, etc., as hereinafter set forth. I accomplish this by providing a delivery surface having means for maintaining short and fluid an otherwise stringy and normally non-fluid cement, the delivery device being preferably a dense absorbent pad maintained hot, so that it holds in suspension within itself a supply of cement ready for delivery in the thin-layer quantity and non-stringy condition required.

My present invention is intended primarily as a power machine for handling flat or nearly flat pieces of leather such as outer-soles or their reinforcements, innersoles, heel layers or lifts or the like which usually come to the operator in large bunches requiring to be individually cemented in great numbers and kept separate from each other, thereby heretofore requiring much time, much cement and a large amount of space,

which I have reduced to a minimum. In the case of heel stock, a number of pieces can be cemented at once, and on both sides at the same time, so that they may adhere thoroughly, especially when poor parts of the hide, or substitutes therefor are used in the manufacture of heels.

The constructional details of my invention will appear more at length in the course of the following description, taken in connection with the drawings in which I have illustrated one of many embodiments of my invention.

Figure 1 is a fragmentary view in side elevation of my machine; Fig. 2 is a top plan view of the parts shown in Fig. 1; Fig. 3 is a fragmentary cross-sectional view showing a portion of the device in front elevation; Fig. 4 shows the presser foot and its operating parts in side elevation; Fig. 5 is a cross-sectional detail of the presser foot arranged to cement the top side of a leather piece at the same time that the bottom piece is being cemented.

I prefer to employ a quick set, extremely sticky, normally semi-solid cement which is maintained liquid by heat, and accordingly I have shown a steam jacketed basin 1 supplied by a faucet 2 from a tank 3 also steam jacketed as shown at 4. The cement for use is in the upper portion of the basin as shown at 5 being supplied through a perforated transferring plate 6 to a pad or absorbent delivering device 7 which is kept warm by said plate 6 and has sufficient density to enable it to give under pressure just the right amount of cement to the leather piece to form the thin film or layer with which the leather must be coated, and no more. Above the pad 7 is a support herein shown as a wire screen 8 whose sides or frame ends are provided with depending studs or lining posts 10 and yieldingly supported by springs 11 retained in sockets 12 in the sides of the basin 1. These springs 11 normally hold the screen 8 raised with the frame ends 9 against a feed table 13 at the ingoing side of the machine, and a discharge table 14 at the opposite or outgoing side of the machine, said tables being similarly constructed and consisting of a series of thin bars 15 set on edge as clearly shown in Fig. 2 so as to offer minimum resistance to and contact with the soles or other pieces of leather being cement-

ed. These grid-like tables 13, 14 preferably slope slightly inwardly at their inner ends thereby aiding in positioning the leather piece, which is indicated at 16 in operative position to be cemented. Said piece naturally slides downwardly on the table 13 until it reaches the intermediate position shown on the wire support or screen 8. The tables 13, 14 may be mounted and constructed in any suitable manner for the purpose being herein shown as bolted at 17 to the sides of the cement basin. Above the intermediate portion of the screen 8 is a presser foot 18 shown in enlarged detail in Fig. 5, whose flat lower end is provided with a rearwardly extending arm 19 preferably held yieldingly by spring 20 on a stud 21 adjustably secured by a thumb nut 22 in a bearing 23 of an arm 24 extending from the top end of a slide 25 operated at its lower end by any suitable means, preferably by a power wheel 26 having a cam groove 27 engaged by a roll or pin 28 extending therein from the slide 25, and the latter travels in ways 29 extending rigidly at one side of the apparatus. The foot 18 is herein shown as peripherally grooved at 30 so as to permit an absorbent pad 31 to be detachably secured thereto by any suitable means, as by a spring wire 32 into the grooved edge 30 of the presser foot or depressing device 18.

It will be understood that my invention is capable of a wide variety of mechanical details in its embodiment, and these details will vary greatly to suit the different shapes and varieties of work to the best advantage. The form which I have herein shown is well adapted to handle block heels.

In use the operator stands in front of the machine, and simply shoves one sole after the other along the grid 13 as the presser foot rises and falls. As the first sole reaches the position shown in Fig. 5 it is depressed by the downward movement of the presser foot 18, the wire support or screen offering no material resistance to the downward movement and to the full cementing contact of the sole with the saturated cement pad 7. It instantly receives the desired thin film or coating of cement over its entire bottom side and instantly the presser foot is carried back again, the springs 11 simultaneously causing the wire support or screen 8 to follow the presser foot and carry the sole upwardly level with the top surface of the pointed ends of the opposite tables 13, 14. Thereupon the operator shoves forward another sole which strikes against the one just cemented and moves the latter forward onto the delivering table 14 and itself comes to rest beneath the presser foot, which by this time is again ready to descend, thereby repeating the cementing operation. As the second sole rises the operator shoves forward a third, which automatically re-

moves the second sole as the latter did the first, and so on. If the pad 7 is quite thick, the pressure of the sole squeezes or pumps the cement out to the surface, and when the perforated plate 6 is springy it acts still further to pump up the cement to the pad, which sucks in the cement by the capillary action of its compact fibers. If the operator is working upon leather which should be cemented on both sides, it is not necessary to reverse the leather piece and repeat the cementing operation, but he simply places a cementing pad 31 in position on the presser foot and causes the machine to run slightly faster and permits the presser foot to descend into contact with the cement pad 7 at every other revolution of the cam wheel 26. In this case he does not depend upon the soles feeding each other forward, but feeds each individual sole to the cementing position and removes the same therefrom by hand.

It will be observed that the machine may be kept in motion all the time without smearing or wasting the cement and is always ready at any moment for the operator to proceed with a further batch of leather pieces and to cease at any moment so as to assemble the cemented pieces. This is of practical importance in this class of work. The absorbent pad 7 maintains an ever present flow of cement in exactly the restricted amount required, prevents evaporation, loss or waste of the cement and avoids all possibility of stringing, and raises this usually disagreeable and dirty class of work to the plane of neatness and attractiveness. The wire screen or lifting device engages the work so slightly that it does not interfere with the thorough and complete cementing of the leather, while the thin and grid-like character of the delivering table 14 and the fact that it is somewhat warm avoids all possibility of daubing or otherwise smooching the machine or the cemented pieces while passing through the apparatus. The sliding feed motion avoids handling the pieces.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a machine of the kind described, liquid delivering means for coating the stock, and automatic means having a straight-line movement toward and from the delivering means, for simultaneously pressing all portions of an extended area of stock flat against the delivering means to render the stock evenly tacky.

2. In a machine of the kind described, liquid delivering means for coating the stock, means cooperating therewith to position the stock properly for receiving said liquid, and an automatic mechanism for moving one of the aforesaid means toward the other for simultaneously pressing all

portions of an extended area of said stock flat against the said delivering means to render the stock evenly tacky, one of the aforesaid two means being capable of yielding relatively to the stock to insure even pressure.

3. In a machine of the kind described, means for rendering the surface of a piece of work tacky, and mechanism coöperating with the delivery of the work to operative position for automatically separating said work and said means to permit the more rapid feeding of the work after its surface has been rendered tacky.

4. The combination with means for rendering the surface of a flat piece of work tacky, of stripper mechanism for instantly separating said means and said work from each other by a relative perpendicular movement as soon as the work has been rendered tacky, whereby its feeding movement is facilitated in a direction transverse to said separating movement.

5. In a machine of the kind described, cement delivering means, and automatic means for simultaneously pressing all portions of an extended area of stock flat against the cement delivering means, said automatic means including a yielding connection for permitting said means to press yieldingly on the stock.

6. In a machine of the kind described, two sets of cement applying means, combined with mechanism for simultaneously engaging said cement applying means on the opposite sides of the stock at all points throughout the extended area of the stock.

7. In a machine of the kind described, a cement delivering apparatus containing a cement pad sufficiently thick and absorbent to be capable of pumping the cement to its surface by the compression of the pad, combined with means for automatically pressing a piece of stock flat down hard upon said pad.

8. The combination with a cement delivering device, of yielding means for receiving the stock arranged to normally hold the stock out of contact with the cement delivering means, and means for depressing said yielding means and the stock in contact with the cement.

9. In a machine of the kind described, a cement applying device, a feed table, means for receiving the stock from said table, and a presser device to engage the stock of said receiving means and cause the cement to be applied thereto.

10. The combination with a cement pad of yielding means to receive the work, and a presser device to engage the work on said

yielding means and depress the latter and the work onto said cement pad.

11. The combination with a cement applying device, of gridlike work supporting means having an opening for said cement applying device, a spring held wire support at said opening to receive the work from said work support, and means coöperating with said wire support to cause cement to be applied to the work.

12. The combination with a cement delivering device, of a work support over which the work is fed to said device, and a constantly reciprocating presser foot to engage the successive pieces of work as they are fed into position beneath the same and move said pieces of work successively into cement receiving position.

13. The combination with a cement pad, capable of holding in suspension cement to be pumped therefrom by the pressure of the work against the pad and means connected therewith for maintaining normally non-fluid cement in a fluid condition at the surface of said pad, of yielding means to receive the work, and a presser device to engage the work on said yielding means and depress the latter and the work onto said cement pad.

14. The combination of a cement pad, a perforated yielding support thereunder capable of being depressed into the cement for pumping a supply of cement into the pad, of yielding means to receive the work, and a presser device to engage the work on said yielding means and depress the latter and the work onto said cement pad.

15. The combination of a cement applying holder, having a dense absorbent exterior, means for maintaining said absorbent exterior and its supply of cement hot, means for receiving and supporting the work, and a presser device for engaging the work on said receiving means and causing the cement to be applied to said work.

16. In a machine of the kind described, a cement applying device, having a flat cement-delivering device with a dense absorbent exterior, a feed table, means for receiving the stock from said table, and a presser device, to engage the stock on said receiving means and cause the stock and the cement-delivering device to be brought into mutual contact.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ANDREW THOMA.

Witnesses:

GEO. H. MAXWELL,

T. A. CONNOR.