

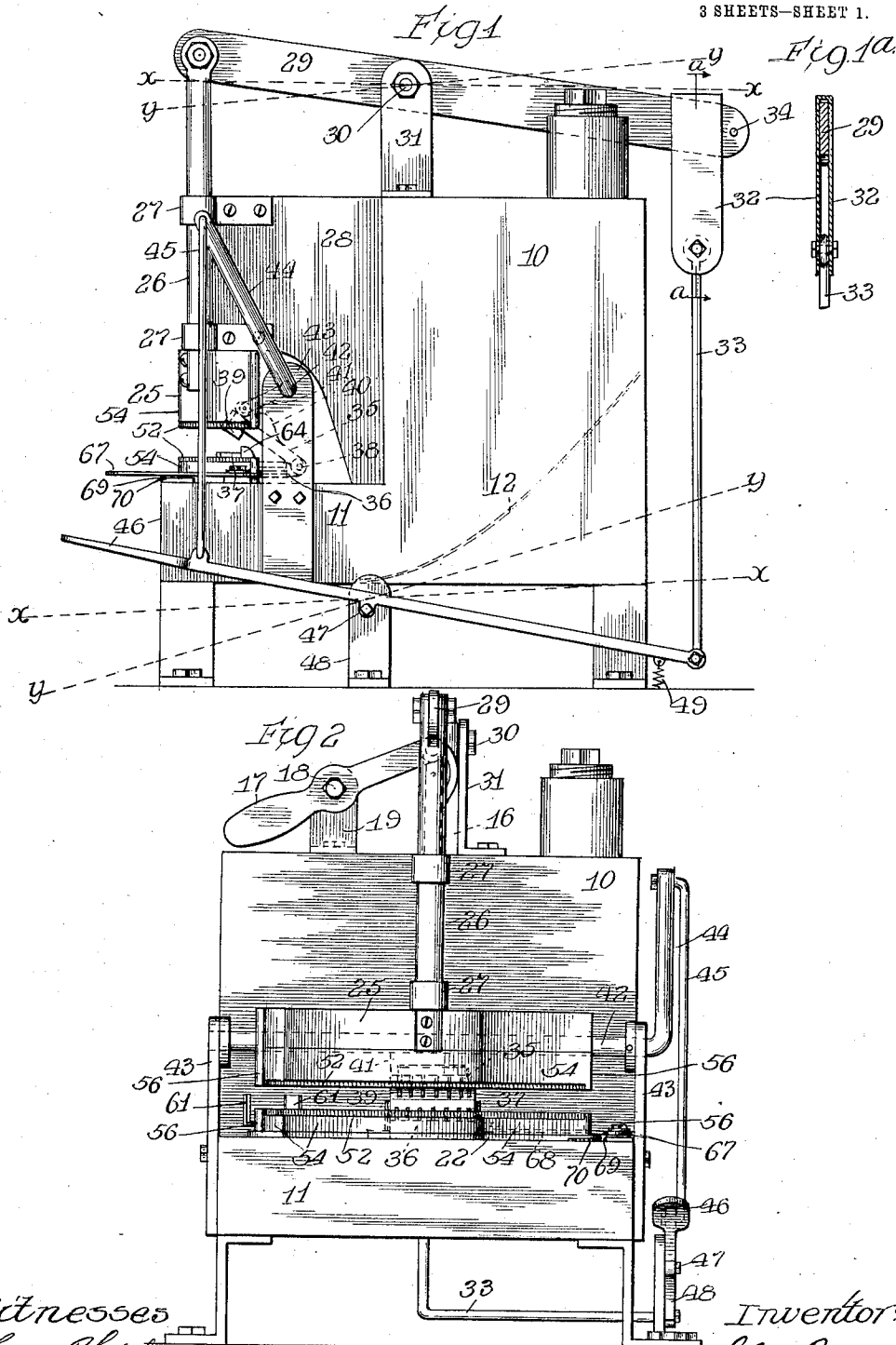
J. W. BARNA.
CEMENTING AND SNIPPING MACHINE.

APPLICATION FILED JULY 15, 1908. RENEWED NOV. 10, 1911.

1,016,387.

Patented Feb. 6, 1912.

3 SHEETS—SHEET 1.



Witnesses
Henry R. White
R. A. White.

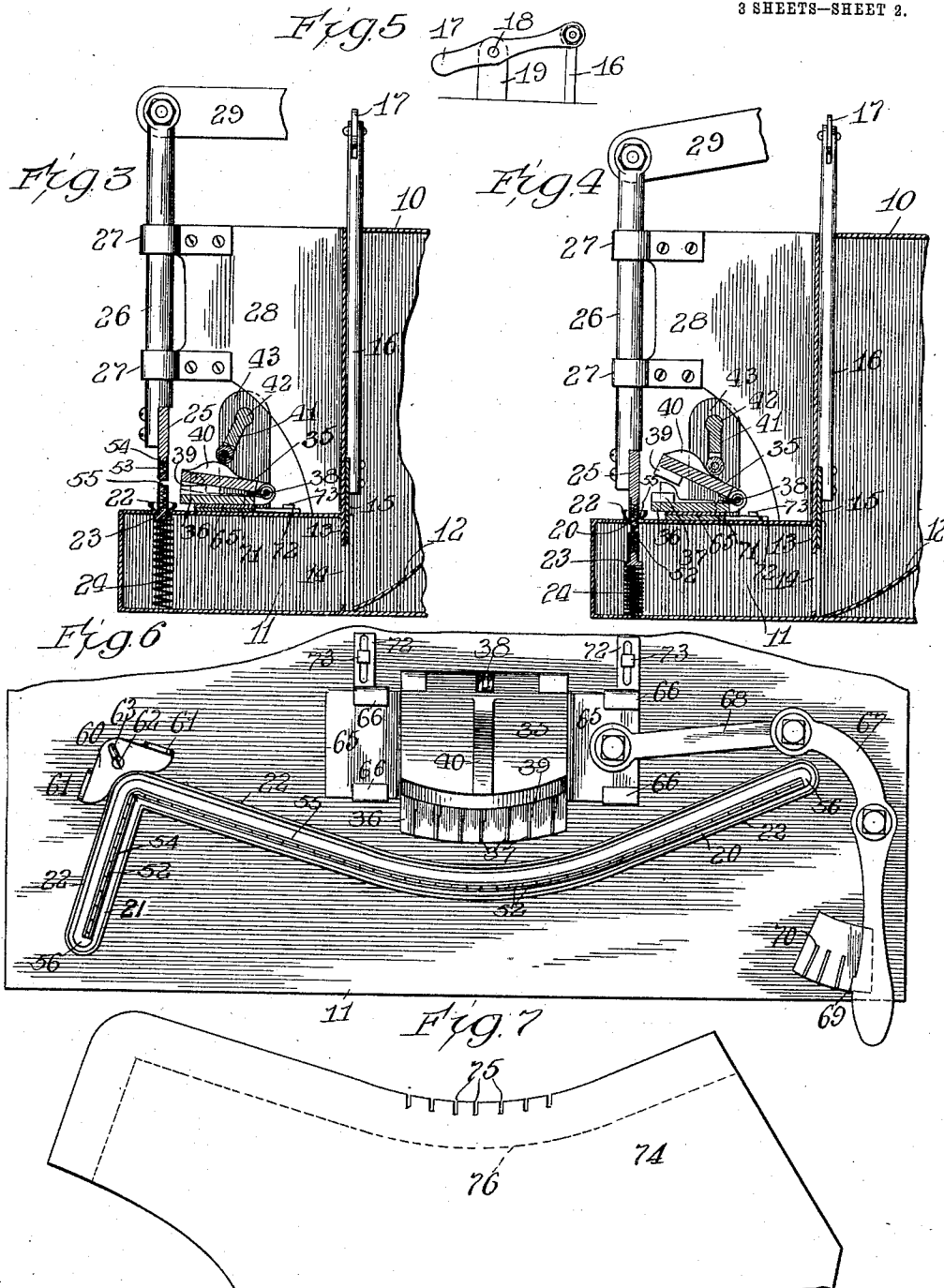
Inventor:
J. W. Barna
By C. W. Brown & Co. Attorneys

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Witnesses
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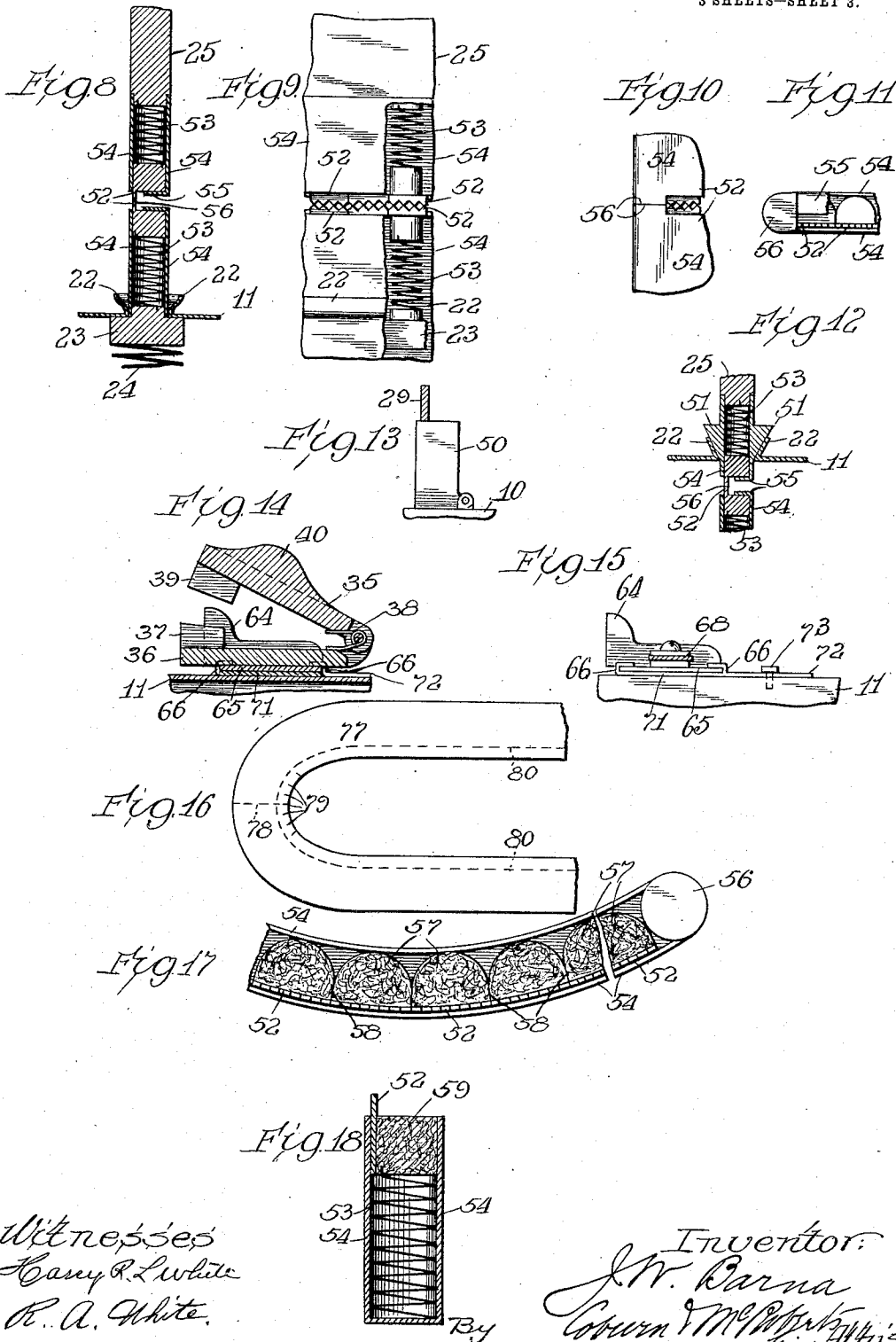
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Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH W. BARNA, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO BOSTON MACHINE WORKS COMPANY; OF LYNN, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

CEMENTING AND SNIPPING MACHINE.

1,016,387.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed July 15, 1908, Serial No. 443,579. Renewed November 10, 1911. Serial No. 659,641.

To all whom it may concern:

Be it known that I, JOSEPH W. BARNA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cementing and Snipping Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to mechanism to cement and snip shoe uppers, foxings, vamps, etc., and the main object thereof is to provide a machine which will simultaneously cement both sides of the material and also snip the edges at the concave curve.

Other objects of the invention will be apparent from the description and accompanying drawings which illustrate a practicable embodiment thereof.

In the drawings Figure 1 is a side view of a machine embodying the features of my present invention, the successive positions of certain of the parts being indicated in dotted lines; Fig. 1^a is a detail sectional view on the line *a-a* of Fig. 1 showing the lost-motion connection between the wiper-lever and its operating link; Fig. 2 is a front elevation of the machine of Fig. 1; Figs. 3 and 4 are detail views in side elevation with certain parts in section; Fig. 5 is a detail side view of the valve stem and its operating lever or handle; Fig. 6 is a top plan view of a lower wiper and of a snipper with the gage for the snout of a quarter; Fig. 7 is a plan view of a Blucher quarter after it has been snipped and cemented by my machine; Fig. 8 is a detail sectional view of the upper and lower wipers and the top of the cement chamber; Fig. 9 is a front elevation of the parts of Fig. 8, parts being broken away; Fig. 10 is a detail view of the ends of the wipers showing the teeth of the wipers and the end blocks; Fig. 11 is a plan view of a section of one of the wipers of Fig. 8, being taken at its end; Fig. 12 is a detail sectional view of the wipers showing a slight modification in the form of the upper wiper; Fig. 13 is a detail sectional view of the wiper-lever and its lock; Fig. 14 is a sectional view of the snippers; Fig. 15 is a detail view of the lower snipper jaw and certain associated elements, some of the parts being in section

and others in elevation; Fig. 16 is a plan view of a vamp after it has been snipped and cemented by the machine; Fig. 17 is a plan view of a portion of a wiper of slightly modified form; and Fig. 18 is a sectional view thereof.

In the drawings the reference numeral 10 indicates a suitable glue or cement tank or pot of any desired size and proportions, and preferably having a forwardly extended chamber 11 at its front near its bottom. In practice I prefer to incline the floor or bottom 12 of the tank forwardly as shown in the drawings, and the chamber 11 is separated from the area of the tank body by a wall 13 having a passage 14 which is controlled by any suitable valve. In the form shown a slide valve 15 is employed having a stem 16 projecting up through the top of the tank where it may be manipulated to regulate the flow of cement to the chamber; for convenience of operation the stem may be provided with a handle 17 pivotally mounted as at 18 upon a standard or post 19 on the top of the tank.

The upper wall of the chamber 11 is provided with an opening or slot 20 which is curved or crescent shaped throughout the greater portion of its length and is provided at its left end with an angularly disposed forwardly directed portion 21. The mouth of the slot is bell-shaped or flaring by reason of the upwardly extending and oppositely inclined or tapering walls 22.

Within the chamber 11 and normally projecting up through the slot or opening 20 is a wiper 23 which is mounted upon springs 24 adapted to normally hold its top edge slightly above the line of the walls 22 as shown in Fig. 3. The wiper 23 is of the same contour as the slot and coöperates with an upper wiper 25 of corresponding shape. The upper wiper 25 is carried upon the lower end of a vertically disposed and movable rod 26 which is guided in its reciprocations by suitable guides 27 attached to a bracket 28 projecting forwardly from the front wall of the tank body 10 sufficiently to bring the upper wiper over and in alinement with the lower wiper. The rod 26 is pivotally connected at its upper end to the front end of a wiper-lever 29 which is pivotally mounted as at 30 in an upright 31 on the top of the tank 10, the

rear end of the lever 29 working freely in a loop 32 upon the upper end of a connecting rod 33 to provide a lost-motion connection between these parts substantially as shown in Fig. 1^a and for a purpose hereinafter explained, the loop being held from displacement of the end of the lever by a stop-pin 34.

A snipper is provided and preferably is located on the top of the chamber 11 and in rear of the lower wiper. This snipper may be of any suitable form and in the present embodiment it consists of a pair of upper and lower jaws 35 and 36, respectively, the lower jaw being horizontally disposed and with its teeth or knives 37 slightly above the normal plane of the lower wiper 23. The upper jaw is preferably hinged to the lower jaw by a spring-hinge 38 which tends to hold the upper jaw in raised or open position with its teeth or knives 39 separated from those of the lower jaw. The movable jaw may be operated by any suitable means, and for this purpose I provide its upper surface with a cam 40 adapted to be wiped by a finger or projection 41 on a rock-shaft 42 which is journaled in bearings in opposite uprights 43 on the sides of the chamber.

One end of the rock-shaft 42 has a crank 44 which is connected by a link 45 to an operating lever 46 which is pivoted at 47 on a bracket or post 48 at one side of the tank and also is connected to the angular lower end of the operating rod 33. The lever 46 is held normally in the position of the full lines of Fig. 1 by a retractile spring 49, and with the other parts in their respective positions there shown in full lines; when the front end of the operating lever is depressed its initial movement causes the projection or finger 41 on the rock-shaft 42 to ride up the front incline of the cam 40 and closes the jaw 35 upon its companion jaw 36 (Fig. 3) to snip the material lying therebetween, and when the finger passes over the apex or peak of the cam and moves down its rear incline the spring-hinge 38 opens the jaws (Fig. 4) to release the material. The parts normally stand in the position of the full lines of Fig. 1 with the jaws and wipers open or separated for the reception of the material, and while the material is thus being snipped by the initial movement of the operating lever, the wiper-lever 29 is drawn down by the weight of the upper wiper until the latter rests on the material being treated, the correlation of the wipers causing cement to be applied to both sides of the material; the parts are then in the position shown in Fig. 3 and indicated by the dotted lines *x* of Fig. 1. The continued downward movement of the operating lever moves the projection 41 over the cam 40 but does not operate the lever 29 by reason of

the lost-motion connection of Fig. 1^a, and so allows an interval for the withdrawal of the material from between the wipers. This continued movement of the operating lever takes up the lost-motion and brings the bottom of the loop against the lever 29, and then its downward movement is continued to lower both of the wipers into the glue or cement for a fresh supply, this position of the wipers being shown in Fig. 4 and indicated by the dotted lines *y* in Fig. 1, this action occurring against the resistance of the springs 24 and placing them under tension to again project the lower wiper to its normal position when the pressure on the lever 46 is released.

When the machine is out of use it is desirable to retain the wipers down in the pot to keep them fresh with cement, and for this purpose any lock or catch may be employed as for example the turn-button 50 taking under the rear end of the lever 29 as in Fig. 13. When in this position the wipers are below their position when temporarily immersed for replenishing their supply for succeeding operations. Also, when the machine is out of use, it is desirable to keep the cement from exposure, and this may be accomplished by making the upper wiper with an enlarged portion 51 flared or offset in cross-section as shown in Fig. 12 to correspond with and close the flare of the walls 22.

The wipers may be of any suitable construction and in practice I have found that spring-pressed serrated or toothed surfaces are satisfactory, and preferably I divide the surface into sections. Thus, as clearly shown in Figs. 8 to 12 inclusive, the wipers are composed of a plurality of toothed plates 52 which are carried by associated springs 53, the plates and springs being mounted in casings 54 on the ends of the wipers, the springs reacting between the wipers and the bodies of the plates which are held against displacement by inturned flanges 55 of the casings. The wipers are provided at their ends with blocks 56 to take the pressure off the teeth when the wipers are brought together.

The casing for the toothed plates may of course be constructed in any suitable manner; in the form thus far described this casing is a metallic shell in which the plates and their associated springs are positioned with the springs abutting against each other, but in the form illustrated in Figs. 17 and 18 the casings are shown as composed of a metallic block suitably bored or reamed out at intervals to provide individual cavities 57 for the springs, the numeral 58 designating the dividing walls between adjacent cavities. Each cavity receives its associated plate and spring, it being understood of course that the plates practically abut at

their adjacent edges by reason of the narrowness of the dividing walls 58. In practice it is desirable to make each wiper plate as short as is consistent with proper strength of their individual springs, so that the plates will wipe into all unevennesses of the leather or other material to be cemented; shoe quarters are usually skived or thinned at their edges and it is therefore desirable to have the wiper plates spring-pressed so that they will follow the taper of the quarters toward their edges, and also to have them short so that they will contact with the material throughout their length as the material is withdrawn from between them. The springs also provide yielding mountings for the plates so that materials of different thicknesses may be treated with equally satisfactory results; and the teeth or serrations of the plates are preferably small or fine so that they will wipe uniformly over the surfaces of the material, although of course they may be made plain if desired.

In the form shown in Fig. 17 each wiper plate is provided with an absorbent surface or end 59 which may be provided by suitable sponge or other material for the purpose of furnishing additional cement to the material if desired.

Gages are provided at suitable points to regulate the depth or width of the surface to be glued or cemented, and in the form shown in Fig. 6 an end or corner gage 60 is employed in position to receive the snout or corner of a Blucher quarter, the gage being provided with angularly disposed gage-faces or risers 61, and also being adjustable to and from the wipers in order to vary the width of the surface to be glued by any suitable means such as the adjusting screw 62 passing through a slot 63 in the gage and into the top wall of the chamber. The sniper is also provided with gages 64 whose front edges are suitably positioned to allow the material to rest more or less upon the knives 37 of the lower sniper jaw, the position of the gages with relation to the teeth being regulated to correspond with the depth to which it is desired to snip the material.

All quarters for Blucher shoes must of course be snipped at the center of their curves, and in order to provide for varying sizes of uppers the sniper may be adjusted along the length of the wipers. For example, in the embodiment shown, if larger quarters are treated the sniper will be moved to the right of its position in Fig. 6, and to the left for smaller ones. For this purpose the sniper may be provided with any suitable adjusting means, and as shown in the present embodiment the sniper is mounted upon an adjustable base 65 which slides back and forth in the direction of the length of the wipers, being guided by suitable guides 66. The base may be moved by

any suitable means such as the pivoted handle 67 to which it is connected by a suitable link 68, the free end of the handle being provided with a tooth 69 which engages a suitably notched or serrated plate 70 to hold the base in its various adjusted positions.

In order to vary the width of the cemented area the snippers, and also their associated guides, may be moved toward and away from the wipers; this may be done by adjusting the base, and for this purpose as shown in the drawings the base may be in turn mounted upon a plate 71 provided with rearwardly extending wings 72 which may be suitably slotted to receive the headed bolts 73 whereby the plate is locked in its various adjusted positions. The plate 71 in this form will also carry the guides 66.

When a Blucher quarter such as shown at 74 in Fig. 7 is inserted in place upon the lower wiper, the sniper is adjusted to snip the material at the center of its curve, it being understood that in practice a pair of such quarters may be simultaneously treated, being placed in position on the lower wiper with the associated gages adjusted to provide the required depth of cement to be applied and to snip at the proper points; the machine is then operated as above described with the result that the quarters are snipped at the center of their curve as at 75 in Fig. 7 and the upper wiper is brought down upon them to substantially the position shown in Fig. 3, the upper and lower wipers then resting against the upper and lower faces of the pair of quarters at substantially the line 76, shown in Fig. 7, and then as the operator withdraws the quarters the cement is uniformly spread or deposited upon both sides from the line 76 to the edge of the material.

In Fig. 16 I have shown a suitable vamp 77, and when vamps are treated they are folded along the dotted line 78 and inserted in place in the machine, the sniper having first been adjusted to position to snip the vamp as shown at 79, and then the wipers are operated to deposit the cement upon both sides of the vamp as shown at 80.

It is obvious that by this mechanism the material may be cemented upon both sides at the same operation, and furthermore that in addition to this double cementing operation the material is suitably snipped by practically one and the same operation employed to deposit the cement. It is also apparent that the yielding arrangement of the wiper plates enables me to use materials of various thicknesses and also insures the contact of the plates with the material at all points.

The flaring or tapering walls 22 at the opening 20 are important as they prevent the cement from overflowing through the opening, and also in conjunction with the

enlarged portion 51 of the upper wiper serve to seal the tank when the machine is out of use.

It is of course understood that the shape or contour of the wipers may be varied according to the parts to be cemented, and that the position of the sniper with respect to the wipers may be adjusted or changed to snip the various parts, such for example as stays, foxings, quarters, vamps, etc., at the desired points, the projection or finger on the rock-shaft being of sufficient extent or being differently positioned as the case may be to cooperate with the cam of the movable sniper-jaw.

While I have described an embodiment of my invention especially intended for cementing and snipping parts of shoes, it is of course to be understood that the various features of my invention are adapted for more extended use and may be employed for similarly treating leather or other material for use in other relations and for other purposes, as their application as well as their structural details may be widely varied without departing from the scope of my invention.

What I claim is:—

1. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, and means to operate the movable wiper.

2. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper and means to operate the sniper and the movable wiper.

3. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper, a lever, and connections between the lever and the sniper and movable wiper to successively operate the sniper and wiper.

4. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper, a rock shaft having a finger to operate the sniper, a wiper-lever, and an operating lever connected to the rock-shaft and wiper-lever to successively operate them.

5. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper having a movable jaw, a rock-shaft having a finger to operate the jaw, an operating lever, and connections between the operating lever and sniper and movable wiper.

6. In a device of the class described, a tank having an opening, a yielding wiper in

the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper having a movable jaw, a cam on the jaw, a rock-shaft having a finger to wipe over the cam, a wiper-lever, and means to successively operate the rock-shaft and wiper-lever.

7. In a device of the class described, a cement tank, a pair of wipers, means to open and close the same, means to lower the wipers into the tank to supply cement to the wipers, a sniper adjacent the wipers comprising a pair of jaws, and means to operate the sniper.

8. In a device of the class described, a tank having a flared opening, a yielding wiper in the opening, a movable wiper having a portion adapted to fill the flared opening and adapted to be moved to and from the first wiper, and means to operate the movable wiper and to move the same into the flared opening.

9. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper, a lever, and connections between the lever and the sniper and movable wiper to successively operate the sniper and wiper and then move the wipers into the tank.

10. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper adapted to be moved to and from the first wiper, a sniper, a rock shaft having a finger to operate the sniper, a wiper-lever, and an operating lever connected to the rock-shaft and wiper-lever to successively operate them and then move the wipers into the tank.

11. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper, a lever adapted to move the second wiper to and from the first wiper, a sniper having a movable jaw, a rock-shaft having a finger to operate the jaw, an operating lever, and operating connections between the operating lever and wiper-lever and movable wiper.

12. In a device of the class described, a tank having an opening, a yielding wiper in the opening, a movable wiper, a lever adapted to move the second wiper to and from the first wiper, a sniper having a movable jaw, a cam on the jaw, a rock-shaft having a finger to wipe over the cam, and means to successively operate the rock-shaft and wiper-lever from a common source of power.

13. In a device of the class described, a cement tank, opposite wipers mounted on the tank, means to operate the wipers to cement the material, an adjustable sniper, and means to operate the sniper.

14. In a device of the class described, a

cement tank, a pair of wipers mounted on the tank, means to operate the wipers to cement the material, a sniper adjustable along the wipers, and means to operate the

5 sniper.
15 15. In a device of the class described, a cement tank, a pair of wipers mounted on the tank, means to operate the wipers to cement the material, a sniper adjustable to and from the wipers, and means to operate the

10 the sniper.
16. In a device of the class described, a cement tank, a pair of wipers mounted on the tank, means to operate the wipers to cement the material, a sniper adjustable along and to and from the wipers, and means to operate the sniper.

17. In a device of the class described, a cement tank, opposite wipers mounted on the tank, means to operate the wipers to cement the material, an adjustable sniper, having a guide, and means to operate the

20 the sniper.
18. In a device of the class described, a cement tank, opposite wipers mounted on the tank, means to operate the wipers to cement the material, an adjustable sniper, means to operate the sniper, and an adjustable end-guide.

25 19. In a device of the class described, a cement tank, opposite wipers mounted on the tank, means to operate the wipers to cement the material, an adjustable end-guide, an adjustable sniper having a guide, and means to operate the sniper.

20. In a device of the class described, a wiper comprising a body and a series of wiper-teeth yieldingly mounted on the body.

21. In a device of the class described, a

wiper comprising a casing, and a series of yieldingly mounted wiper-elements therein, each such element having a serrated edge. 40

22. In a device of the class described, a wiper comprising a casing, and a series of yieldingly mounted wiper-elements therein, each such element having a serrated plate and an absorbent body. 45

23. In a device of the class described, a pair of opposite wipers, means to open and close the same, yieldingly-mounted teeth therein, and end-blocks thereon. 50

24. In a device of the class described, a cement tank having an offset chamber, a wall of the chamber having an opening communicating with the tank, a valve controlling the said opening, and cement-applying means on the chamber. 55

25. In a device of the class described, a cement tank having an offset chamber, a wall of the chamber having an opening communicating with the tank, a valve controlling the said opening, a sniper on the chamber, means to operate the sniper, and cement-applying means on the chamber. 60

26. In a device of the class described, a cement tank having an offset chamber provided with a flared opening, a yielding wiper in the opening, a movable wiper, means to move the latter wiper to and from the first wiper, and means to lower the wipers into the tank. 70

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH W. BARN A.

Witnesses:

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J. McROBERTS.