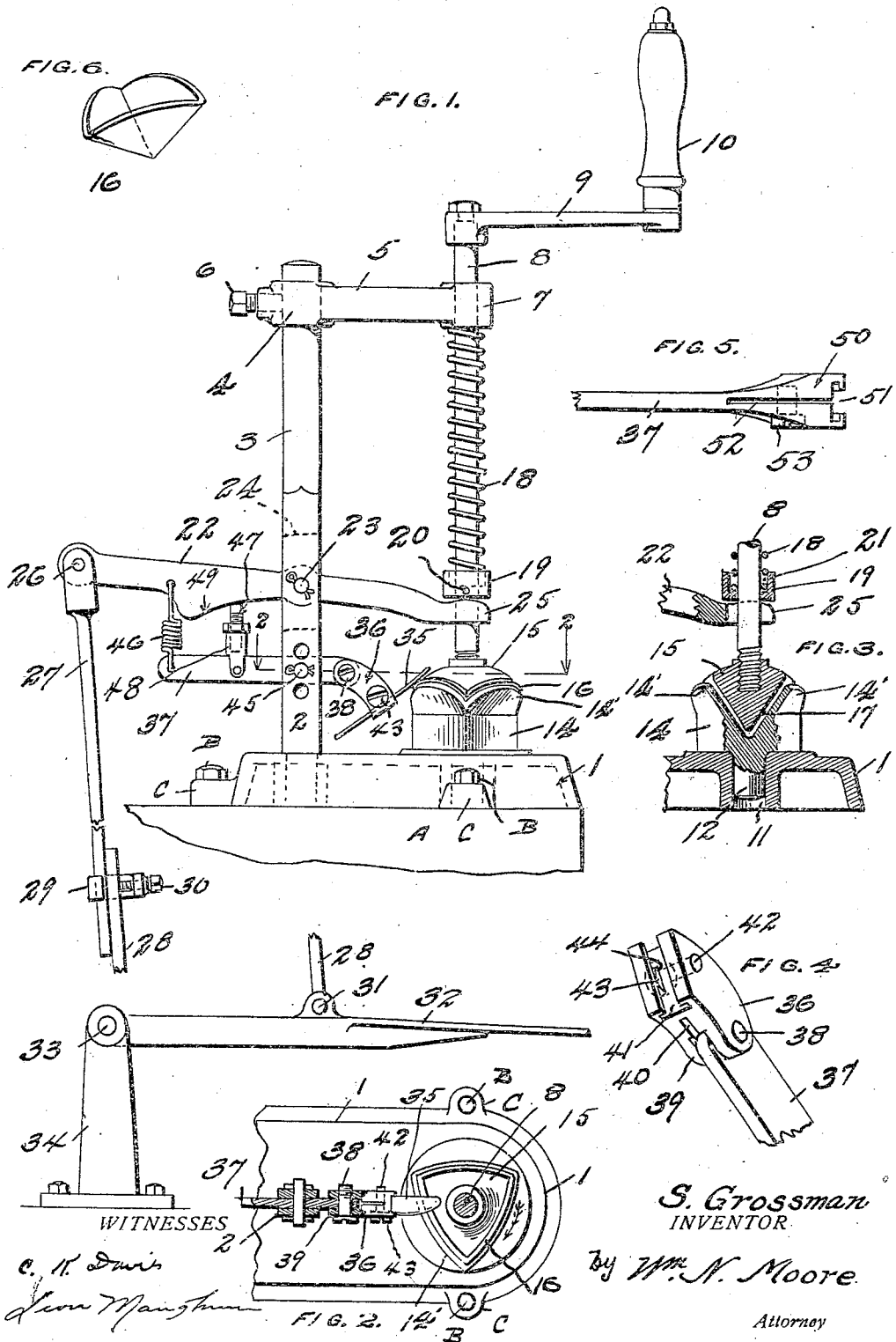


S. GROSSMAN.
LEATHER TRIMMING MACHINE.
APPLICATION FILED AUG. 26, 1908.

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UNITED STATES PATENT OFFICE.

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LEATHER-TRIMMING MACHINE.

954,955.

Specification of Letters Patent. Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, SIMON GROSSMAN, citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Leather-Trimming Machines, of which the following is a specification.

My invention relates to improvements in leather cutting machines, and applies particularly to machines for cutting or trimming leather corner-pieces or "corners" for suit cases and the like.

The object of the invention is the provision of a machine by means of which the leather corner pieces, which have been previously pressed into approximate shape and size, may be trimmed with precision and accuracy. The machine also increases the rapidity with which the pieces may be trimmed, and the manipulation and operation of the device are facile and simple.

To attain these objects the invention consists of a treadle operated spring pressed clamping mechanism for holding the work; a knife or cutter; adapted to trim the work, and certain novel features and combinations and arrangements of elements, as will be more fully described in the following specification and pointed out in the claims.

In the drawings I have illustrated one example and a modified element of the physical embodiment of the invention, constructed according to the best mode I have so far devised for the practical application of the principles.

Figure 1 is a side elevation of a machine embodying my invention, parts of the foot-power mechanism being broken away to more clearly illustrate the invention. Fig. 2 is a horizontal sectional view taken on line 2—2 in Fig. 1. Fig. 3 is a broken vertical sectional view of the work, clamping device and connections. Fig. 4 is a perspective view of the knife holder, looking at the under side. Fig. 5 is a top plan view of a modified knife holder, and Fig. 6 is a perspective view of a leather corner-piece as trimmed by the machine.

In use the machine is preferably secured to a table or bench, as indicated at A by means of bolts B passed through the perforated ears or lugs C on the base 1. The base 1 is provided with a socket, (shown in dotted lines Fig. 1) in which

the upright or post 2 is firmly seated. At its lower end the post 2 may be rectangular in cross section, but its upper end 3 is preferably cylindrical in order to accommodate the sleeve 4 of the bracket arm or brace 5, which is adjustable as to its location on the post and may be secured in adjusted position by means of a set screw 6. At its front end the bracket 5 is provided with a sleeve 7 which forms a journal bearing in which the stem 8 may be rotated by means of the crank 9 and attached handle 10, for a purpose to be described.

Located directly beneath the stem 8 and in alinement therewith is a socket 11 formed in the base 1, for the reception of the stud 12 which forms a journal in the socket 11 as a bearing or seat. This journal 12 is integral with the female member 14 of the work clamping or holding device, of which the head 15 forms the male member. The head 15 is secured to the end of the stem 8 by means of screw threads, as clearly shown in Fig. 3. The two members of the work holding device are of peculiar shape, and may be varied both in shape and size to fit the work desired. I have illustrated the members of a shape to adapt for use with the three sides of the equilateral corner piece 16. Thus the female member 14 is formed with a recess 17 having three sides, and the male member 15 is formed as a head with three sides complementary to the faces or walls of the depression or recess 17. The work or piece 16 is held between the two members 14 and 15 by means of the spring 18 which exerts its tension between the sleeve 7 and a collar 19 secured to the stem by a pin, as 20. The sleeve 7 preferably has a seat 21 therein for the reception of the end of the spring 18.

The head 15 is normally held down in the member 14 by the spring. To lift the head for the insertion of a corner piece, I pivot the lever 22, at 23 in the post 3, which is conveniently slotted as at 24 to allow movement of the lever, and provide a forked end 25 which straddles the stem 8 and is located under the sleeve 19 secured on the stem. To the rear end of the lever at 26 I pivot the rod 27, which is clamped to a second similar rod 28 by means of the clip 29 and screw 30. The lower end of the rod 28 is pivoted at 31 to the foot lever or treadle 32, and this member is in turn pivoted at 33 to a pedestal or support 34.

The knife or cutter 35 is supported by means of the holder or head 36 which is adjustably connected to the lever 37 by means of the clamping screw 38. As shown more clearly in Figs. 2 and 4 the head 36 is forked at its rear end 39 and split at 40 for a distance to insure elasticity, so that the head may be turned on the screw 38 as a pivot and clamped in adjusted position by means of the screw. At its front end the head is formed with a dove-tail groove 41 and the knife 35 is held in this groove by means of the clamp screw 42, whose head 43 may project through the opening 44 formed in the face of the slot 41. After the knife has been suitably placed in the slot of the holder, the screw 42 is turned until its head 43 clamps the knife between it and the opposite side of the slot 41, where it is firmly held for its work.

The lever 37 which carries the cutter head is pivotally supported at 45 in the post 1, and is connected at its rear end by means of spring 46 to the lifting lever 22. The spring 46 exerts its energy to pull on the rear end of the lever 37, thus forcing the front end with its cutter, head and knife downwardly, and the knife is held in position to operate on the edges of the corner piece as the latter is rotated, as will be described.

In order to remove the knife from operative position when inserting the work I provide an adjustable abutment or contact piece, which consists of a screw 47, threaded into a socket 48 which is secured firmly to the lever 37. The lever 37 is formed with a curved or inclined lower edge 49 against which the screw 47 bears. Thus when the lever 22 is pulled down at the rear on its pivot 23 by the treadle and rocked, the inclined edge 49 rides on the screw 47 and forces the screw and rear end of lever 37 downwardly, the lever 37 swinging on its pivot 45. As the rear end is forced down the front end is raised, carrying with it the knife head and knife and the latter swings in a circle away from the work. Simultaneous with the movement of the knife, the lifting lever 22 raises the stem 8 and its head 15 against the pressure of spring 18, from the member 14, thus permitting the insertion of a pressed corner piece.

When the corner piece is in place the foot is removed from the treadle, the spring 8 forces down the head through the medium of the sleeve 19 and stem and clamps, and holds the work between the male and female members, the rear ends of levers 22 and 37 are lifted and the knife 5 held to its operative position by means of the spring 46. The stem is now rotated by means of the handle 10. This movement rotates the work holding device and works the entire device turning in the bearings 7 and 11. The corner piece is thus rotated with its edges

against the edges of the stationary knife cutting and trimming the three edges with a clean cut and precision. The knife head reciprocates as the work rotates, the curved edges 14' of the member 14 causing the knife to rise until the extreme height of the curve is reached, and the spring 46 holding the knife to its work as the curve decreases.

In Fig. 5 I illustrate a modified form of cutter head. In this instance the head is formed integral with the lever 37, the dove-tail groove 51 and split 52 being present as in the first example, but the knife 35 is clamped in the groove by means of a screw 53 which is adapted to draw the two jaws of the head together and thus hold the knife between them.

From the above description taken in connection with drawings it is clear I have provided a device which fulfils all the conditions set forth as the object of my invention.

The modifications and changes may be made within the scope of my claims, for instance, the knife holder may be elevated to a position so that the knife may cut in a vertical plane and if the work is held between flat or horizontal clamping members, a circular disk will result from the rotation of the work. With the knife held in position of Fig. 1, and the work held flat, a circular disk with chamfered edges will be produced.

Other changes may be made where desired without departing from the spirit of my invention.

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

1. The combination of a rotatable member adapted to receive the work, a clamping member, and means for rotating both members, with a resiliently mounted cutter held in operative position to act on the work as described and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

2. The combination with a recessed rotatable member to receive the work, complementary clamping head and means for rotating said members, of a resiliently mounted cutter held in operative position to act on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

3. The combination with a recessed rotatable member to receive the work, a complementary spring pressed clamping head and means for rotating the members, of a resiliently mounted cutter held in operative position to act on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

4. The combination with a member adapted to receive the work, a clamping member,

and means for rotating both members, of an adjustable resiliently mounted cutter held in operative position to act on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

5 5. The combination with a member adapted to receive the work, a clamping member, and means for rotating both members, of a resiliently mounted cutter held in operative position to act on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

10 6. The combination with a member adapted to receive the work, a clamping member and means for rotating both members, of a resiliently mounted adjustable cutter-head carrying a cutter adapted to operate on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

15 7. A base, a recessed member to receive the work and rotatable in the base, a complementary spring pressed clamping head, and means for rotating the latter members combined with a resiliently mounted adjustable cutter head carrying a cutter adapted to operate on the work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

20 8. The combination with a member adapted to receive the work and provided with guiding edges, a clamping member, means for rotating both members and the work, and a resiliently mounted knife held in operative position, and guided by said edges in its work and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

25 9. A recessed rotatable member to receive the work and provided with guiding edges, a complementary spring pressed clamping head and means for rotating said members, combined with a resiliently mounted knife held in operative position and guided by said edges in its operation and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

30 10. The combination with work clamping and holding mechanism and a resiliently mounted cutter located in operative position, of means for simultaneously releasing the clamp, and withdrawing the knife from operative position and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

35 11. The combination with a recessed rotatable member to receive the work, a clamping head and means for rotating said members, and a resiliently mounted cutter or knife, of means for simultaneously releasing the clamp and withdrawing the knife from operative position and means for adjusting the cutter to the work, and for guiding and controlling said cutter.

40 12. The combination of a rotatable mem-

ber adapted to receive the work, a clamping member, and means for rotating both members, a lever for releasing the clamp, and a second lever actuated by the first and carrying a cutter in operative proximity to the work.

13. The combination with a recessed rotatable member to receive the work, a complementary clamping head and means for rotating said members, a lever for withdrawing said head, and a second lever actuated by the first and carrying a cutter head and cutter.

14. The combination with a recessed rotatable member to receive the work, a complementary clamping head and means for rotating said members, a lever for withdrawing said head, and a second lever actuated by the first and carrying an adjustable cutter head and cutter.

15. The combination with a recessed rotatable member to receive the work, a complementary spring pressed clamping head and means for rotating the members, a lever for releasing said clamping head, a second lever carrying a cutter and actuated by the first lever, and an elastic connection between said levers to hold the cutter to its work.

16. The combination with a member adapted to receive the work, a spring pressed clamping member, and means for rotating both members, a pivoted lever for releasing the clamp, a second pivoted lever carrying a knife and an abutment in contact with the first lever, whereby the knife is withdrawn from operative position when the clamp is released.

17. The combination with work holding and operating mechanism, and means for releasing the work, of a lever carrying a knife, and a connection between the releasing means and said lever for withdrawing the knife as the work is released.

18. The combination with work holding and operating mechanism, and means for releasing the work, of a lever carrying a knife, means connected to the releasing means for holding the knife to its work, and a connection between the releasing means and said lever for withdrawing the knife as the work is released.

19. The combination with work holding and operating mechanism, and means for releasing the work, of a lever carrying a knife, a spring connecting the releasing means and said lever for holding the knife to its work, and a connection between the releasing means and said lever for withdrawing the knife as the work is released.

20. The combination with work holding and operating mechanism, and means for releasing the work, of a lever carrying a knife, and a spring connecting the releasing means and said lever to hold the knife to its work.

21. A machine for forming and trimming

suitcase corners, consisting of a rotatable member, in combination with resiliently mounted trimming means adapted to conform to the shape of the rotatable member
5 to trim the leather to the proper shape.

22. In combination with a rotatable member, a resiliently mounted knife or cutter having a vertical movement or adjustment to trim the leather as the said member rotates.
10

23. In a machine for shaping and trimming suitcase corners, the combination of means for forming the corner with resiliently mounted means for cutting or trimming said corner.
15

24. In a machine of the character described, the combination of a rotatable member, of a resiliently mounted cutter operating in conjunction therewith, said cutter
20 being constructed to adjust and adapt itself to the rotation of said member.

25. In a machine of the character described, the combination with a rotatable die member, of a cutter operating in conjunction with said die member, said cutter having a vertical adjustment and being yieldingly mounted to adapt itself to the movement of the die but being stationary with reference to horizontal movement.

26. In a machine of the character described, the combination of a table or support, a rotatable die member consisting of male and female parts, means for rotating said die member, means for clamping and
30 releasing the parts of the die, and a resiliently mounted cutter head carrying a cutter operating in conjunction with the die member.
35

27. In a machine of the character described, the combination of a table or support, a die member mounted in said table or support and composed of male and female parts, means for rotating the die member, lever and treadle connections for moving the
40 male part of the die into and out of engagement with the female part of the die member, and a resiliently mounted cutter operated in conjunction with the die member.
45

28. In an apparatus for cutting and trimming the edge portions of triangular corner-pieces, the combination with a bed-plate provided with bearings, of a pair of revolving
50 spindles mounted in said bearings, said spin-

dles being in alinement with each other, and one of said spindles having a sliding motion
55 toward the other spindle, a male supporting member upon one of said spindles, the said male supporting member being of a pyramidal form, a female clamping member upon the other spindle, said female member being provided with a hollow three-
60 sided receiving portion, all arranged so that the female member can be made to register with the male member, and means for revolving said spindles, and a resiliently
65 mounted knife-holder provided with a knife adapted to be moved against the edge of the clamped corner-pieces and operating in conjunction with the said male supporting member and said female clamping member,
70 substantially as and for the purposes set forth.

29. In an apparatus for cutting and trimming the edge-ports of triangular corner-pieces, the combination with a bed-plate
75 provided with bearings, of a pair of revolving spindles mounted in said bearings, said spindles being in alinement with each other, and one of said spindles having a sliding motion toward the other spindle, a male
80 supporting member upon one of said spindles, the said male supporting member being of a pyramidal form, a female clamping member upon the other spindle, said female member being provided with a hollow three-
85 sided receiving portion, all arranged so that the female member can be made to register with the male member, means for revolving said spindles, and a cutter for trimming the exposed edge-ports of the cornerpiece
90 which is clamped between said registering male and female members, and a resiliently mounted knife-holder provided with a knife adapted to be moved against the edge of the
95 clamped corner-pieces and operating in conjunction with the said male supporting member and said female clamping member, substantially as and for the purposes set forth.

In testimony whereof I affix my signature, 100
in presence of two witnesses.

SIMON GROSSMAN.

Witnesses:

LEON MANGHUM,
CHAS. K. DAVIES.