

**1,777,314**

2 Sheets-Sheet 1

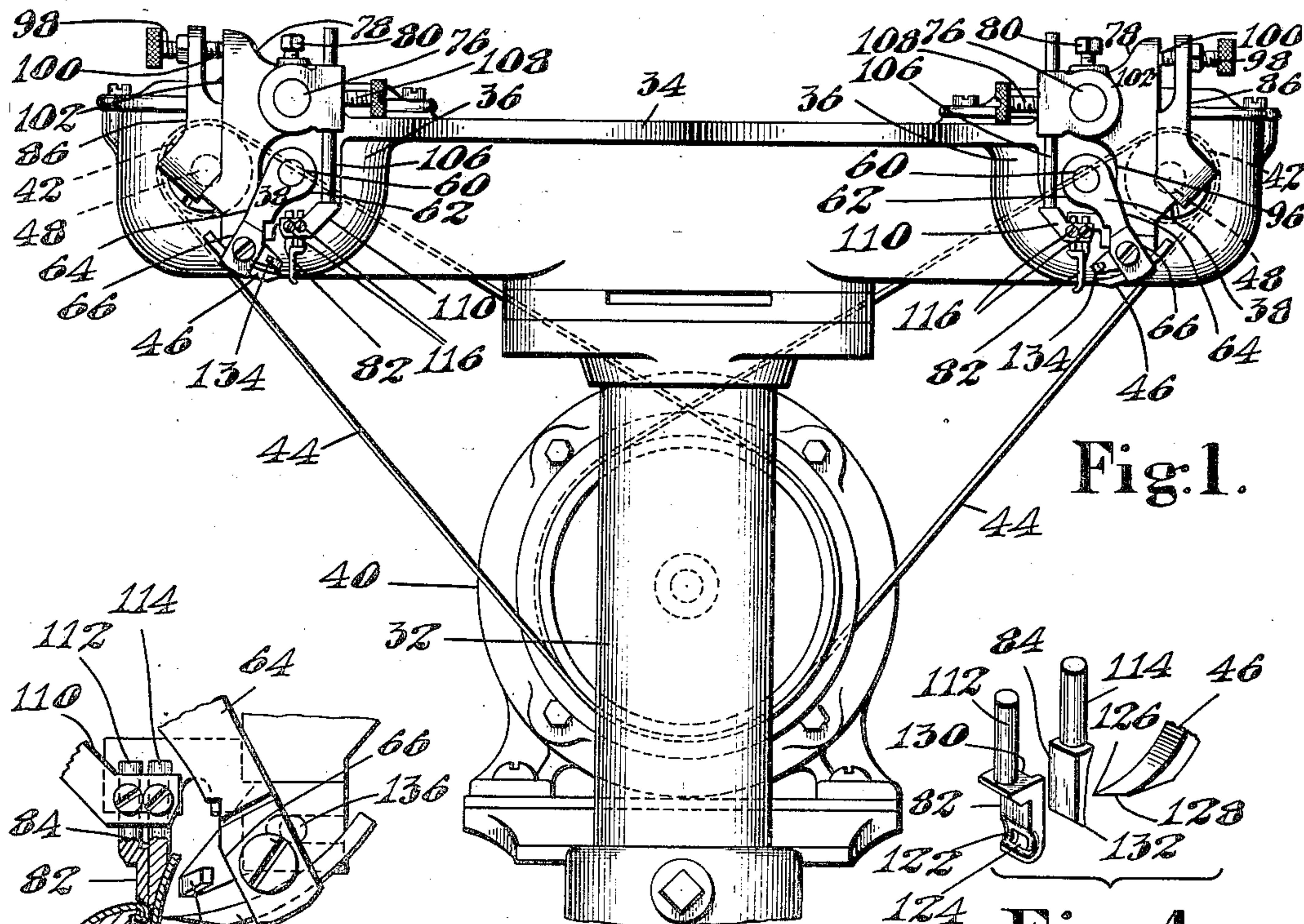


Fig. 1.

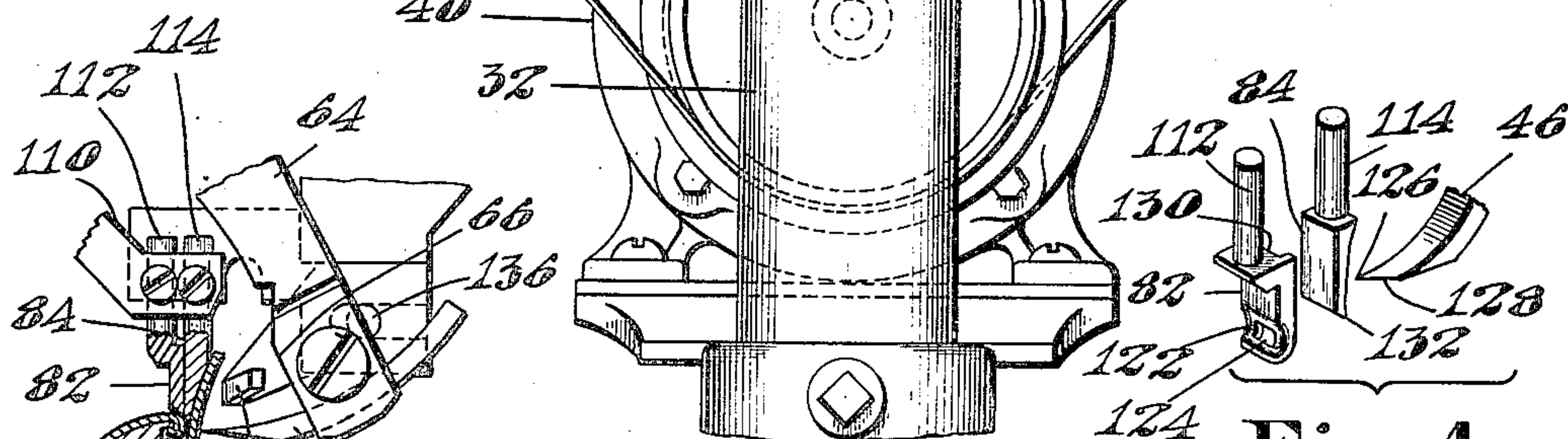


Fig. 4.

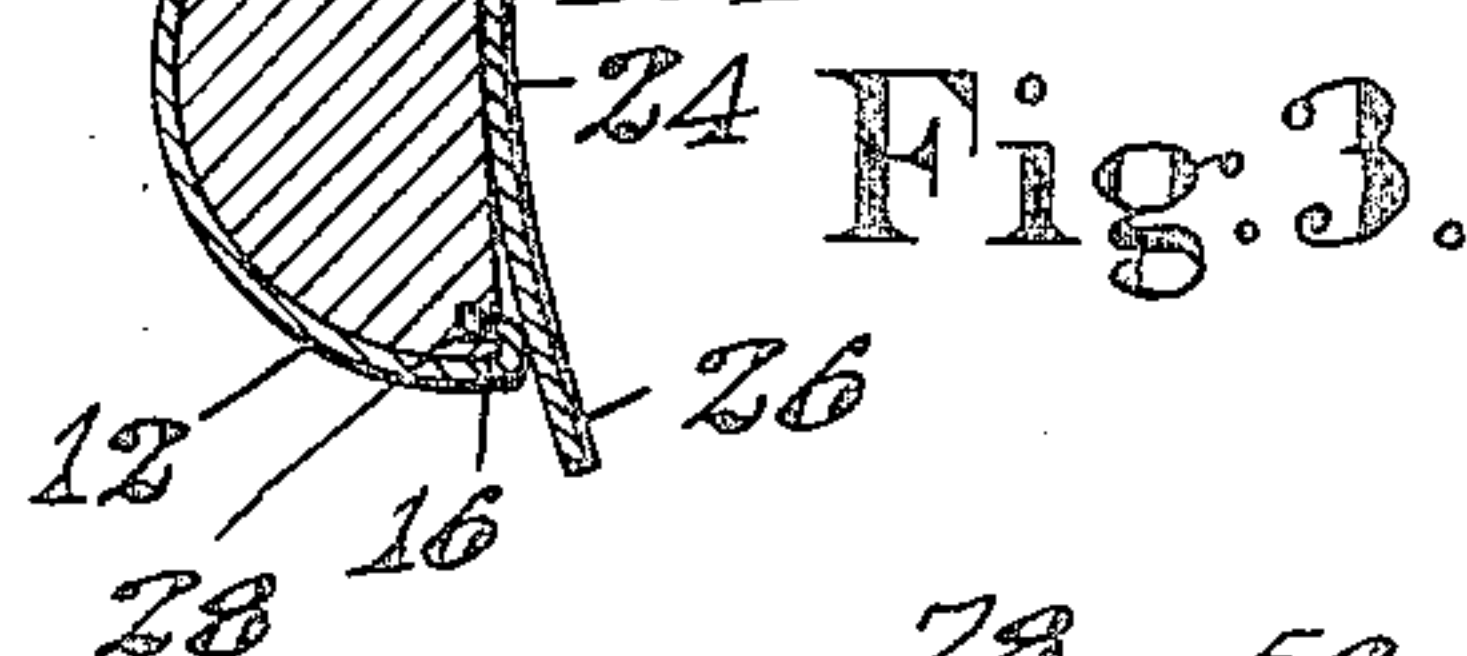


Fig. 3.

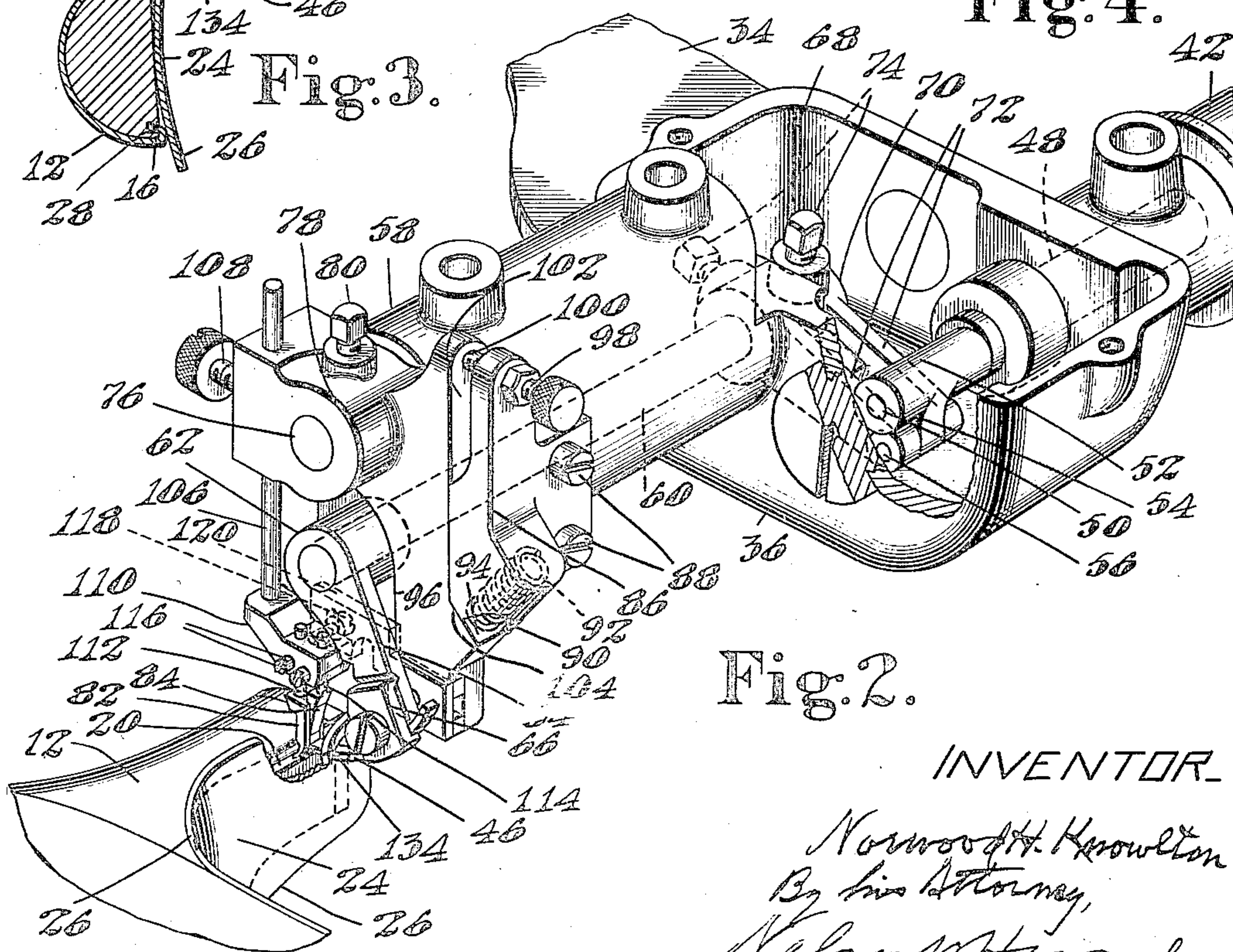


Fig. 2.

INVENTOR

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Oct. 7, 1930.

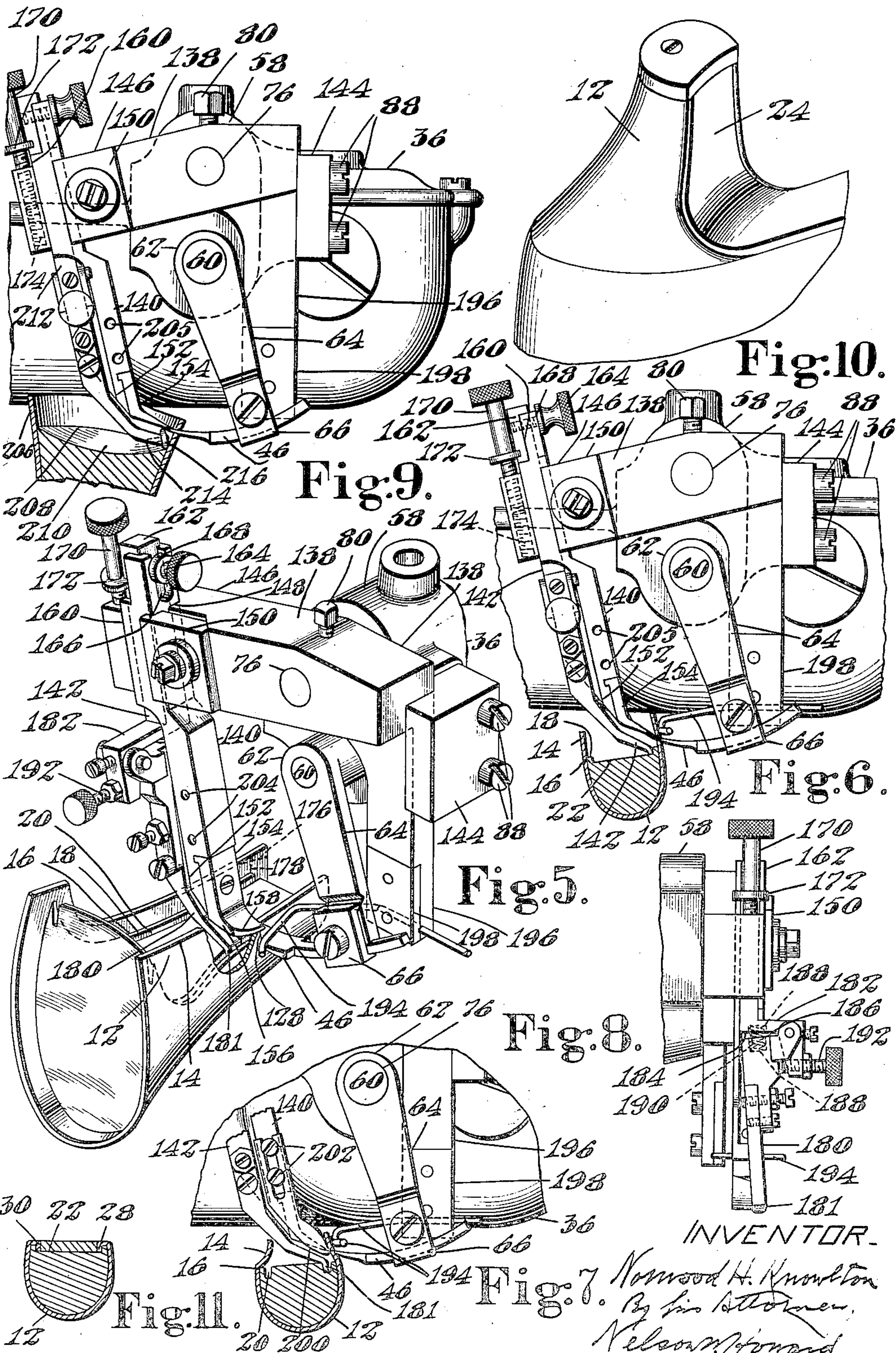
N. H. KNOWLTON

1,777,314

MACHINE FOR TRIMMING HEEL COVERS

Filed Dec. 17, 1928

2 Sheets-Sheet 2





## UNITED STATES PATENT OFFICE

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## MACHINE FOR TRIMMING HEEL COVERS

Application filed December 17, 1928. Serial No. 326,650.

This invention relates to trimming machines and is herein illustrated as embodied in a machine for trimming heel coverings.

In covering wooden Louis heels it is the usual practice to cover the rear portion and the sides of the heel with one piece of covering material, to turn the forward marginal portions of the covering inwardly over the breast corners of the heel, and to secure them upon the lateral marginal portions of the heel breast. The breast of the heel is then covered with a separate covering which overlaps the inturned side cover margins, and finally the separate breast covering is trimmed flush with the sides of the heel. When covering a heel in this manner precision in trimming the marginal portions of the side covering which are to be turned over the breast corners is not essential since these margins are subsequently covered by the breast covering.

There are certain disadvantages, however, in having the lateral edges of the heel-breast covering flush with the sides of the heel and, in order to avoid these disadvantages and to provide improved heels which are neat in appearance, certain improved features of covered heel construction have been disclosed and claimed in United States Letters Patent No. 1,691,149 issued November 13, 1928 on application filed in the name of Anthony Cocozella, and in United States Letters Patent No. 1,704,204 issued March 5, 1929 on application filed in the name of William H. Nutt. As fully explained in the Nutt patent, relatively narrow grooves are made in the breast of a heel adjacent to the breast corners so as to form a rib extending along each lateral margin of the heel breast. In covering a heel prepared in this manner, a covering for the rear and sides of the heel is applied with its forward marginal portions covering the ribs on the heel breast and tucked into and secured within the grooves at the inner sides of the ribs, while the portions of the breast surface between the ribs is covered by a separate covering, for example a flap split from the sole of the shoe, the lateral margins of which covering are also tucked into and secured within the grooves beside the tucked-

in margins of the side covering. The Cocozella patent, above referred to, discloses a heel having a shallow recess in its breast surface for the reception of a covering such as a breast-covering flap split from the sole of a shoe, the recess being of less width than the breast surface of the heel and thus forming ribs which extend along the opposite lateral margins of the heel breast so that the covering may be fitted within the recess with the opposite edges of the covering hidden from view and protected by heel material at the opposite sides of the recess. While the Cocozella patent shows the opposite forward marginal portions of the cover for the rear and sides of the heel as covering the ribs on the heel breast and terminating flush with the sides of the recess between the ribs, the side covering, if desired, may be tucked into the recess in a manner similar to that in which the side cover margins are tucked into the grooves in the Nutt patent.

In covering heels of the improved types above referred to, it is obvious that both the side covering and the breast covering must be trimmed accurately in order that their marginal portions can be fitted properly into the recess or the grooves. It is very difficult to trim the side and the breast coverings by hand and such a process is slow and requires such a high degree of skill on the part of the operator as to make it commercially impracticable. Moreover, when the heel coverings are trimmed they are usually in temper, and if trimmed to exactly the same size as the portions of the heel which they are to engage they sometimes shrink as they dry and will not fit properly. It is therefore preferable to allow for shrinkage by trimming the coverings slightly oversize. Oversize trimming adds to the difficulties of hand trimming of heel coverings for the improved heels above disclosed.

An object of the present invention is to provide an effective and reliable machine for trimming the side coverings of heels as well as the breast coverings of heels for reception either in recesses or in narrow grooves formed in the breasts of the heels.

With the above objects in view and in ac-



cordance with a feature of the invention, the illustrated machine comprises instrumentalities comprising a knife and a shearing member for trimming a covering attached to a heel to prepare a marginal portion of the covering for insertion in a narrow groove in the breast of the heel, and a gage arranged for positioning between the covering and the heel as well as adjustable relatively to the shearing member and having a narrow portion constructed and arranged to engage within the narrow groove to facilitate the positioning of the covering relatively to the trimming instrumentalities. The gage for assisting the operator in positioning the covering relatively to the trimming instrumentalities so that the marginal portion of the covering when trimmed will fit accurately is made narrow to engage within the groove during the trimming operation as the heel in the groove, is moved to present different portions of the covering to the trimming instrumentalities. In accordance with another feature of the invention, the illustrated machine is provided with instrumentalities comprising an oscillating knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel and a gage located at a substantial distance from the shearing member, the gage being arranged for positioning between the covering and the heel and being constructed and arranged to engage a side wall of the recess to facilitate the positioning of the covering relatively to the trimming instrumentalities. In order to retain the covering adjacent to the oscillating knife and the shearing member during the trimming of the heel covering, the illustrated machine is also provided with covering guides constructed and arranged to engage the covering, thereby to assist in positioning the covering between the knife and the shearing member. When fitted for trimming side covers, the illustrated machine includes means for preventing the portion of the side covering, which is later to be inserted into the recess in the heel breast, from being acted upon by the trimming means until the operator has properly positioned the work relatively to the machine.

The invention will now be described with reference to the drawings, which illustrate preferred embodiments thereof, and pointed out in the claims.

In the drawings,

Fig. 1 is a front elevational view of a machine embodying the invention and provided with instrumentalities for trimming a heel breast covering to prepare marginal portions thereof for reception in grooves in the breast of a heel;

Fig. 2 is an enlarged perspective view of the right-hand trimmer shown in Fig. 1 with

portions of the casing of the machine removed and broken away clearly to illustrate portions of the mechanism for operating an oscillating knife;

Fig. 3 is a detail view partly in section illustrating the relative positions of a heel having its heel breast covering trimmed and the instrumentalities for trimming the covering;

Fig. 4 is a perspective view showing in detail a gage, a shearing member and the cutting portion of an oscillating knife used in the machine illustrated in Fig. 1;

Fig. 5 is a perspective view of a portion of the right-hand trimmer shown in Fig. 1 provided with attachments constructed and arranged for trimming a side covering of a heel to prepare a marginal portion thereof for reception within a groove in the breast of a heel and also illustrating a heel positioned relatively to the machine for having its side covering trimmed for reception within said groove;

Fig. 6 is a front elevation of the portion of the machine shown in Fig. 5 and illustrating a side covering of a heel in the process of having the marginal portions of its side covering trimmed for engagement with the sides of a recess in the breast of a heel;

Fig. 7 is a detail view of a portion of the machine shown in Fig. 6 provided with an additional guide for engaging the inner side of a heel side covering which extends beyond the breast corner of a heel;

Fig. 8 is a side view of a portion of the machine as seen from the left side of Fig. 5 and illustrating in detail a gage for engaging the groove or the recess in the breast of a heel;

Fig. 9 is a front view of a trimmer of the same type as the trimmer shown in Figs. 5 and 6 but provided with attachments for trimming the marginal portion of a heel side covering extending beyond the rim of the attaching face of a heel to prepare said marginal portions thereof for being folded over and secured to the attaching face of the heel;

Fig. 10 is a perspective view of the rear portion of a shoe and illustrates a finished heel the covering of which has been trimmed by the above machine; and

Fig. 11 is a sectional view of a covered heel of the type having a recess in its breast, into which recess a heel breast covering has been inserted, the marginal portions of the side covering having been turned into the recess to register with the sides of the recess.

As shown in the drawings, the improved heels above described are provided with a covering 12 for the rear and the sides of the heel, which covering has marginal portions 14 (Figs. 5 and 6) extending beyond the breast corners 16 of the heel. The marginal portions 14 of the side covering are prepared for laying upon the breast of the heel so as



to cover the ribs 18 and are to be tucked into narrow grooves 20 adjacent to the breast corners or secured to the side walls of a recess 22 (Fig. 6) formed in the heel breast.

5 The covering 24 (Figs. 2 and 3) for the breast of the heel between the grooves 20, which covering 24 is illustrated as split from the sole to cover the breast of a Louis heel, has its marginal portions 26 extending beyond the  
10 breast corners 16 of the heel, which marginal portions 26 are to be prepared for reception in the grooves 20 beside the tucked-in margins 28 (Figs. 3 and 11) of the side covering 12. Where the heel breast is provided  
15 with a recess 22 (Figs. 6 and 11) the breast covering is inserted in the recess as shown in Fig. 11 so that its opposite edges 30 (Fig. 11) are hidden from view and abut against the tucked-in margins 28 of the side covering 12.

20 The illustrated machine is constructed and arranged for preparing the marginal portions 14 of the side covering 12 for reception within the grooves 20 or within the recess 22 and for preparing the marginal portions 26  
25 of the heel breast coverings for reception within the grooves 20 and comprises a standard 32 (Fig. 1) for supporting an elongated head 34 the ends of which are enlarged to form housings 36 for carrying the heel covering trimmers 38 and instrumentalities for  
30 operating the same.

The right and left trimmers 38 illustrated in Fig. 1 are alike except that their trimming instrumentalities are reversed in order that  
35 the operator may trim the marginal portions of the heel covering by starting the trimming cut at the top-lift-receiving face of the heel and progressing toward the attaching surface of the heel. Either of the trimmers,  
40 however, may be used for trimming either of the marginal portions of the heel covering, if desired. Since the trimmers are substantially duplicates, only one of the trimmers need be described in detail.

45 Power for operating the machine is supplied by a motor 40 which drives a pair of pulleys 42 through belts 44. In order to effect oscillatory movement of a knife 46 from the rotation of the pulley 42, the illustrated  
50 machine is provided with a shaft 48 (Fig. 2) upon which the pulley 42 is mounted and which has an eccentrically mounted pin 50 extending from its forward end, the pin 50 carrying a sleeve 52 provided with a downwardly extending arm 54 having a recess  
55 carrying a connecting pin 56.

The forward portion 58 of the housing 36 forms a bearing for a rod 60 extending forwardly and rearwardly of the machine, which  
60 rod 60 projects beyond the front portion of the housing 36 and carries a hub 62 having a depending arm 64 to which the oscillating knife 46 is secured by a clamp 66. The rear portion of the rod 60 extends into an opening  
65 68 (Fig. 2) of the housing 36 and carries a hub

70 provided with a bifurcated extension 72 which straddles the downwardly extending arm 54 of the sleeve 52 and has recesses for receiving the connecting pin 56. The hub 70 may be fixed to the rod 60 by any convenient  
75 means, such as a pair of set screws 74. Rotation of the shaft 48 causes the sleeve 52 which is mounted upon the eccentric pin 50 to be raised and lowered, thereby effecting the oscillation of the bifurcated arm 72, the rod 60  
75 and the knife 46.

The forward portion 58 of the housing 36 also forms a bearing for a supporting rod 76 which extends forwardly and rearwardly of the machine. The forward end of the rod 76  
80 projects beyond the front of the housing 36 and carries a bracket 78 (Figs. 1 and 2) which is fixed to the supporting rod 76 by a set screw 80. The bracket 78 carries a gage 82 (Figs. 2 and 4) and a shearing member 84.  
85

It is sometimes desirable, particularly when the machine is used by an inexperienced operator, accurately to position the heel relatively to the gage 82 and the shearing member 84 before the oscillating knife 46 and the  
90 shearing member 84 are placed in cutting relation relatively to one another. Accordingly, the bracket 78, which is fixed to the supporting rod 76, is mounted so as to permit it to be swung toward and away from the oscillating knife 46 or to cause it to be fixed relatively to the oscillating knife 46, as will presently appear.  
95

In order to control the arc through which the bracket 78 may be swung, the housing 36 is  
100 provided with a lug 86 (Figs. 1 and 2), which is fixed thereto by screws 88. The lug 86 has a recess 90 (Fig. 2) at its lower portion for receiving a spring 92, one end of which engages a face 94 of a downwardly extending  
105 portion 96 of the bracket, and extending through the top portion of the lug 86 is a set screw 98 the end portion 100 of which normally engages a face 102 of the bracket 78. The spring 92 tends to urge the bracket 78 in a  
110 clockwise direction about the axis of the supporting rod 76, the rotation being limited by the set screw 98. The set screw 98 ordinarily is positioned (Figs. 1 and 2) so that the face 94 of the downwardly extending portion 96  
115 of the bracket 78 engages the face 104 (Fig. 2) of the lug, thereby holding the bracket 78 rigid relative to the housing 36 and the oscillating knife 46. When the screw 98 has been moved to the right (Figs. 1 and 2) the  
120 machine is adjusted to permit movement of the bracket 78 so that the shearing member 84 and the gage 82 are out of trimming relation with one another when the machine is idle, the bracket being moved in a clockwise direction  
125 by the spring 92 until the face 102 of the bracket abuts against the end portion 100 of the screw 98.

The gage 82 and the shearing member 84 are rigidly supported from the bracket 78 by



a downwardly extending bar 106 which is secured in adjusted relation to the bracket 78 by a set screw 108, thereby positioning the gage 82 and the shearing member 84 as a unit relatively to the oscillating knife 46. A plate 110 (Figs. 2 and 3) having openings therein for an extension rod 112 of the gage 82 and an extension rod 114 of the shearing member 84 is secured to the bottom portion of the bar 106 and is provided with set screws 116 by which the gage 82 and the shearing member 84 are secured in adjusted relation relatively to one another. In order to assure that the gage 82 and the shearing member 84 will be rigidly fixed to the bracket 78, the plate 110 may be attached at its rear portion by a screw 118 (Fig. 2) to an extension member 120 which is secured to the lower end of the vertically extending portion 96 of the bracket 78.

The gage 82 (Fig. 4) near its lower end is provided with a concave portion 122 which has a recess 124 for receiving the leading portion 126 of the cutting edge 128 of the oscillating knife 46. The rear portion 130 of the gage is recessed throughout its length for the reception of the shearing block 84 the lower shearing edge 132 of which cooperates with the cutting edge 128 of the knife 46 for trimming the heel-breast covering. The concave portion 122 of the gage 82 is arranged to engage the covered rib 18 of the heel and is formed and arranged to enter the narrow groove 20 in order to engage within the groove as the heel is moved to present different portions of the covering to the trimming instrumentalities. The term "groove" as used herein may define either the original groove which was formed in the heel or the portion of the original groove remaining after the side covering has been received in the original groove, and the term "side" of the groove may define the side of the original groove or the side formed by the side covering which has been received within the groove. The term "recess" is used in the generic sense and includes a narrow groove as well as a wide groove extending substantially from one breast corner to another, as shown in Fig. 6.

In order to assist in retaining the covering of the heel, which covering is liable to be drawn back with the knife 46 due to the adhesiveness of cement upon the covering, the machine is provided with a flap guide 134 adjacent to the shearing member 84 so that the covering will readily feed between the shearing member 84 and the knife 46, which flap guide is adjustably secured at 136 (Fig. 3) to the vertically extending portion 96 of the bracket 78.

A heel having its breast covering prepared for reception in the grooves is guided past the trimmer (Fig. 2) by hand, the gage 82 which engages within the groove 20 assisting the operator in correctly positioning

the breast covering relatively to the trimming instrumentalities so as to prepare the marginal portions of the breast covering accurately to be received in the grooves. If it is desired to swing the bracket 78 so that the knife 46 and the shearing member 84 will not cooperate with one another to sever the marginal portion of the covering until the operator has correctly positioned the work relatively to the gage and the shearing member, the screw 98 is rotated a few turns outwardly. With the machine adjusted in this way, the work is properly positioned while the knife 46 oscillates idly, and the operator then presses the heel toward the knife 46, thus swinging the bracket 78 toward the knife until the face 94 of the bracket 78 engages the lug 86 at which time the shearing member 84 and the knife 46 cooperate to trim the covering and the heel is moved past the trimmers to complete the operation as above described.

The machine is shown in Figs. 5 to 8, inclusive, as fitted to prepare the marginal portions of the side covering for reception in the grooves 20 or in the recess 22 in the breast of the heel, the machine so fitted differing from the machine above described only by the substitution of a different type of bracket 138, shearing member 140 and gage 142 for the bracket 78, shearing member 84 and gage 82 already described.

In preparing the marginal portions of the side coverings for reception in narrow grooves 20 or in a recess 22 in the breast of a heel, it has been found unnecessary to use a bracket mounted for swinging movement and it is preferable to use the bracket 138 which is quite similar to the bracket 78 already described, the bracket 138 being held rigidly relatively to the housing 36 by a lug 144 secured to the housing 36 by screws 88. A horizontally extending portion 146 of the bracket 138 is provided with an opening 148 for supporting the shearing member 140 and the gage 142.

The shearing member 140, which is secured to the bracket 138 by a wedge-shape clamp plate 150, comprises a downwardly extending portion 152 (Figs. 5 and 6) having a shearing insert 154 secured thereto, which insert has a lip portion 156 (Fig. 5) provided with a beveled edge 158 arranged to cooperate with the oscillating knife 46 for severing the heel covering. The top portion of the shearing member 140 has an offset portion 160 which is recessed lengthwise of the shearing member and receives a gage supporting column 162. The gage supporting column 162 and the shearing member 140 carried thereby are secured against movement relatively to the shearing member 140 by a screw 164 carried by the supporting column 162 and extending through a slot 166 (Fig. 5) in the offset portion 160 of the shear-



ing member 140, the screw 164 having a collar 168, between which collar 168 and the supporting column 162 the shearing member 140 may be rigidly clamped. The supporting column 162, which carries the gage 142, may be adjusted relatively to the shearing member by a screw 170 which is rotatably fixed within an extension 172 of the supporting column 162 and enters a threaded hole 174 in the upper face of the bracket 138. In order to adjust the gage 142 relatively to the bracket 138 the set screw 164 is loosened and the screw 170 is turned until the desired adjustment is made; the set screw 164 is then tightened for rigidly holding together the gage 142 and the shearing member 140.

Inexperienced operators sometimes find difficulty in starting the trimming operation without severing too much material along the marginal portion of the side covering as indicated by the line 176 (Fig. 5), this being caused by the gage not being properly located relatively to the work before the severing of the marginal portion of the covering is begun. When the marginal portion of the side covering is trimmed in this manner, the portion of the side covering which is to be secured in the groove adjacent to the top-lift-receiving face of the heel is too short to be properly secured in the groove, with the result that the covering will soon start to come off. In order that the operator may position the gage in the groove in such a manner that the work will be properly presented to the machine before the trimming instrumentalities start to sever the marginal portion of the side covering to the left of the position indicated by the line 178 (Fig. 5), the gage is provided with an arm 180 (Figs. 5 and 8) having a thin curved heel engaging portion 181 located at a substantial distance from the shearing member and constructed to engage the breast of the heel and engage within the groove 20, which arm 180 is hinged to an extension 182 of the column 162 (Figs 5 and 8). The lower face 184 of the column extension 182 (Fig. 8) and the upper face 186 of the arm 180 are provided with recesses 188 in which a spring 190 is inserted, the spring 190 normally urging the arm 180 forward of the shearing member 140, as shown in Fig. 8. By arranging the arm so that it leads the trimming instrumentalities, the operator is able accurately to position the gage 142 in the groove before the trimmer begins to sever any portion of the side covering which is later to engage within the groove 20. When the gage 142 has been properly positioned within the end of the groove 20 the pressure of the heel against the gage for moving the heel past the trimmer will cause the arm 180 to swing clockwise (Fig. 8) until the face 186 of the arm engages the lower face 184 of the column extension 182. Where the operator is ex-

perienced it is generally unnecessary to swing the arm 180 during the trimming operation, the arm being held rigidly relatively to the supporting column 162 by a set screw 192, which maintains the upper face 186 of the arm 180 against the lower face 184 of the supporting column 162.

In order to assist in retaining the marginal portions 14 of the side covering between the beveled edge 158 of the shearing member 140 and the knife 46, a flap guide 194 (Figs. 5, 7 and 8) similar to the flap guide 134 (Fig. 3), used in trimming the breast flap above described, is used, the flap guide 194 being secured to the bottom of a vertically extending portion 196 of the bracket 138 by a clamp 198.

In preparing the lateral marginal portions of a relatively stiff side covering, the marginal portions 14 (Figs. 5 and 7) extending beyond the breast corners of the heel have a tendency to lean toward the breast of the heel, as shown in Fig. 7. In order to straighten the marginal portions 14 extending beyond the breast corners of the heel so that they will not interfere with the proper operation of the shearing member 140 and the gage 142 as the heel is moved past the trimming instrumentalities, the machine illustrated in Figs. 6 to 8 is provided with a flap guide 200 (Fig. 7) which is fixed to the shearing member 140 by screws 202 threaded into holes 204 (Figs. 5 and 6) in the shearing member 140.

The above illustrated machine may also be conveniently used for preparing the marginal portions of a side covering 206 (Fig. 9) extending beyond the rim 208 of the attaching face 210 of the heel for being folded over and secured to the attaching face of a heel. The trimming means of the machine when fitted for this operation are provided with a gage 212 having a hook portion 214 extending toward the knife 46 and having a roller 216 mounted at its end. The roller 216 is guided around the rim 208 of the attaching face 210 of the heel as the knife 46 severs the marginal portion of the side covering 206 extending beyond the rim of the attaching face of the heel, as shown in Fig. 9.

In order to prepare the marginal portions 14 of the side covering extending beyond the breast corners 16 of the heel for reception within grooves 20 in the breast of the heel, the operator presents the work to the machine as shown in Fig. 5, the marginal portions 14 of the side covering being positioned relatively to the trimming instrumentalities with the assistance of the gage 142, the engaging portion 181 of which is in contact with the breast of the heel and engages within the groove 20. The trimming cut is started at the end of the heel adjacent to the top-lift-receiving face of the heel, the operator moving the heel by hand past the trimming in-



strumentalities and retaining the gage within the groove 20 as the trimming progresses toward the attaching face of the heel.

In preparing the marginal portions of the side covering 14 extending beyond the breast corners 16 of the heel for reception within a recess 22 in the breast of the heel, the procedure is substantially similar to the operation above described except that the heel engaging portion 181 engages the bottom and one of the sides of the recess during the trimming operation, as shown in Fig. 6.

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

1. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a narrow groove in the breast of the heel, and a gage arranged for positioning between the covering and the heel having a narrow portion constructed and arranged to engage within said narrow groove to facilitate the positioning of the covering relatively to the trimming means, said gage and shearing member being adjustable relatively to each other.
2. A machine for trimming heel coverings having, in combination, a shearing member, a knife arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a narrow groove in the breast of the heel, a gage spaced at a substantial distance from the shearing member and arranged for positioning between the covering and the heel and having a narrow portion constructed and arranged to engage within said narrow groove to facilitate the positioning of the covering relatively to the knife, and means for operating the knife.
3. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a narrow groove in the breast of the heel, and a gage adjustable relatively to the shearing member and arranged for positioning between the covering and the heel and having a narrow portion constructed and arranged to engage a side of the narrow groove to facilitate the positioning of the covering relatively to the trimming means.
4. A machine for trimming heel coverings having, in combination, a shearing member, a knife arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in the narrow groove in the breast of the heel, a gage arranged for positioning between the covering and the heel and spaced at a substantial distance from and

adjustable relatively to the shearing member and having a narrow portion constructed and arranged to engage a side of the narrow groove and a portion of the breast surface of the heel to facilitate the positioning of the covering relatively to the knife, and means for operating the trimming knife.

5. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, said gage and shearing member being adjustable relatively to each other, and means for oscillating the knife.

6. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and adjustable relatively to as well as spaced at a substantial distance from the shearing member and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, a heel covering guide constructed and arranged to engage the covering thereby to assist in positioning the covering between the knife and the shearing member, and means for oscillating the knife.

7. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, said gage and shearing member being mounted for movement relatively to each other and being spaced at a substantial distance from each other, and means for oscillating the knife.

8. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the



covering and the heel and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, said gage and shearing member being mounted for movement relatively to one another for purposes of adjustment, a heel covering guide constructed and arranged to engage the covering thereby to assist in positioning the covering between the knife and the shearing member, and means for oscillating the knife.

9. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and spaced at a substantial distance from the shearing member and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, means to adjust the gage and the shearing member relatively to each other, and means to oscillate the knife.

10. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and spaced at a substantial distance from the shearing member and constructed and arranged to engage within said groove to facilitate the positioning of the covering relatively to the knife and the shearing member, the gage and the shearing member being mounted for movement as a unit relatively to the knife, and means for oscillating the knife.

11. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife constructed and arranged to cooperate with the shearing member for trimming a covering attached to a heel to prepare the margin of the covering for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged to engage within said recess to facilitate the positioning of the covering relatively to the knife and the shearing member, the gage and the shearing member being mounted for movement relatively to one another and also being mounted for movement as a unit relatively to the knife, and means for oscillating the knife.

12. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trim-

ming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, and a gage arranged for positioning between the covering and the heel and constructed and arranged to engage a side wall of the recess to facilitate the positioning of the covering relatively to the trimming means, said gage and shearing member being adjustable relatively to each other.

13. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, and a gage located at a substantial distance from the shearing member and arranged for positioning between the covering and the heel, said gage being constructed and arranged to engage within the recess during the trimming operation to facilitate the proper positioning of the covering as the heel is moved to present different portions of the covering to the trimming means.

14. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a narrow groove in the breast of the heel, and a gage arranged for positioning between the covering and the heel and having a narrow portion constructed and arranged for engaging the breast of the heel and a side of the groove during the operation of the trimming means, said gage and shearing member being adjustable relatively to each other.

15. A machine for trimming heel coverings having, in combination, means comprising a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a narrow groove in the breast of the heel, and a gage arranged for positioning between the covering and the heel and located at a substantial distance from the shearing member, said gage having a narrow portion constructed and arranged for engaging the breast of the heel and engaging within the narrow groove during the trimming operation to facilitate the proper positioning of the covering as the heel is moved to present different portions of the covering to the trimming means.

16. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife arranged to cooperate with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged to engage within the recess to facili-



tate the positioning of the covering relatively to the oscillating knife, said gage and shearing member being adjustable relatively to each other, and means for oscillating the knife.

17. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife co-operating with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and located at a substantial distance from the shearing member and being constructed and arranged to engage within the recess to facilitate the positioning of the covering relatively to the oscillating knife and the shearing member, and means for oscillating the knife.

18. A machine for trimming heel coverings having, in combination, means including a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a narrow groove in the breast of the heel and substantially parallel to a breast corner of the heel, and a gage arranged for positioning between the covering and the heel and having a narrow portion constructed and arranged to engage within the recess during the trimming operation to facilitate the proper positioning of the covering as the heel is moved to present different portions of the covering to the trimming means, said gage being located at a substantial distance from the shearing member and being adjustable relatively to the shearing member.

19. A machine for trimming heel coverings having, in combination, means including a knife and a shearing member for trimming a side covering of a heel to prepare the marginal portion thereof for reception in a recess, a gage arranged for positioning between the covering and the heel and constructed and arranged to engage one of the sides of the recess to facilitate the positioning of the covering relatively to the trimming means, said gage and shearing member being adjustable relatively to each other, and a covering guide constructed and arranged to engage the covering, thereby to assist in positioning the covering adjacent to the trimming means.

20. A machine for trimming heel coverings having, in combination, means including a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a narrow groove in the breast of the heel, a gage arranged for positioning between the covering and the heel, said gage being located at a substantial distance from the shearing member and having a narrow portion constructed and arranged to engage one of

the sides of the narrow groove, thereby to facilitate the positioning of the covering relatively to the trimming means, and a covering guide constructed and arranged to engage the covering, thereby to assist in positioning the covering relatively to the trimming means.

21. A machine for trimming heel coverings having, in combination, means including a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and adjustable relatively to the shearing member, said gage being located at a substantial distance from the shearing member and constructed and arranged to engage one of the sides of the recess, thereby to facilitate the positioning of the covering relatively to the trimming means, and a heel covering guide constructed and arranged to engage the inner face of the covering, thereby to assist in positioning the covering relatively to the trimming means.

22. A machine for trimming heel coverings having, in combination, means including a knife and a shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for reception in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and adjustable relatively to the shearing member, said gage being constructed and arranged to engage one of the sides of the recess, thereby to facilitate the positioning of the covering relatively to the trimming means, and heel covering guides constructed and arranged to engage both the inner and the outer faces of the covering for positioning the covering adjacent to the trimming means.

23. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife arranged to co-operate with the shearing member for trimming the side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel, said gage being located at a substantial distance from the shearing member and constructed and arranged for reception in the recess to facilitate the positioning of the covering to be trimmed relatively to the oscillating knife, means for adjusting the gage relatively to the shearing member, and means for oscillating the knife.

24. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife cooperating with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the



breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged for reception in the recess to facilitate the positioning of the covering relatively to the oscillating knife and the shearing member, means for adjusting the gage and the shearing member relatively to each other and for adjusting the shearing member relatively to the knife, and means for oscillating the knife.

25. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife cooperating with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the breast of the heel, a gage arranged for positioning between the covering and the heel and constructed and arranged for reception in the recess to facilitate the positioning of the covering relatively to the oscillating knife and the shearing member, means for adjusting the gage and the shearing member relatively to one another and for adjusting the shearing member and the gage as a unit relatively to the knife, and means for oscillating the knife.

26. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife cooperating with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the breast of the heel, a gage constructed and arranged for insertion in the recess to facilitate the positioning of the covering relatively to the knife and the shearing member, said gage being mounted for pivotal movement toward and away from the shearing member in a plane substantially normal to the path of movement of the knife, and means for oscillating the knife.

27. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife cooperating with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the breast of the heel, a gage constructed and arranged for reception in the recess to facilitate the positioning of the covering to be trimmed relatively to the knife and the shearing member, said gage also being constructed and arranged for movement toward and away from the knife and the shearing member, means for urging the gage away from the knife and the shearing member, and means for oscillating the knife.

28. A machine for trimming heel coverings having, in combination, a shearing member, an oscillating knife cooperation with the shearing member for trimming a side covering of a heel to prepare a marginal portion thereof for insertion in a recess in the breast of the heel, a gage constructed and

arranged for reception in the recess to facilitate the positioning of the covering relatively to the knife and the shearing member, said gage being mounted for pivotal movement toward and away from the shearing member in a plane substantially normal to the path of movement of the knife, means for holding the gage against pivotal movement relatively to the knife, and means for oscillating the knife.

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

NORWOOD H. KNOWLTON.

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**CERTIFICATE OF CORRECTION.**

**Patent No. 1,777,314.**

**Granted October 7, 1930, to**

**NORWOOD H. KNOWLTON.**

**It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, lines 20 and 21, strike out the words and comma "in the groove," and insert same to follow after the word "accurately" in line 18; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.**

**Signed and sealed this 6th day of January, A. D. 1931.**

**(Seal)**

**M. J. Moore,  
Acting Commissioner of Patents.**