A. M. ENGLISH & H. W. GIBBS.

CRIMPING OR CORRUGATING MACHINE.

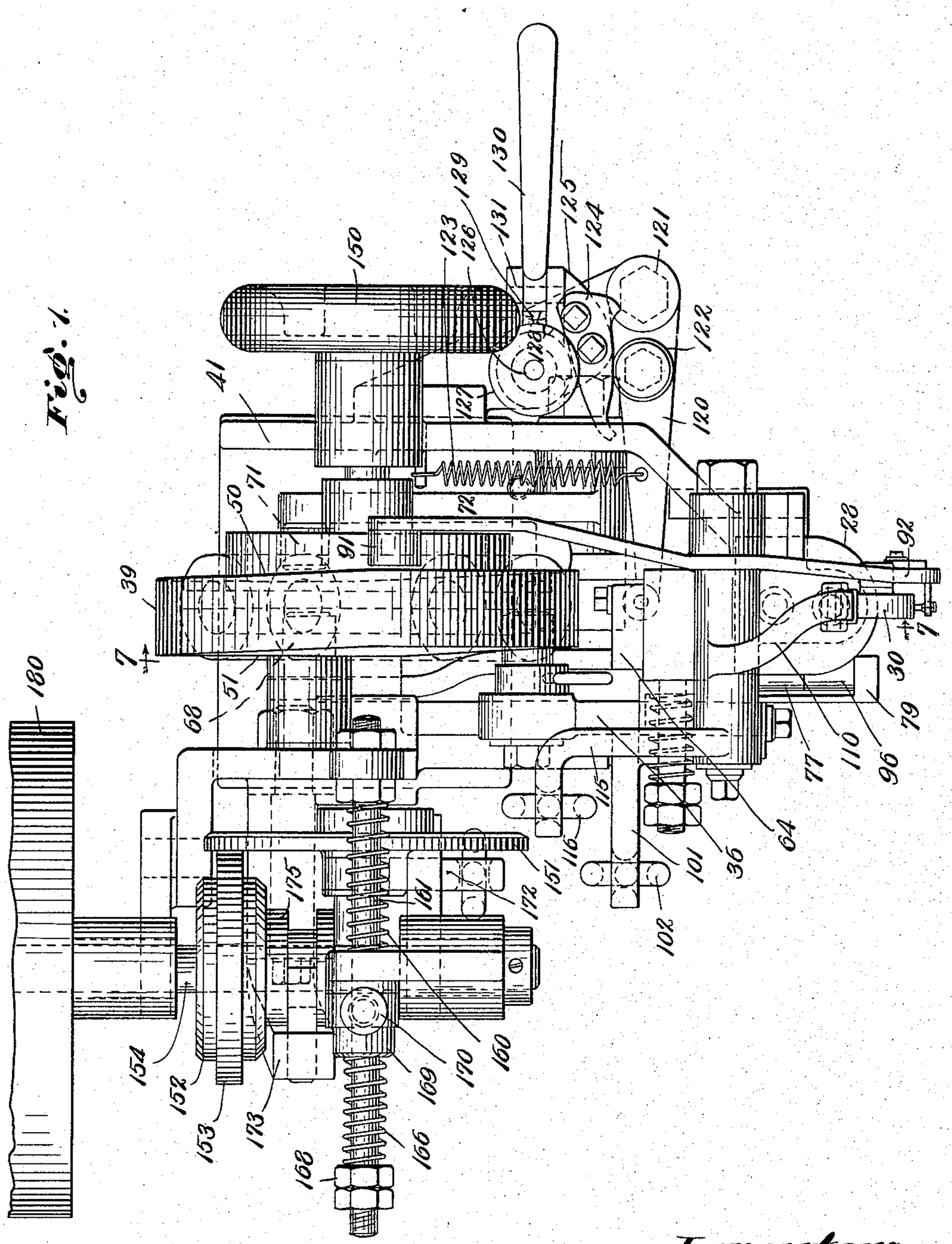
APPLICATION FILED AUG. 9, 1915.

1,166,823.

Patented Jan. 4, 1916.

6 SHEETS—SHEET 1.

Fig. 1.



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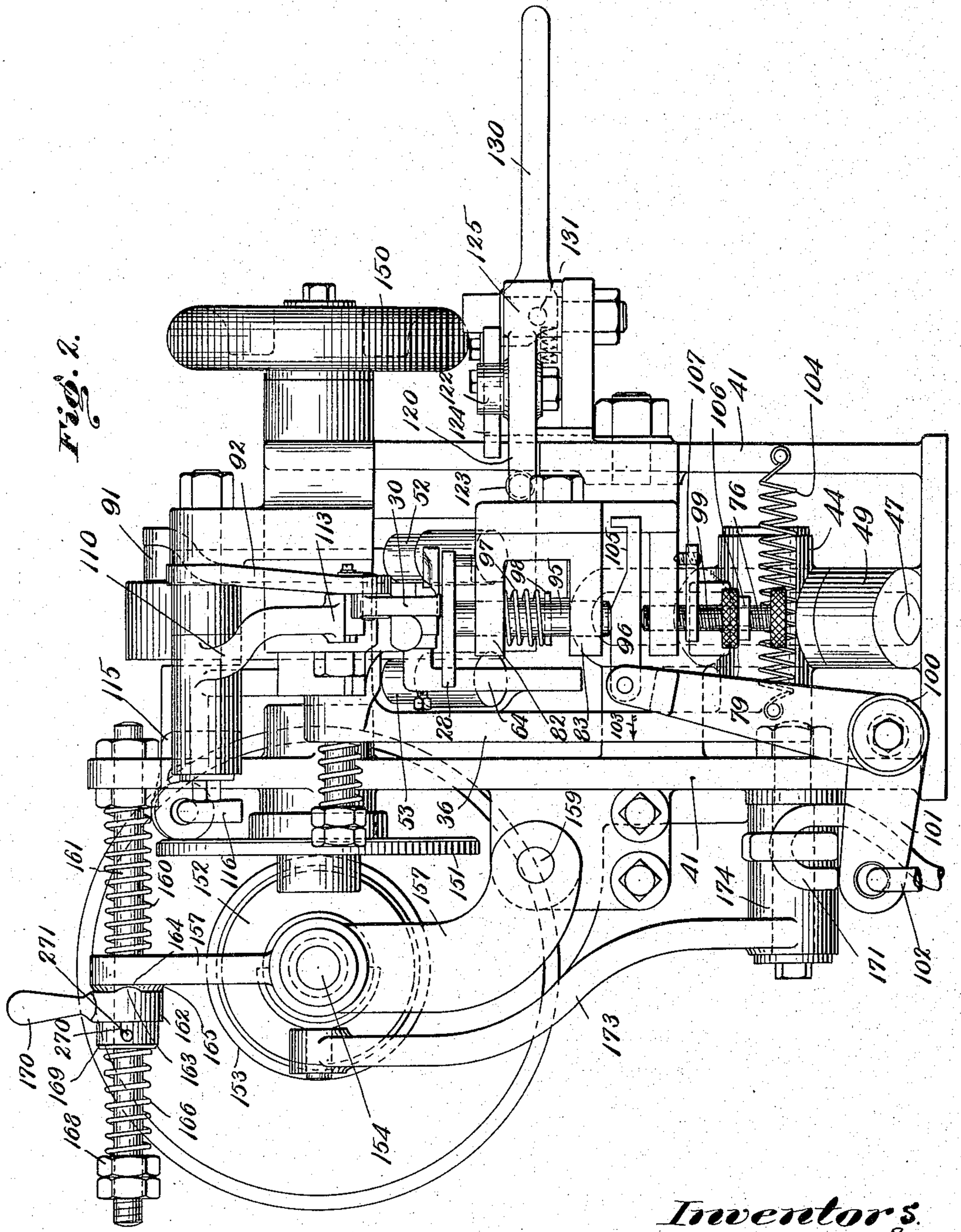
6 SHEETS—SHEET 2.

Fig. 2.



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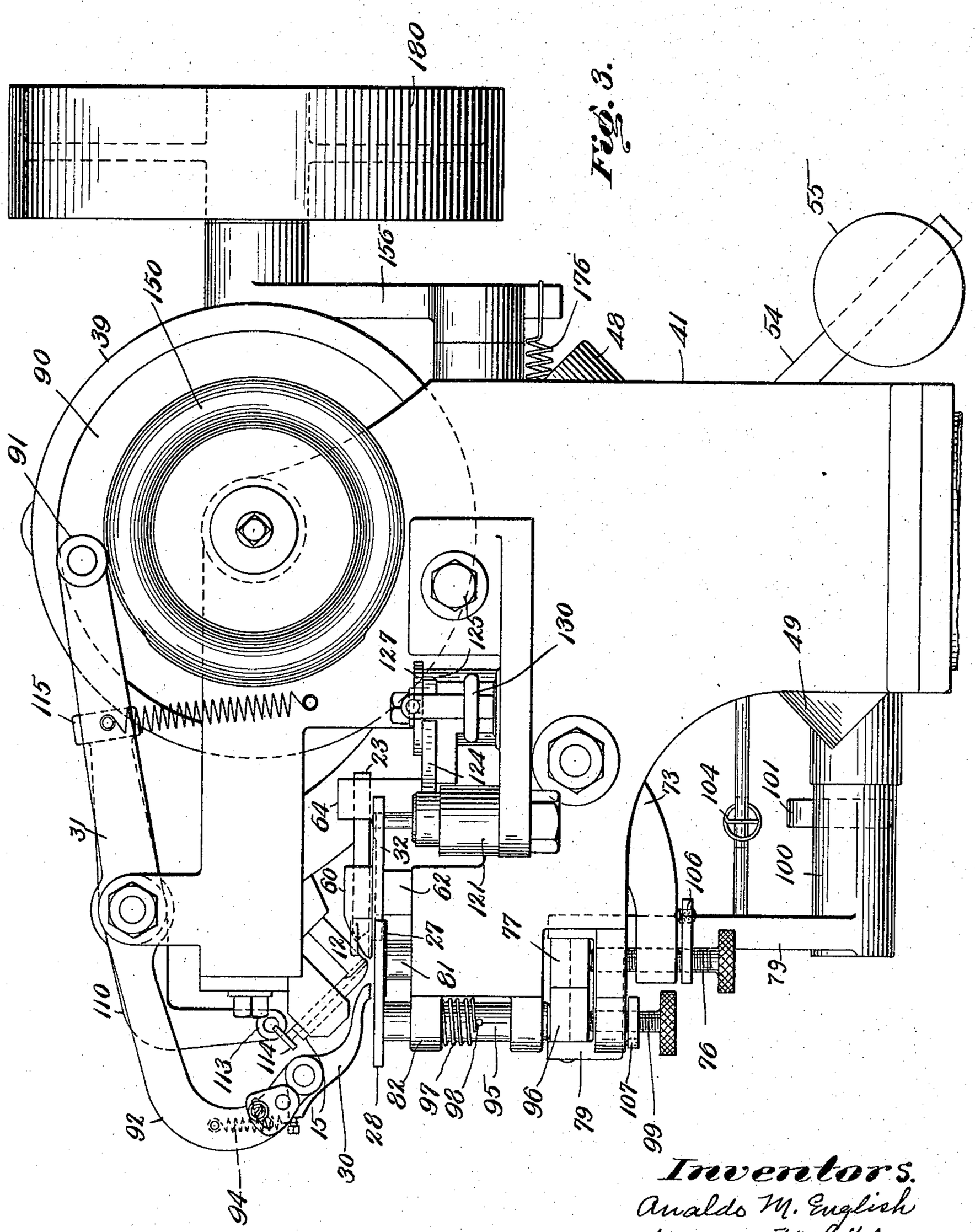
6 SHEETS—SHEET 3.

Fig. 3.



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6 SHEETS—SHEET 4.

Fig. 4.

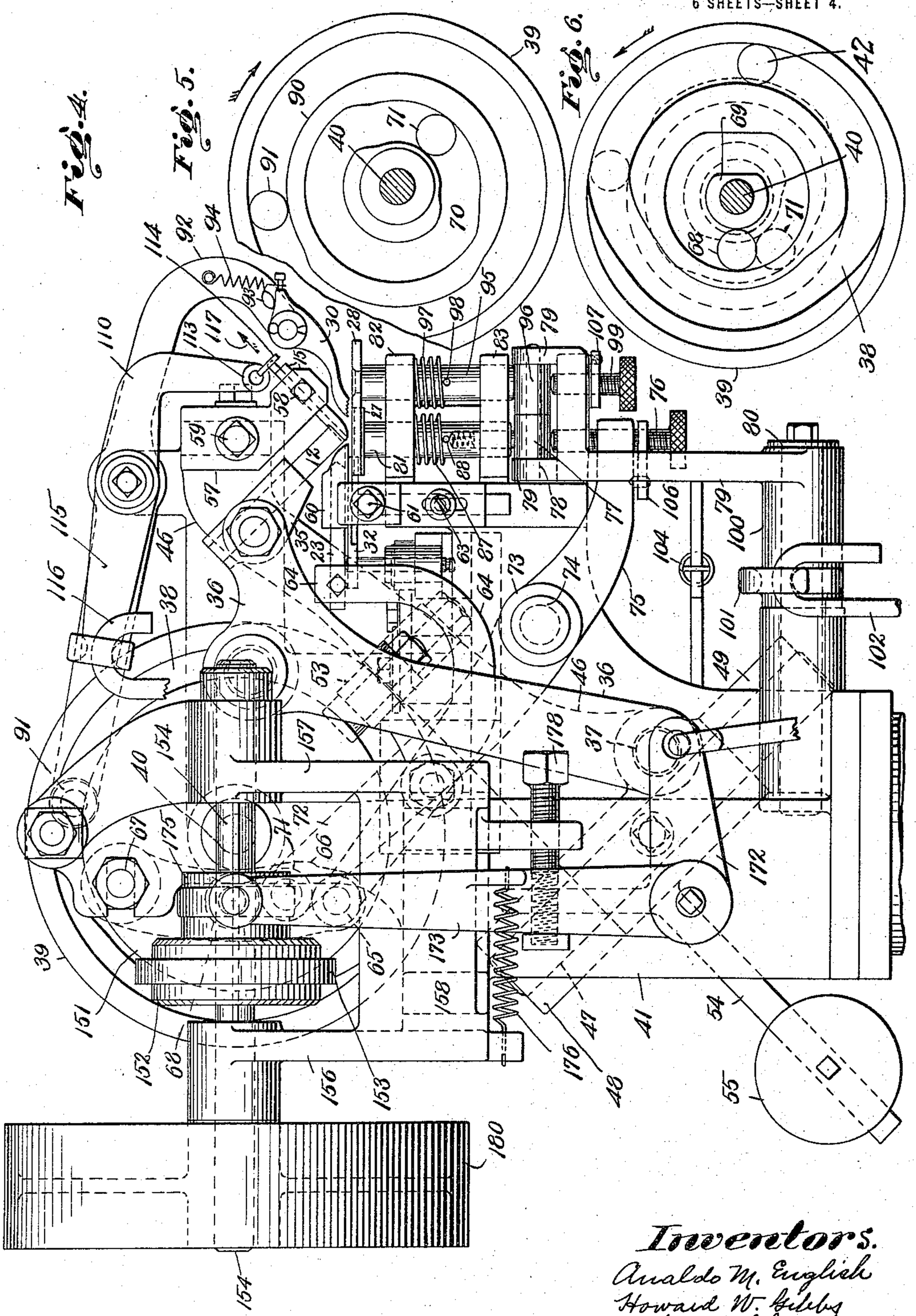

Fig. 5.

Fig. 6.

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6 SHEETS—SHEET 5.

Fig. 7.

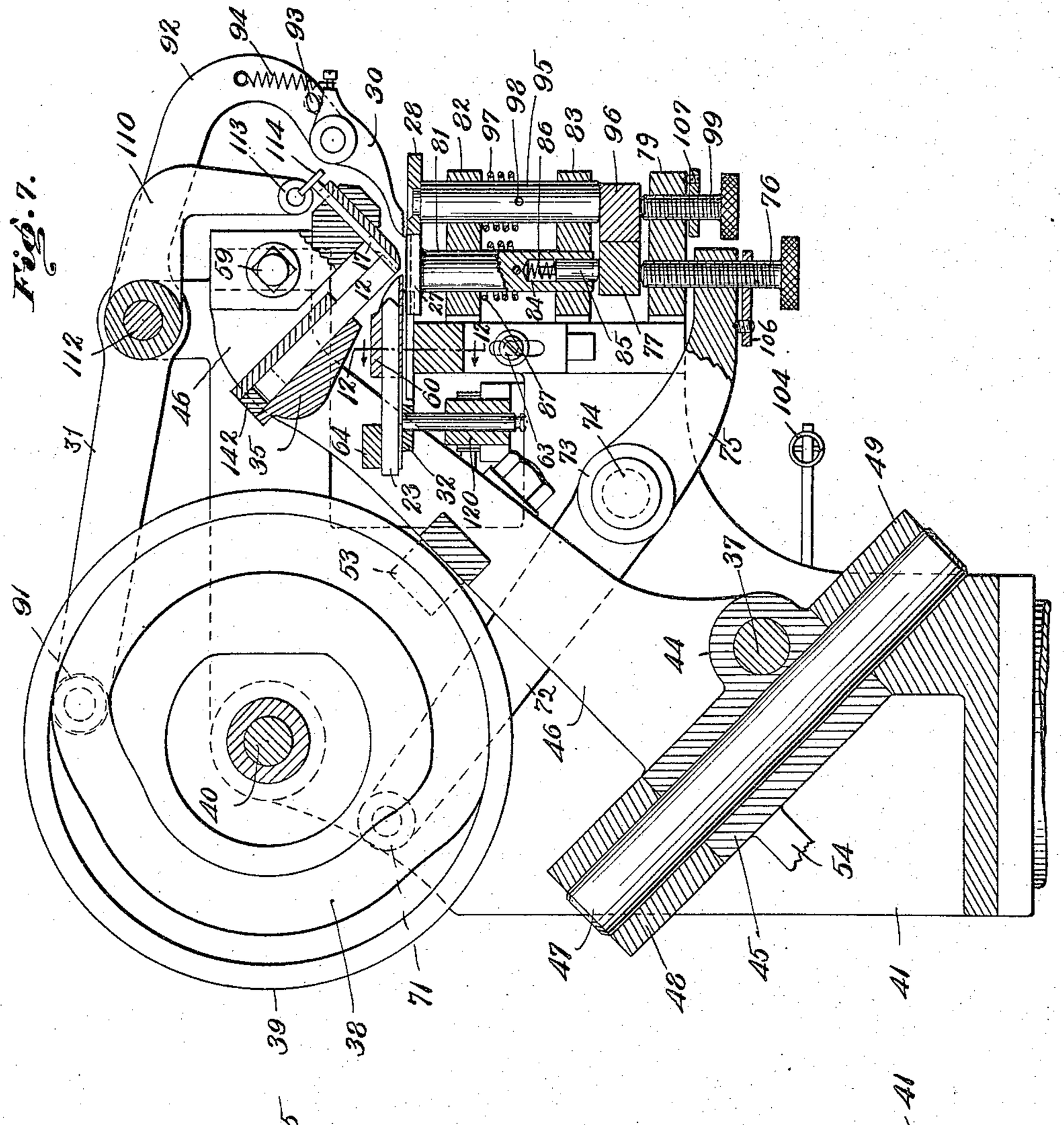


Fig. 8.

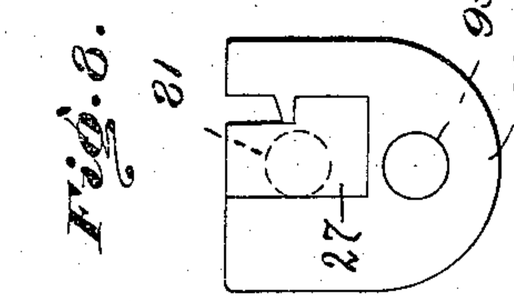


Fig. 9.

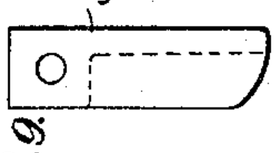


Fig. 10.

Fig. 11.

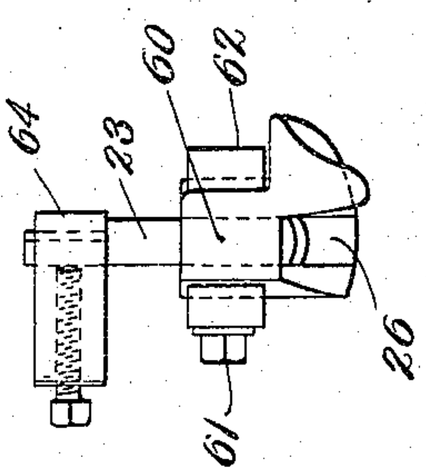
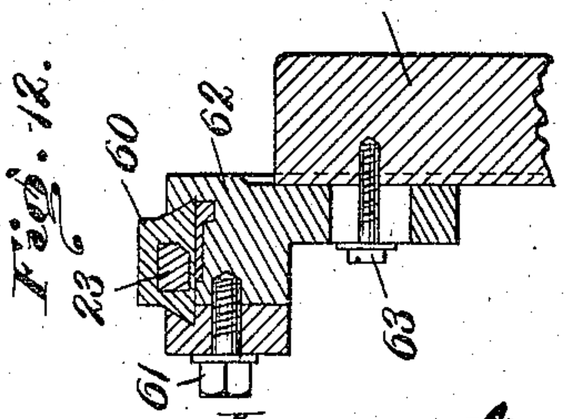


Fig. 12.



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6 SHEETS—SHEET 6.

Fig. 13.

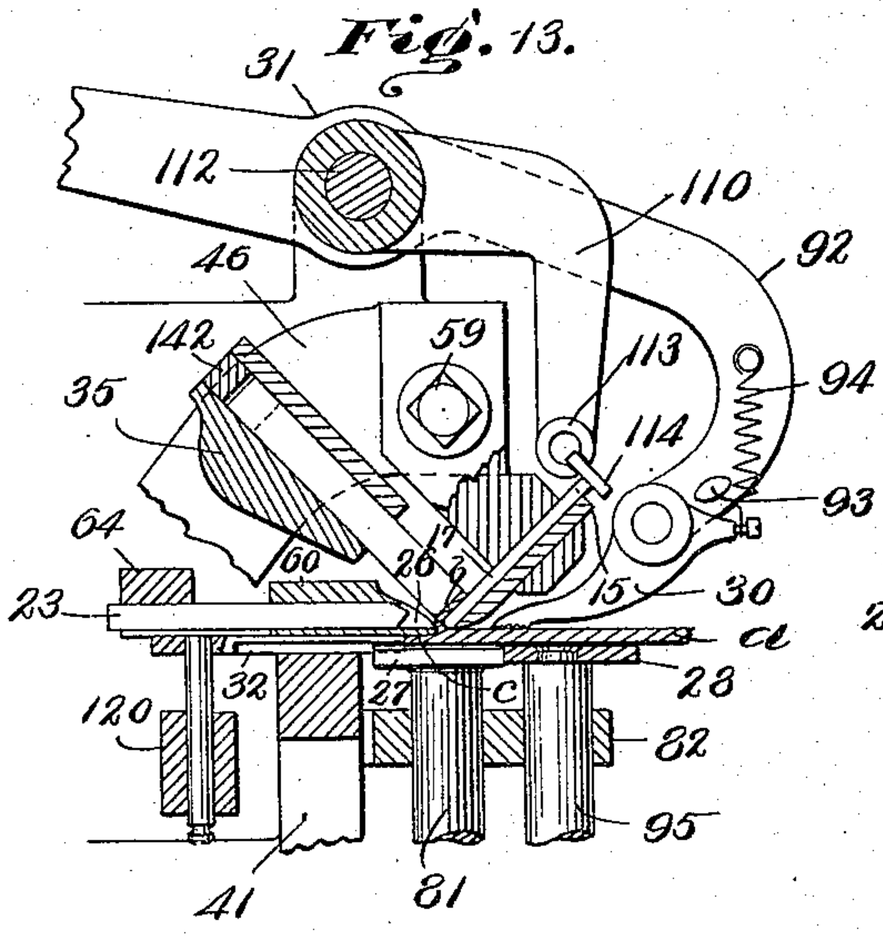


Fig. 14.

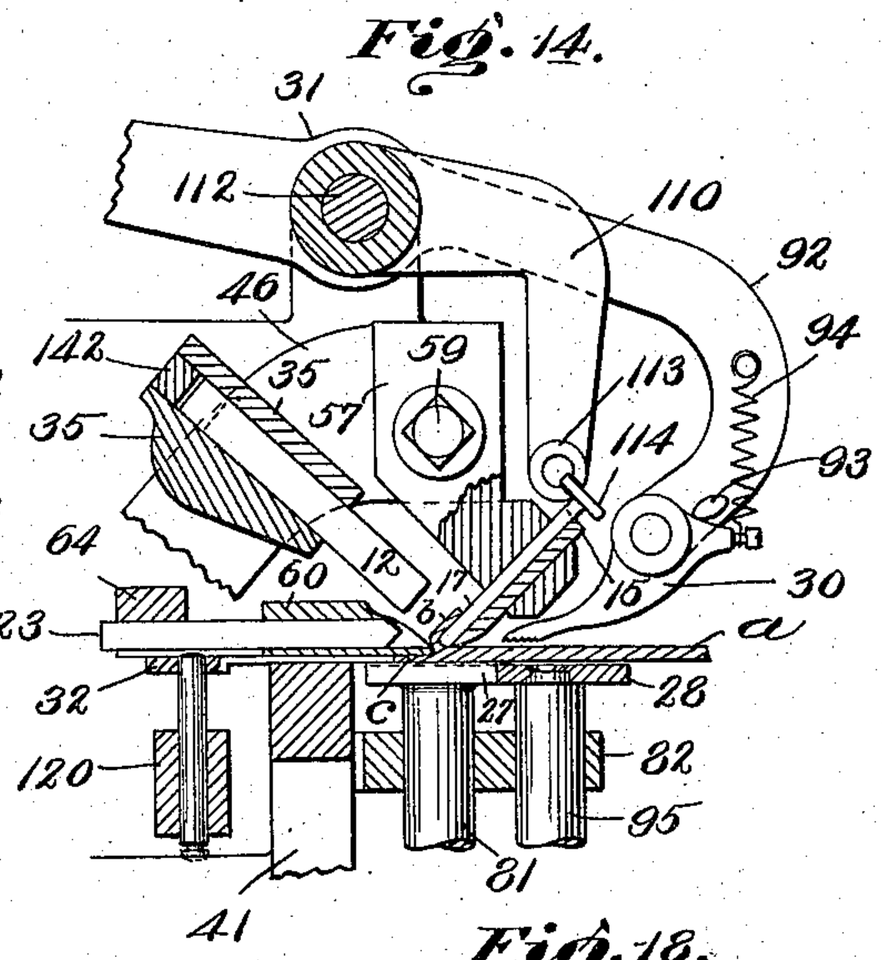


Fig. 15.

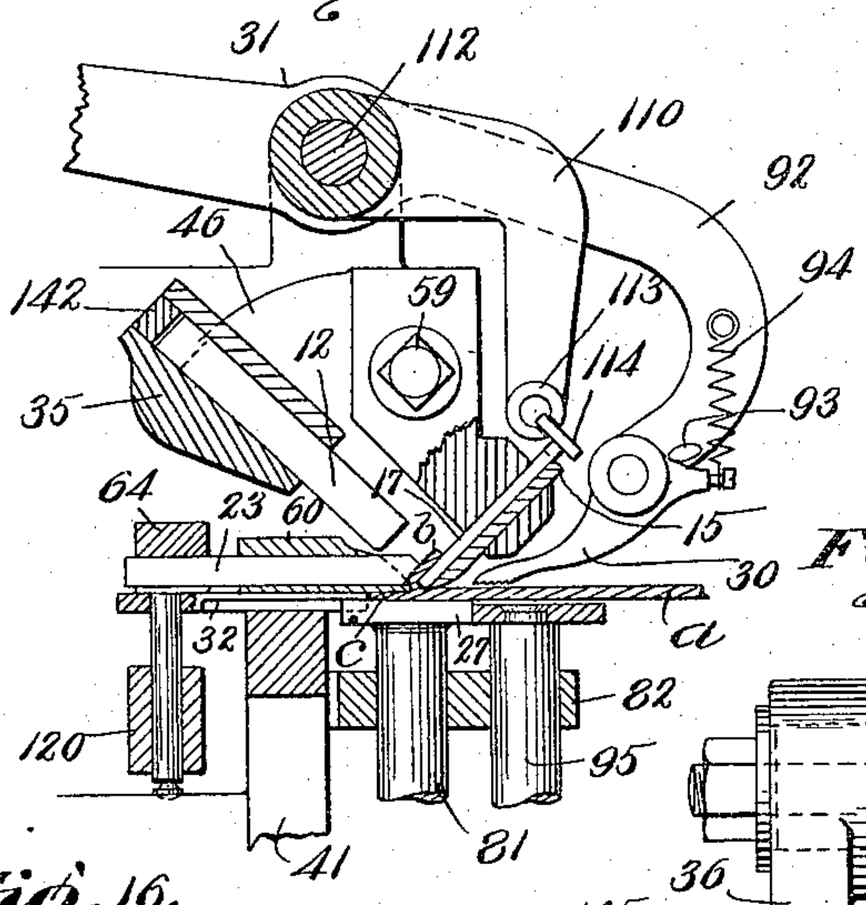


Fig. 16.

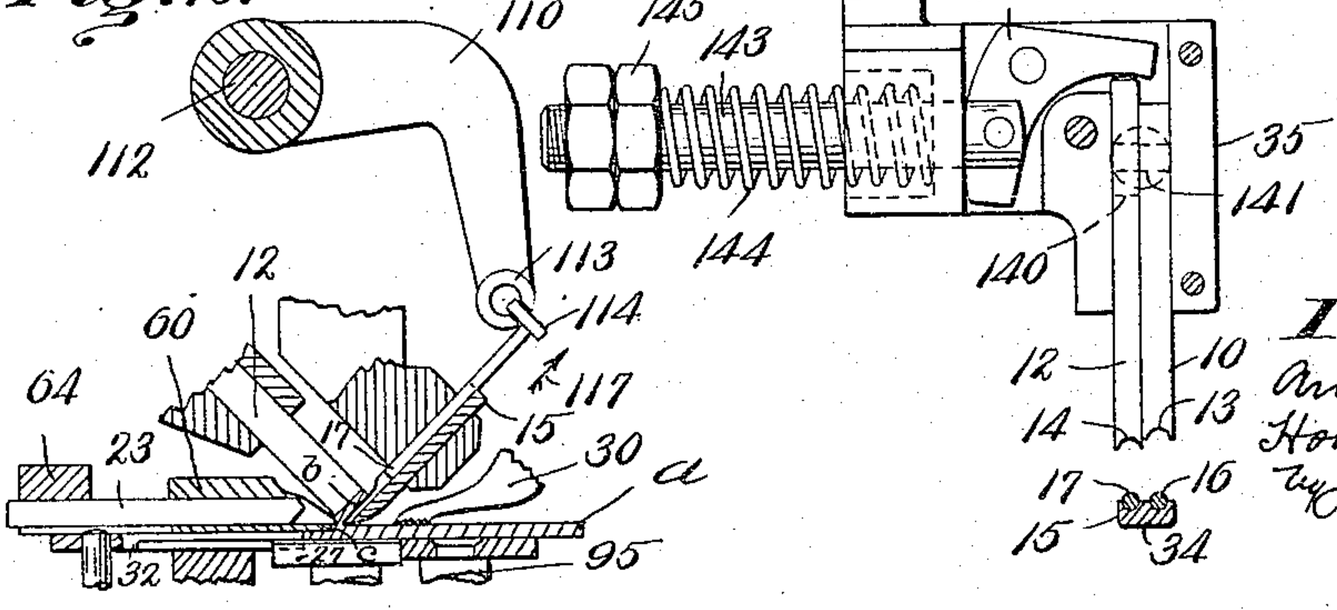


Fig. 17.

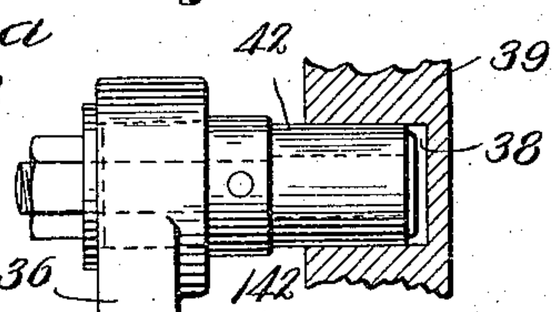


Fig. 18.

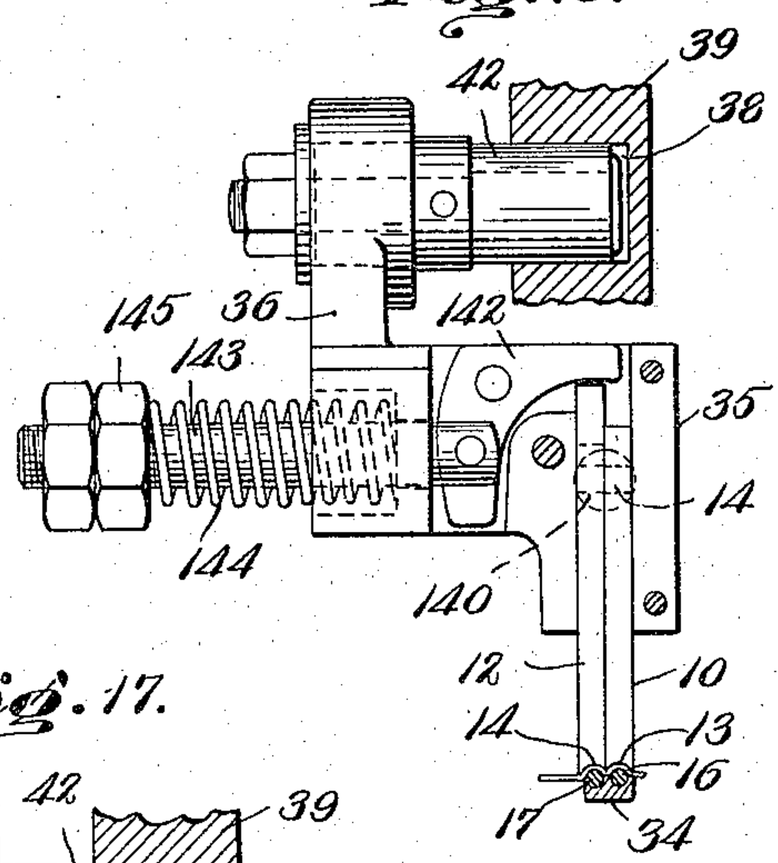
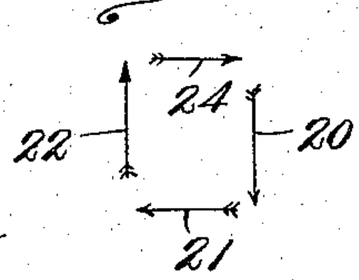


Fig. 19.



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UNITED STATES PATENT OFFICE.

ANALDO M. ENGLISH, OF BROOKLINE, AND HOWARD W. GIBBS, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO J. SPAULDING & SONS CO., OF ROCHESTER, NEW HAMPSHIRE, A COPARTNERSHIP COMPRISING EMMA C. SPAULDING AND MARION L. SPAULDING, OF BOSTON, MASSACHUSETTS, ROLAND H. SPAULDING AND HUNTLEY N. SPAULDING, OF ROCHESTER, NEW HAMPSHIRE, AND LEON C. SPAULDING, OF BUFFALO, NEW YORK.

CRIMPING OR CORRUGATING MACHINE.

1,166,823. Specification of Letters Patent. **Patented Jan. 4, 1916.**

Application filed August 9, 1915. Serial No. 44,392.

To all whom it may concern:

Be it known that we, ANALDO M. ENGLISH and HOWARD W. GIBBS, citizens of the United States, and residents of Brookline and Boston, in the counties of Norfolk and Suffolk, respectively, in the State of Massachusetts, have invented an Improvement in Crimping or Corrugating Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a crimping or corrugating machine, and is herein shown as embodied in a machine for transversely crimping or corrugating the lip of an insole for boots and shoes, for which purpose it is particularly applicable.

The present invention has for its object to provide a crimping or corrugating machine with which the lip of the insole may be transversely crimped or corrugated in a superior manner, especially at the toe portion of the insole. To this end provision is made for feeding the insole by means of the crimping or corrugating tools. Provision is also made for holding the insole when the crimping tools are disengaged from the lip.

The invention further has for its object to provide a machine which has provision for crimping or corrugating the lip for the whole or a portion of its length, whereby the fore part may be crimped or corrugated and the shank portion left free from crimps or corrugations. Provision is also made for turning up the lip previous to its being crimped, and for holding the insole firmly against movement while the lip is being turned up.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a plan of a machine embodying the invention. Fig. 2, a front elevation of the machine shown in Fig. 1. Fig. 3, a side elevation looking toward the left in Fig. 1. Fig. 4, a side elevation looking toward the right in Fig. 1. Figs. 5 and 6, opposite side elevations of the main cam disk or wheel to be referred to. Fig. 7, a vertical section on the line 7—7, Fig. 1. Fig. 8, a plan of the work table and movable gripping jaw. Figs. 9 and 10, details of the gage to be referred to. Figs. 11 and 12, details of the lip turning tool and its guide block, Fig. 12 being a section on the line 12—12, Fig. 7. Figs. 13, 14, 15, and 16, details to illustrate the operation of the machine. Figs. 17 and 18, details of the crimping tools, and Fig. 19, a diagram to illustrate the feed movement of the crimping tools.

Referring to the drawings, *a* represents an insole provided with a lip *b* and a feather *c* for use in welted boots and shoes, and preferably made of substantially non-stretchable fiber.

The machine herein shown is provided with suitable tools for forming transverse crimps or corrugations in the lip *b*, which tools will be hereinafter described as the crimping tools, and said crimping tools are made movable after they have formed a crimp or corrugation in the lip, so as to feed the insole forward a sufficient distance to bring an uncrimped portion of the insole into position to be crimped. One of the crimping tools is provided with a cavity for the reception of a portion of the lip, and the other or coöperating tool is provided with a projection, which coöperates with the cavity to force the lip into the latter and thereby form a transverse crimp or corrugation in the lip. In the present instance, the tool having the cavity is movable toward the tool having the projection, and for sake of distinction the tool having the cavity may be designated the anvil, and the tool with the projection, the crimping tool.

In the present instance the anvil is composed of two members 10, 12, (see Figs. 17 and 18), arranged side by side and provided at their front ends with cavities 13, 14, and the crimping tool is made as a bar 15 having projections 16, 17, which coöperate with the cavities 13, 14, to force the lip *b* into the latter. The projections 16, 17, may and preferably will be made movable, for a purpose as will be described. The

anvil 10, 12, is moved toward the crimping tool 15 in the direction indicated by the arrow 20, Fig. 19, and into substantially the position shown in Fig. 13, to form a new crimp by the co-action of the cavity 13 and projection 16, and to retain the previously formed crimp in proper shape by the co-action of the cavity 14 and projection 17, and the said tools while engaged with the lip *b* and in the position shown in Fig. 13, are moved laterally in the direction of arrow 21, Fig. 19, so as to feed the insole forward and bring an uncrimped portion of the lip into position to be turned over or back into position to be crimped; and at or about the end of the forward feed of the insole, the latter is held from movement by a suitable gripping mechanism, as will be described, which grips the feather *c* of said insole. The anvil 10, 12 is then withdrawn or moved in the direction indicated by the arrow 22, Fig. 19, from substantially the position shown in Fig. 13 to that shown in Fig. 14 to release the lip, and when the anvil has been withdrawn sufficiently, a lip-turning tool 23 is moved forward from the position shown in Fig. 13, to that shown in Fig. 15, and engages the uncrimped portion of the lip and turns the latter back or over into what may be termed its crimping position. The lip-turning tool 23 is then withdrawn, and while this movement is taking place, the anvil 10, 12 and crimping tool 15 are moved in the direction indicated by the arrow 24 back to the starting position. The gripping mechanism which engages the feather *c* consists as herein shown of a stationary jaw 26 and a movable jaw 27, the latter being made as a part or section of a table or work-support 28 upon which the insole is placed.

The movable jaw 27 engages the underside of the insole below the feather *c* and forces the latter up against the stationary jaw 26, and said jaws hold the insole when the lip *b* is released by the crimping tools, and when the lip *b* is held by the crimping tools and the latter are simultaneously moved laterally to effect the feed of the insole, the movable gripping jaw 27 is lowered into the position shown in Fig. 13, and releases the insole, so that the latter may be fed forward by the crimping tools. On the other hand, when the lip *b* is released by the crimping tools, the gripping jaw 27 is in its elevated position shown in Figs. 14 and 15, and the insole is held at the feather while the anvil 10, 12, is moving in the direction indicated by the arrows 22, 24, 20, Fig. 19. It will thus be seen that the insole is fed through the machine by the crimping tools, which is especially advantageous when going around the toe portion of the insole, as the liability of the lip being distorted or imperfect crimping taking place owing to the difference in the diameters of the curves of the feather and of the turned up lip at the toe portion, is avoided or at least reduced to a minimum.

When the lip turning tool 23 is moved forward to engage the lip and turn it over, it is desirable to avoid displacement of the insole with relation to the line of feed, and to this end, provision is made for keeping the insole up in proper position, which is accomplished in the present instance by a tool or device 30, which may be designated a pusher, and which is pivoted to the end of a lever 31 and is provided with teeth or serrations on its under surface to engage the upper surface of the insole. The pusher 30 is arranged to engage the upper surface of the insole at or near the end of the forward feed of said insole, and pushes the insole up against a suitable stop or gage 32, which engages the edge of the feather, and when the insole is thus pushed into proper crimping position the gripping jaw 27 is elevated to grip the feather and hold the insole firmly while the lip turning tool 23 is turning over the lip *b*. After the feather *c* has been firmly gripped by the jaws 26, 27, the pusher 30 is lifted out of engagement with the insole and moved back into its starting position.

The projections 16, 17, of the crimping tool 15 are preferably made as rods, which are movable longitudinally in suitable grooves 34 in the bar 15, so that they may be moved at the will of the operator into an inactive position with relation to the cavities 13, 14, and thus allow the crimping tools to engage the lip to feed the insole without crimping a portion of the lip, as for instance, the shank portion of the insole, whereby liability of tearing, splitting or breaking of the lip at the shank portion is avoided.

The mechanism for operating the various tools above referred to, will now be described in detail. The members 10, 12 of the anvil are mounted in a head or box 35 attached to a lever 36 (see Figs. 4, 17 and 18), which is mounted on a horizontal pivot 37 so as to move in a vertical plane under the influence of a path cam 38 in one face of a cam disk or wheel 39, fast on a shaft 40 having bearings in the framework 41 of the machine. The path cam 38 acts on a roller 42 carried by the lever 36 and effects movement of the anvil 10, 12, in the direction of an arrow 20 to crimp the lip *b* transversely, to hold it in this position while the insole is being fed forward in the direction of arrow 21, to move the anvil in the direction of arrow 22 and to hold it in its withdrawn position while it is being moved in the direction of arrow 24 back to its starting position.

The pivot 37 for the lever 36 is mounted to turn in a boss 44 (see Figs. 4 and 7) on

the hub 45 of a lever 46, which hub is mounted to turn on a pivot pin or shaft 47 having bearings in hubs 48, 49, attached to the framework. The lever 46 for sake of distinction may be designated the feed lever, as it is oscillated on its pivot 47 to move laterally with relation to the pivot pin 47 in the directions indicated by the arrows 21, 24, in Fig. 19, and thus effect the forward feed of the insole and also the return movement of the crimping tools to the starting position of the latter. The movements of the lever 46 in opposite directions are effected by like face cams 50, 51, on opposite sides of the disk or wheel 39 near the circumference of the same, (see Fig. 1), which are engaged by rollers 52, 53, carried by the lever 46 (see Figs. 2 and 4.) The hub 45 of the lever 46 is provided as shown with an arm 54 carrying a counterweight 55. It will be seen, that while the lever 36 is free to be turned on its pivot 37, so as to move the anvil toward and from the crimping tool, both levers 36, 46, move laterally practically as one lever, and therefore the anvil carried by the lever 36 remains at all times in alinement with the crimping tool 15, which is carried by the lever 46, it being secured to an arm 57 attached to the lever 46. The crimping tool 15 may be adjusted on the arm 57 and secured in its adjusted position by a set screw 58 (see Fig. 4) and the arm 57 is adjustable on the lever 46 and is secured in its adjusted position by means of the set screw 59 or otherwise.

The lip turning tool 23 is herein shown as mounted to slide in a guide block 60 attached as by screw 61 to a bar 62, which is adjustably secured as by set screw 63 to the framework 41, (see Fig. 12) and said tool is secured at its rear end to a curved link 64 (see Fig. 4), which is pivotally attached at 65 (see Fig. 4) to the lower end of a lever 66, which is pivoted at 67 to the framework 41 of the machine, and carries a roller 68, represented in Fig. 6, which engages a cam 69 attached to one face of the main cam disk or wheel 39. The cam 69 is suitably shaped and timed to actuate the tool 23 so as to act on an uncrimped portion of the lip at the end of the feed movement of the insole.

The movable gripping jaw 27 is actuated by a path cam 70 (see Fig. 5) on the right hand side or face of the main cam 39 (viewing Fig. 1), said cam being engaged by a stud or roller 71 on a lever 72, having a hub 73 mounted on a pivot pin or stud 74 attached to the framework 41, and from which hub extends an arm 75 carrying at its end a screw 76, which engages a wedge-shaped bar 77, pivotally mounted on a pin 78, carried by the forked end of a lever 79, which is mounted on a pivot pin 80 supported by the framework of the machine.

The wedge bar 77 supports the movable jaw 27, which has extended from its underside, (see Figs. 4 and 7) a stem or spindle 81, which is guided by arms 82, 83, attached to the framework, and is provided at its lower end with a socket 84 for the reception of a plunger or pin 85, which rests on the upper surface of the wedge bar 77 and is held in engagement therewith by a spring 86 in the socket 84. The stud or spindle 81 is encircled by a spring 87 between a pin 88 and the arm 82 and serves to lower the gripping jaw 27, when permitted so to do by the cam 70, which acts on the lever 72 to lower the screw 76 and thereby permit the wedge bar 77 to be turned down on its pivot by the spring 87. The cam 70 is suitably shaped to permit the jaw 27 to be lowered while the insole is being fed forward, and to hold the said jaw up into its closed or gripping position while the crimping tools are disengaged from the lip of the insole. The stationary gripping jaw 26 in the present instance forms part of the guide block 60.

The pusher 30 is operated by a peripheral cam 90 on the right hand side or face of the main cam disk 39, said cam engaging a roller 91 (see Figs. 1 and 5), carried by the lever 31, which is provided with a curved arm 92 to which the pusher is pivoted. The arm 92 carries a stop pin 93 against which the pusher 30 is held by a spring 94, when the pusher is elevated out of contact with the insole, said stop pin acting to prevent the front or toothed end of the pusher from dropping down into the opening left in the table 28 when the gripping jaw 27 is lowered.

Provision is made for lowering the table and gripping jaw at the will of the operator, for the purpose of inserting the insole into the machine, and to this end, the table 28 is provided with a spindle 95, which is movable in the guide bars 82, 83, and has its lower end resting on a wedge bar 96, which is mounted on the pivot pin 78, the said spindle being encircled by a spring 97, which bears against a pin 98 on the spindle and the underside of the guide bar 82. The wedge bar 96 is supported by a set screw 99 carried by the forked lever 79. The hub 100 of the lever 79 has an arm 101, which is operatively connected with a foot lever or treadle (not shown) by a link or connecting rod 102, in a manner well understood. By depressing the treadle referred to, the lever 79 is turned so that its forked end is moved in the direction indicated by the arrow 103 in Fig. 2 against the action of the spring 104, with the result that the narrow portions 105 of the wedge bars 77, 96 are brought beneath the spindles 81, 95, which allows the springs 87, 97, to lower the table 28 and the gripping jaw 27, thereby leaving

ample room for the operator to properly position the insole in the machine, that is, with the front edge of the stationary jaw 26 entered under the channel flap so as to initially turn up the said flap to form the lip *b*. After the insole has been properly positioned as described, the operator releases the treadle referred to, and the spring 104 turns the lever 79 in the direction opposite to that indicated by the arrow 103, (Fig. 2), so as to bring the thicker rear portion of the wedge bars between the set screws 76, 99, and the ends of the spindles 81, 95, thereby elevating the table 28 and gripping jaw 27. The set screws 76, 99 are held from turning accidentally by means of lock nuts 106, 107.

Provision is made for rendering the crimping tools inactive at the will of the operator without interfering with the feed of the insole by the crimping tools, and this result is accomplished by means of a lever 110 mounted on a pivot pin 112 attached to the framework, and provided with a slotted hollow boss 113 at its front end (see Figs. 7 and 16), into which the cross bar or head 114 of the crimping rods or tool 16, 17, is extended. The lever 110 has an arm 115 (see Fig. 4) operatively connected as by a rod or link 116 with a suitable treadle (not shown), but which when depressed by the operator, causes the lever 110 to be turned on its pivot so that it is moved in the direction of the arrow 117 in Figs. 4 and 16, and the crimping tools are thereby moved lengthwise so as to withdraw them from their operative position with relation to the anvil 10, 12, and as a result the anvil on its forward movement presses the lip *b* against the substantially flat lower end of the bar 15, thereby leaving this portion of the lip uncrimped, while at the same time it is held with sufficient firmness to feed the insole.

The gage or stop 32 which is engaged by the feather *c*, is secured to a lever 120 pivoted at 121 to the framework, (see Figs. 1 and 2) and provided with a roller 122, which is held by a spring 123 in contact with a cam 124, carried by a lever 125, which is mounted to turn on a stationary pivot pin 126 having fast thereon a disk 127, provided with one or more notches 128, which are designed to receive a projection 129 on a handle 130, which is mounted on a pivot pin 131 to move in a vertical direction, said pivot pin being carried by the lever 125, which latter is turned in a horizontal plane by means of the handle 130, so as to bring the proper or desired portion of the cam 124 into engagement with the roller 122 and thereby properly position the gage 32 with relation to the feather *c*.

In the construction herein shown, the gage 32 is moved into its extreme forward position to engage the feather at the forepart of the insole, by the front end of the cam 124, and is moved into its extreme rear or backward position to engage the feather at the shank of the insole, by the rear end of the said cam being brought into engagement with the roller 122. The cam 124 may be locked in these extreme positions or at any desired intermediate position by entering the projection 129 on the handle into a notch 128 in the stationary disk 127. The anvils 10, 12 are made of unequal length (see Figs. 17, 18), and one as 12 is made longer than the other, 10, so that the anvil 12 may be engaged with the crimp or corrugation last formed by the anvil 10, before the anvil 10 is engaged with an uncrimped portion of the lip. The anvil 12 is provided with a slot 140 into which enters a pin 141 on the anvil 10, and the rear end of the anvil 12 engages one arm of an elbow lever 142, whose other arm is pivotally connected with a rod 143 extended through the lever 36 and encircled by a spring 144, which bears against the lever 36 and against a nut 145 on the rod. The spring 144 normally turns the lever 142 so that the front end of the anvil 12 projects beyond the front end of the anvil 10, and when the anvils are moved forward in the direction of arrow 20, (Fig. 19), the anvil 12 will be engaged with the last formed crimp before the anvil 10 engages the uncrimped lip, and when the anvil 10 is engaged with the lip, the front end of the anvil 12 will be forced back substantially flush with the front end of the anvil 12 from the position shown in Fig. 17 to that shown in Fig. 18, thereby preventing distortion of one crimp while the next one is being formed and insuring that the lip *b* will be provided with uniform crimps.

The cam shaft 40 may be rotated by power and by hand, and for the latter purpose, it is provided with a hand wheel 150, while for the former purpose, it may be provided with any suitable driving mechanism. In the present instance, a friction driving mechanism is provided. To this end the cam shaft 40 has fast on it a disk 151 (see Figs. 2 and 4), with which coöperates a wheel 152 provided with a rubber or other friction surface 153, and mounted on a main or driving shaft 154 to rotate therewith and to move longitudinally thereon. The driving shaft 154 is journaled in a yoke-shaped frame comprising arms 156, 157 and a hub 158, which latter is mounted to turn on a pivot pin 159 having bearings in the framework of the machine. The driving wheel 152 is normally held out of contact with the driven member or disk 151 by a spring 160 (see Fig. 2), which encircles a rod 161 fastened at one end to the framework and having its other end extended through the arm 157 of the yoke-shaped frame and through a sleeve or ring 162, which is free to be turned on said rod

and is provided with a projection 163, which is normally held in a cavity 164 in a boss 165 on the arm 157.

The projection 163 is normally held in its socket or cavity 164 by a spring 166, encircling the rod 161 between a nut 168 and a washer 169, which bears against the sleeve 162. By turning the sleeve 162 on the rod 161, the projection 163 is removed from its cavity 164 and engages the face of the boss 165, thereby moving the washer 169 so as to move the end wall of a slot 270 from contact with a pin 271 on the rod 161 (see Fig. 2) and placing the arm 157 under the influence of the spring 166, which turns the arm 157 so as to compress the spring 160 and bring the friction driving wheel 152 into contact with the driven member or disk 151, which starts the machine in operation. The sleeve 162 is provided with a handle 170 for turning it. When the sleeve 162 is turned, so that the projection 163 enters the cavity 164, the spring 166 forces the end wall of the slot 270 against the pin 271, and removes the influence of the spring 166 from the arm 157, which is thus placed under the influence of the spring 160 and is moved thereby so as to disengage the driving wheel 152 from the driven disk 151.

The speed of the machine may be regulated by moving the driving wheel 152 longitudinally on the shaft 154 toward and from the center of the driven member 151, which may be effected by the operator depressing a foot treadle (not shown), but which is connected by the link 171 (see Figs. 2 and 4) with an arm 172 of an elbow lever 173, which is pivoted at 174 to the framework, and is engaged with the grooved hub 175 of the driving wheel 152. The lever 173 may be returned to its stationary position by a spring 176. The movement of the driving wheel 152 toward the center of the disk 151 may be limited by a screw 178, which forms an adjustable stop. The driving shaft 154 may be driven in any suitable manner and is shown as provided with a driving pulley 180.

We have herein shown one construction of machine embodying this invention, but it is not desired to limit the invention to the particular construction shown.

Claims:

1. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, and means for bodily moving said tools while engaged with said lip to feed said insole.

2. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, means for bodily moving said tools while engaged with said lip to feed said insole, and means for turning an uncrimped portion of said lip into position to be crimped.

3. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, means for moving one of said tools toward the other to effect a transverse crimp in said lip and for disengaging said tool from said lip, means for moving said tools while engaged with said lip to effect the feed of said insole, and means for gripping the insole while the lip is released by said crimping tools.

4. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, and a movable lip turning tool to act on an uncrimped portion of the lip and turn it into position to be crimped by said crimping tools.

5. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, and a lip turning tool movable toward and from one of said crimping tools.

6. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, one of said tools having a cavity and the other a projection coöperating with said cavity to force the lip into the same and capable of being moved into an inactive position to enable a portion of the lip to be left uncrimped.

7. In a machine of the character described, in combination, mechanism for transversely crimping the lip of an insole, mechanism for engaging the feather of said insole, means for moving said crimping mechanism bodily while engaged with the lip to feed the insole, and means for releasing the feather while the insole is being fed by the crimping mechanism.

8. In a machine of the character described, in combination, crimping tools constructed and arranged for forming a transverse crimp in the lip of an insole, means for bodily moving said tools simultaneously in one direction while engaged with the said lip, and means for moving one of said tools in a different direction to engage it with said lip and to disengage it therefrom.

9. In a machine of the character described, in combination, means for transversely crimping the lip of an insole, a tool for turning an uncrimped portion of the lip into position to be crimped. and means for moving the insole in opposition to the lip turning tool.

10. In a machine of the character described, in combination, means for transversely crimping the lip of an insole, a tool

for turning an uncrimped portion of the lip into position to be crimped, a pusher to engage the insole and move it toward the lip turning tool, and means to operate said pusher.

11. In a machine of the character described, in combination, a table to support an insole, a movable gripping jaw forming a section of said table, a stationary jaw located above the table and coöperating with said movable gripping jaw to engage the insole, and means for transversely crimping the lip of said insole.

12. In a machine of the character described, in combination, crimping tools constructed and arranged for transversely crimping the lip of an insole, and comprising a member having a projection to engage one side of said lip, and an anvil member having a cavity to engage the other side of said lip, and means for moving the anvil member toward its coöperating member.

13. In a machine of the character described, in combination, crimping tools constructed and arranged for transversely crimping the lip of an insole and comprising an anvil composed of members provided with cavities for the reception of the said lip, and a coöperating member having projections to force the lip into said cavities, one of the anvil members being movable independently of the other.

14. In a machine of the character described, in combination, a table to support the insole, a gage to position the insole on said table, a lever to move said gage, a cam to act on said lever and position said gage, and a lever carrying the said cam.

15. In a machine of the character described, in combination, a table to support the insole, a gage to position the insole on said table, a lever to move said gage, a cam to act on said lever and position said gage, a lever carrying the said cam, a pivoted handle attached to said lever, and a notched device coöperating with said handle to hold the cam lever stationary.

16. In a machine of the character described, in combination, a movable gripping jaw provided with a spindle, a wedge-shaped bar coöperating with said spindle to elevate said jaw and to permit it to be lowered, a spring to move said jaw into its lowered position, a cam, and means actuated by said cam for moving said wedge-shaped bar in opposition to said spring.

17. In a machine of the character described, in combination, a table to support an insole and vertically movable, a wedge-shaped bar coöperating with said table to raise the same and to permit it to be lowered, a lever to which said wedge-shaped bar is secured to move therewith, means for moving said lever, and means to lower said table, when said lever is moved in one direction.

18. In a machine of the character described, in combination, transversely crimping tools to engage the lip of an insole to crimp the same, means for moving said tools bodily to feed the insole, means for moving one of said tools toward and from the other of said tools, means for gripping the insole to hold the same while the lip is released from the crimping tools, and a lip turning tool movable into engagement with said lip to turn an uncrimped portion of the lip into crimping position.

19. In a machine of the character described, in combination, mechanism constructed and arranged for transversely crimping the lip of an insole and of feeding the latter by the lip, and means for rendering said crimping mechanism inactive to crimp the lip while it remains active for feeding the insole by the lip.

20. In a machine of the character described, in combination, mechanism constructed and arranged for transversely crimping the lip of an insole, and means for rendering said mechanism inactive for crimping the lip while leaving the said mechanism active to engage the lip.

21. In a machine of the character described, in combination, crimping tools constructed and arranged to transversely crimp the lip of an insole, a lever carrying one of said tools, and a second lever for moving the other of said crimping tools toward and from its coöperating tool, said second lever being pivoted to the first-mentioned lever to move therewith in one direction and independently thereof in another direction.

In testimony whereof, we have signed our names to this specification.

ANALDO M. ENGLISH.
HOWARD W. GIBBS.