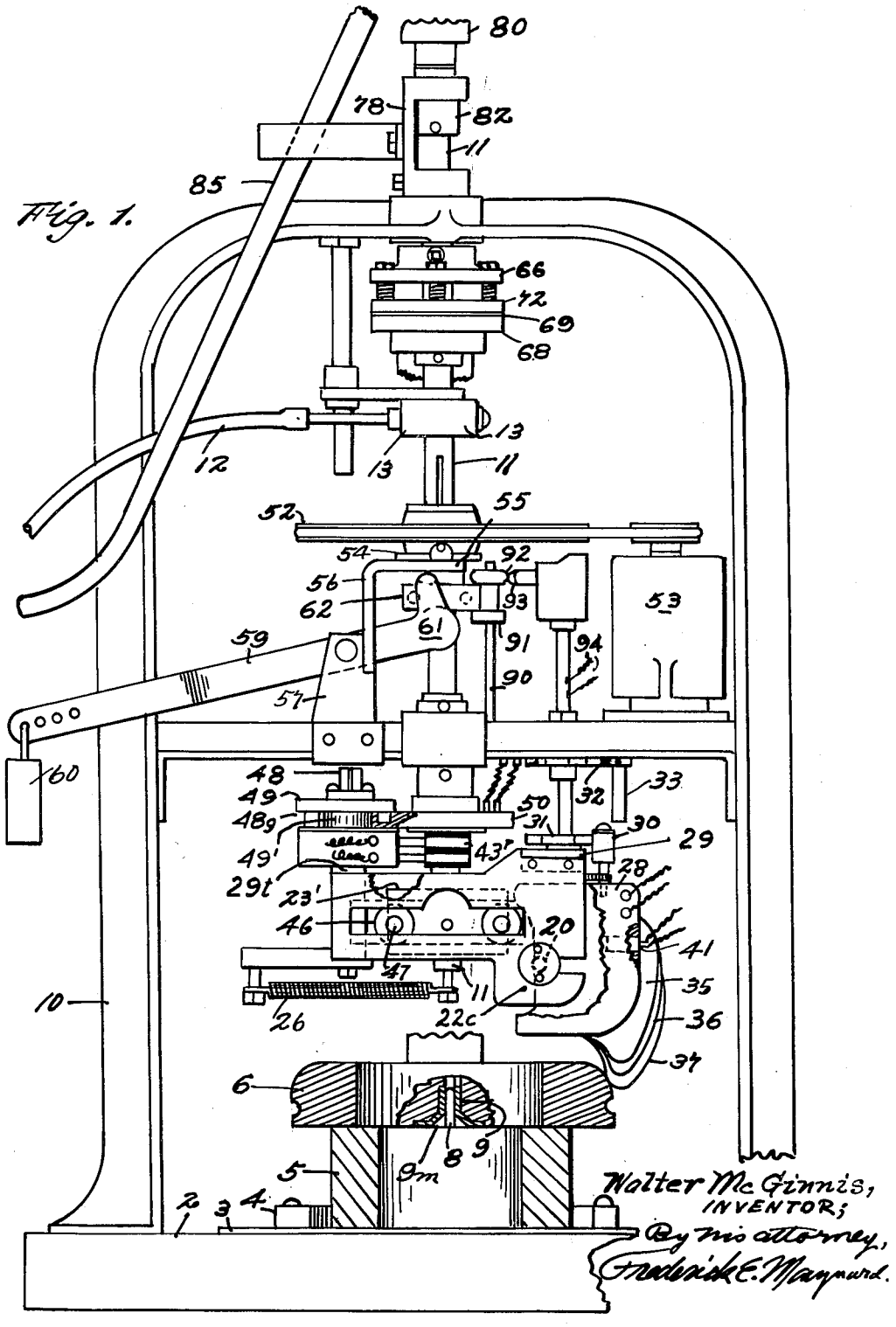
March 10, 1953 W. McGINNIS 2,630,946

HAT FLANGE IRONING MACHINE

Filed June 17, 1947 5 Sheets-Sheet 1

Fig. 1.



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HAT FLANGE IRONING MACHINE

Filed June 17, 1947 5 Sheets-Sheet 2

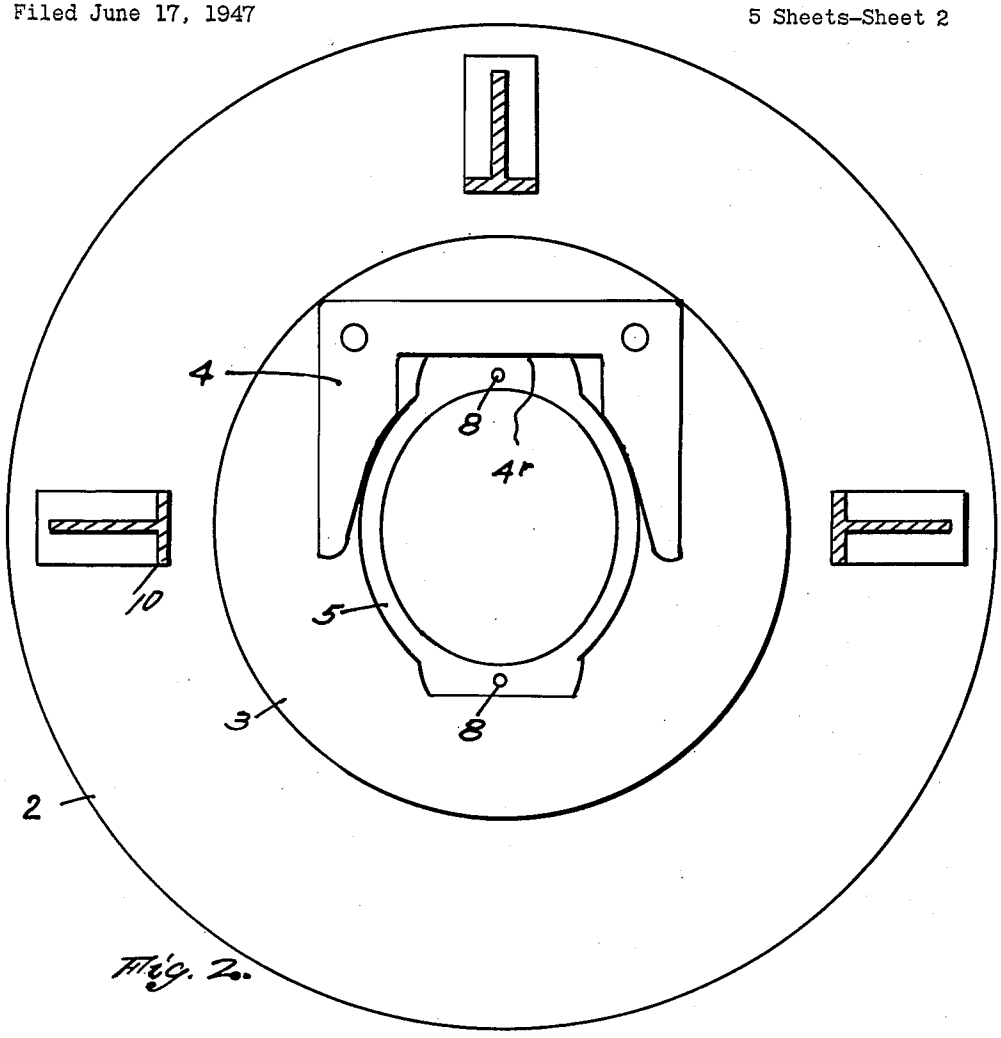


Fig. 2.

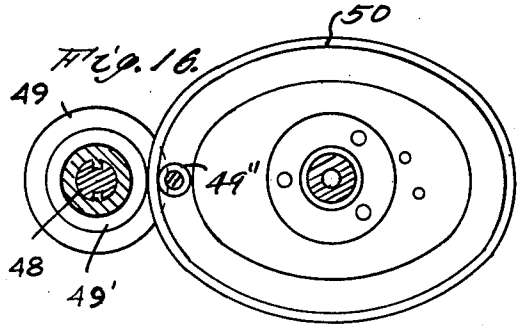


Fig. 16.

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HAT FLANGE IRONING MACHINE

Filed June 17, 1947 5 Sheets-Sheet 3

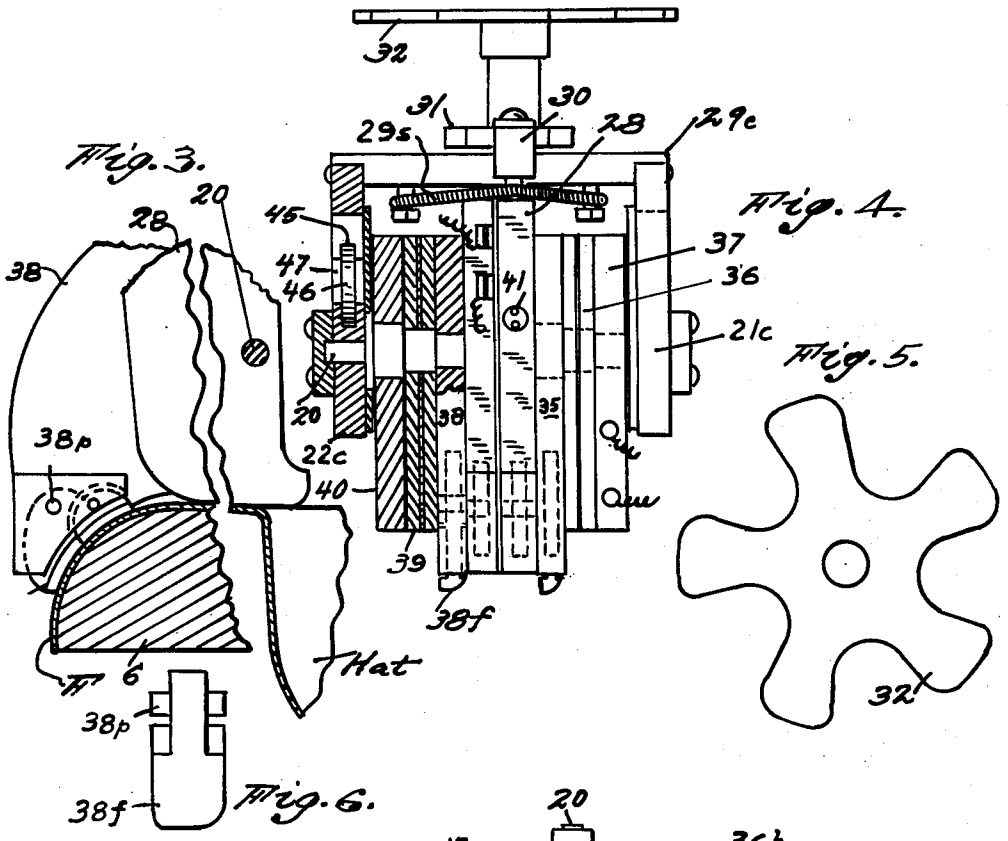


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

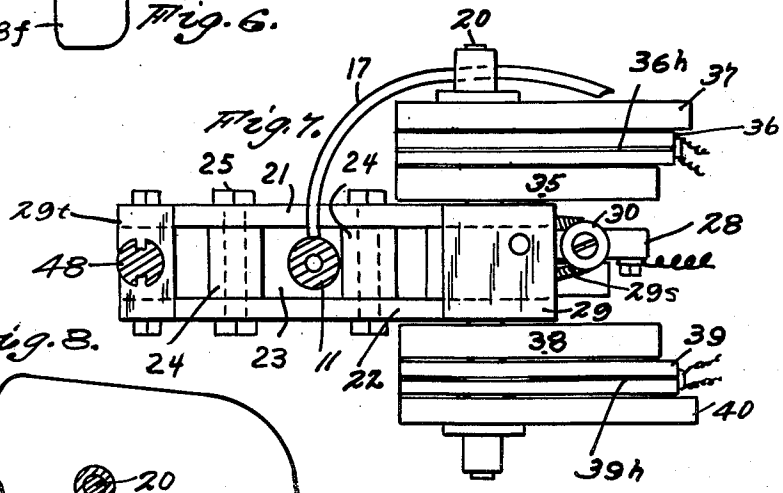
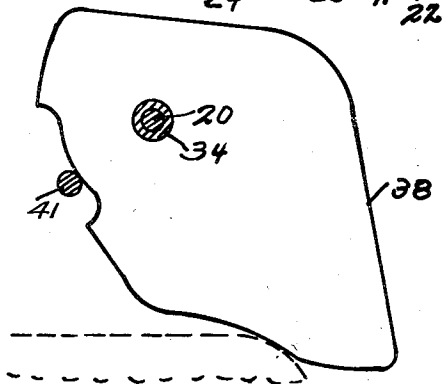


Fig. 7.

Fig. 8.



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March 10, 1953 W. McGINNIS 2,630,946

HAT FLANGE IRONING MACHINE

Filed June 17, 1947 5 Sheets-Sheet 4

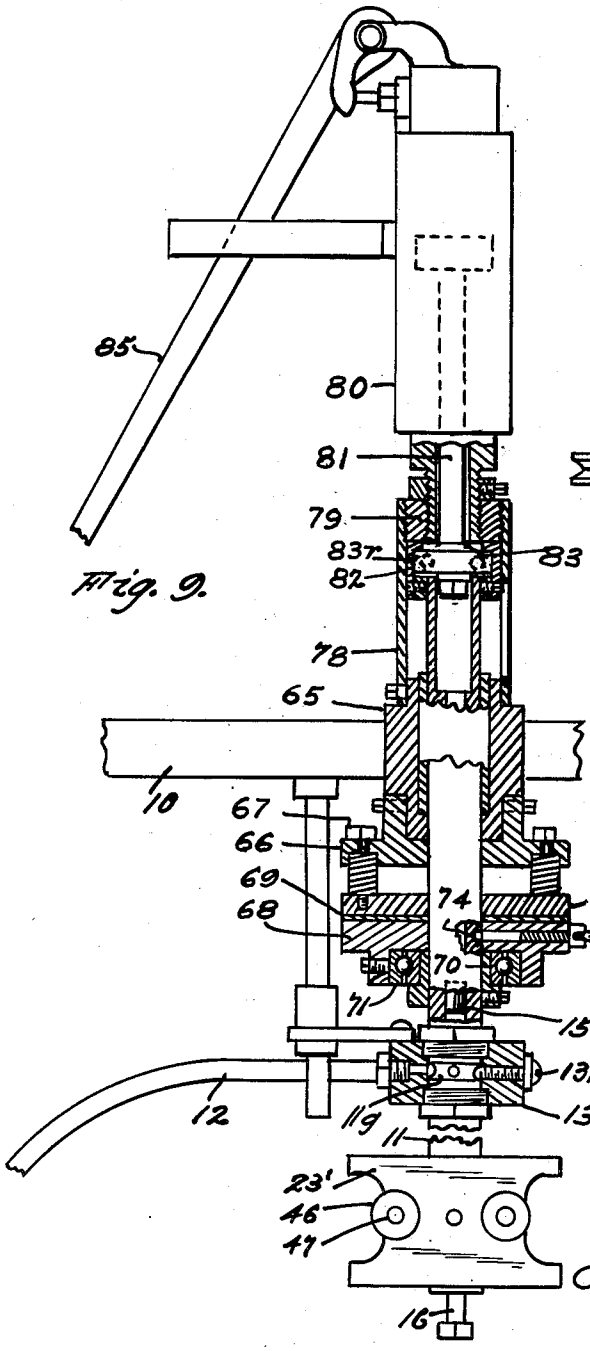


Fig. 9.

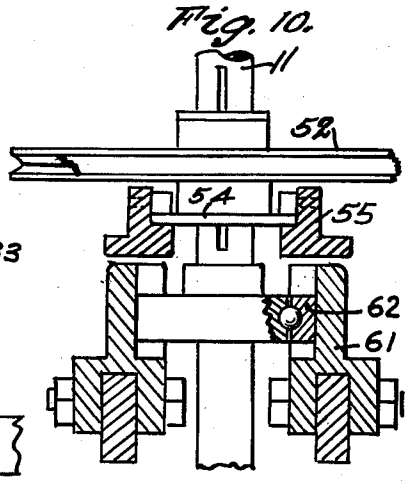


Fig. 10.

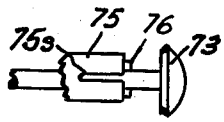


Fig. 11.

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HAT FLANGE IRONING MACHINE

Filed June 17, 1947 5 Sheets-Sheet 5

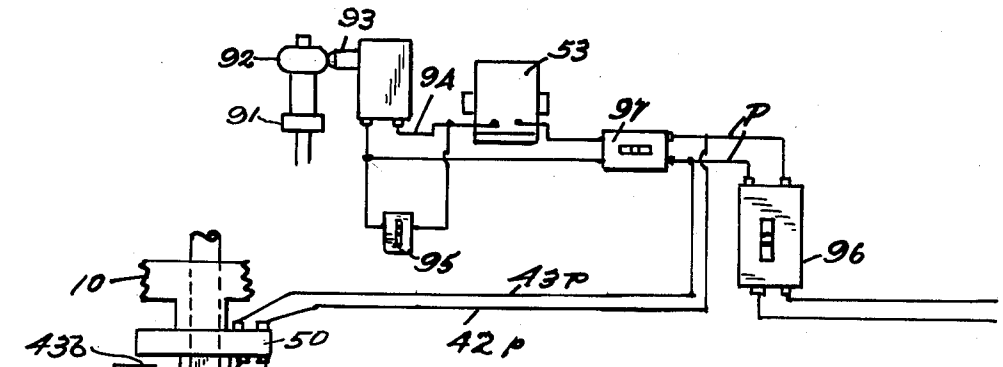


Fig. 12.

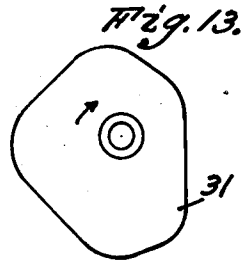
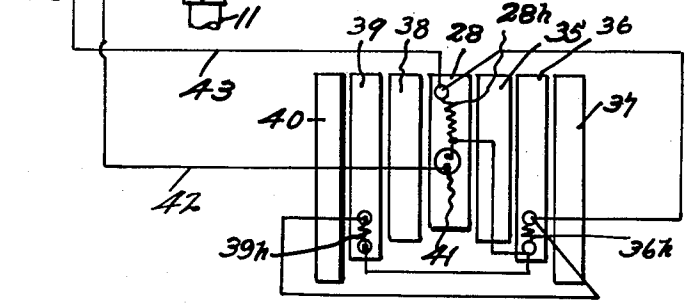


Fig. 13.



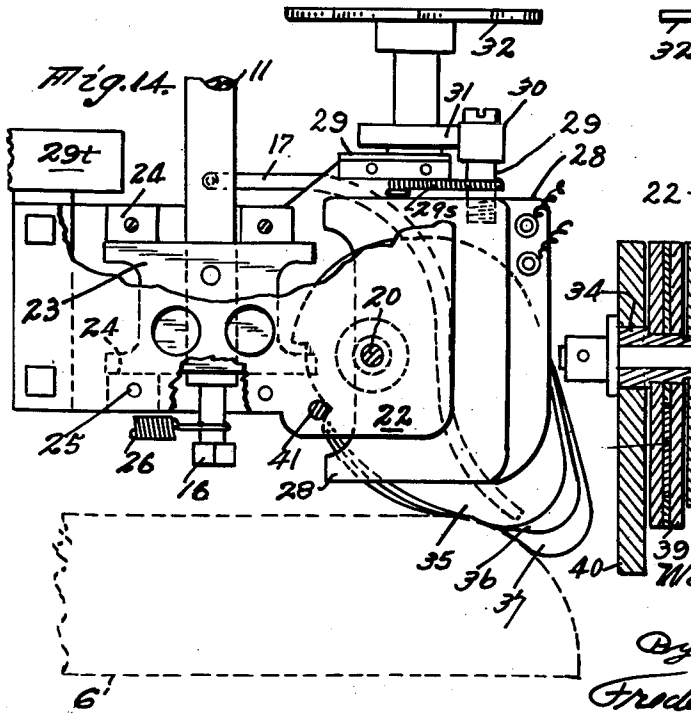


Fig. 14.

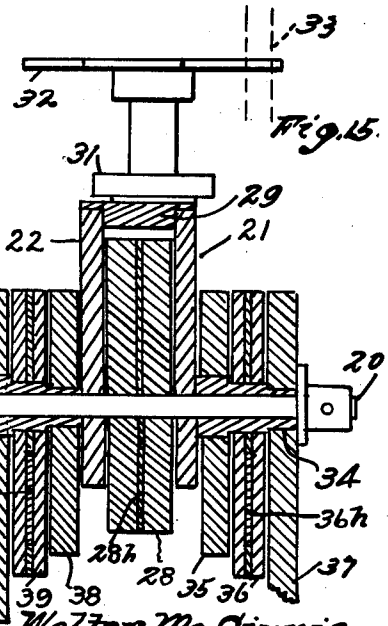


Fig. 15.

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Patented Mar. 10, 1953

2,630,946

UNITED STATES PATENT OFFICE

2,630,946

HAT FLANGE IRONING MACHINE

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Application June 17, 1947, Serial No. 755,133

33 Claims. (Cl. 223—14)

1

This invention is a hat flanging machine.

Various machines have been proposed, and some used, for the mechanical ironing of hat flanges; that is, the pressing is done by machines including means to apply an iron, of one kind or another, to the flange—the intent being to eliminate manual iron operation. Machines that are now in use, and the patent art machines are not what can be called simple, mostly necessitate a running support for the hat to be pressed. Machines for this purpose and now in use are very costly, are cumbersome and heavy, and, most seriously, are not of rapid operation in capacity production.

Therefore, it may be stated that one of the cardinal objects of the instant invention is to provide an automatic flanging machine that is relatively simple, considering the problem, and of high production capacity.

A high purpose of the invention is to provide a flanging machine which reduces operator's attention to a minimum so that one operative of average ability may attend to several of these machines while they are running without noticeable fatigue. Fatigue from manual ironing of hat flanges is notorious and operatives must have frequent rests or change of work during a day's time at work.

Another and important object of the invention is to provide a flanging machine in which running assemblies are reduced to a minimum—this machine incorporating but a single organization which requires motion during the ironing process; that organization including a rotative ironing head.

Also, an object of the invention is to provide a machine powered mechanism for instantly shifting the ironing head toward and from a hat supporting, flanging block, and in this connection an object is to provide means to be manually actuated so that the ironing head may be shifted away from the block irrespective of the instant position of the head shifting mechanism.

Provision is given by this invention for the safe holding down of a hat block on its associated conventional portable-type stand by operative parts forming a feature of the ironing head, and a provision is made to greatly facilitate the temporary mounting of one or another of an assortment of hat blocks on one of the said stands, and whereby to greatly extend the useful life of each of the said blocks by a novel armoring dowel pin socket.

Heretofore it has been an arduous manual task, and one not easily mechanically accomplished,

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to effectively, rapidly and safely press the inner or "band" edge of the hat flange. This invention provides an ironging head having certain ironing members functioning expressly to carefully work on an annular zone of the flange immediately adjacent to the band edge whilst other coordinate and relatively independently moving iron members are at work on respective zones of the hat flange outwardly from the band zone.

The invention has as a further object the provision of means which will permit of the very rapid and reliable placement of successive stand-and-block sets, each carrying a properly applied and secured hat, into given position for the immediately following, lowering of the ironing head onto the hat and the rapid rotation of the said head in its effective position on the flanges, and it can here be stated that means are provided whereby to carefully predetermine the effective weight of the ironing head in operating position on the engaged (and sheathed) hat flange. And means are provided whereby if so desired water vapor can be supplied at the hat flange.

The present machine is for the rapid pressing of hat flanges which are oval in plan and generally curve upward at the rim and means are provided to effect an oval, orbital motion of the ironing head in close conformance to the figure of the plan of the flange.

For economical operation and safety means are included for electrically heating the ironing head by providing certain of its ironing members with included heating elements of approved type, other elements of the head being heated by radiation from the generating members, an automatic heat controller being included in the head.

For power economy and for precaution, means are provided whereby the rotational drive of the ironing head can be automatically stopped when the head is shifted from its effective position as to the hat block; though continuous rotation of the head may be had if and when a skilled operative so wishes.

The mechanism which functions to lower and raise the ironing head is preferably of a type including a fluid pressure operated piston and the invention embodies a swivel connection whereby the rotative head is suspended and which provides for the ready upward shift of the head assembly whilst the suspending piston may be in its lower position. Also this connection provides for a lost descending motion of the swivel-hanger device immediately after the ironing elements of the head have come to rest on the presented hat flange (it will not be repeated that

the hat flange is normally covered by a moist and protecting fabric). This lost motion swivel safely allows for very material vibrations of the ironing head incidental to irregularities of hat flanges and the supporting blocks that may be presented to the effective head.

With respect to the ironing head its structure involves a rotary carrier, which will hereinafter be called the member, and with it is reciprocatively combined a basket having a set of independently pivoted, closely nested, generally flat, parallel respective-zone pressing elements. Since the whole head structure will operate at a considerable degree of heat, an object here is to provide an efficient and long life bearing between the said member and the basket.

The invention resides in certain advancements in this art as set forth in the ensuing disclosure and has, with the above, additional objects and advantages as hereinafter developed, and whose constructions, combinations and details of means will be made manifest in the following description of the herewith illustrative embodiments and their manner of operation; it being understood that modifications, variations and adaptations may be resorted to within the scope, spirit and principles of the invention as claimed in conclusion hereof.

Fig. 1 is a sectional, front elevation of the machine. Fig. 2 is a sectional plan showing the table and its affixed, block stand centering device and an applied, portable block stand and its centering device. Fig. 3 is a vertical section of a side of a flange block with ironing plates in effective position and partly broken away. Fig. 4 is a vertical cross-section of an ironing head, on the tilting axis of the irons. Fig. 5 is a plan of a star wheel of an iron rocking device. Fig. 6 is an end elevation of a fly-iron detached from its respective carrying iron (of Fig. 3). Fig. 7 is a plan of a modified form of ironing head. Fig. 8 is a side elevation of a detached iron, in effective position. Fig. 9 is an elevational, vertical section of the elevating, jack assembly (omitting certain parts just above the ironing head block). Fig. 10 is a detail view of the hold down device for the driving pulley of the ironing shaft. Fig. 11 is a detail view of a shaft brake locking key. Fig. 12 is a diagram of the electrical circuits. Fig. 13 is a plan of an iron tilting cam. Fig. 14 is a sectional elevation of the head shown in plan in Fig. 7. Fig. 15 is a vertical section along the axis of the tilting irons of Fig. 14. Fig. 16 is a plan of the elliptic, iron reciprocating cam.

On a suitable bed **2** there is a central, friction pad **3**, Fig. 2, on the rear portion of which is fixed a V-plan jig **4** opening forwardly for the ready and quick insertion and solid positioning of a suitable and preferably standard type of flange stand **5**, commonly of elliptical and tubular form. Onto the top of the stand is readily attachable (at a remote hat bench not shown) one or another of a variety of flange blocks **6**, Fig. 1, onto the top of which a hat flange is imposed, and generally moistened. A portion of an applied hat flange F is shown in Fig. 3; being omitted elsewhere for clarity of disclosure of the mechanism.

These flange blocks are of hat flange shape in plan and are of ring form, and the crown of an applied hat hangs in the block chamber of the stand **5**. It is highly desirable that the flange block be securely disposed on the stand **5** to prevent tilting and objectionable vibration of the block on the stand when in ironing position in the machine herein described.

Therefore, to provide for fast assembly of a flange block on a plate or iron flange stand, and to secure long life of the block for repeated use, in hat ironing operations, the stand is provided with front and rear dowel pins **8**, in its top face, to readily enter the conical mouth, pin centering, armor sockets **9** sunk in the flat bottom of the block **6**, Fig. 1. The conic mouth **9***m* facilitates rapid placement of a flange block onto the pins of a stand (before insertion of the stand in this ironing machine). The sockets **9** prevent wear of the wooden blocks and with the elongate pins **8** fitting well into the bores of the sockets make an effective stabilizing connection of the block onto its stand and make a safely portable assembly to be quickly thrust into the bed jig. The side walls of the jig fit and center the block stand, whose rear flat wall **4***r* rests firmly on the back wall of the jig; which thus centers and supports the stand, aided by the friction pad **3**.

Rigidly upstanding from the bed **2** is a substantial frame **10** which supports the several mechanisms of this machine. There is suitably journaled in this frame a substantial, rotary and preferably tubular shaft **11**, a feature being that a vaporous fluid is supplied to this shaft by way of a flexible hose **12**, Fig. 9, to a fixed fitting **13** feeding shaft ports **14** just below a shaft bore-plug **15**; a plug **16** closing the lower end of the shaft, this hanging vertically over the center of the removably interposed flange block on the bed. The vapor is discharged from the shaft by way of a small, rigid tube **17**, Fig. 14, directly onto the flange of a hat being pressed by a next described ironing head.

The ironing head.

Figs. 14 and 15 illustrate one embodiment of an ironing head. The head here disclosed is distinguished by the provision of a system of wholly independent plates or irons each of which is designed to orbitally traverse a generally oval zone of a hat flange while the flange is solidly supported on a flange block **6**, Fig. 14. The plates are of suitable thickness and flat and vertically disposed side by side in a close gang and vertically oscillate on a common transverse spindle **20**. The spindle is supported at its ends in parallel vertical side walls **21** and **22** of a gang basket which slidably embraces a substantial carrier member **23** rigidly fixed on the lower end of the shaft **11**; Fig. 7 showing the carrier member and its irons in plan.

To effect efficient reciprocation and easy lubrication of the hot iron cage on the member **23** upper and lower pairs of block-shape bearings **24** are pivoted on cross bolts **25** in the cage walls **21**—**22** and beyond opposite sides of the interposed shaft **11** to provide for across-shaft reciprocation of the cage on the member **23**, horizontally above the flange block **6**. A substantial tension spring **26** connected to the plug **16** and to the cage tends to constantly pull the cage in one direction against a controlling cam device, mentioned later.

Referring in detail to the pivoted irons as best seen in Figs. 8 and 14, a central iron **28** pivots directly on the spindle **20** and moves freely between the cage walls **21**—**22** and under a bridge **29** affixing said walls at one end. Fig. 14 shows certain irons broken away to uncover the bottom portion of the central iron **28** as being in a position to engage and press a zone of the hat flange immediately at and around the band seam of the flange.

It is a particular object of this invention to provide an iron of plate form which will very

effectively press the band zone of a hat flange. The iron 28 is adapted to be lowered directly onto the seam zone and to repeatedly traverse it, orbitally, and at the same time to be firmly oscillated, by a suitable means, in and out across the inner margin of the seam zone—for a good pressed finish.

To do this the iron 28 has a top stud 29 with a roller 30 constantly pulled by a spring 29s against a step-face cam 31 rotatively mounted on the bridge 29 and fixed to a star wheel 32 which, as the shaft 11 rotates the carrier member 23 and its cage, will intermittently engage an intercepting, fixed prong 33 on the frame 10.

To secure a very efficient ironing head the spindle 20 is provided with stepped journal sleeves 34 outwardly of the walls 21—22 and on the steps thereof is a right-hand side set of irons or plates 35, 36 and 37 which are slightly relatively spaced for free action on their sleeve 34. On the left side of the cage is a set of irons 38, 39 and 40, on respective steps of their sleeve 34. The irons of the two said sets all freely swing vertically and their outermost bottom edge portions are adapted to firmly drop into effective position on respective, concentric zones of the presented hat flange as the entire ironing head is lowered for that purpose, as will be explained.

The tilt of the irons (except iron 28) is limited by a stop bar 41, Fig. 14, on the cage, and as the ironing edges of the irons 35 to 40, inclusive, engage the hat flange these irons tilt up and their own weight is all the pressure imposed on the flange at the respective zone. The iron 28 is applied in a nicely determined degree, as hereinafter stated.

It is found to be not necessary to provide all of the independent irons of the head with individual heating means. As shown, the center iron 28 is provided with an electric heating element 28h (of conventional form) and irons 36 and 39 have heating elements 36h and 39h respectively, Figs. 7 and 12, and when these latter are energized the flanking irons on each side of the irons 36 and 39 will be efficiently heated by radiation therefrom; also by conduction.

In the iron 28 there is a thermostatic switch 41 connected in the main circuit 42—43 to break the heating circuit to the elements at a predetermined high temperature. Each of the heating elements is connected in parallel to the main circuit 42—43, Fig. 12.

There is shown in Figs. 1 and 4, a form of ironing head assembly in which all of the independent irons 28, 35, 36, 37, and 38, 39 and 40, are arranged on the supporting spindle 20 (and its step bearings) between external cage walls 21c and 22c which are connected by a bridge 29c at one end and a tie 29t at the other end, Fig. 1. The walls 21c and 22c have windows with top and bottom, longitudinal channel tracks 45 in which pairs of bearing rollers 46, having trunnions 47 in the driving member 23', operate due to longitudinal reciprocation of the cage which carries the ironing head (the iron assembly).

The iron reciprocator

While the shaft 11 is rotating it forms the power agent of a mechanism which reciprocates the iron cage carried by the suspending member 23 (23') on the shaft.

Rigidly fixed on the tie member 29t is a post 48 on which is splined a grooved cap 48c on which there is a roller 49 operatively fitting in a fixed, channel cam 50 which fits in the cap groove 48g to keep it from vertical motion as to the cam 50, Fig. 16. A cam roller 49' is pressed inward by a tension spring 26; the outer wall of the channel cam preventing undue out thrust of the cage, as might occur; and the main cam roller 49' normally running on the rim of the cam 50.

The cam 50 is rigidly secured to a cross-brace of the frame 10, concentrically of the shaft 11 and therefore as the cage is rotated by the shaft the oval contour of the cam causes the cage to concurrently reciprocate with the resultant generally ovate orbital sweep of the ironing assembly while the irons are in engagement with a hat flange reposing on the flange block 6 then interposed below the ironing head, Fig. 1.

Iron raising and lowering means

Before a hat block can be safely put in ironing position under the ironing head this should be elevated a suitable degree. Moreover, it is desirable that when the irons are in lowered, effective position the center iron 28 will have a predetermined maximum pressure on the hat flange. Further, it is desirable to have both a mechanical lowering and lifting means for the shaft 11 and its attached devices, and a safety or manual device for lifting the shaft assembly independently of the then low-position of the power means.

Therefore, above the cam 50 there is splined on the shaft 11 a pulley 52 driven at a suitable speed by a gear ratio motor unit 53. The lower hub of the pulley has a flat flange 54 which is engaged and held against axial shift by yoke arms 55 of a bracket 56 extending up from a chair 57. On the chair is pivoted a manual lever 59 whose outer end carries a poise 60 of suitable and variable weight (as by buck shot load) and whose inner end includes a yoke 61 engaging an outer, free ring 62 of a ball bearing mounted on the shaft against end play. By this lever the shaft assembly can be instantly thrust upward to lift the irons from the hat; while the shaft is idle or is rotating.

The shaft brake

Means are provided for the purpose of arresting the rotation of the shaft as it is elevated to upper position clearing the ironing head from the work.

Above the shaft vapor joint 13, Fig. 9, the frame 10 is provided with a journal 65 on the lower end of which is clamped a collar 66 in which float vertical bolts 67 carrying a brake disc 68 faced with a friction pad 69.

Fixed on the shaft 11 is a ball bearing race 70 having an outer ring 71 on which is fixed a discal brake shoe 72, whereby, as the shaft is elevated its rotation is quickly stopped by engagement with the fixed pad 69. The brake can be decommissioned, made inoperative, at will by pulling out a latch 73 from a socket 74 in the shaft. The latch can be locked open by rotation thereof in its sleeve 75 to bring a holding pin 76 across the outer end of the sleeve; this having a longitudinal spline slot 75s for the pin.

The shaft power jack

A distinctive feature of this invention resides in a power mechanism, preferably of fluid pressure type, for lowering and raising the shaft and its attachments at will of the operative.

Extending up from the journal 65 there is a fixed sleeve 78 having a top bushing 79 in which is fixed the lower end of a pneumatic motor

cylinder 80 having a piston rod 81 extending down through the bushing 79.

In this mechanism provision is made for free rotation of the shaft as to the elevating rod 81 and also for a free ascent or descent as to the said rod. Hence a swivel is provided including a thimble 82 fixed on the upper end of the shaft, the bore of which provides for the relative descent of the intruded end of the rod 81. On the rod end is mounted a ball bearing 83 in which the rod is axially slidable, from the upper position, Fig. 9, to a lower position in the shaft.

The bearing 83 includes an outer ring 83r which is fixed in the thimble 82 and by which the shaft is raised or lowered by the non-rotative rod 81, while the shaft is idle or is rotating.

From the above it will be seen that the piston rod lowers the ironing head onto the surface of the subjacent hat flange and after the head is arrested on the flange the rod can move down its full piston stroke and leave the full, effective load of the several irons for pressure on the hat flange.

The motor control

It is desirable that the motor 53 will be automatically stopped as the driven shaft 11 is elevated, and automatically started again as the shaft moves down for another pressing operation in the machine, and provision is made for such functions.

Fixed on the frame cross piece is a post 90 on which is slidable a spool-shaped cylinder 91 which embraces the near side of the ring 62 and therefore is reciprocated by and with it (and the shaft). The upper end of the cylinder 91 has a rim 92 which, as the cylinder rises, engages and throws off a yieldable switch 93 fixed on the frame and thereby breaks the motor circuit 94, Fig. 12. When the shaft 11 is next lowered the actuating rim recedes and allows the automatic switch 93 to again close the motor circuit.

While the motor is idle a fresh hat, on a flange block, is thrust onto the bed 2 and the jack lever 85 is struck down to effect the lowering of the iron carrying shaft 11. After a little practice on running the machine the operative may desire to speed up production and therefore a by-pass circuit switch 95, Fig. 12, is wired around the automatic switch 93, for use at will for securing continuous operation of the motor and the shaft 11. The shaft can be reciprocated readily at will during continuous rotation by its motor.

The heater circuit

The circuit 42—43 includes a pair of yieldable contact brushes 42b and 43b mounted and insulated in the block 29t and in constant contact with insulated brush rings 42r and 43r, Fig. 12, fixed to the stationary cam 50. From the rings extend insulated wires 42p and 43p connecting to bus wires P for power from a remote master switch 96 which serves the motor circuit. A local, service switch 97 is provided in the motor circuit for convenient use.

It will be seen that collectively the several irons will effectively cover the entire hat flange surface that is to be pressed.

Figs. 3 and 6 illustrate small fly-irons 38f having pivots 38p suitably mounted for instance in an iron 38, to each sweep in respective, close zones of the flange, as may be desired in some cases instead of having the foot of the iron itself do the pressing.

The fitting 13 is swivelled against axial shift on the shaft 11 by key screw 13k interlocking in a respective peripheral groove 11g in the shaft.

The grooved block 49 has an out-throw control roller 49'' hooking into the channel of the fixed cam 50, Fig. 14.

What is claimed is:

1. A hat flanging machine having, in combination, means including a stationary hat block having a rim for supporting a hat flange with one face outwardly, and means for ironing the flange and comprising a shiftable mechanism including a carrier, means to rotate the carrier above the hat flange on the block and an ironing head structure reciprocative on the carrier while the latter is in rotation, and means for shifting said mechanism toward and from the block.

2. The machine of claim 1; said shifting means including a fluid power actuated device for shifting said mechanism to move the said head structure toward and from effective position and being connected to said mechanism by a swivel joint.

3. The machine of claim 1; said shifting means including power means to reciprocate said mechanism and including a piston, and a swivel and lost-motion connection between the power piston and the mechanism.

4. The machine of claim 1; said shifting means including power means including a piston having lost motion connection to said mechanism whereby to lower the head structure to effective position on the hat flange and then disconnect from the said structure so that only the load of the weight of the said structure is effective in pressing the engaged flange.

5. The machine of claim 1; and said shifting means including a suspending device for the said mechanism and which disengages therefrom when the head structure is in effective position on the flange, and a counterbalance attached to the said structure to predetermine its effective weight.

6. The machine of claim 1; said shifting means including a raising and lowering power piston device for and connected to the said mechanism, and auxiliary manual means for raising the structure while the said device is at its lower position.

7. A hat flanging machine including a power reciprocated elevator shaft, a power rotated jack shaft coaxial with the elevator shaft and a lost motion and swivel connection between said shafts, a stationary flange block coaxial with said shafts, a carrier fixed to the jack shaft to turn therewith, a basket mounted on the jack shaft carrier for transverse reciprocation as to the jack shaft and having a set of ironing elements to engage and orbitally run on a presented hat flange on said block, means connected to and for effecting reciprocation of the basket while it is rotating orbitally on the hat flange.

8. The machine of claim 7; the last named means including a cam characterized to effect a motion of the set of irons complementary to the oval plan of a given hat flange to be pressed the cam being of the positive, double acting type for to and fro action on the basket.

9. A hat flanging machine including a shaft having an attached, reciprocating ironing structure, and means for rotating the shaft for positive drive of said structure; said shaft being hollow and forming a conduit for a moistening fluid to be discharged at the ironing surface

of said structure and a vapor supply pipe having a swivel connection with the rotary shaft.

10. A hat flanging machine having, in combination, a jack shaft and means for rotatively driving the shaft, a carrier corotatively fixed on the shaft, an ironing head including a basket, having pivoted plate irons, mounted on the said carrier to reciprocate transversely as to the shaft, and a stationary channel track engaged by a fixed port of the basket to give the irons an oval circuit complementary to a given oval-plan hat flange presented to the irons.

11. The machine of claim 10; said track extending around the shaft and a roller on said fixed port of the basket bearing on said track part.

12. The machine of claim 10; said shaft being axially shiftable to lower and raise the said head, and a track engaging roller having a splined connection with the said fixed port and being operatively connected with the track against shift with the shiftable head basket.

13. The machine of claim 10; said track surrounding the shaft, a cam engaging roller mounted on the said part, and means constantly urging the roller to engagement with the stationary track.

14. A hat flanging machine having, in combination, a rotary jack shaft having a carrier member transversely fixed thereon, a cage-like basket substantially enclosing the said member, bearing means on the said member and on which the basket is mounted for reciprocation and is guided against undue vibration and means for giving the basket an oval orbit.

15. A hat flanging machine having, in combination, a rotative jack shaft, a hanger member fixed on and transverse to the shaft, an ironing head basket member substantially enclosing the hanger member, parallel side sets of journal elements pivotally mounted on one of said members and reciprocatively engaging the other member, and means for relatively reciprocating the said members during rotation of the shaft.

16. The machine of claim 15; said elements consisting of top and bottom sets of oscillative bearing blocks carried by the cage member and engaging respective top and bottom faces of the hanger member.

17. The machine of claim 15; said elements consisting of lateral sets of rollers pivoted on the hanger member and interengaged with adjacent sides of the basket to prevent up or down movement thereof as to the hanger block.

18. A hat flanging machine having, in combination, an ironing head including a rotary hanger member, a basket rotative with and reciprocatively mounted on said member, and an ironing device consisting of a gang of independent, given-zone ironing, plate-form irons having a common center of free oscillations on and carried by the rotary basket, and means for rotating said member and the basket.

19. A hat flanging machine having, in combination, a main carrier member and means to rotate the member, a basket supported on and rotative with said member and means to reciprocate the basket on and while the member is rotating, and an ironing device including a plurality of ironing parts pivotally supported on the basket for independent oscillation and for travel in an oval orbit corresponding to, and to engage, a presented hat flange.

20. A hat flanging machine having, in combination, an ironing head including a rotary basket having a transverse pivot therein, and a gang of parallel plates all freely hung along said pivot and having bottom ironing surfaces to engage and traverse a presented stationary hat flange, means for rotating said basket, and means for reciprocating the plates on the hat during rotation of the basket.

21. The machine of claim 20; said plates being pivoted off center on said common pivot so as to gravitate at one end to effective position, and means to limit swing of the plates.

22. The machine of claim 20; said pivot including a stepped bearing device with separate steps for the plates and on which the plates have capacity for a small degree of free side play for self-positioning on the hat flange.

23. The machine of claim 20; one of the ironing plates being operative on a zone immediately at and orbitally around the band seam of the hat, and means operatively mounted on the basket for mechanically oscillating said plate while the basket is rotating to effect ironing pressure immediately along the seam edge.

24. The machine of claim 23; said means including a rotary, multistep, controlling cam for the seam zone plate, and a cam roller mounted on the last named plate and yieldably engaging the cam.

25. A hat flanging machine having, in combination, a stationary work bed having a jig guide and stop device thereon for reception of a portable hat block and stand assembly for supporting a hat with a flange face outward, and an ironing mechanism arranged coaxially above the bed jig device and including an ironing head adapted to the bodily axially moved down to effectively engage and press the hat flange on an introduced stand assembly, and means to effect rotation of the ironing head.

26. A hat flanging machine including a work bed, a flanging block and stand assembly unitarily, readily removably resting unaffixed to and on said bed, and a flange block stabilizing and pressure device mounted axially above and to move to and from the assembly and including an element orbitally moving and pressing at about and on the band line zone of a hat flange on the block.

27. The machine of claim 25; said device including a plate iron having a flat, bottom ironing face reciprocative on the inner, seam zone of the hat flange, and means for oscillating said iron at the seam edge of the flange while the device is moving orbitally on and around the flange.

28. A hat flanging machine having, in combination, a table having an open-side jig, a hat block and stand unit adapted to be bodily readily thrust into the jig and held thereby for processing, and hat flange pressing mechanism operatively mounted on the table and including a rotary jack shaft coaxial with the jig, a carrier fixed to the shaft to rotate therewith, a cage reciprocative on the carrier across the shaft, and a system of ironing plates tiltably mounted on one end of the cage and having effective bottom faces to engage and orbitally sweep and reciprocate on the flange of a hat mounted on the hat block, and means for shifting the system of plates to and from the hat flange.

29. The machine of claim 28; the said unit being unattached to the table and manually readily removable with its pressed hat from the table while the cage and its irons are in elevated position.

30. A hat flanging machine including a power reciprocated elevator shaft, a power rotated jack shaft coaxial with the elevator shaft and a lost motion and swivel connection between said shafts, a portable, non-rotary flange stand and flange block supported axially below the jack shaft, a carrier fixed corotatively on the lower portion of the jack shaft, a basket transversely reciprocative on and carried by said carrier and having a system of vertically oscillative irons pivoted thereon and rotative orbitally on the flange of a presented, stationary hat, and means for transversely reciprocating the carrier during the orbital movement of the irons.

31. In a hat flanging machine, a hat block means for supporting a hat with its flange presented for ironing pressure, and means coaxial with said block means for pressing the flange and including an ironing assembly having a set of relatively movable ironing members with flange contact faces; said block means and said ironing means being relatively rotative.

32. The machine of claim 31; said members operating under the force of gravity only on an engaged hat.

33. The machine of claim 31; said members

being independently pivoted on a carrier part of the assembly and operative by gravity of their own weight only for pressing function.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
289,202	Wilson	Nov. 27, 1883
587,944	Eickemeyer	Aug. 10, 1897
602,280	Bobsien	Apr. 12, 1898
1,590,643	Neuwelt	June 29, 1926
1,604,135	Reynolds	Oct. 26, 1926
1,865,197	Manxi	June 28, 1932
1,872,631	Angelus et al.	Aug. 16, 1932
1,932,312	Hobgood	Oct. 29, 1933
1,986,364	Schlesinger	Jan. 1, 1935
2,014,210	Schultze	Sept. 10, 1935
2,148,153	Eichenbaum	Feb. 21, 1939
2,161,434	Schultze	June 6, 1939
2,355,380	Kaufman et al.	Aug. 8, 1944
2,399,932	Miller	May 7, 1946
2,479,228	Goodchild	Apr. 16, 1949