Oct. 25, 1932. A. W. PHELPS 1,884,198

PRESS

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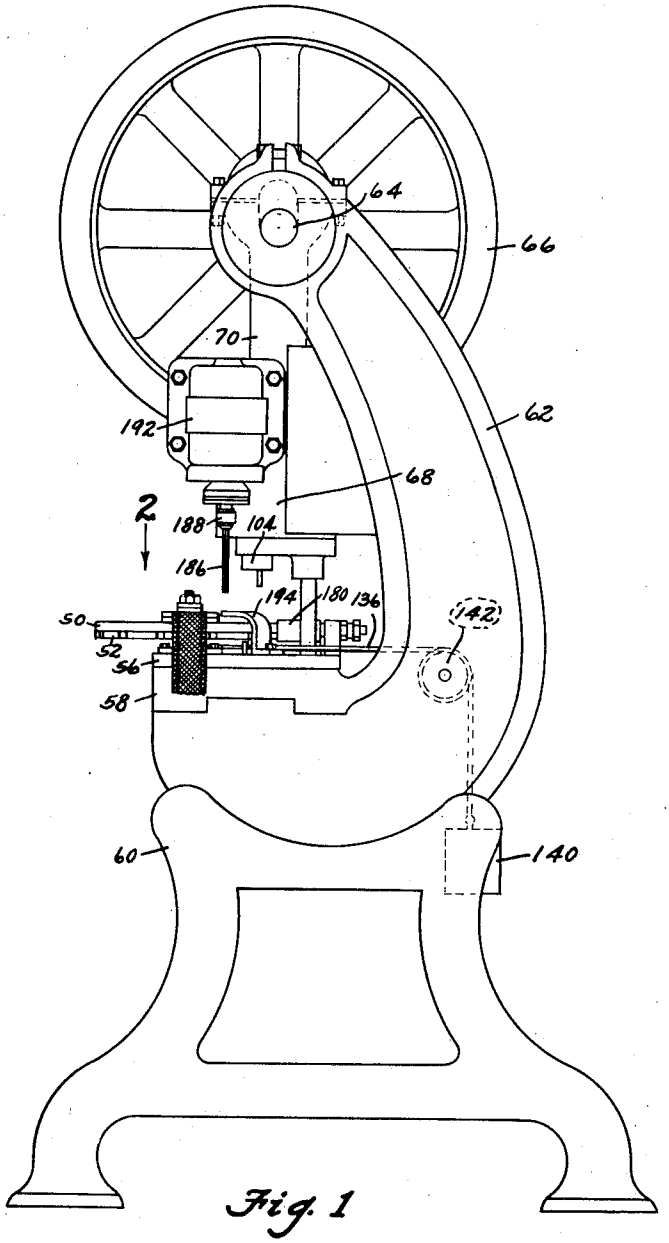


Fig. 1

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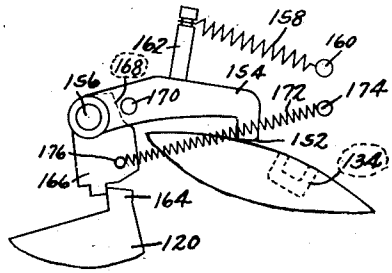


Fig. 10

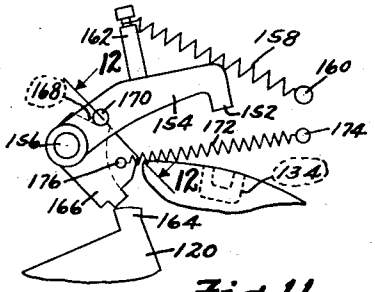


Fig. 11

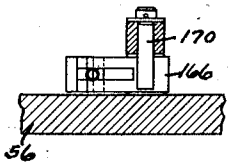


Fig. 12

Fig. 2

Fig. 13

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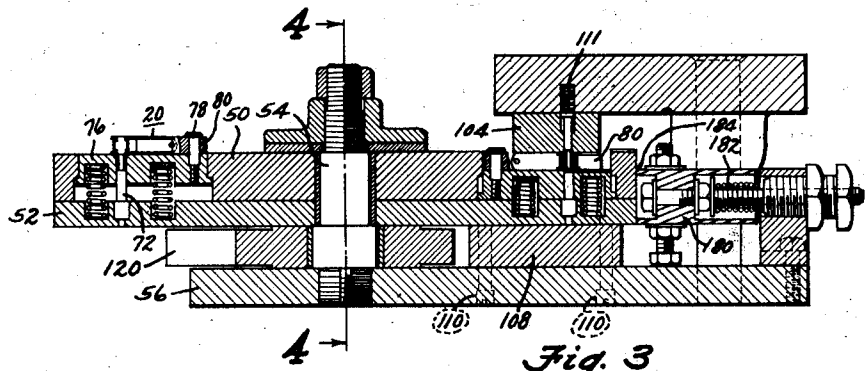


Fig. 3

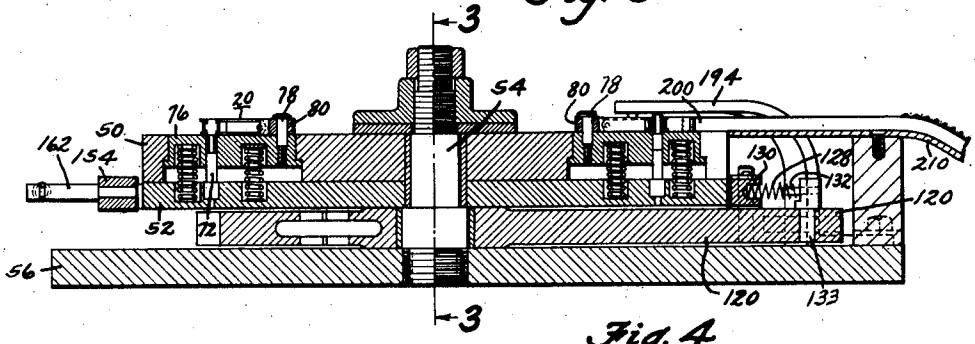


Fig. 4

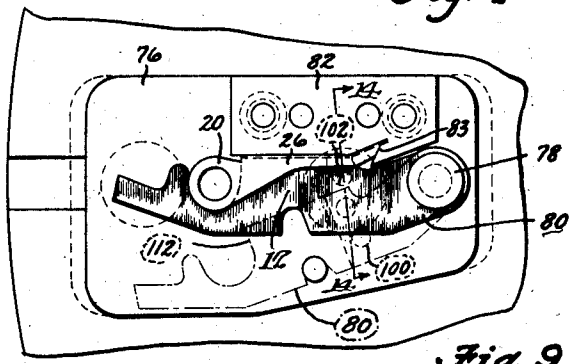


Fig. 9

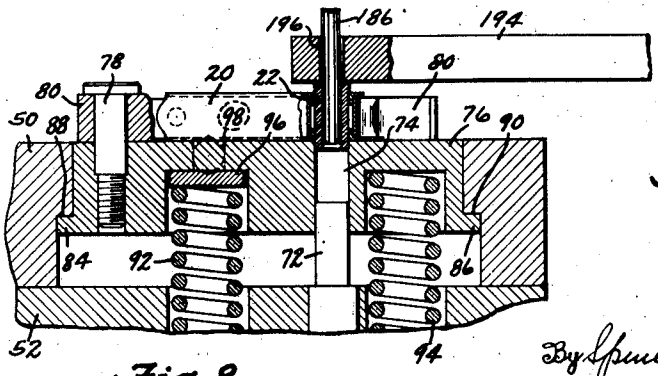


Fig. 8

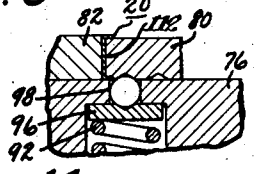


Fig. 14

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Fig. 5

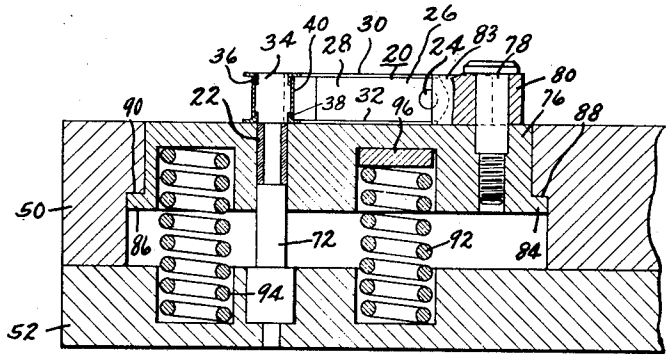


Fig. 6

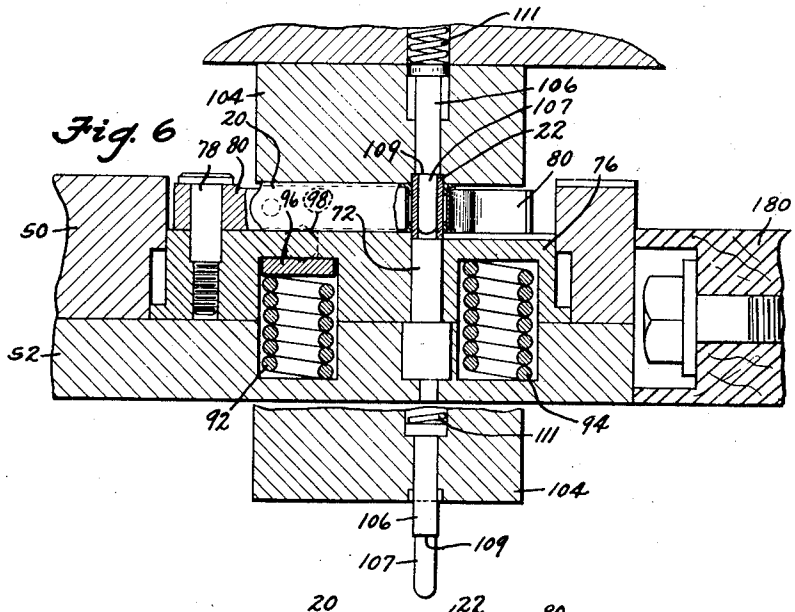
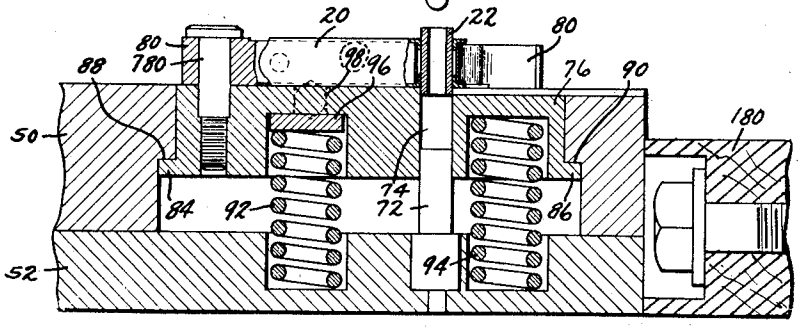


Fig. 7



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UNITED STATES PATENT OFFICE

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PRESS

Application filed June 1, 1929. Serial No. 367,818.

This invention relates to an apparatus for and a method of manufacturing a circuit breaker lever, and in particular to a device for press fitting the bushing into an aperture provided therefor in the circuit breaker lever and for reaming the bushing after it has been press fitted.

An object of this invention is to automatically press the bushing into the circuit breaker lever and to ream the bushing after it has been pressed into position, thereby reducing the cost of production by saving labor, by producing a more uniform product and by reducing the number of defective pieces. This has been accomplished by providing a plurality of sets of supports arranged in a dial, each set of supports comprising a supporting member for the bushing fixedly attached to the dial, a floating or resilient supporting pad or plate provided with clamps adapted to clamp a circuit breaker lever in position. In the last named support is provided an aperture in alignment with the support for the bushing into which the bushing is inserted. The circuit breaker lever has a seat, comprising an aperture, for receiving and holding this bushing. This aperture is in alignment with the aperture in its support when clamped in position so that as the dial is indexed by automatically driven means, a reciprocating cross head which carries an aligning member, forces the circuit breaker and its support toward the bushing and its support so as to force the circuit breaker over the bushing. After this is done the dial is again indexed so that the clamped circuit breaker lever has its bushing aligned with a reamer which automatically reams the bushing. Means have been provided for releasing the clamp for ejecting the finished circuit breaker and for removing the waste material formed by the reamer. It can be readily seen that all that is necessary for the operator to do is to insert the bushing and the circuit breaker lever in their respective places.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred embodiment of one form of the present invention is clearly shown.

In the drawings:

Fig. 1 shows a side elevation of the device.

Fig. 2 shows a plan view of the dial looking in the direction of arrow 2 in Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Figs. 2 and 4.

Fig. 4 is a sectional view taken on the line 4—4 of Figs. 2 and 3.

Fig. 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is an enlarged fragmentary sectional view of a portion of the dial seen on the right of Fig. 3.

Fig. 7 is an enlarged fragmentary sectional view of a portion of the dial seen on the right of Fig. 4.

Fig. 8 is a detail view showing the reamer just before finishing reaming of the bushing.

Fig. 9 is a detail plan view of the circuit breaker support and clamps.

Figs. 10 and 11 are detail views of the driving mechanism.

Fig. 12 is a sectional view taken on the line 12—12 of Fig. 11.

Fig. 13 is a sectional view taken on the line 13—13 of Fig. 2.

Fig. 14 is a sectional view taken on the line 14—14 of Fig. 9.

Fig. 1 is drawn to a smaller scale than Figs. 2–4, and 10–14 inclusive.

Figs. 5–9 inclusive are drawn to a larger scale than the other figures.

In the production of circuit breaker levers it is necessary to provide an insulating bushing for the lever. One way of accomplishing this is to provide the circuit breaker lever 20 with a bushing 22 made from bakelite or a body of another phenol condensation product which provides a very good bearing and at the same time a good insulator. The circuit breaker lever 20 carries a contact point 24 at one end of a channel shaped arm 26, which has a web 28, and flanges 30 and 32. Each of the flanges 30 and 32 are provided with apertures 34 which have an inwardly flared edge 36, which may cooperate with a tubular member 40 to form a tubular recess for the bushing 22. The tubular member

40 may be omitted for some types of circuit breaker levers. As best seen in Figs. 6, 7 and 8 the bushing 22 is supported only at its ends by the flared portions 36 and 38. From this structure it can be readily seen that it is necessary to guide the bushing as it is forced through the aperture so that the bushing will be properly aligned with respect to the flared edges 36 and 38. If it were not thus guided, the bushing would in some cases, become jammed without passing through the aperture in the flange 30.

In order to carry out this method a dial comprising circular plates 50 and 52, held in position by a pin or suitable stub shaft 54, threadedly engaging a base 56, adapted to be mounted on the frame 58 of a punch press having the frame 60, the upright 62 into which is journalled a crank shaft 64 carrying a fly-wheel 66, and a reciprocating cross head 68 connected to the crank shaft by a connecting rod 70.

The circular plate 52 carries a plurality of equally spaced supporting sets each comprising a pin 72 extending into an aperture 74 in a floating or resiliently mounted plate or pad 76 to support the bushing 22. The plate 76 carries a pin 78 upon which is pivoted a movable clamping member 80, cooperating with fixed clamping member 82 to support and clamp the circuit breaker lever 20, as best seen in Fig. 5. The plate 76 is provided with flanges 84 and 86 which cooperates with the shoulders 88 and 90 in a recess in the circular plate 50 to limit the upward movement of plate 76 by the springs 92 and 94, seated in recesses in members 52 and 76. Intermediate the spring 92 and the plate 76 is mounted a small circular plate 96 which supports a ball 98 located in a hole in plate 76 and engaging a recess 100 or 102 in clamp 80 to hold it in clamped position or in open position.

It can be readily seen that as the bushing 22 is inserted in the aperture 74 while the set of supports 72 and 76 are in the position indicated by A in Fig. 2, and the circuit breaker lever 20 clamped between members 80 and 82, the bushing 22 may be pressed into the circuit breaker lever by moving the bushing 22 upwardly or by moving the circuit breaker lever 20 downwardly or by a relative movement of both the bushing 22 and the circuit breaker lever 20 toward each other. In this device the circuit breaker lever 20 is moved downwardly as viewed in Fig. 6, so as to press the bushing 22 into the circuit breaker lever 20.

After intermittently rotating the dial so that the circuit breaker lever 20 is moved from position A, as best seen in Fig. 2, to position B by a mechanism which will be described later, the circuit breaker lever 20 is pushed to the down position as best seen in Fig. 6 by a reciprocating block 104, attached to the cross head 68. The block 104 carries a resiliently mounted aligning pin 106 which has a reduced portion 107 that cooperates with the aperture 74 to properly guide the bushing 22 as the circuit breaker lever 20 is moved to the down position. The reduced portion 107 is limited in its movement into the bushing 22 by the shoulder 109. As the pin 106 is urged downwardly as seen in Fig. 6, by a helical spring 111, the block 104 may advance downwardly after the shoulder 109 on the pin 106 engages the bushing 22. The supporting plate 76, being resiliently mounted on the spring 92 and 94, moves downwardly with the circuit breaker lever 20. In order to relieve the strain on the circuit breaker lever 20, the block 104 cooperates with the clamping members 80 and 82 to move the floating plate 76 downwardly.

The plate 52 is prevented from exerting an undue pressure or force upon the stub shaft 54 by an anvil or platen 108 attached to the base member 56 by screws 110 as best seen in Fig. 3.

As the block 104 is raised from the down position disclosed in Fig. 6 to the up position disclosed in Fig. 7, the circuit breaker lever 20 is prevented from being carried upwardly with the pin 106 by the clamping member 80 which has an extension 112 extending between the flanges 30 and 32 of the circuit breaker lever as best seen in Fig. 14.

The means for intermittently rotating the rotary dial consists of the lever 120 carrying a pivotally mounted pawl 124 having a detent 126 which is biased towards the dial by a spring 128 seated in a recess 130 and mounted on a pin 132 carried by a stud 133 mounted in the lever 120. The dial is provided with U-shaped members 134 seated in recesses provided therefor in the periphery of the dial.

Flexible means such as a rope or cable 136 passing over a pulley 142, has one end attached to the lever 120 by a pin 138 and to a weight 140. It can be readily seen that the lever 120 will be biased in a counterclockwise direction about the stub shaft 54 as viewed in Fig. 2 by the weight 140. The lever 120 is rotated in a clockwise direction by a chain 144 passing under the pulley 146, having one end not shown attached to the reciprocating cross head and the other end attached to the lever 120 through a turnbuckle 150. As the cross head 68 advances downwardly as viewed in Fig. 1, the lever 120 will be rotated in a counterclockwise direction as viewed in Fig. 2, the pawl 124 disengaging the recess in the dial. As the cross head moves upwardly the lever 120 is moved from the dot dash position 120*a* as disclosed in Fig. 2, to the full line position 120. As the lever 120 rotates in a clockwise direction the detent 126 will engage the U shaped member 134*a*, so as to rotate the dial.

In order to prevent the dial from moving after it has been indexed and while the lever

120 rotates in a counterclockwise direction, a suitable means has been provided to lock the dial in position. This has been accomplished by a detent 152 carried on lever 154, pivoted at 156 and urged in a clockwise direction by a spring 158, having one end attached to a pin 160 carried by the base 56 and the other end attached to a pin 162 carried by lever 154. Immediately before the detent 126 engages the U-shaped member 134*a* a dog 164 integral with the lever 120 strikes a trigger 166 pivotally mounted at 156, moving lever 154 from the full line position to the dot dash position 154*a* as seen in Fig. 2, by means of a shoulder 168 engaging a pin 170 carried by lever 154, this permits the rotation of the dial by the detent 126. As the lever 120 is moved from a full line position to a dot dash position as seen in Fig. 2, member 164 engages the trigger 166 rotating it in a clockwise direction about the pivot 156 until the dog 164 clears the trigger, when the trigger will be snapped back into the position disclosed in Fig. 2, by a spring 172 having one end attached to a pin 174 carried by the base 56 and the other end attached to a pin 176 carried by the trigger 166. The spring 172 having sufficient tension to snap the trigger 166 back into position, but not enough tension to remove the detent 152 from the recess 134.

A brake 180 urged towards the dial by a spring 182 has an arcuate surface 184 engaging the dial to prevent it from rotating too freely. As the structure of this brake does not form a part of this invention a detailed description is omitted as this is found in my copending application for an assembling press Serial No. 324,340, filed December 7, 1928.

When the circuit breaker lever and the bushing which has been rotated from position B to position C as seen in Fig. 2 by the indexing means for intermittently rotating the rotary dial, the aperture through the bushing is reamed by a reamer 186 carried in a chuck 188 mounted on and driven by the armature shaft of the motor 192 which is attached to the reciprocating cross head 68 so that as the cross head reciprocates, the reamer 186 will also reciprocate.

The bracket 194 attached to the base 56 is provided with an aperture 196 which is in alignment with the aperture in the bushing when in position C and directly above the bushing 22 so that the reamer is steadied by this bracket and so that the bushing is not pulled out of the seat provided therefor in the circuit breaker lever. The bracket 194 prevents the bushing from following the reamer as it is retracted from the down position as viewed in Figs. 1 and 8.

As the support and the circuit breaker lever is roated from position C to position D by the indexing means, the clamping lever 80 strikes a trigger or release 200 mounted on the base 56 so that the clamping lever 80 will be opened in the open position by means of the spring urged ball 98 engaging the recess 102. When in the position D the circuit breaker lever 20 is ejected from the clamping members by means of a jet of air from the pipe 204 connected to a source of compressed air, through a valve mechanism, not shown, which is opened momentarily immediately after the circuit breaker lever arrives at position D. Another pipe 206 connected to the same source of compressed air as the pipe 204 and controlled by the same valve mechanism removes dust and chips from the aperture 74 in the support 76 so that this aperture is ready for another bushing when it arrives at position A.

A chute 210 is placed in alignment with the pipe 204 at position D so that as the circuit breaker lever 20 and the bushing 22 is ejected through the chute 210 into a suitable receptacle, not shown, provided therefor.

Operation

At station A the operator inserts a bushing 22 made from a bakelite or another phenol condensation product into aperture 74 so that the bushing 22 rests on the support 72 and is flush with the top of plate 76 as best seen in Fig. 5. Then he places the circuit breaker lever 20 on the plate 76 so that the arm 26 carrying the contact 24 extends into a recess 83 and the clamping member 82 so that the circuit breaker lever 20 may be accurately positioned, then he moves clamping member 80 from the dot dash position shown in Fig. 9, to the full line position so as to clamp the circuit breaker lever 20 in position. The operator inserting a bushing and a circuit breaker into each of the succeeding supports when they arrive at position A pre-assembles the work pieces.

When the circuit breaker lever and the bushing 22 arrive at position B the reciprocating block 104 forces the circuit breaker lever 20 and the support 76 downwardly so as to force or press the bushing 22 into the apertures provided therefor in the circuit breaker lever 20 as best seen in Figs. 3 and 6. The reduced end 107 of the aligning pin 106 enters the bushing 22 so as to guide the bushing. As the block 104 is raised upwardly the bushing 22 will now follow the circuit breaker lever 20 into the up position disclosed in Fig. 7.

When the circuit breaker lever 20 and the bushing 22 arrives at station C the aperture through the bushing is reamed by the reamer 186. The bushing is prevented from following the reamer by the bracket 194 and by the clamping members 80 and 82.

As the circuit breaker lever and its support moves from position C to position D, the end of the clamping member 80 engages the trigger 200 which opens the clamping member 80 so as to permit a blast of air emitting

from the pipe 204 to eject the circuit breaker lever from its support through the chute 210.

When the support arrives at position E dust and chips which have accumulated in the aperture 74 on top of the support 72 is removed by a blast of air from the pipe 206.

This device has been shown in connection with the circuit breaker lever 20 having apertures for receiving the bushing 22. It is within the purview of this invention to assemble the circuit breaker levers having the bushing pressed into some other seat than an aperture, as for example, a pair of clamps. With a slight modification this device may be used for pressing or staking other parts than a bushing and its support.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, a floating support for the circuit breaker lever; a pair of clamping members mounted on said floating support for holding the lever in position; a support for the bushing so arranged as to hold the bushing in alignment with the circuit breaker lever; and means for causing the lever to be advanced towards the bushing so as to cause the lever to be pressed upon the bushing.

2. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, a resilient support for the circuit breaker lever; a pair of clamping members mounted on said resilient support holding the lever in position, means for supporting the bushing; means for guiding the bushing into the aperture in the circuit breaker lever; and means for causing a relative movement between the circuit breaker lever and the bushing to cause the bushing to be pressed into the circuit breaker lever.

3. In a device for securing a member to a second member provided with a seat for receiving and holding the first member means for guiding the first member while approaching the seat in the second member and while advancing therein during assembly of the members.

4. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, means for holding the circuit breaker lever and bushing in alignment; means for causing a relative movement between the circuit breaker lever and the bushing so as to force the bushing into the aperture; and means for guiding the bushing as it advances through the circuit breaker lever.

5. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, means for holding the circuit breaker lever; means for supporting the bushing; means for guiding the bushing into the aperture provided therefor in the circuit breaker lever; and means for causing a relative movement between the circuit breaker lever and the bushing to cause the bushing to be press fitted into the lever, said last named means including means for guiding the bushing through the aperture.

6. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, means for supporting the bushing; clamping means for holding the circuit breaker lever so that the bushing is in alignment with the aperture in the circuit breaker lever; means causing a relative movement of the bushing and the circuit breaker lever so as to press the bushing into the lever; and means for guiding the bushing through the aperture in the circuit breaker lever so as to maintain the bushing in alignment.

7. The method of pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising the steps of positioning the circuit breaker lever and the bushing in a pre-assembled relation so that the bushing is aligned with the aperture in the circuit breaker lever; clamping the circuit breaker lever while thus positioned; causing a relative movement between the clamped circuit breaker lever and the bushing so as to press the bushing into the aperture provided therefor, and guiding the bushing externally and internally while it advances through the aperture in the circuit breaker lever.

8. The method of pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising the steps of aligning the bushing and the aperture in the circuit breaker lever; clamping the circuit breaker lever while thus aligned; causing a relative movement between the clamped circuit breaker lever and the bushing so as to force the bushing into the aperture provided therefor; and guiding the entire internal cylindrical surface of the bushing while it advances through the aperture in the circuit breaker lever, and that portion of the external cylindrical surface of the bushing which is not yet received by said aperture.

9. The method of pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and

holding the bushing, comprising the steps of positioning the circuit breaker lever and the bushing in a preassembly station so that the bushing is in axial alignment with the aperture in the circuit breaker lever; moving the circuit breaker lever and the aligned bushing to an operating station; pressing the bushing into the aperture of the circuit breaker lever while in said operating station, and guiding the bushing externally and internally while it advances through the aperture of the circuit breaker lever.

10. The method of pressing the bushing into a support, said support having an aperture for receiving and holding the bushing, comprising the steps of positioning the support and bushing in a preassembly station so that the bushing is in alignment with the aperture in the support; clamping the support while in the preassembly station; moving the clamped support and the aligned bushing to an operating station; pressing the bushing into the aperture provided therefor, while in said operating station, and guiding the entire internal cylindrical surface of the bushing while it advances through the aperture in the circuit breaker lever, and that portion of the external cylindrical surface of the bushing which is not yet received by said aperture.

11. The method of pressing the bushing into a circuit breaker lever and of reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing comprising, the steps of arranging the circuit breaker lever and the bushing in a pre-assembled relation so that the bushing is in alignment with the aperture provided therefor; causing a relative movement between the circuit breaker lever and the bushing so as to press the bushing into the aperture; and reaming the bushing after it has been press fitted into the circuit breaker lever.

12. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, a support for the bushing; a resiliently mounted support for the circuit breaker lever; means for moving the resiliently mounted support to an operating position; and means for causing a relative movement between the circuit breaker lever and the bushing so as to press the bushing into the aperture provided therefor.

13. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, a support for the bushing; clamping means for holding the circuit breaker lever in a pre-assembled relation with respect to the bushing on the support; means for locking said clamping means in a clamped position; means for pressing the bushing into the aperture provided therefor; and a trigger for releasing said clamping means after the bushing has been pressed into the circuit breaker lever.

14. A device for pressing the bushing into a circuit breaker lever, said circuit breaker lever having an aperture for receiving and holding the bushing, comprising in combination, means for supporting the bushing; clamping means for holding the circuit breaker lever in a pre-assembled relation with respect to the bushing on the circuit; means for locking said clamping means in a clamped position; means for pressing the bushing into the aperture provided therefor; a trigger for releasing said clamping means after the bushing has been pressed into the circuit breaker lever; and means for ejecting said assembled circuit breaker lever from said clamping means.

15. A device for pressing a member into a seat provided therefor in a second member, comprising in combination, a floating support for supporting one of said members; means for supporting the other of said members; and reciprocating means for causing a relative movement between said members so as to press said second member into the seat provided therefor in said first member.

16. A device for pressing the bushing into a circuit breaker lever and reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising in combination; a conveyor for supporting the circuit breaker lever, means for pressing the bushing into the recess provided by the circuit breaker lever, means for reaming the bushing; and a bodily movable means carrying the means for pressing the bushing into the recess provided by the circuit breaker lever and the means for reaming the bushing.

17. A device for pressing the bushing into a circuit breaker lever and reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising in combination; a conveyor for supporting the circuit breaker lever, means for pressing the bushing into the recess provided by the circuit breaker lever, means for reaming the bushing; and a bodily movable means for supporting both of last said means so as to impart concurrent operative movements to them.

18. The method of pressing a bushing into a circuit breaker lever and reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising the steps of; arranging the circuit breaker lever and the bushing in a preassembled relation at a loading station of a

conveyor; intermittently moving the conveyor so as to convey the circuit breaker lever and its preassembled bushing from said loading station to a press fitting station and to convey an assembled circuit breaker lever from said press fitting station to a reaming station for reaming the aperture of the press fitted bushing, and intermittently moving of means carrying the means for pressing a bushing into a circuit breaker lever and the means for reaming the press-fitted bushing so as to impart concurrent operative movements to both of last said means.

19. The method of pressing a bushing into a circuit breaker lever and reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising the steps of; arranging the circuit breaker lever and the bushing in a preassembled relation at a loading station of a conveyor; intermittently moving the conveyor so as to convey the circuit breaker lever and its preassembled bushing from said loading station to a press-fitting station and to convey an assembled circuit breaker lever from said press-fitting station to a reaming station for reaming the aperture of the press-fitted bushing, intermittently moving of means carrying the means for pressing a bushing into a circuit breaker lever and the means for reaming the press-fitted bushing so as to impart concurrent operative movements to both of last said means, and guiding the bushing after it advances through the circuit breaker lever so as to maintain the bushing in alignment with the aperture of the circuit breaker lever.

20. The method of pressing a bushing into a circuit breaker lever and reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising the steps of; arranging the circuit breaker lever and the bushing in a preassembled relation at a loading station of a conveyor clamping the circuit breaker lever while in said preassembled relation; intermittently moving the conveyor so as to convey the circuit breaker lever and its preassembled bushing from said loading station to a press-fitting station and to convey an assembled circuit breaker lever from said press-fitting station to a reaming station for reaming the aperture of the press-fitted bushing, and intermittently moving of means carrying the means for pressing a bushing into a circuit breaker lever and the means for reaming the press-fitted bushing so as to impart concurrent operative movements to both of the last said means.

21. A device for pressing the bushing into a circuit breaker lever and for reaming the bushing after being press-fitted into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing, comprising in combination; means for supporting the bushing; means for holding the circuit breaker lever so that the bushing is in alignment with the aperture in the circuit breaker lever; means for effecting a relative movement of the bushing and the circuit breaker lever so as to press the bushing into the circuit breaker lever, means for reaming the bushing after it has been press-fitted into the circuit breaker lever; and reciprocatory means carrying both last said means and imparting concurrent operative movements to them.

22. A device for pressing a bushing into a circuit breaker lever and for reaming the bushing after being pressed into the circuit breaker lever, said circuit breaker lever being provided with a recess to receive the bushing; comprising in combination, means for supporting the circuit breaker lever and the bushing in a preassembled relation; means for pressing the bushing into the aperture provided therefor, means for reaming the bushing after it has been press-fitted into the circuit breaker lever, reciprocating means for imparting to both of last said means concurrent operative movements, and means for ejecting said circuit breaker lever from said support after it has been reamed.

23. A device for pressing a bushing into the aperture of a circuit breaker lever comprising, in combination, a movable support for the circuit breaker lever, said support having an aperture for slidably receiving a bushing; a stop for said support; springs normally maintaining the support in engagement with the stop; a stationary plunger engaged by that end of the bushing in the aperture of the support which is remote from a supported circuit breaker lever; means on the support for locating a circuit breaker lever so as to be coaxially aligned with the bushing; a movable ram for moving the circuit breaker lever and therewith the support relative to the bushing whereby the latter advances into the aperture of the circuit breaker lever; and a pilot pin carried by the ram and projecting into the bore of the bushing prior to its advance into the aperture of the circuit breaker lever and during the advance therein.

24. A device for pressing a bushing into the aperture of a circuit breaker lever comprising, in combination, a circuit breaker lever support having an aperture for slidably receiving a bushing, said support being movable parallel to the axis of the bushing; a stop for said support; springs normally maintaining the support in engagement with the stop; a stationary plunger projecting into the aperture of the support and engaged by that end of the bushing which is remote from a supported circuit breaker lever; means on the support for locating a circuit breaker

lever so as to be coaxially aligned with the bushing; a movable ram for moving the circuit breaker lever and therewith the support relative to the bushing whereby the latter advances into the aperture of the circuit breaker lever; and a pilot pin yieldingly carried by the ram and movable coaxially of the bushing, said pilot pin extending into the bushing prior to its advance into the aperture of the circuit breaker lever and during the advance therein.

In testimony whereof I hereto affix my signature.

ALVA W. PHELPS.