

May 13, 1924.

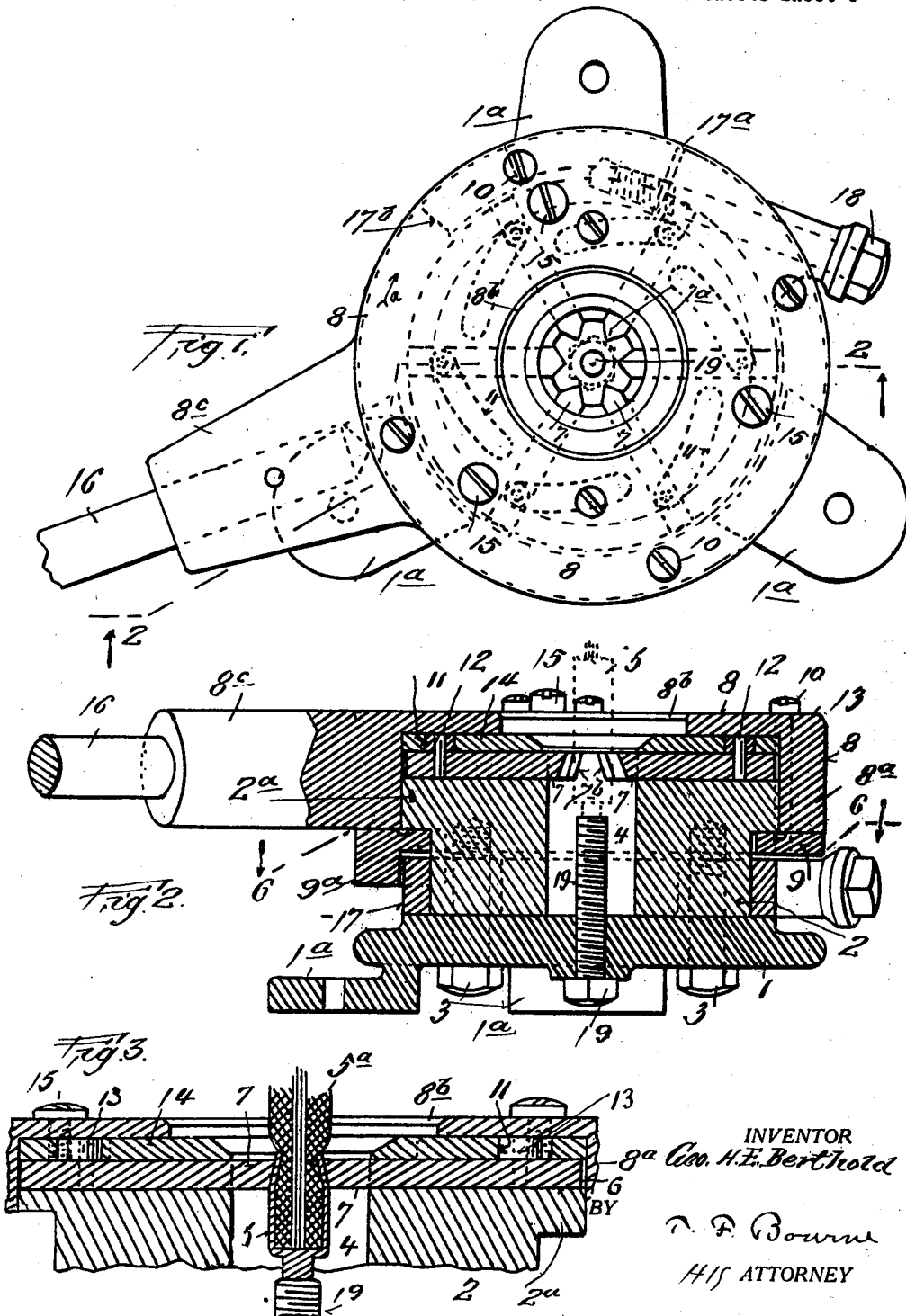
1,493,515

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CRIMPING MACHINE

Filed April 7, 1923

2 Sheets-Sheet 1



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Fig. 3.

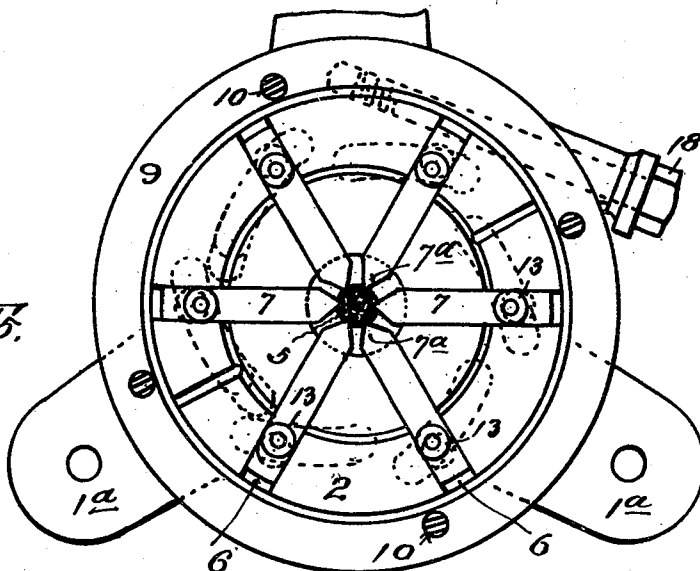


Fig. 4.

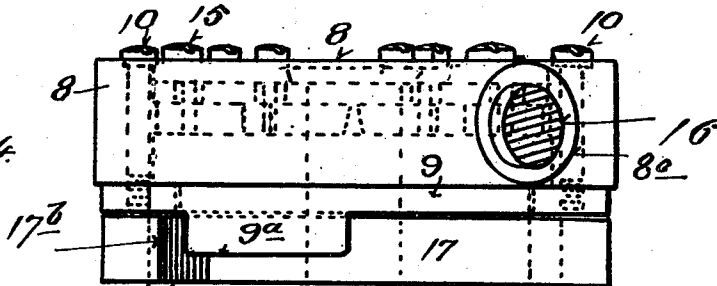


Fig. 6.

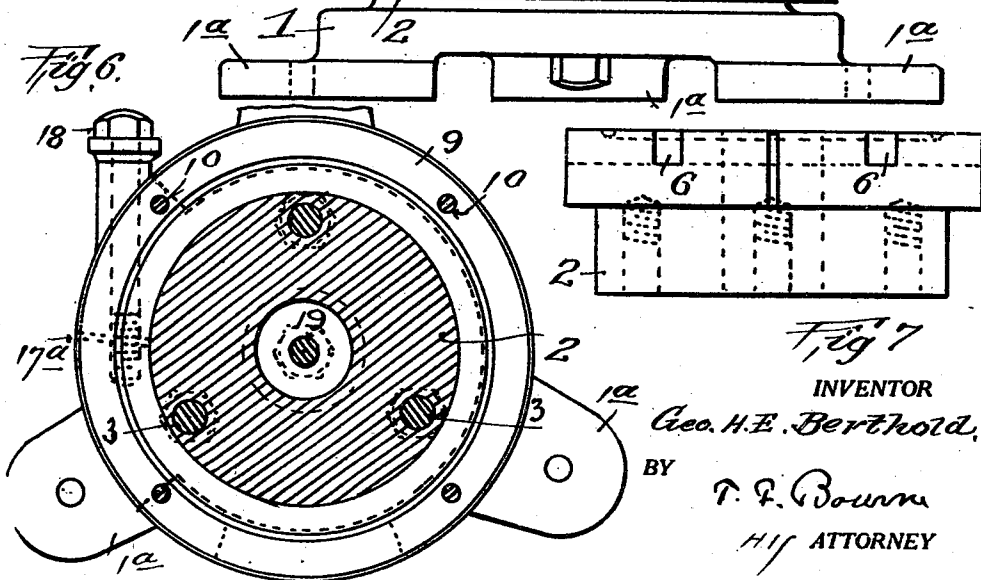


Fig. 7

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UNITED STATES PATENT OFFICE.

GEORGE H. E. BERTHOLD, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO RAJAH AUTO SUPPLY CO., OF BLOOMFIELD, NEW JERSEY, A CORPORATION OF NEW YORK.

CRIMPING MACHINE.

Application filed April 7, 1923. Serial No. 630,434.

To all whom it may concern:

Be it known that I, GEORGE H. E. BERTHOLD, a citizen of the United States, and resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Crimping Machines, of which the following is a specification.

The object of my invention is to provide a simple and efficient machine or fixture adapted to crimp or dent metal sleeves, ferrules or the like, and is particularly adapted to attach terminal sleeves or ferrules to insulation upon insulated electrical conductors by squeezing the sleeves or ferrules to crimp or dent the same into the insulation.

My invention also comprises novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part hereof, wherein—

Fig. 1 is a plan view of a machine embodying my invention;

Fig. 2 is a section on line 2, 2, in Fig. 1;

Fig. 3 is a detail section, enlarged, showing parts in crimping position;

Fig. 4 is a side view;

Fig. 5 is a plan view illustrating the crimping jaws, the rotative cap being omitted;

Fig. 6 is a detail plan view partly in section, and

Fig. 7 is a detail side view of the guide block for the crimping jaws.

Similar numerals of reference indicate corresponding parts in the several views.

At 1 is a suitable base shown provided with legs 1^a which may be attached to a support, which base is provided with a guide block or projection 2. Said parts may be secured together by screws 3. The guide block or projection 2 is shown provided with a central bore 4 to admit an article 5, such as an electric terminal, (Fig. 3), the upper surface of which block or projection is provided with radial grooves 6 communicating with bore 4. Radially disposed crimping jaws are slidable in the grooves 6 to engage the terminal 5, the inner ends of which jaws are shown tapering at 7^a, (Figs. 1 and 5), and preferably downwardly inclined at 7^b to form crimping edges or jaws. At 8 is a rotative cap or head journaled upon guide block 2 and shown provided with a recess receiv-

ing the upper portion of said block, a flange 8^a of said cap or head encircling the guide block 2, whereby said cap or head is rotatively guided. At 9 is a gib ring encircling the guide block or projection 2 and located under an annular rim or projection 2^a of said block. Said ring and the cap 8 are detachably secured together by means of screws 10 and thereby the cap 8 is rotatively retained upon block 2. The cap 8 is provided with an opening 8^b registering with the bore 4 for admission of the terminal 5 and the insulated electric conductor 5^a. The cap 8 is provided with means to move the jaws 7 radially toward and from the axis of the guide block as said cap is rotated back and forth, for which purpose the inner face of said cap is provided with cam grooves or slots 11 that receive projections 12 extending from the jaws 7, whereby when the cap is rotated back and forth said jaws will be reciprocated toward and from the terminal 5 located within bore 4. The projections 12 are shown comprising pins provided with rollers 13 operative in the cam slots 11 to reduce friction. While the cam slots 11 may be milled directly in the inner surface of the top of cap 8, I preferably form said slots in a hardened apertured steel plate 14 that is secured to cap 8 by means of screws 15. The cap 8 is shown provided with a shank 8^c to which a lever 16 is secured for rotating cap 8.

To limit the inward movement of jaws 7 to crimp or dent the terminal 5 into the insulation of conductor 5^a to the desired extent I provide a stop collar 17 that encircles the guide block 2 beneath the ring 9, which collar is slit at 17^a and provided with a screw 18 adapted to clamp the collar in set position around guide block 2. The collar 17 is provided with a projection 17^b below the ring 9 and in the path of a projection 9^a depending from said ring, (Figs. 2 and 4). The collar 17 may be set in such position around guide 2 that its stop 17^b will be engaged by the stop 9^a of ring 9 when the cap 8 has been rotated to the desired extent in the direction of the arrow *a* in Fig. 1 to cause the jaws 7 to crimp or dent the wall of terminal 5 the desired distance into the insulation of the conductor.

At 19 is a stop, shown in the form of a screw threaded in base 1, entering bore 4 axially in position to be engaged by termi-

nal 5 to cause the rear portion of the latter to be presented in crimping position with relation to the crimping jaws 7, (Fig. 3). The stop 19 may be adjusted longitudinally according to the dimensions of terminals to be crimped on the insulation of different conductors.

When it is desired to attach terminals to insulated electric conductors said terminals are placed upon the insulation, the jaws 7 are expanded by rotating cap 8 in the direction reverse to the arrow *a* in Fig. 1, the terminal is inserted through opening 8^a into bore 4 to rest against stop 19, and cap 8 is rotated in the direction of said arrow until the stop 9^a engages stop 17^b, whereby the jaws 7 will be advanced toward the terminal to dent or crimp the same, (Fig. 5). The cap is rotated reversely to spread the jaws to release the crimped terminal. By means of the construction set forth the marginal portion of the tubular terminal may be crimped or dented uniformly into the insulation of the conductor to retain the terminal thereon without danger that the terminal will be crimped too much or irregularly into the insulation, since the jaws 7 may all be given an equal movement toward the terminal, and the extent or depth of such crimping may be regulated as required.

Having now described my invention what I claim is:—

1. A crimping machine comprising a plurality of spaced jaws, guiding means for said jaws, a rotative cap having means cooperative with said jaws to move said jaws toward and from the axis of the cap when it rotates, and means adjustable in the direction of rotation of the cap and cooperative with the latter to limit rotation of the cap in a direction to advance the jaws.

2. A crimping machine comprising a plurality of radially disposed jaws, a guide block having radially disposed guiding grooves for said jaws, a cap rotative around said guide block, means cooperative between said cap and jaws for moving the latter radially when the cap is rotated, a stop carried by the cap, and stop means cooperative with the first named stop, said stop means being adjustably carried by the guide block to limit rotation of said cap in the direction to advance the jaws axially respecting the cap.

3. A crimping machine comprising a guide block having guiding means for jaws, a plurality of jaws operative in said guiding means, a cap rotative upon said guide block, means cooperative between the cap and jaws for reciprocating the latter as the cap is rotated, said guide block having a projection, a ring connected with said cap to rotatively retain the cap upon the guide block, a stop collar having a projection means to secure said collar in set position around the guide block, and a projection upon said ring to cooperate with the first named projection to limit rotation of the cap.

4. A crimping machine comprising a plurality of spaced jaws, guiding means for said jaws provided with a bore to receive an article to be crimped, a cap rotative upon the guiding means, means cooperative between the jaws and the cap for reciprocating the jaws during rotations of the cap, said cap having an opening registering with said bore, a stop within said bore to engage said article to regulate its position between said jaws, said stop being axially adjustable in said bore, and means to retain said stop in adjusted position.

GEO. H. E. BERTHOLD.