

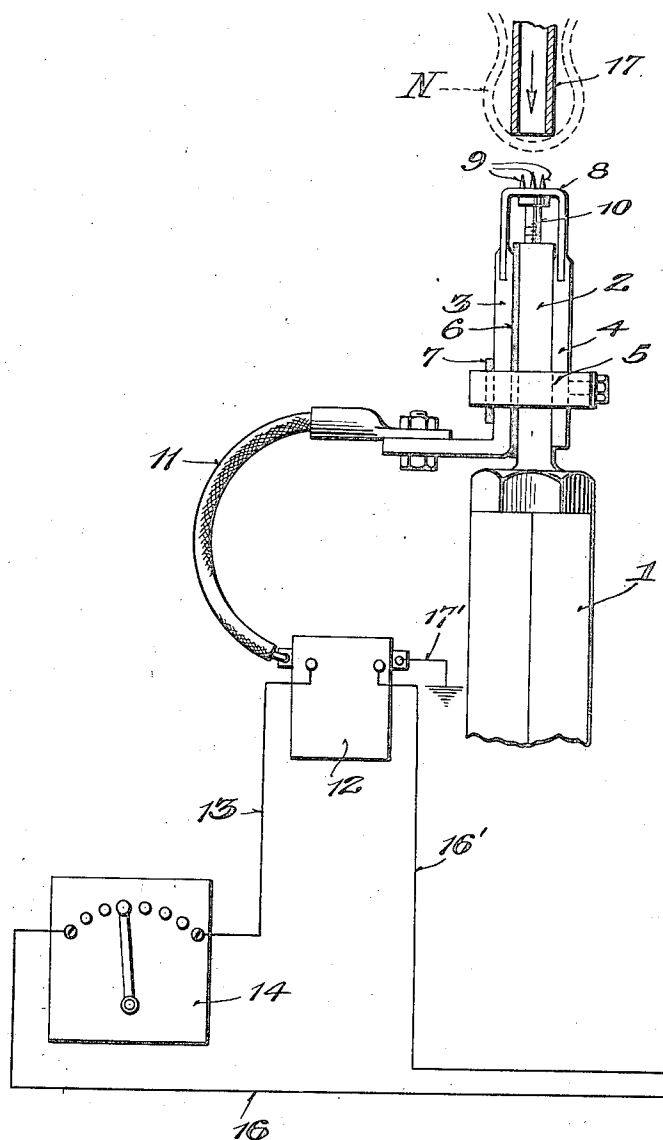
Nov. 20, 1923.

1,474,912

P. A. RAICHE

ELECTRIC PERFORATING DEVICE

Filed May 16, 1922



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ELECTRIC PERFORATING DEVICE.

Application filed May 16, 1922. Serial No. 561,271.

To all whom it may concern:

Be it known that I, PAUL A. RAICHE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Electric Perforating Devices, of which the following is a specification.

This invention relates to certain new and useful improvements in electric perforating devices and pertains more especially to the perforating of rubber by the use of electrically heated pins or points.

The invention, while being especially adapted for the purpose of perforating the ends of nursing bottle nipples, is not so limited and can be employed with equal facility in the perforation of various articles made of rubber and other materials as will be later herein manifested.

The primary object of the invention is to provide a device of this kind which can be easily and quickly operated and which effects positive and quick perforation of the rubber or the like by a relative movement between the heated points and the object operated upon.

The invention still further aims to provide a device of this type which has improved means of simple character for effecting heating of the points and for providing means for operating the points by movements toward the object to be perforated.

In the drawings, the figure is a side elevation of the invention, parts being shown in fragment.

In proceeding in accordance with the present invention, a plunger 1 is employed having an attenuated stem or end 2, the plunger affording a carrier and being operated by any well known or approved means. An approximately L-shaped copper conductor bar 3 is engaged with one side of the stem 2 and a straight copper conductor bar 4 is engaged with the opposite side, the bars being held in rigid engagement with the stem 2, by means of a clamp 5. Insulation, such as mica indicated at 6, is arranged between bar 3 and stem 2 and like insulation 7 is disposed between the clamp and the opposite face of bar 3. A resistance bar 8 preferably of nichrome and of approximately inverted U-shape has its free ends suitably connected to the upper ends of the bars 3 and 4 such as by being inserted in

slots in the bars, and has its lateral part extending across the free end of the stem 2 and carrying one or more perforating pins or points 9, the lateral part of the bar 8 being supported by the head of a screw 10 which latter is threaded into the outer end of the plunger stem. A wire 11 connects the right angular lower end of the bar 3 to a coil 12, the latter being connected by wire 13 to a rheostat 14, the rheostat being connected to a source of electric supply by wire 16 while the coil is connected to ground by wire 17 and to the source of electrical supply by wire 16'. A die or work support 17 which receives or engages the nipple N alines with the points.

In operation, the current goes through the rheostat, coil, bar 3 and resistance bar 8, thence through bar 4 and the plunger to ground, effecting heating of the perforating points, whereupon the plunger is moved to cause the points to engage the nipple N and freely pass therethrough to form holes therein. Obviously by changing the form of the work support, other articles or objects can be operated upon and perforated with equal facility.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a nipple perforating device, a plunger having a stem, a pair of conductor bars disposed on opposite sides of the stem, a clamp for connecting the bars to the stem, insulation between one of the bars and the stem and between said bar and the clamp, a circuit including the bars, an inverted U-shaped resistance bar secured at its free ends to the bars, points carried by the U-shaped bar, a screw between the stem and the main part of the U-shaped bar to support the latter, and a work holder alined with the points.

2. In a nipple perforating device, a plunger having a stem, a pair of conductor bars disposed on opposite sides of the stem, a clamp for connecting the bars to the stem, insulation between one of the bars and the stem and between said bar and the clamp, a circuit including the bars, an inverted U-shaped resistance bar secured at its free ends to the bars, points carried by the U-shaped bar, and a work holder alined with the points.

3. In a nipple perforating device, a mem-

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ber having spaced conductor bars affixed thereto, a resistance bar fixedly connected to each of the conductor bars, a circuit including the conductor bars, points on the resistance bar, and a work support alined with the points and connected to the carrier so as to support the bar from the latter.

4. In a perforating machine, a work support, a stem arranged in a circuit, perforating means, means arranged on opposite sides of the stem and connected to the perforating means to support the latter from the stem, one of said means on the stem being insulated from the latter, and means to electrically connect said one of said means on the stem in the circuit.

5. In combination with a carrier, an inverted rigid U-shaped bar having its lateral part extending across the free end of the carrier, fixed perforating points carried by said lateral part of the bar, and means to electrically heat the points connected to the free ends of the U-shaped bar and connected to the carrier so as to support the bar from the carrier.

6. In a perforating machine, a work support, a stem arranged in a circuit, perforating means, a pair of means arranged on opposite sides of the stem and connected to the perforating means, means to insulate one of said means from the stem, means to electrically connect said one of the pair of means in the circuit, and means to removably and adjustably connect said pair of means and therewith the perforating means to the stem.

7. In a perforating machine, a work support, a stem arranged in a circuit, perforating means, means connected to the stem and insulated in part therefrom to support the perforating means, and means to connect said second means in the circuit.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PAUL A. RAICHE.

Witnesses:

M. A. KINGSLEY,
J. A. MILLER.