Jan. 29, 1924. 1,482,099

W. C. STOPPELWERTH

HAND PUNCH

Filed July 27, 1922

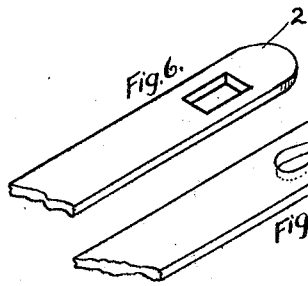


Fig. 6.

Fig. 5.

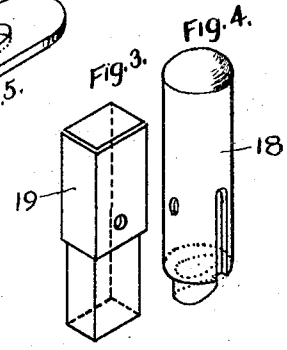


Fig. 3.

Fig. 4.

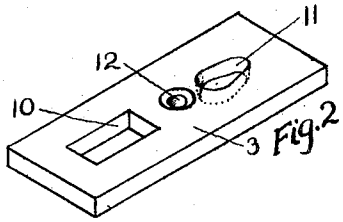


Fig. 2.

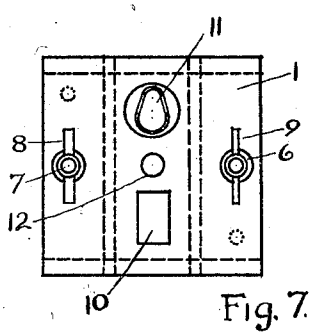


Fig. 7.

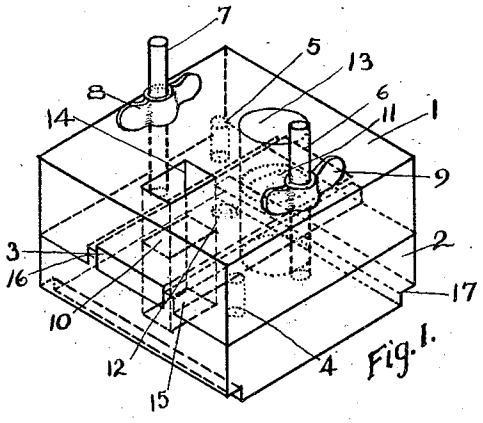


Fig. 1.

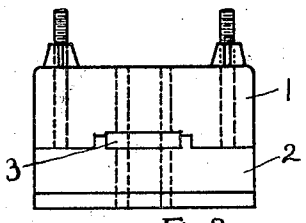


Fig. 8.

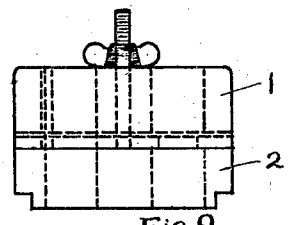


Fig. 9.

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Patented Jan. 29, 1924. 1,482,099

UNITED STATES PATENT OFFICE.

WILLIAM C. STOPPELWERTH, OF SPRINGFIELD, ILLINOIS.

HAND PUNCH.

Application filed July 27, 1922. Serial No. 577,985.

To all whom it may concern:

Be it known that I, WILLIAM C. STOPPELWERTH, citizen of the United States, residing at 1425 Penn Street, Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Improvement in Hand Punches, of which the following is a specification.

My invention relates to hand punches particularly of a type adapted to be used for punching holes of main springs for phonograph motors. An object of my invention is to provide a simple and economical device for the use of the phonograph mechanic in making repairs on the main springs of phonographs and victrolas.

It will be observed that the most frequent type of repair work necessitated on the part of a phonograph mechanic is the replacement of main springs for the reason that main springs are very often wound up too tight and broken. In this connection with this device a phonograph mechanic will be enabled to take the old spring in its broken condition, trim it off at the broken end and merely slip the end into the punch slot and it is ready for punching the new hole in the spring which is used for anchoring the spring in its casing when normally in use in a phonograph.

It would be further observed that the holes in the spring can be made from either of two die designs provided in the structure of this punch.

A comprehensive embodiment of my invention is illustrated in the accompanying drawings which form a part of this specification in which similar figures of reference indicate corresponding parts in the several illustrations. In the accompanying drawing I have illustrated the preferred embodiment of my invention in which it will be observed that the major element of novelty in my invention is found in its simplicity of construction and economical arrangement of parts as for the purpose above mentioned.

In the drawings:—

Fig. 1 is an isometric drawing of the completely assembled hand punch of my invention.

Fig. 2 is an isometric drawing of the steel die plate containing the two die designs involved in this construction.

Fig. 3 is an isometric drawing of the rectangular punch used in punching the rectangular hole in springs.

Fig. 4 is an isometric drawing of the cylindrical punch having its lower end shaped to fit the smaller and pear shaped die as shown at numeral 11 in Fig. 2.

Fig. 5 is an isometric drawing of a repaired end of a steel main spring showing how it looks with one of the holes punched in it that would be made with punch as shown in Fig. 4, numberal 18.

Fig. 6 is an isometric drawing of steel main spring for phonograph showing how it would look with the rectangular hole punched therein as would be made with the punch as shown in Fig. 3, numeral 19.

Fig. 7 is a top view of the hand punch assembled.

Fig. 8 is an end view of the same.

Fig. 9 is the side view of said punch.

Referring to the details of construction and operation of my invention attention is called to the functioning of each part and method of assembling and using the hand punch.

In assembling the parts of the punch we start with base 2, Fig. 1.

In Fig. 1 the parts are assembled as follows:

The die plate 3 is inserted in the longitudinal slot formed by the parallel guides 15 and 16 and detachably secured therein by means of screw 12 at its center. After the die plate is secured into operative position the top anchoring block, numeral 1, Fig. 1, is dropped into operative position and guided to its normally fitting adjustment by guiding posts 4 and 5 Fig. 1, as well as anchoring posts 6 and 7. In the operation of this hand punch when the assembling is thus far completed the spring should be inserted at one end of the die guided into position by the slotted shape of the anchoring block 1 where it fits down over the die plate 3 after pushing the end of the spring into position to be punched resting on the die block over the die holes therein. The next thing is to secure the spring in this position rigidly before punching holes therein and this is done by turning thumb screws 8 and 9 down on anchoring posts 6 and 7 until the thumb screws are screwed down tight thus holding the anchoring block down tightly on top of spring to be punched.

The next step is to select the punch that will make the desired design of hole in the spring, drop the punch into its corresponding vertical guide slot and then take a ham-

mer and give it a firm blow on top of the punch. To release the spring after the desired hole is punched unscrew the thumb screws and lift the top anchoring block 1 slightly just enough to release the pressure on the spring and withdraw the spring.

It will be observed that bottom block 2 has two slots along its lower edge adapted to provide a convenient means of holding it in a vise if desired.

Having thus described the nature of my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. In a hand punch of the character described a detachable die plate adapted to operate in conjunction with a base casting and an anchoring cap used for holding said die plate detachably secure in a predetermined position when the die is normally used for punching holes in spring material, means comprising threaded bolts, thumb screws and guide pins for holding said elements in operative position as and for the purpose described.

2. In a hand punch of the character described having a detachable die plate, a slotted die rest provided with vertical guide pins and securing bolts, an anchor cap provided with vertical guide slots adapted to guide the blow of the punch when in operation.

3. In a hand punch of the class described the combination comprising an interchangeable and detachable die plate, a die rest with vertical die slots and horizontal guide slots for guiding said die plate into operative position, an anchor cap provided with vertical punch guide holes and means for detachably securing said cap into operative position when normally in use as and for the purpose set forth.

4. A metallic hand punch device for phonograph-spring repair, comprising in combination, a rectangular base die rest, a detachable rectangular die plate containing spaced and respectively rectangular and pear shaped holes serving as die openings through which a hand driven punch is adapted to operate in blanking out holes in phonograph springs such as will conform to the design of the said die openings; a rectangular top anchoring cap provided with vertical guide means and thumbscrew securing means that are adapted to guide and secure said cap into correct position to hold said die plate, a cylindrical hand punch handle integral with a blanking punch pattern of pear shaped design, a rectangular hand punch handle integral with a smaller rectangular blanking punch pattern with stop means provided in an abrupt shoulder between said handle and said pattern; said die rest provided with integral guide bars spaced to embrace at the sides said die plate, and provided further with a threaded centrally located set screw hole for securing, with screw, said die plate into operative position preventing longitudinal movement; said die rest provided further with vertical blanking release holes in spaced relations and in respective vertical alignment with the said die designs in said die plate, all to suitably provide quick and effective means in compact combination for repairing phonograph springs by punching new anchoring holes therein when needed.

5. In a metallic hand punch device for phonograph spring repair work a rectangular base die rest, a detachable rectangular die plate containing spaced and respectively rectangular and pear shaped holes serving as die openings through which a hand driven punch is adapted to operate in blanking out holes in phonograph springs such as will conform to the design of the said die openings; a rectangular top anchoring cap provided with vertical guide means and thumbscrew securing means that are adapted to guide and secure said cap into correct position to hold said die plate, a cylindrical hand punch handle integral with a blanking punch pattern of pear shaped design, a rectangular hand punch handle integral with a smaller rectangular blanking punch pattern with stop means provided in an abrupt shoulder between said handle and said pattern; said die rest provided with integral guide bars spaced to embrace at the sides said die plate, and provided further with a threaded centrally located set screw hole for securing, with screw, said die plate into operative position preventing longitudinal movement; said die rest provided further with vertical blanking release holes in spaced relations and in respective vertical alignment with the said die designs in said die plate, all to suitably provide quick and effective means in compact combination for repairing phonograph springs by punching new anchoring holes therein when needed.

6. In a device of the character described a blanking die plate having spaced and designed die holes respectively rectangular and pear shaped for repairing phonograph springs, in combination with a rectangular base die rest, a rectanguler top anchoring cap provided with vertical guide means and thumbscrew securing means that are adapted to guide and secure said anchoring cap into normal operative position when holding down said die plate, a cylindrical hand punch handle integral with a blanking punch pattern of pear shaped design, a rectangular hand punch handle integral with a smaller rectangular blanking punch pattern with stop means provided in an abrupt shoulder between said handle and said pattern; said die rest provided with integral guide bars spaced to embrace at the sides said die plate, and provided further with a threaded

centrally located set screw hole for securing, with screw, said die plate into operative position preventing longitudinal movement; said die rest provided further with vertical blanking release holes in spaced relations and in respective vertical alignment with the said die designs in said die plate, all to suitably provide quick and effective means in compact combination for repairing phonograph springs by punching new anchoring holes therein when needed.

In witness whereof I hereunto set my hand and seal this 24th day of July, 1922.

WILLIAM C. STOPPELWERTH. [L. S.]

Witnesses:
ELIZABETH L. EOGET,
MARGARET S. LUTHY.