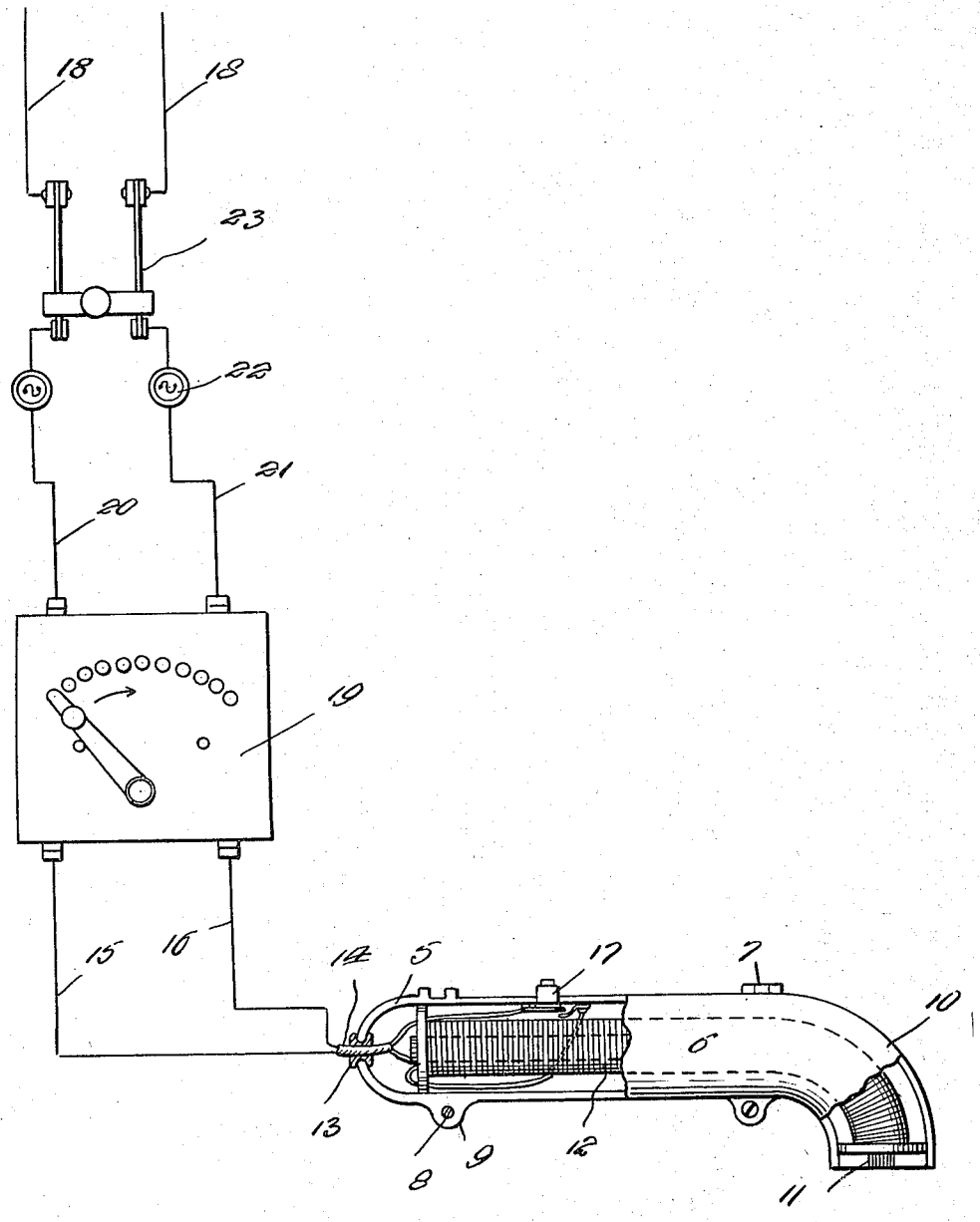
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G. E. VOLZ

MAGNETIC WORK HANDLING IMPLEMENT

Filed Dec. 14, 1923



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UNITED STATES PATENT OFFICE.

GOTTHOLD E. VOLZ, OF DETROIT, MICHIGAN.

MAGNETIC WORK-HANDLING IMPLEMENT.

Application filed December 14, 1923. Serial No. 680,777.

To all whom it may concern:

Be it known that I, GOTTHOLD E. VOLZ, citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Magnetic Work-Handling Implements, of which the following is a specification.

This invention relates to certain new and useful improvements in magnetic work handling implements particularly adapted for use in placing or removing metallic pieces of work in or from position in the operation of punch presses or the like.

It is the usual practice for an operator of a punch press to place the pieces of work upon the press table or to remove the work therefrom by the use of his hands, and in so doing, the operator is subject to injury. It is accordingly an object of the present invention to provide an implement or tool capable of efficiently handling the pieces of work while being placed in or removed from machines of this kind, altho capable of general application, and through the use of which the operator's hands will not be subject to injury.

Another object of the invention is to provide an implement of the above kind, which embraces the desired qualities of simplicity and durability of construction, as well as efficiency in operation.

Still another object of the invention is to provide a work handling implement of the above character which may be conveniently operated and controlled.

Other objects will appear as the nature of the invention is better understood, and the same consists in the novel form, combination, and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing, the view is one partly diagrammatic, and partly in side elevation, as well as partly broken away and in section, showing a work handling implement constructed in accordance with the present invention, and connected with a source of electricity in a preferred manner.

Referring more in detail to the drawing, the implement consists of an elongated tubular casing preferably constructed of half sections 5 and 6 hinged together as at 7 and having suitable means such as bolts 8 extending through ears 9 provided upon the free edges of the sections 5 and 6 for holding the latter in closed relation. This casing is provided with a downturned end portion, as at 10, the free end of which is open, and arranged within and corresponding in shape to the casing, is an electromagnet comprising a soft metal core 11 that is exposed at one end through the open end portion of the casing and upon which is wound the usual coil 12. The casing is of such form and size as to permit the straight portion thereof to be grasped in the hand, and to thereby act as a hand hold or grip.

The inner end of the casing is preferably closed and provided with a suitable small opening in which is secured a bushing 13 of insulating material, through which the extension cord 14 may extend, which extension cord comprises insulated lead wires 15 and 16. A conventional form of push button switch 17 is mounted in the top of the straight portion of the casing, and has one terminal thereof connected with one of the wires 15 and 16, while the other of said wires 15 and 16 is connected to one terminal of the coil 12. The other terminal of the coil 12 extends to the other contact of the switch 17, and as the latter is normally open, the circuit to the coil 12 will be closed upon pressing the button of the switch 17, thereby energizing the coil 12 and causing the core 11 to be magnetized. When this takes place, the open downturned end portion 10 of the casing is placed upon the upper surface of the metal piece of work into engagement with the adjacent end of the core 11, so that such piece of work will be effectively held against the open end of the casing and whereby such piece of work may be readily transferred to the punch press or removed therefrom. By reason of the fact that the hand grasps the casing at a point remote from the open end of the casing, the operator's hands will not be subject to injury, the casing being sufficiently long to insure this result. As soon as the work has been properly placed, the push button switch may be released, so as to open the circuit of the coil 12 and de-energize the latter, whereby the piece of work will be released from the core 11. Where the device is employed in places equipped with city power supply, the line of which is indicated by the wires 18, the lead wires 15 and 16 are preferably connected with a suitable rheostat 19, from which wires 20 and 21 lead to fuses 22, that are in turn connected to a double pole switch

23, that is properly connected to the line wires 18. In this manner, the strength of the magnetism may be regulated through the proper adjustment of the rheostat 19, while the implement will be effectively protected against overload by means of the fuses 22. Also, the switch 23 may be opened when the device is not required for use so as to protect the rheostat and wires as well as the tool or implement. From the foregoing description, it is believed that the construction and operation, as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

What I claim as new is:

1. A magnetic work handling implement of the character described comprising a tubular casing having a downturned end portion, the free end of which is open, an electro-magnet arranged within and substantially conforming to the shape of said casing and comprising a coil provided with a soft metal core exposed at one end to the open end of the downturned end portion of the casing, means for facilitating energizing of said magnet, and means to control energization of said magnet.

2. A magnetic work handling implement of the character described comprising a tubular casing having a downturned end portion, the free end of which is open, an electro-magnet arranged within and substantially conforming to the shape of said casing and comprising a coil provided with a soft metal core exposed at one end to the open end of the downturned end portion of the casing, means for facilitating energizing of said magnet, means to control the energization of said magnet, said controlling means comprising a normally open push button switch carried by the top of the inner end portion of the casing.

3. A magnetic work handling implement of the character described comprising a tubular casing having a downturned end portion, the free end of which is open, an electro-magnet arranged within and substantially conforming to the shape of said casing and comprising a coil provided with a soft metal core exposed at one end to the open end of the downturned end portion of the casing, means for facilitating energizing of said magnet, means to control the energization of said magnet, said casing being composed of separable longitudinal half sections.

4. A magnetic work handling implement of the character described comprising a tubular casing having a downturned end portion, the free end of which is open, an electro-magnet arranged within and substantially conforming to the shape of said casing and comprising a coil provided with a soft metal core exposed at one end to the open end of the downturned end portion of the casing, means for facilitating energizing of said magnet, means to control the energization of said magnet, said casing being composed of separable longitudinal half sections, hingedly connected along adjacent edges, and means to detachably join the casing sections along the remaining edges thereof.

5. A magnetic work handling implement of the character described comprising a tubular casing having a downturned end portion, the free end of which is open, an electro-magnet arranged within and substantially conforming to the shape of said casing and comprising a coil provided with a soft metal core exposed at one end to the open end of the downturned end portion of the casing, means for facilitating energizing of said magnet, means to control the energization of said magnet, said casing being composed of separable longitudinal half sections, said casing having a straight inner end portion of relatively long dimensions, and adapted to be grasped in the hands of the user of the implement.

In testimony whereof I affix my signature.

GOTTHOLD E. VOLZ.