

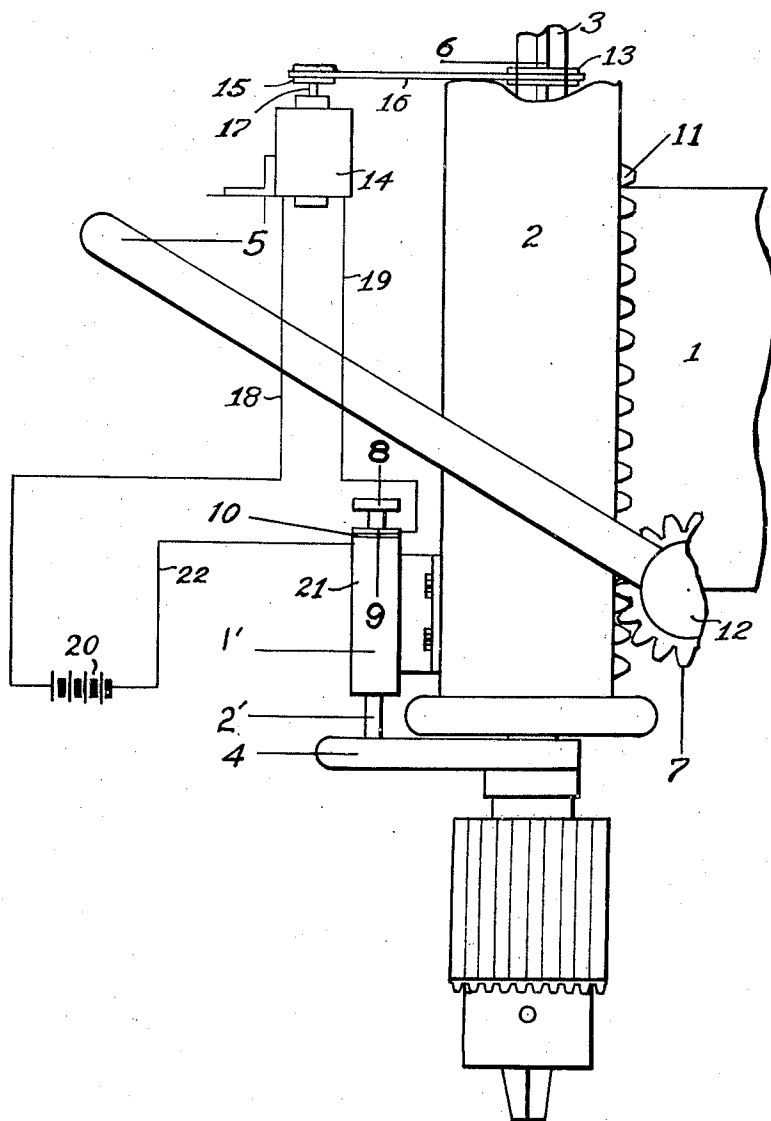
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W. HEINEMANN

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ELECTRIC AUTOMATIC STARTER

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W. Lloyd Crummer

WITNESS

INVENTOR

WALDO HEINEMANN

BY *Victor J. Evans & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE

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ELECTRIC AUTOMATIC STARTER

Waldo Heinemann, Philadelphia, Pa.

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1 Claim. (Cl. 77—6)

My invention relates to improvements in starting mechanisms for drill press spindles.

The object of the invention is to provide means for automatically starting the rotation of the spindle when the same is moved downwardly into engagement with the work to be operated upon.

Another object of the invention is to provide a device of this character which is simple in construction, cheaply manufactured and having certain details of structure and combination of parts hereinafter more fully set forth.

In the accompanying drawing the figure represents a side elevation of the improved device.

Referring now to the drawing, 1 represents a horizontally arranged support, carrying, at one end, a vertically disposed sleeve 2 adapted to move vertically within the support. Extending vertically through the sleeve is the spindle 3, which is free to rotate but held against longitudinal movement within the sleeve. One side of the sleeve is provided with rack teeth 11, meshing with a cog wheel 7, rotatably supported on a shaft 12, carried by the support 1. The cog wheel 7 is provided with a lever 5, by means of which it is rotated for raising and lowering the sleeve. The shaft or spindle 3 carries a sprocket wheel 13, held against rotation but vertically movable thereon. An electric motor 14 is properly supported with a sprocket wheel 15 in horizontal alinement with the sprocket wheel 13, and passing around the sprocket wheels is a drive chain 16. The motor shaft 17 carries the sprocket wheel 15, whereby the spindle is rotated. The motor 14 is driven by electricity through the wires 18 and 19 leading to the battery 20, or other source of supply. Carried by the support 1, in any desired manner, is a vertically disposed cylindrical member 21, through which passes a vertically movable rod 2', which is insulated from the member 21. A wire 22 leads from the battery 20 to the member 21. Carried by the upper end of the member 21 is a ring-like insulator, through which the rod 2' freely passes. This insulator 10 supports a disc 9, which is connected

to the wire 19 leading to the motor 14. The upper end of the rod 2' is provided with an enlarged head 8, which, as shown in the drawing, is normally held in an upward position out of contact with the disc 9.

The lower end of the sleeve 2 is provided with an outwardly extending collar or arm 4, upon which is supported the rod 2', whereby the rod is held in an upward position when the drill spindle is in its raised position and the circuit to the motor is broken.

In the operation of the device, the lever 5 is moved downwardly causing the sleeve 2, through the medium of the cog wheel 7 and rack teeth 11, to lower the spindle into engagement with the work to be operated upon. The arm or collar 4 is simultaneously lowered allowing the rod 2' to move downwardly, bringing the head into engagement with the disc 9 and completing the circuit to the motor through the wires 18, 19 and 22, thus starting the rotation of the spindle.

What is claimed is:

An automatically operable switch mechanism for an electric motor driven drill press comprising an elongated cylindrical member adapted to be supported in fixed vertical position on the press, a vertical rod slidably extended through the cylindrical member, the said rod having its lower end projecting below the cylindrical member for engagement with a member carried by the drill press spindle for moving the rod with the movement of the spindle, an enlarged head formed on the upwardly projecting end of the rod, a ring of insulating material mounted on the upper end of the cylindrical member, and a disc of electric conductive material supported on the insulating ring, the said disc and the cylindrical member being connected to terminals of an electric circuit through the motor so that when the spindle is lowered the head on the upper end of the rod will drop into contact with the disc to close the motor circuit and effect rotary operation of the spindle.

WALDO HEINEMANN.