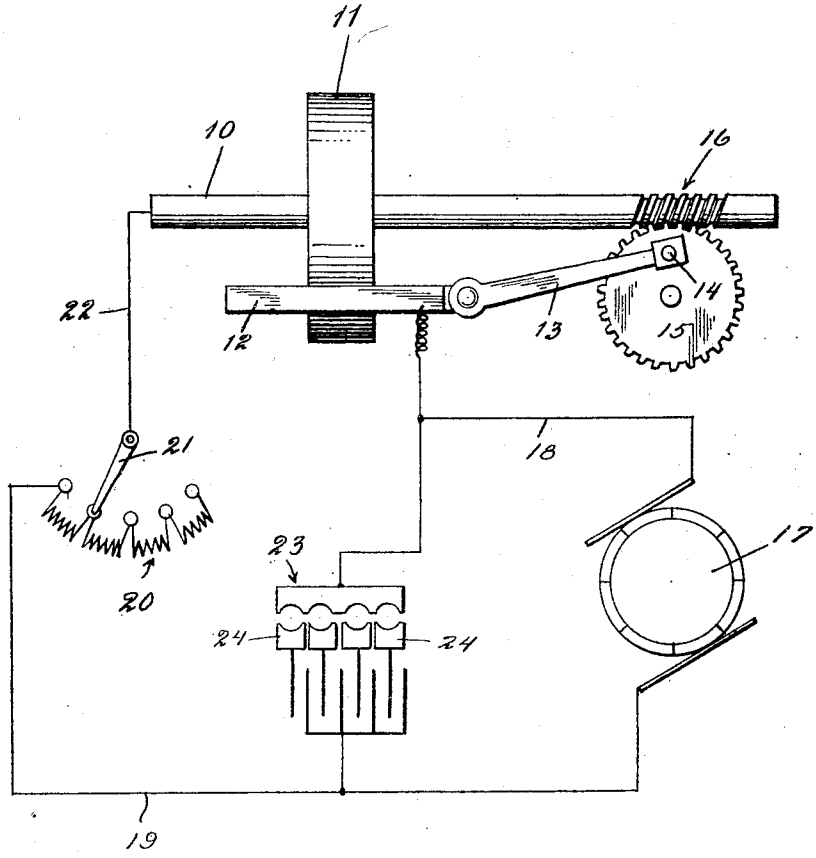
Feb. 9, 1926. 1,572,515

M. S. CLAWSON

METHOD OF ROUGHENING GRINDING WHEELS

Filed August 8, 1922



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Patented Feb. 9, 1926. 1,572,515

UNITED STATES PATENT OFFICE.

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METHOD OF ROUGHENING GRINDING WHEELS.

Application filed August 8, 1922. Serial No. 580,412.

To all whom it may concern:

Be it known that I, MONROE S. CLAWSON, a citizen of the United States, residing at Upper Montclair, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Methods of Roughening Grinding Wheels, of which the following is a specification.

This invention relates to the grinding and polishing art and has for its object the provision of a novel process and means for roughening grinding wheels continually while they are in use so that they will be maintained in proper condition for effective action.

The principle involved is the passing of current through two conductors which have rapid relative movement, the points of contact continually changing with such rapidity that there is a high resistance to the current at the point of contact which will result in the generation of sufficient heat to fuse the metal, which fused metal is wiped away as fast as fusing occurs so that there will be a positive removal, the moving element being affected far less than the other.

More specifically, the present invention has for its object the provision of a movable element contacting continually with a grinding wheel, both of these elements being in circuit with a source of current, means being also provided for varying the strength of the current and for preventing arcing at the point of contact of the movable dressing element with the rotary grinding wheel.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawing in which—

The figure shows a somewhat diagrammatic view of an apparatus for carrying out my process.

It should be understood in advance that the structure illustrated is merely an example of means for carrying out the principle involved. The numeral 10 designates a shaft which may be driven by any desired means, not shown, and which carries a grinding wheel 11 which must naturally be constructed of some conductor of electricity, preferably high speed steel. Engaging the periphery of this grinding wheel is a movable element 12 which may be formed as a bar of iron, steel, carbon or the like and which is connected with a pitman 13 pivoted upon a wrist pin 14 carried by a worm-wheel 15 meshing with a worm 16 on the shaft 10 so that as the shaft is rotated the bar 12 will be rubbed back and forth against the periphery of the grinding wheel.

The numeral 17 represents a source of current such as a dynamo or the like, which has one terminal connected by a wire 18 with the movable element 12 and which has its other terminal connected by a wire 19 with a rheostat 20 which includes a movable arm 21 connected with the shaft 10 by a wire 22. The purpose of the rheostat is to regulate the strength of current passing through the grinding wheel and the movable element 12.

In order to prevent the formation of a spark at the points of contact of the members 11 and 12 and to thus prevent pitting or burning of the grinding wheel, I may prefer to use a condenser 23 bridging the wires 18 and 19 and formed of a plurality of units 24 so arranged that any desired number thereof may be plugged into the circuit.

In the operation it will be seen that the passage of the current through the member 12 engaging the wheel 11 will cause a drag so that as the member 12 is reciprocated the wheel will be roughened and thus kept in a condition making it efficient for use in dressing or grinding down articles or material.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simple and yet highly effectual method of and apparatus for roughening a grinding wheel while in use so that it will be unnecessary to stop dressing operations to roughen the grinding wheel or to replace a smooth one. From actual experiment I have discovered that the process is very efficient, continuous and inexpensive.

I claim:

The process of roughening a rotating grinding wheel of conducting material consisting in rubbing thereagainst transversely of the periphery thereof a conducting element, the grinding wheel and the conducting element being connected in series with a source of current.

In testimony whereof I affix my signature.

MONROE S. CLAWSON.