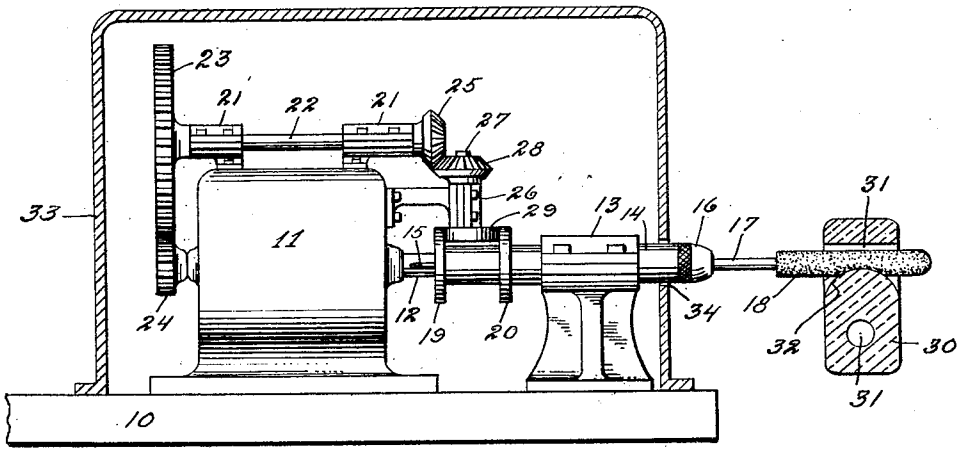
April 18, 1933. D. BETTINI 1,904,608

INSULATOR FINISHING BRUSHING MACHINE

Filed Dec. 20, 1930

Fig. 1.



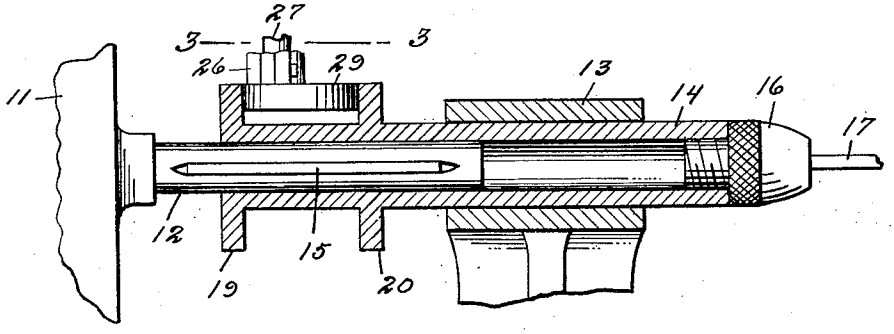


Fig. 2.

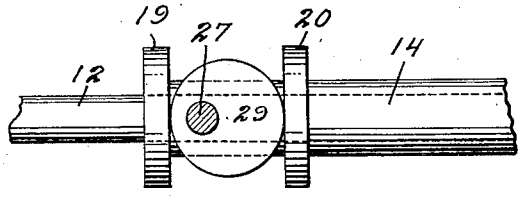


Fig. 3.

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UNITED STATES PATENT OFFICE

DAVID BETTINI, OF BALTIMORE, MARYLAND, ASSIGNOR TO LOCKE INSULATOR CORPORATION, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND

INSULATOR FINISHING BRUSHING MACHINE

Application filed December 20, 1930. Serial No. 503,849.

The invention relates to apparatus for the manufacture of porcelain insulators and has special reference to machines for finishing and dressing insulators, particularly those of the strain type for guy or other use.

It is well known that guy strain insulators and the like comprise a block or other body of porcelain formed with interlinking passages for the reception of metallic fittings which project in opposite directions from the opposite sides of the body so that the material between the passages is under compression when the insulator is in service. Various means may be employed for forming these passages while the insulator body is in a "green" or somewhat plastic condition. Various types of cutters may be used. Regardless of the exact method of and means employed for forming the passages, the fact remains that the edges are very apt to be rough and uneven if not actually torn. It therefore becomes necessary to dress, smooth and round off the edges so that the insulator, when finished, will be free from roughness or irregularities of any sort. It is of course possible that this work may be done manually by pressing and wiping the clay either by means of the fingers or some suitable tool.

However, as such methods are slow, I have devised the present invention which has for its general object the provision of a motor driven rotary and reciprocatory brush against which any of the surfaces of the insulator, when in a partially dry condition, may be placed or onto which the insulator may be passed so that the brush will operate within the passages for smoothing the walls thereof and making them true.

An important object of the invention is to provide an apparatus of this character embodying a novel transmission mechanism for imparting reciprocatory as well as rotary motion to the brush so that it will have a rapid and efficient action without grooving the body of the insulator as might be the case if the motion were purely rotary.

A further object of the invention is to provide an apparatus of this character which will be simple and inexpensive to make, easy to assemble, positive in action, efficient and durable in service, and a general improvement in the art.

To the attainment of the foregoing and other objects and advantages, the invention preferably consists in the details of construction and the arrangement and combination of parts to be hereinafter more fully described and claimed, and illustrated in the accompanying drawing in which:

Figure 1 is a side elevation of the machine with the removable cover in section and showing it working upon a guy strain insulator,

Figure 2 is a detail longitudinal section taken along the drive shaft and showing the details of the transmission, and

Figure 3 is a cross section taken on the line 3—3 of Figure 2.

Broadly considered, the invention comprises a power device such as an electric motor, a brush, wiper or the like rotated thereby and a transmission mechanism likewise operated by the motor for imparting reciprocatory movement to the brush or wiper.

Referring more particularly to the drawing, the numeral 10 designates a suitable support which may be a table or stand, upon which is mounted an electric motor 11, details of which are not shown but which has the usual shaft 12. Mounted on the base or support 10 in spaced relation to the motor 11 is a suitable bearing 13 within which is slidably and rotatably mounted a sleeve 14 telescoped onto the shaft 12 and held slidably and non-rotatably thereon by means of a spline 15. At one end this sleeve carries a chuck 16 for holding the shank 17 of a tool 18 which might be a wiper but which is preferably a brush formed either of bristles or fine wires, whichever is found more suitable. At its other end the sleeve is formed with a pair of spaced disks 19 and 20.

Mounted on the motor are suitable bearings 21 through which is journaled a shaft 22 equipped at one end with a gear 23 meshing with a pinion 24 on the motor shaft 12, and equipped at its other end with a bevel gear 25. Also carried by the motor is a bearing 26 through which is journaled a shaft 27 equipped at its upper end with a bevel gear

28 meshing with the bevel gear 25 and equipped at its lower end with an eccentric 29 located between and cooperating with the disks 19 and 20.

In the operation of the apparatus, when the motor is energized the shaft 12 will of course be rotated and by virtue of the spline 15 will cause rotation of the sleeve 14, chuck 16 and brush 18. At the same time, the rotation of the pinion 24 on the motor shaft will turn the gear 23, shaft 22 and bevel gear 25 and consequently cause rotation of the gear 28, shaft 27 and eccentric 29. As the eccentric is confined between the disks 19 and 20, it will be seen that as it turns it will coact with these disks in alternation and slide the sleeve 14 longitudinally upon the shaft 12 and within the bearing 13 so that reciprocatory motion will be imparted to the brush 18 simultaneously with its rotation.

In the use of the mechanism, it is intended that the insulator 30, which is here shown as of the guy strain type with interlinking passages 31, is taken in the hands of the operator and moved about or manipulated in such manner as to bring any desired surfaces thereof into engagement with the moving brush. Insulators of this type frequently have longitudinally extending grooves in the sides and it is quite apparent that by bringing the grooved portions into engagement with the brush they will be smoothed out and dressed so as to be even and uniform. The corners may also be rounded off. Attention is called to the fact that one of the principal utilities of the apparatus is its ability to dress out the interlinking passages 31. Of course the brush must be of an appropriate diameter depending upon the size of these passages and it will be seen that the insulator may be slid onto the brush so that the brush will pass through one of the passages. The operator then tilts the insulator back and forth so that the brush may be brought into contact with the curved wall 32 of the passage and effectually smooth off all portions thereof to protect the mechanism against clogging on account of dust or particles of clay abraded off and it is preferable to provide a removable hood or cover 33 having an opening 34 accommodating the tubular member or sleeve 14.

Clearly the device may be used for dressing off insulators of any and all types, its use not being is any way restricted to any one type of insulator though logically it is peculiarly adapted for dressing out passages or recesses which may be more or less inaccessible where ordinary methods and apparatus are employed. Of course this dressing is done at some stage in the manufacture prior to firing, the probability being that best results can be obtained when the insulator is in a bone dry condition though it should be remembered that the device will operate even though there be an appreciable moisture content in the insulator body. A feature of importance is that the reciprocatory movement prevents any grooving of the material such as might occur if the motion were purely rotary and the operator neglected to move the insulator about properly with respect to the brush. By means of this mechanism the work of dressing insulators may be carried out expeditiously and with a reasonable degree of accuracy.

From the foregoing description and a study of the drawing it is believed that the construction, operation and advantages should be readily apparent to one skilled in the art without further explanation.

While I have shown and described the preferred embodiment of the invention, it should be understood that the disclosure is merely an exemplification of the principles involved as the right is reserved to make all such changes in the details of construction as will widen the field of utility and increase the adaptability of the device provided such changes constitute no departure from the spirit of the invention or the scope of the claims hereunto appended.

Having thus described the invention, I claim:

1. In an insulator finishing machine, a stationary support, a motor mounted thereon and having a shaft, bearing means on the support, a tubular member slidable and rotatable within the bearing means and having a splined telescopic connection with said shaft, an abrading element carried by said tubular member, means driven by the motor for reciprocating said tubular member simultaneously with rotation thereof, comprising collars carried by said tubular member and an eccentric driven by the motor shaft and located between and cooperating with said collars.

2. In an insulator finishing machine, a stationary support, a motor mounted thereon and having a horizontal shaft, bearing means on the support, a tubular member slidable and rotatable within the bearing means and having a splined telescopic connection with said shaft, an abrading element carried by said tubular member, means driven by the motor for reciprocating said tubular member simultaneously with rotation thereof, comprising collars on said tubular member, an eccentric located between and cooperating with said collars, a vertical shaft carrying said eccentric, bearing means on the motor for said vertical shaft, and countershafting driven by the motor shaft and driving said vertical shaft.

In testimony whereof I affix my signature.

DAVID BETTINI.