Nov. 25, 1930. D. J. GAWRON 1,783,038

ELECTRIC PENCIL SHARPENER

Filed Aug. 27, 1930 2 Sheets-Sheet 1

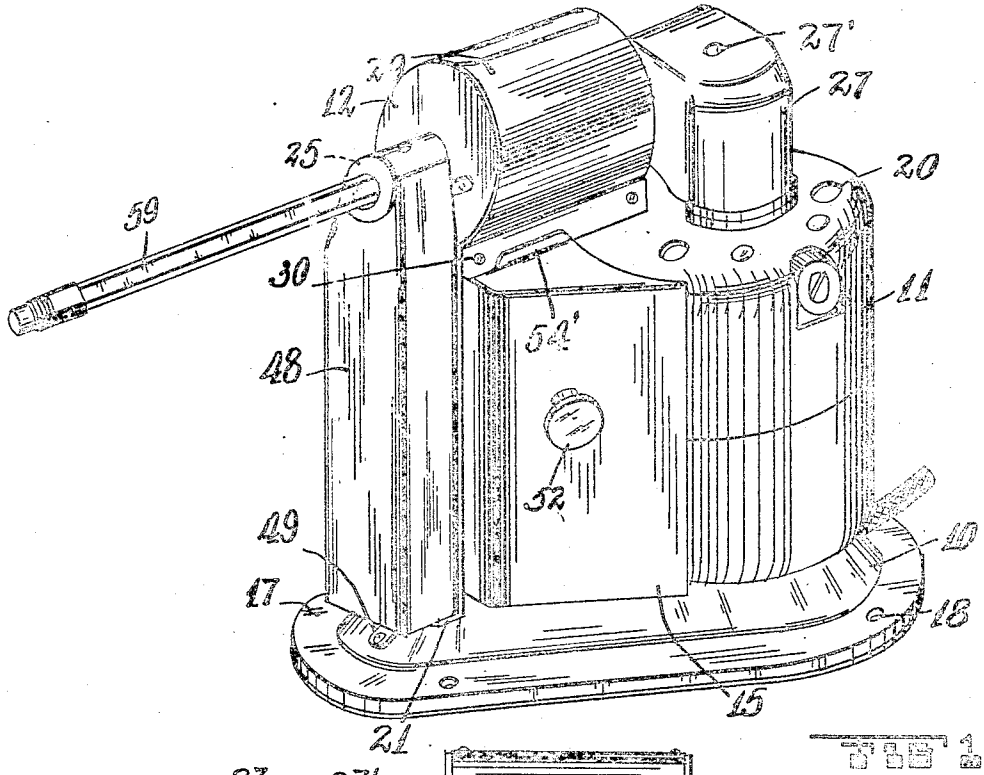


Fig. 1

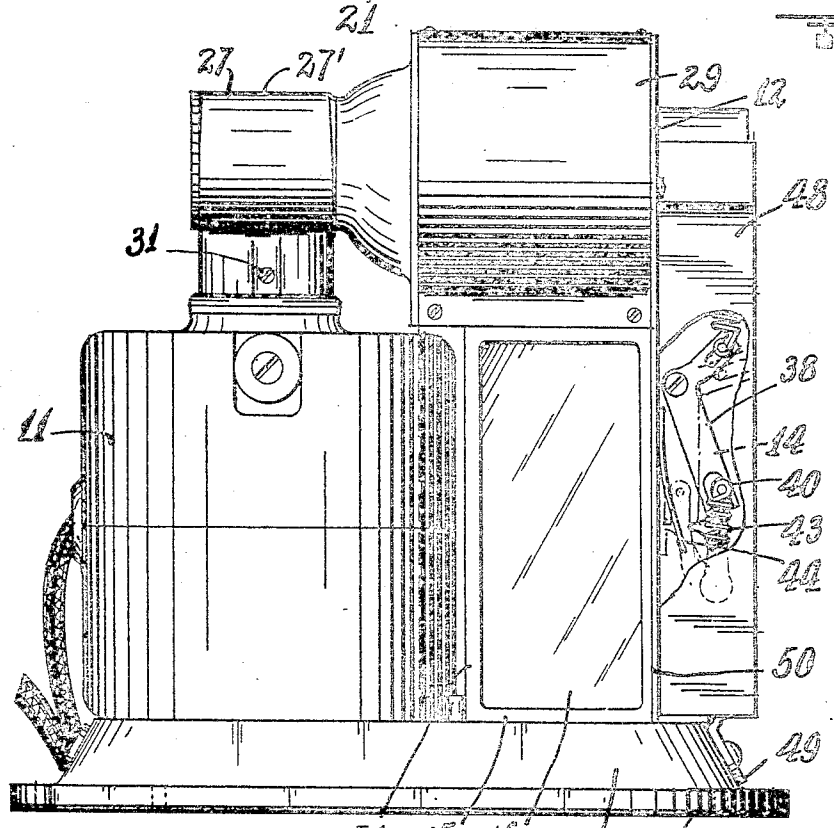


Fig. 2

INVENTOR
David J. Gawron
BY
Zoltan A. Polachek
ATTORNEY

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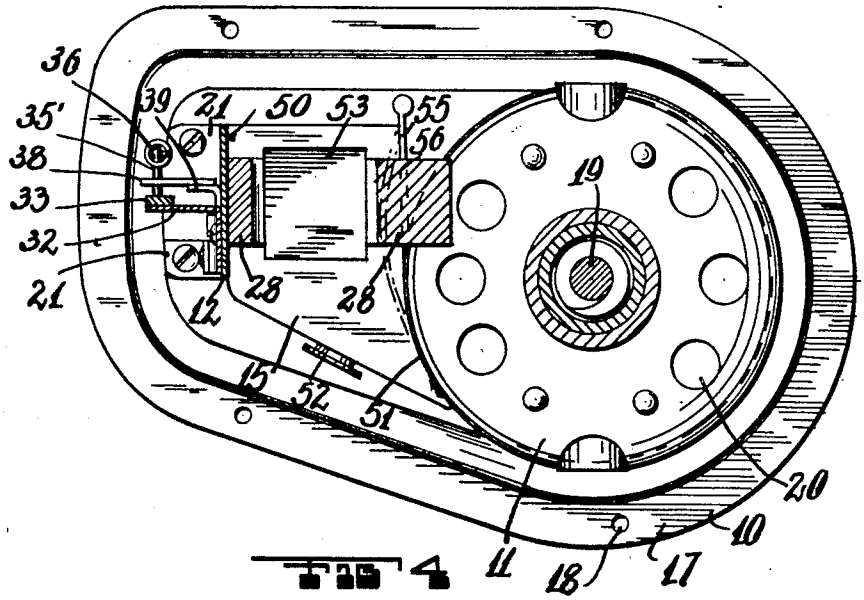


FIG. 4

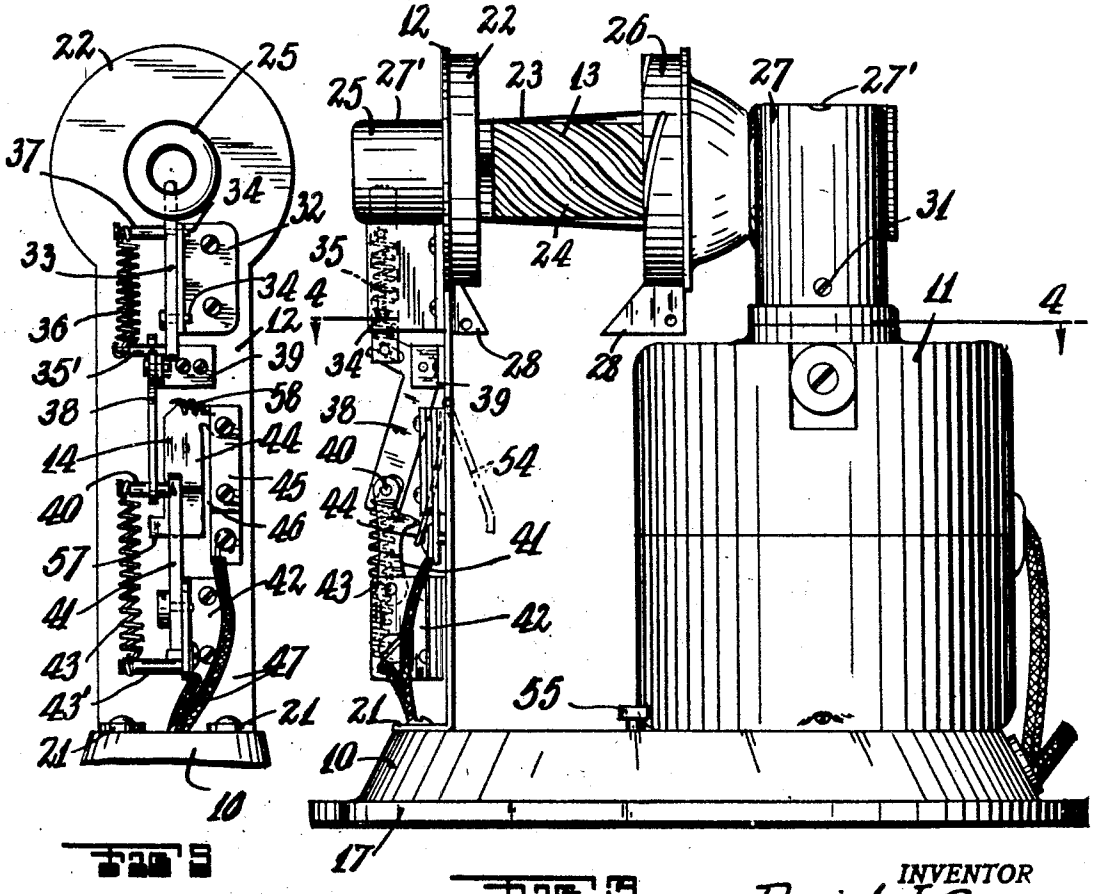


FIG. 5

INVENTOR
David J. Gawron
BY Zoltan P. Polachek
ATTORNEY

Patented Nov. 25, 1930

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UNITED STATES PATENT OFFICE

DAVID J. GAWRON, OF BROOKLYN, NEW YORK

ELECTRIC PENCIL SHARPENER

Application filed August 27, 1930. Serial No. 478,078.

This invention relates to new and useful improvements in an electric pencil sharpener.

The invention has for an object the provision of a device of the class mentioned which is of simple durable construction, dependable in use and efficient in action, and which can be manufactured and sold at a reasonable cost.

The invention proposes a vertical plate attached upon a base spaced from a motor vertically mounted on the said base, a pencil sharpener attached between the plate and the motor, a drawer beneath the pencil sharpener to catch shavings falling from the pencil sharpener, an automatic switch for starting the motor upon insertion of a pencil within the sharpener, and means for holding the drawer in place.

The invention also proposes a means for automatically causing the switch to become inoperative upon the removal of the drawer.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:—

Fig. 1 is a perspective view of a device constructed according to this invention.

Fig. 2 is a side view of the said device with part of the casing broken away to show part of the automatic switch.

Fig. 3 is a side view of the device without the casing for the automatic switch and the sharpener, and also with the drawer removed.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a front view of Fig. 3.

The electric pencil sharpener comprises a base 10, a motor 11 attached on the base so that the sides are vertical, a vertical support plate 12 spaced from the motor and attached on the base, a pencil sharpener 13 extending horizontally across the motor 11 and the vertical plate 12 and operatively connected to the motor, an automatic switch 14 for starting the motor upon insertion of a pencil 59 into the sharpener and mounted upon the vertical plate 12, a drawer 15 for receiving shavings from the sharpener and formed with a window 16 at the rear and slidably mounted on the base between the motor and the vertical plate, and means on the base to hold the drawer 15 in place.

The base 10 is formed of metal and is fitted with a flange 17 around its periphery. Apertures 18 are formed in the flange and are used for fastening the base to a desk or the like. The motor 11 is of a conventional type and is vertically mounted upon the base so that its sides and shaft 19 are vertical. Openings 20 are formed on the top of the motor for ventilation purposes. The vertical support plate 12 is spaced a small distance from the motor and extends well above the motor. Lugs 21 are bent at right angles to the plate at the bottom end of the plate for fastening the plate to the base by means of bolts. At the upper end of the plate 12, a flange 22 is formed with an opening in its center for allowing the sharpener to be rotatively mounted within.

The pencil sharpener 13 is of a conventional type having a conventional bracket 23 upon which two roller knives 24 are pivoted, only one of which is seen in the drawing. A tubular pencil guide 25 is attached upon the plate 12 and passes through the flange 22 for rotatively supporting the pencil sharpener at one end. A large flange 26 rotatively supports the bracket 23 and is attached to a casing 27 of reduction gears, not shown on the drawing. Conventional gear teeth which are formed within the large flange 26 and pinions which are attached to the roller knives 24 for rotating the said roller knives are not shown on the drawing. Lugs 28 are formed on the flanges 22 and 26 for allowing a casing 29 to be put over the pencil sharpener covering both the sides and the top, but allowing the bottom to remain open for letting the shavings fall through. Screws 30 hold the casing 29 in place. Suitable oil holes 27′ are provided on the casing 27 and pencil guide 25.

The casing 27 is held in place by a screw 31. The automatic switch 14 for starting the motor upon insertion of the pencil 59 into

the sharpener includes a right angled bracket 32 attached upon the plate 12, a bar 33 mounted on the said plate by means of screws 34, and slots 35 allow the rod to slide. An opening in the tubular guide member 25 allows the bar 33 to enter it. A peg 35′ extends from the bar 33 and a spring 36 acts between the peg and a stud 37 from the bracket 32 for continually urging the bar 33 upward into the tubular pencil guide. A bell crank 38 formed with forked ends is pivotally mounted on a bracket 39 attached to the plate 12. The upper fork end of the bell crank 38 engages with the peg 35′, and the lower fork end of the bell crank engages with a peg 40 projecting from a contact arm 41.

The contact arm 41 is pivotally mounted on a right angle bracket 42. A spring 43 acts between the peg 40 and a projection 43′ form the bracket 42 for continually urging the contact arm 41 outwards. A contact plate 44 of substantially rectangular shape is attached on insulation blocks 45 at one edge and fastened upon the plate 12. A slot 46 in the contact plate 44 provides resiliency for the plate. Upon the insertion of a pencil into the tubular guide 25, the rod 33 is depressed and the bell crank 38 pivots and pushes the contact arm 41 towards the contact plate 44. Upon contact, the circuit is closed. Wires 47 are connected to both contact plate and contact arm and then in series with the electric motor, the actual wiring being not shown on the drawing. A casing 48 fits over the entire automatic switch 14 and is formed with lugs 49 for fastening it.

The drawer 15 fits in between the vertical plate 12 and the motor 11. One side of the drawer 50 is straight for engaging against the plate 12 and the other side 51 is curved for engaging against the side of the motor. A handle 52 is attached to the front portion of the drawer 15. The window 16 in the rear of the drawer is used for seeing the amount of shavings in the drawer. An opening 53 is formed on the top of the drawer 15 for allowing the shavings from the pencil sharpener to fall in and a lug 54′ projects from the drawer top to act against the casing 29 for constituting a stop. The means for preventing the drawer 15 from loosely falling about comprises a spring 55 riveted to the base 10 and normally urging the drawer against the plate 12. Dot and dash lines 56 show the spring 55 in its normal position when the drawer 15 is removed.

The means for automatically causing the switch to become inoperative upon the removal of the drawer comprises a plate section 57 of the same shape as the contact plate 44 cut-out in the plate 12, and the plate section being pivotally mounted within the said opening. A spring 58 normally urges the contact plate away from the contact arm 41. Dot and dash lines 54 show the plate section 57 in its normal position when the drawer 15 is removed. If then, a pencil is inserted into the pencil guide and the contact arm 41 moves, no contact will take place because the contact plate 44 is too far away. Upon the insertion of the drawer 15, the contact plate 44 is moved up towards the plate 12 and contact can then take place.

In operation of the device, a pencil is inserted into the tubular guide member 25, the bar 33 is depressed and contact is made between the contact arm 41 and the contact plate 44. The motor then drives the sharpener through the reduction gears and causes the sharpening of the pencil. If a pencil is inserted in the machine while the drawer is out, the motor will not start because the contact plate 44 is out of reach of the contact arm 41.

While I have shown and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold the drawer in place, said vertical support plate comprising a flange formed with an aperture at its upper end for rotatively mounting the sharpener, and lugs bent at right angles to the plate at the lower end for mounting the plate to the said base.

2. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold drawer in place, said automatic switch for starting the motor upon insertion

of a pencil into the sharpener comprising a bar slidably mounted upon a bracket on the vertical support plate, a peg projecting from the said bar, means for urging the said bar upward, a bell crank formed with forked ends engaging the said peg with its upper end and mounted on a bracket on said plate, a contact arm pivotally mounted on a bracket on said plate, a peg projecting from the said arm, said peg engaging in the forked end of the said bell crank, a means for normally urging the contact arm outward, and a contact plate supported by insulation blocks attached on said plate in front of the contact arm.

3. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold drawer in place, said automatic switch for starting the motor upon insertion of a pencil into the sharpener comprising a bar slidably mounted upon a bracket on the vertical support plate, a peg projecting from the said bar, springs for urging the said bar upward, a bell crank formed with forked ends engaging the said peg with its upper end and mounted on a bracket on said plate, a contact arm pivotally mounted on a bracket on said plate, a peg projecting from the said arm, said peg engaging in the forked end of the said bell crank, a spring for normally urging the contact arm outward, and a contact plate supported by insulation blocks attached on said plate in front of the contact arm.

4. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold drawer in place, said automatic switch for starting the motor upon insertion of a pencil into the sharpener comprising a bar slidably mounted upon a bracket on the vertical support plate, a peg projecting from the said bar, means for urging the said bar upward, a bell crank formed with forked ends engaging the said peg with its upper end and mounted on a bracket on said plate, a contact arm pivotally mounted on a bracket on said plate, a peg projecting from the said arm, said peg engaging in the forked end of the said bell crank, a means for normally urging the contact arm outward, and a contact plate supported by insulation blocks attached on said plate in front of the contact arm, said contact plate being substantially rectangular in shape and formed with a slot for making the plate resilient.

5. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold drawer in place, said drawer having one side straight for engagement against said plate and the other side curved for engagement against the motor, an opening at the top for allowing the shavings to fall through, and a lug formed at the top for engagement against the pencil sharpener for acting as a stop to prevent the drawer from falling inward.

6. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, and means on base to hold drawer in place, said means for holding the drawer in place comprising a spring attached on the base for normally urging the drawer against the said plate.

7. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from

the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, means on base to hold drawer in place, and a means for automatically causing the switch to become inoperative upon the removal of the drawer comprising a plate section in an opening in said plate, a contact plate mounted on the plate and within said opening, and means for normally urging the plate inward.

8. An electric pencil sharpener, comprising a base, a motor attached on the base so that its sides are vertical, a vertical support plate spaced from the motor and attached on the base, a pencil sharpener extending horizontally across the motor and the vertical plate and operatively connected to the motor, an automatic switch for starting the motor upon the insertion of a pencil into the sharpener and mounted upon the vertical plate, a drawer for receiving shavings from the sharpener and formed with a window at the rear and slidably mounted on the base between the motor and the vertical plate, means on base to hold drawer in place, and a spring for automatically causing the switch to become inoperative upon the removal of the drawer comprising a plate section in said plate, a contact plate mounted on said plate, and springs for normally urging the plate inward.

In testimony whereof I have affixed my signature.

DAVID J. GAWRON.