

June 14, 1927.

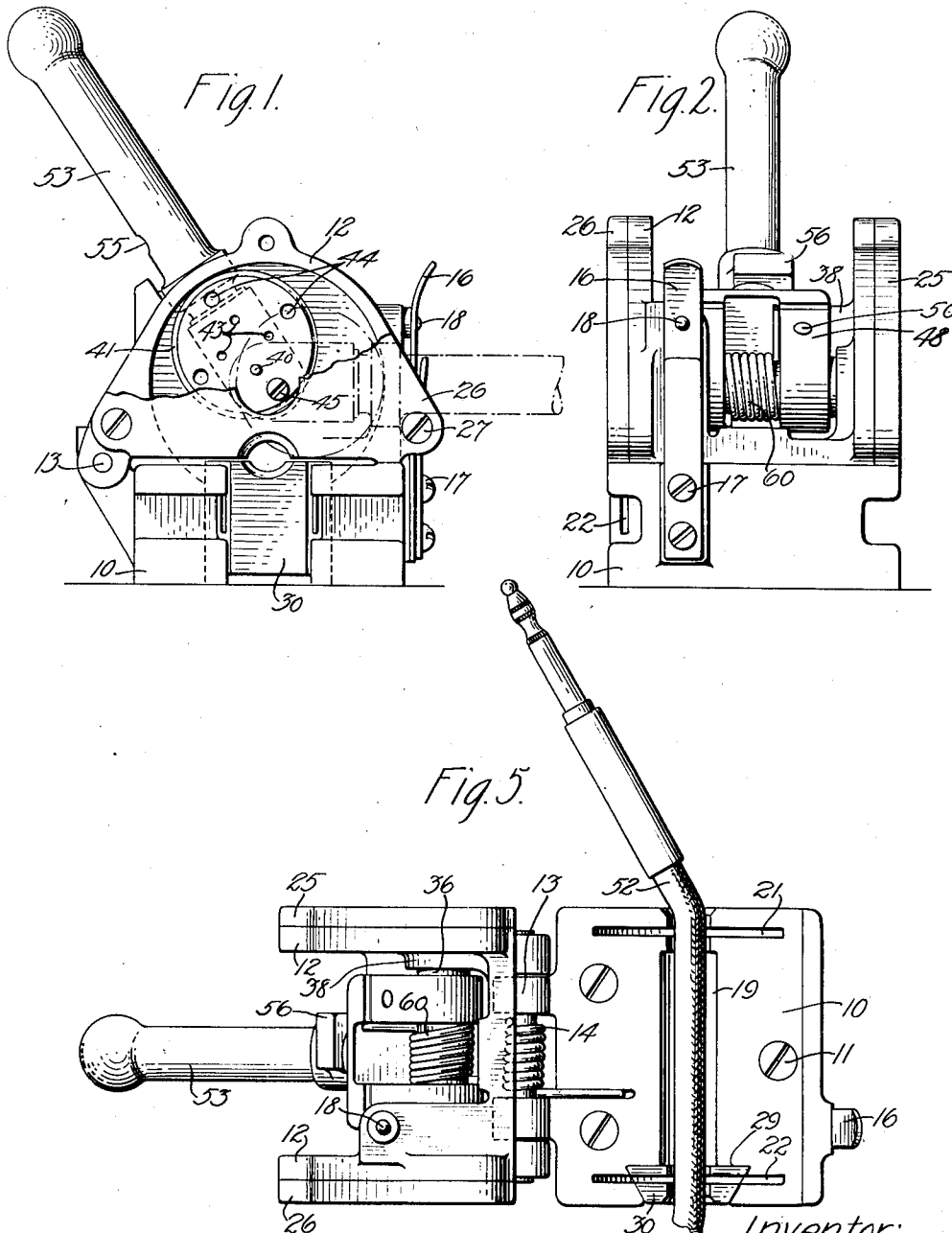
L. N. HAMPTON

1,632,004

CUTTING DEVICE

Filed Dec. 30, 1922

2 Sheets-Sheet 1



Inventor:  
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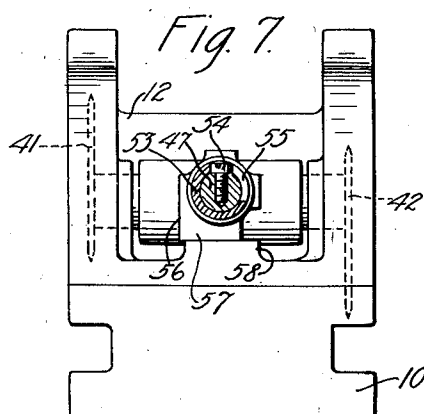
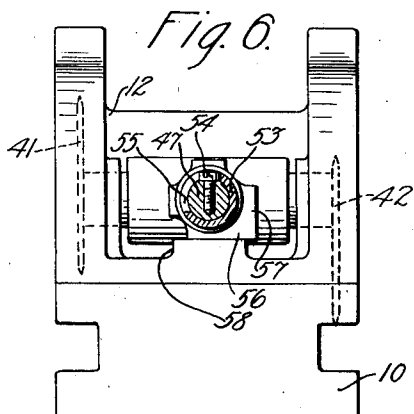
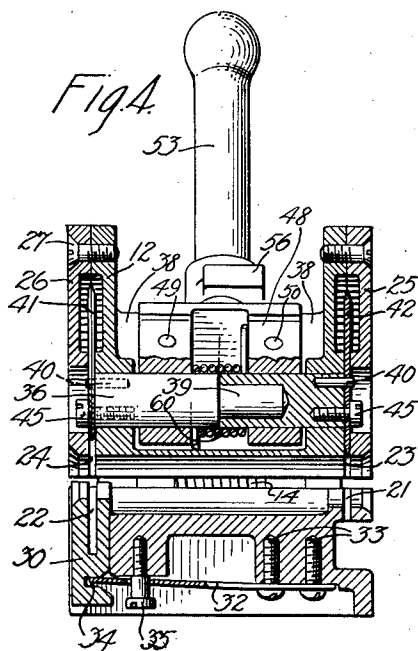
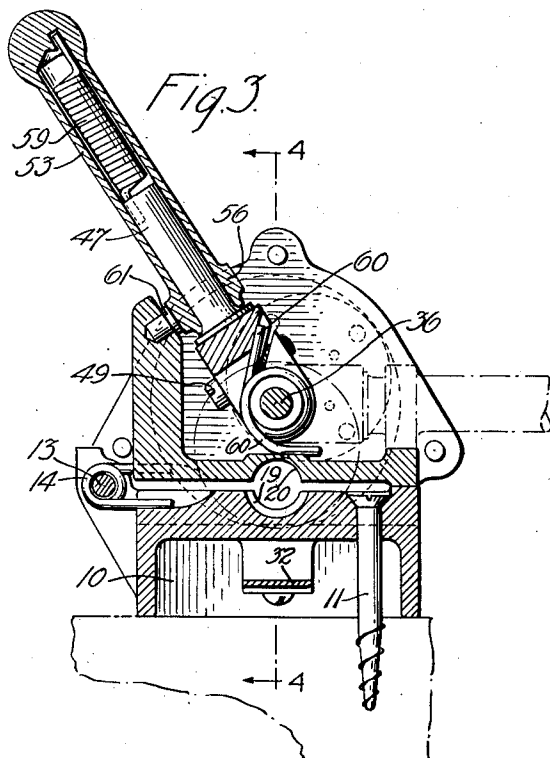
L. N. HAMPTON

1,632,004

CUTTING DEVICE

Filed Dec. 30, 1922

2 Sheets-Sheet 2



Inventor:  
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## UNITED STATES PATENT OFFICE.

LEON N. HAMPTON, OF NEW YORK, N. Y., ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## CUTTING DEVICE.

Application filed December 30, 1922. Serial No. 609,977.

This invention relates to cutting devices. It is the object of the invention to provide a device for simultaneously cutting an article at a plurality of different points to a plurality of different depths.

The invention has wide application and, because of its adjustable features, may be used for many different cutting operations. The invention is herein described in connection with the cutting of telephone switchboard cords, for the purpose of making repairs but it will be understood that it is equally suitable for other purposes.

In telephone exchanges, when a switchboard plug becomes worn or otherwise rendered unfit for further service, it is customary to sever the cord adjacent the plug and then to remove the insulation about an inch or two from the severed end preparatory to attaching a new plug. The present invention provides means for severing a damaged telephone plug from a cord and simultaneously slitting the insulation, but not the wire, an inch or two from the severed end, in order that this strip of insulation may be slipped off and a new plug adjusted in place.

Other features and advantages of the invention relate to the means provided for adjusting the depth of cut of the cutting members and for adjusting the cutting edge of such members; the additional means for further adjusting the depth of cut of the cutting members; and the means for clamping the cord tightly in place during the cutting operation.

These and other features of the invention, and the particular arrangement of parts which is thought most preferable, will appear from a consideration of the following description taken in connection with the accompanying drawings in which:

Fig. 1 is an end view of the device with a portion of the end plate broken away;

Fig. 2 is a front view thereof;

Fig. 3 is a sectional view taken on the line 3-3 of Fig. 2;

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

Fig. 5 is a top elevation showing the device in open position with a telephone switchboard cord mounted therein; and

Figs. 6 and 7 are front views showing diagrammatically the adjustment of the cut-

ting members for different radial positions of the hand lever.

Referring to the drawings, a base plate 10, which may be of cast iron, is adapted to be secured to a work table by means of screws 11, and a cover 12, which may also be of cast iron, is hinged to the base plate at 13, and is adapted normally to be held in its open position under the action of a coil spring 14. A leaf spring 16 is fixed to the base plate 10 by means of screws 17 and is provided at its upper end with a small hole adapted to engage a pin 18 on the cover 12 to clamp the cover in its closed position as shown in Figs. 1 and 2.

The base plate and cover are provided with semicircular grooves 19 and 20 respectively, running lengthwise through their center portions, these grooves being in alignment when the cover is in its closed position to serve as a seat for a telephone switchboard cord or other article to be cut. The base plate is also provided with end slots 21 and 22 disposed transversely to the grooves 19. Alining with the slots 21 and 22 when the cover 12 is closed upon the base plate, are slots 23 and 24 formed between the ends of the cover 12 and a pair of end plates 25 and 26 which are secured to the ends of the cover by means of screws 27. The slots 23 and 24 are adapted to contain circular knife blades which may be lowered within the slots 21 and 22, as hereinafter more fully described. The slot 22 in the base plate 10 extends through an enlarged slot 29 suitably shaped to retain a member 30 against lateral movement, the slot 22 and the groove 19 also extending through the member 30. A leaf spring 32 is supported at one end on the under side of the base plate by means of screws 33, the other end resting in a nick 34 in the lower end of the member 30 to force the member 30 upward in the slot 29. It will be seen that the member 30 will serve to force a cord or other material which is placed in the groove 19 in an upward direction toward the top of the groove 20, thus clamping the cord between the two grooves. The downward movement of the leaf spring 32 is limited by a stop screw 35 in the under side of the base plate.

A split shaft 36 is journaled in bearings 38 in the cover 12, one part of the shaft be-

ing provided with a central pin 39 which fits into a corresponding recess in the other section of the shaft, thus making the two sections rotatable with respect to each other.

Each end of the shaft 36 is provided near its periphery with a fixed pin 40. A pair of circular knife blades 41 and 42 are provided with a plurality of small holes 43, preferably equidistant from the center of the blade, any one of which holes may engage one of the pins 40 in the split shaft. A plurality of larger holes 44 are also provided equidistant from the center of each blade and are adapted to receive a screw 45 cooperating with a suitable threaded hole in either end of the shaft to clamp the knife blades in position. This arrangement provides means for adjusting the circular blades in a plurality of different positions on the shaft 36 so that a new cutting edge may be employed whenever necessary. A hand lever 47 is provided with a bifurcated split end 48 through which the split shaft 36 passes. The arms of the bifurcated end 48 are provided with adjusting screws 49 and 50, respectively, which when tightened securely clamp their respective halves of the shaft 36 to the hand lever 47. Either of the screws 49 or 50 may be loosened to permit their respective halves of the split shaft 36 to be rotated to raise or lower their respective circular knife blades. In Fig. 4, the half of the shaft supporting the knife blade 42 is so turned that the blade 42 will have a wider sweep than the blade 41 when the shaft 36 is actuated by means of the hand lever 47, or in other words, when it is lowered, the blade 42 will extend further into the slot 21 than the blade 41 will extend into the slot 22. When a telephone switchboard cord 52 is placed in the groove 19, as shown in Fig. 5, and the cover 12 is clamped thereover, the blade 42 will completely sever the cord adjacent the plug when the hand lever 47 is moved forward, while the blade 41 will move forward only far enough to cut the insulation, but not the wire, of the telephone cord. By means of this arrangement, at a single stroke, a damaged telephone plug may be cut off the cord 52 and the insulation extending about an inch or two from the severed end of the cord may be sliced preparatory to slipping off the insulation and adjusting a new plug. In order to completely slit the insulation on the cord 52, after the plug has been severed, the cord may be twisted manually to present different parts of the insulation to the circular blade 41 while the hand lever 47 is held in its lowered position.

Since some standard telephone cords are slightly greater in diameter than others, additional means is provided for slightly adjusting the depth of cut of the blades without necessitating the removal of the end

plates 25 and 26 on the cover 12. For this purpose, the hand lever 47 is provided with an enclosing sheath 53 which is retained thereon by means of a screw 54 in the lever which acts in an arcuate slot 55 in the lower end of the sheath to permit the rotary movement of the sheath. The sheath 53 is provided with a lug having surfaces 56 and 57 which are adapted to engage the raised edge 58 of the cover 12 depending upon the radial position of the sheath 53, as shown in Figs. 6 and 7. In its normal position, when the lever arm is lowered, the lug surface 56 will engage the raised surface 58 of the cover, thus permitting the knife blades 41 and 42 to be lowered to their greatest depth, as shown in Fig. 6. When the sheath 53 is turned upon the lever arm 47, however, and is then lowered, the lug surface 57 will engage the surface 58 of the cover, thus limiting the depth to which the blades 41 and 42 may be lowered, as shown in Fig. 7. The depth of cut of the blade 42 is, in this case, immaterial since it will completely sever the cord in whichever radial position the sheath is held. The slight adjustment of the blade 41, however, is of great importance in slitting the insulation of cords which vary only slightly in diameter. The lever arm 47 is provided with a coil spring 59, one end of which engages the inner end of the sheath 53 and the other end of which is fixed to the lever arm to return the sheath to its normal radial position when the arm is released. A coil spring 60 is also disposed about the shaft 36, one end thereof engaging the face of the cover 12 and the other end engaging the end 48 of the lever arm 47 to return the lever arm to the back position shown in Fig. 3 when the cutting operation is completed. A plug 61 of rubber or other flexible material is provided in the back of the cover 12 to take up the impact of the lever arm when it returns to its normal position under the action of the spring 60.

It will be understood that the spring 59 may be so adjusted that when the arm is lowered in its normal radial position, the raised surface 58 of the cover will be engaged by the lug surface 57 instead of lug 56 as described above. This adjustment will depend entirely on whether most of the telephone cords used in a particular exchange are of large or small gauge. Certain other changes may obviously be made in the details of construction shown and described, and therefore the invention is not limited to any particular construction except as defined by the appended claims.

What is claimed is:

1. A cutting device comprising a base and a cover therefor, cooperating grooves in said base and cover for supporting a cord to be cut, a shaft composed of two relatively rotatable sections journaled in said cover, a

knife blade mounted eccentrically on each of said shaft sections, means for adjustably clamping said shaft sections together, and means for actuating said shaft to lower said blades toward said base.

2. A cutting device comprising a base and a cover therefor, cooperating grooves in said base and cover for supporting a cord to be cut, means for yieldingly clamping such a cord in said grooves, a shaft composed of two relatively rotatable sections journaled in said cover, a knife blade mounted eccentrically on each of said shaft sections, means for adjustably clamping said shaft sections together, and means for actuating said shaft to lower said blades toward said base.

3. A cutting device comprising a split shaft, a knife blade mounted eccentrically on each end of said shaft, a lever for actuating said shaft, and adjustable means on said lever for varying the operating range of said blades.

4. A cutting device comprising a base and a cover therefor, a shaft journaled in said cover, a pair of knife blades eccentrically mounted on said shaft, a lever for actuating said shaft to lower said blades, and adjustable means on said lever cooperating with said base to vary the operating range of said blades.

5. A cutting device comprising a base and a cover therefor, a shaft composed of two relatively rotatable sections journaled in said cover, a knife blade mounted eccentrically on each of said shaft sections, a lever provided with means for adjustably clamping said shaft sections together, and adjustable means on said lever cooperating with said

base for varying the operating range of said blades.

6. A cutting device comprising a base and a cover therefor, cooperating grooves in said base and cover for supporting a cord to be cut, a shaft composed of two relatively rotatable sections journaled in said cover, a knife blade mounted eccentrically on each of said shaft sections, a lever provided with means for adjustably clamping said shaft sections together, a sheath rotatably mounted on said lever, and a plurality of stops on said sheath adapted selectively to engage said base at different radial positions of said sheath to vary the operating range of said blades.

7. A cutting device comprising a base and a cover therefor, cooperating grooves in said base and cover for supporting a cord to be cut, means for yieldingly clamping such a cord in said grooves, a shaft composed of two relatively rotatable sections journaled in said cover, a knife blade mounted eccentrically on each of said shaft sections, a lever provided with means for adjustably clamping said shaft sections together, a sheath rotatably mounted on said lever, a plurality of stops of different sizes on said sheath adapted selectively to engage said base at different radial positions of said sheath to vary the operating range of said blades, and a spring associated with said lever and sheath for returning said sheath to its normal radial position on said lever.

In witness whereof, I hereunto subscribe my name this 28th day of December A. D., 1922.

LEON N. HAMPTON.