March 20, 1928. 1,663,466

A. J. ROSTAL

NEUTRALIZING BAR

Filed Aug. 28. 1924 2 Sheets-Sheet 1

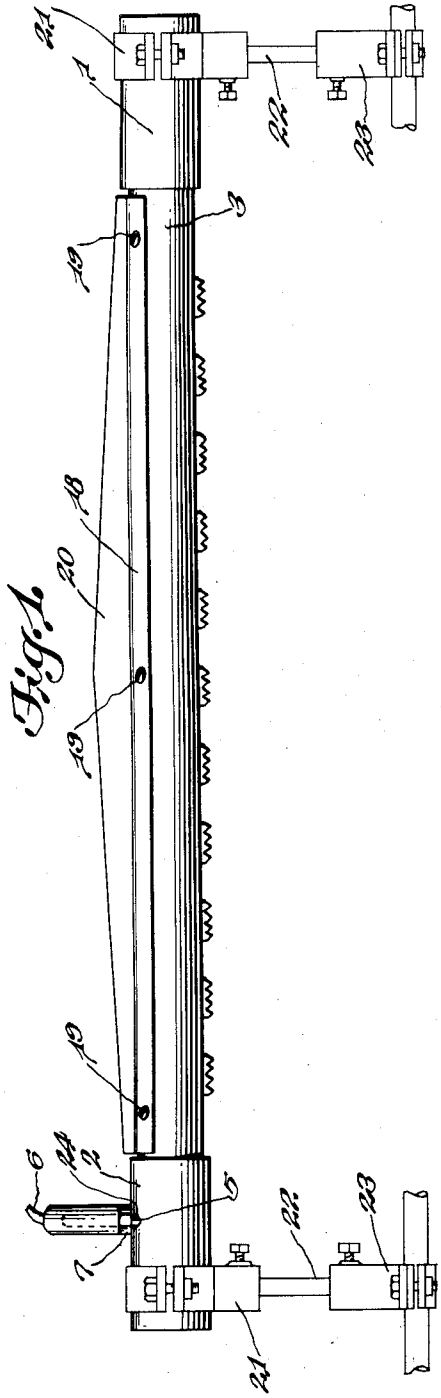


Fig. 1.

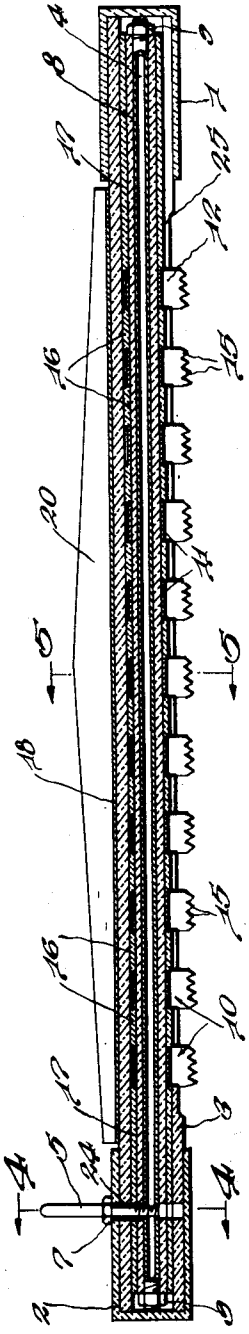


Fig. 2.

A. J. Rostal
INVENTOR

BY Victor J. Evans
ATTORNEY

March 20, 1928. 1,663,466

A. J. ROSTAL

NEUTRALIZING BAR

Filed Aug. 28. 1924 2 Sheets-Sheet 2

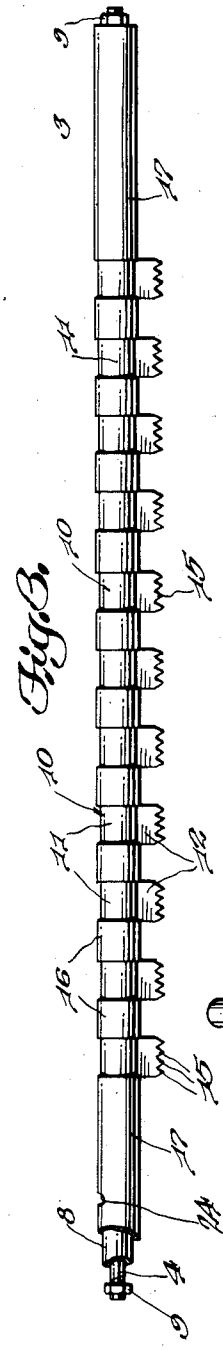


Fig. B.

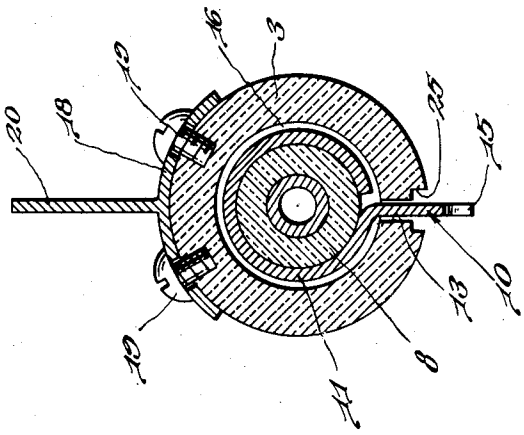


Fig. 5.

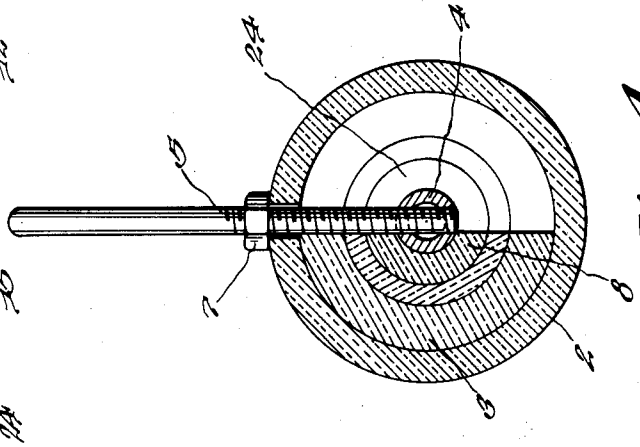


Fig. 4.

A. J. Rostal
INVENTOR

BY Victor J. Evans
ATTORNEY

Patented Mar. 20, 1928. 1,663,466

UNITED STATES PATENT OFFICE.

ALBERT J. ROSTAL, OF CHICAGO, ILLINOIS.

NEUTRALIZING BAR.

Application filed August 28, 1924. Serial No. 734,771.

This invention relates to new and useful improvements in a neutralizing bar and more particularly to a device which is especially adapted for application to a printing press or other machine thru which paper is passed for removing static electricity from the paper. The main object of my invention is the provision of a neutralizing device of this character which can be readily adjusted for positioning the same with respect to the paper whether or not running beneath the neutralizer or above the same.

Another object of my invention is the provision of a neutralizer which can be quickly and readily placed in position upon a printing press or the like or disconnected therefrom and the conducting elements which are carried by the neutralizer are so positioned with respect to the same as to prevent them from becoming accidentally bent out of shape or render them useless.

A further object of the invention is the provision of a neutralizing device of the above character whereby the conducting elements are so positioned with respect to the current supply that it will be necessary to have a comparatively strong current supply in order to transfer the same to the conductors and thus provide a comparatively strong current for the conductors whereby to positively remove all static electricity from the paper passing in contact with the conductors.

With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claims and shown in the accompanying drawings, in which:

Fig. 1 is a side elevation illustrating my improved neutralizer in operative position,

Fig. 2 is a longitudinally sectional view thru the main portion of the neutralizer,

Fig. 3 is a side elevation illustrating the support for the conductors and the conductor's position therein,

Fig. 4 is a transverse section on the line 4—4 of Fig. 2 and,

Fig. 5 is a transverse section on the line 5—5 of Fig. 2.

In carrying out my invention I provide two end bearing cap members 1 and 2 in which is rotatably mounted the supporting sleeve 3. Arranged centrally within this sleeve 3 is a conductive tube 4 which is connected thru the medium of the rod 5 to any source of electric supply by means of the conducting wire 6. The inner end of this rod 5 is threaded into an opening in the tube 4 and retained in proper position by means of a lock nut 7 which is carried by the rod 5 and bears against the cap bearing 2. From this it will be apparent that a source of electric current may be readily supplied to the conductive tube 4.

Mounted upon the tube 4 is a sleeve 8 of insulating material which is retained in position upon the tube by means of the nuts 9 threaded upon each end of the tube. Mounted upon this insulating sleeve 8 are a plurality of conductors 10 which include a circular body portion 11 mounted upon the sleeve 8 and provided with annular extensions 12 which project thru the slot 13 in the sleeve 3 a predetermined distance with their outer ends formed with teeth or projections 15. These conductors 11 are equally spaced by means of a plurality of rings 16 which are mounted upon the insulating sleeve 8. Positioned upon the ends of sleeve 8 are the end sleeves 17 which retain the conductors 11 against lateral movement.

The outer insulating sleeve 3 is strengthened by means of a longitudinally arcuate-shaped plate 18 which is attached to the outer surface of the sleeve 3 by means of screw members 19 and projecting laterally from the plate 18 is a rib 20 which extends longitudinally of the plate 18 and preferably arranged along the central portion of the plate so as to not only provide for strengthening the bar but provide a handle hold whereby the device may be readily rotated for positioning the conductors in a depending position as shown in Fig. 1 or extending upwardly from the top portion of the bar for engaging paper passing over the bar.

The neutralizer is supported by having the cap members 1 and 2 mounted within the bearings 21 at each end of the device, said bearings being adjustably supported upon a rod 22 which in turn is adjustably connected to the bearings 23 clamped in any suitable position upon the printing press or other machine to which the device is to be applied.

In order to permit the sleeves 3 and 8 together with the conductors, to be rotated within the bearing caps 1 and 2, the sleeves 3 and 8 and one of the sleeves 17 are provided with the slots 24 to permit the passage of the inner end of the rod during the rotation of these members. This will permit

the adjustment of the conductors either to an upright position for contacting paper passing over the device or for positioning them in a depending position for contacting paper travelling beneath the device. From this it will be apparent that regardless of the travel of the paper whether above or beneath the device the paper will contact with the teeth 15 and as these conductors 11 together with the teeth are highly energized it will remove the static electricity from the paper. It will be noted that the extensions 12 project thru a longitudinal slot 25 in the sleeve 3. In using my device, member 4 is connected by wire 6 to one side of a suitable source of electrical energy. This induces a charge of static electricity on members 10 and teeth 15 thereof. Member 4 is so connected to the source of electrical energy that the static electricity induced on members 10 is opposite in value to the static electricity produced on the paper during the printing process or by atmospheric conditions. The charges of static electricity on members 10 therefor neutralize the charges of static electricity on the paper, eliminating all difficulty in handling and feeding the paper through the press such as occurs where the static electricity on the paper is not removed or neutralized.

While I have shown and described the preferred embodiment of my invention, it will be understood that various changes and alterations may be made without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, what I claim is:

1. A neutralizing device comprising spaced bearing caps, a conductive element having its ends centrally disposed within said caps, an insulating sleeve surrounding said conducting element, means for connecting said conducting element with a source of electrical supply, a plurality of conductors mounted upon said insulating sleeve, means for retaining said conductors in spaced relation, an outer insulating sleeve enclosing the conductors, said outer sleeve having a longitudinal slot, lateral extensions on said conductors projecting thru said slot, a reinforcing member extending longitudinally of the outer sleeve and attached thereto and means whereby to permit rotative movement of the insulating sleeves and conductors upon the central conducting element for arranging the extensions of the conductors on the inner insulating sleeve in upright or depending position.

2. In a neutralizing device of the character stated, a rotatably mounted sleeve, a stationary main electrical conductor mounted within and spaced away from the sleeve, stationary means for connecting said conductor to a source of electrical energy, and a plurality of supplemental electrical conductors extending about and adjacent the main conductor, the supplemental conductors being electrically insulated from said main conductor and projecting beyond said sleeve and being movable therewith.

3. In a neutralizing device of the character described, end bearing caps, a sleeve rotatably mounted in said caps, a main conductor stationarily mounted in the sleeve and spaced therefrom, a plurality of supplemental conductors mounted for turning movement about the main conductor and electrically insulated therefrom, said supplemental conductors extending through and projecting beyond the sleeve for movement therewith, and stationary means for connecting the main conductor to a source of supply of electrical energy, said sleeve having a slot therein adapted to permit turning thereof.

4. In a neutralizing device of the character described, end bearing caps, a sleeve rotatably mounted in said caps, a main conductor stationarily mounted in the sleeve and spaced therefrom, a plurality of supplemental conductors mounted for turning movement about the main conductor and electrically insulated therefrom, said supplemental conductors extending through and projecting beyond the sleeve for movement therewith, stationary means for connecting the main conductor to a source of supply of electrical energy, and an arcuate plate extending longitudinally of and secured to the sleeve, said plate being provided with a longitudinally extending and outwardly projecting reinforcing rib providing means for turning the sleeve in the end bearing caps.

In testimony whereof I affix my signature.

ALBERT J. ROSTAL.