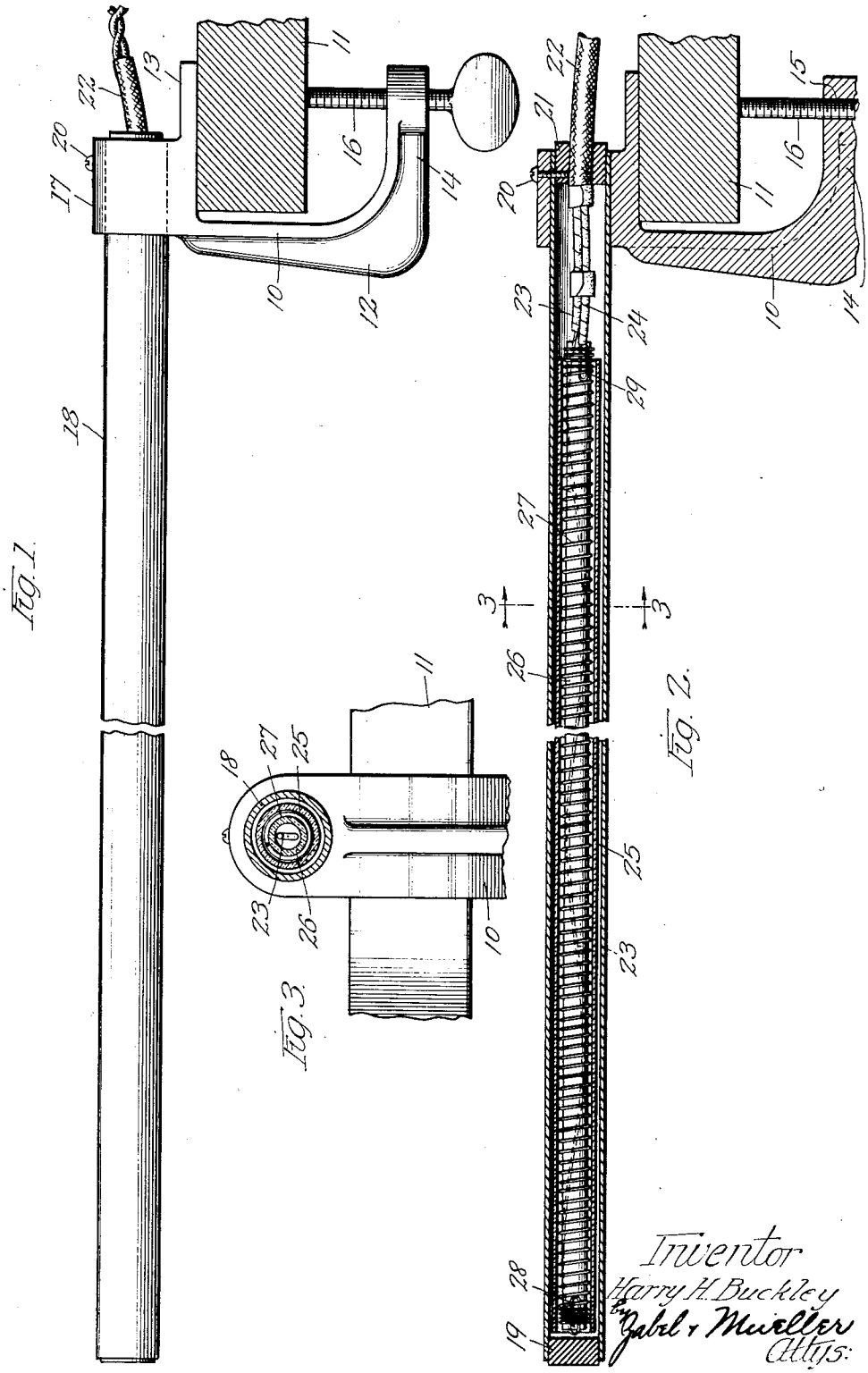
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METHOD OF RENEWING CARBON AND SIMILAR PAPERS.

APPLICATION FILED SEPT. 15, 1919.

1,396,403. Patented Nov. 8, 1921.



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METHOD OF RENEWING CARBON AND SIMILAR PAPERS.

1,396,403. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed September 15, 1919. Serial No. 324,018.

To all whom it may concern:

Be it known that I, HARRY H. BUCKLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Methods of Renewing Carbon and Similar Papers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a method for renewing carbon paper and other similar paper. It is well known that after a sheet of carbon paper has been used a few times on a typewriting or other impression machine portions of the sheet have the carbon removed therefrom so that the sheet will not thereafter give a smooth and even impression.

When a sheet of carbon paper is placed between two sheets of typewriting paper and inserted into a typewriting machine it is subjected to impression of type in a straight line across the sheet. When the carbon paper is inserted into the machine a second time it assumes nearly the same position that it assumed in the first operation, the second impression of the type is made on practically the same line as the first impression. Those portions of the carbon paper between the several lines of impressions remain practically intact and it is the purpose and object of this invention to devise a method by which the carbon remaining on the paper may be spread evenly over the entire sheet so that the carbon sheet may be used over and over again, and will perform the functions of a new sheet of carbon paper.

It is well known that a sheet of carbon paper is formed from a sheet of tissue paper covered over with a paste or coating made of lard and lamp black. It is to be understood, however, that these are not the only substances that may be employed because paraffin or any substance having properties the same as lard may be used in place of it. Likewise, other forms of carbon may be used in place of the lamp black. Instead of carbon, coloring matter of any kind which can be manufactured in powder form may be used to make the impression paper.

Another object of the invention is to provide a simple device for carrying out the method referred to above. Any device of this nature must necessarily be cheap in order to be commercial and must be easy to operate in order that it may be used by persons not skilled in the art of making carbon or similar impression paper. Other objects of the invention will be apparent from the following detailed description of the device disclosed in the drawings accompanying this specification. In this specification and in the drawings I have disclosed one form which my invention may take which form is best known to me at the present time. However, it is to be understood that by this specification and the accompanying drawings I do not intend to limit myself to the specific method or construction disclosed as modifications of the specific method or construction may be required in the practice and manufacture thereof or may occur to those skilled in this art. The real scope and nature of the invention disclosed is to be determined from claims appended to this specification.

The same reference characters have been used to designate the same parts throughout the several views of the drawings in which, Figure 1 is a side view of my device attached to a suitable support. Fig. 2 is a longitudinal vertical section thereof. Fig. 3 is a section on line 3—3 of Fig. 2.

Referring now to the drawings, I show a bracket member 10 which is adapted to be detachably secured to a supporting member 11 such as the edge of a table, a shelf or a window-sill. The bracket member 10 is provided with a suitable strengthening rib 12, an upper horizontal arm 13 which is adapted to engage the top surface of the support 11 and the lower horizontal arm 14 which is adapted to extend beneath the support as shown in the drawings. The arm 14 is provided with a threaded opening 15 which is adapted to receive a thumb screw 16 which screw may be turned up to engage the lower surface of the support as shown in the drawings in order to rigidly secure the bracket to the support.

The bracket member 10 is provided with an upwardly extending portion 17 which is provided with a suitable opening adapted to receive one end of a tube-like member 18. This member is shown round in the draw-

ings but it will be apparent that same may be made oval or elliptical in cross section if so desired. The principal requirement is that the tube shall not have sharp or square corners. The outer end of the tube is closed by a suitable stopper 19 which may be an ordinary cork. The tube is maintained rigidly through the extending portion 17 by means of a screw 20 which screw passes through an opening in the tube and engages a suitable insulating member 21 which closes the other end of the tube.

A suitable conducting wire 22 passes through an opening in the member 21 as shown in Fig. 2 of the drawings. The wire contains two conductors 23 and 24. The free end of the wire 22 (which is not shown) may be provided with any suitable plug or like socket. Located within the tube 18 is a hollow glass tube 25 and located within the tube 25 is a second hollow glass tube 26. The outside diameter of the tube 26 is less than the inside diameter of the tube 25 so that a space is provided between the adjacent walls of the tubes.

Wound around the inner tube 26 is a resistance coil 27 which is wound spirally around the tube 26 and occupies the space between the tubes. The conductor 23 passes through the inner tube and its free end is formed into a hook portion 28 which engages a number of turns at the outer end of the resistance coil. The conductor 24 has its free end formed into a hook 29 which engages a number of turns at the inner end of the resistance coil. With this construction it will be apparent that when electrical connection is made at the free end of the wire 22, current will flow through the resistance coil 27 and cause heating of the coil and its surrounding tubes. The tube 18 will thus be heated and the temperature of the tube will be regulated by means of the resistance coil.

The method of using the above described device is as follows. When a sheet of carbon paper or other similar impression paper has become worn out due to the fact that several impressions have been made on the same portions of the paper, the operator will lay the paper across the heated tube 18 preferably with the carbon surface upward. The ends of the sheet of paper will extend downwardly at the sides of the tube 18. The sheet of carbon paper is then drawn across the tube from one end of the sheet to the other. When the paper is thus drawn across the heat will cause lard or paraffin contained in the paper to melt and the carbon remaining on the paper will flow with the melted lard or paraffin to those portions of the paper where carbon has been removed in use. Thus by simply drawing the sheet of worn carbon across the heated tube the remaining carbon is formed into a smooth, even layer on the sheet of paper and the carbon paper may be used over and over again.

The device disclosed is cheap to manufacture and easy to operate and it will be very apparent that its cost will soon be made up in the saving of carbon paper which would otherwise have to be discarded as useless.

From the above description the nature and construction of my invention will be apparent. What I claim as new and desire to secure United States Letters Patent is:

1. The method of renewing carbon and other similar paper which consists of applying heat progressively to the under surface of the used paper and thereby causing the carbon thereon to be redistributed evenly over the paper.

2. The method for renewing carbon and other similar paper which consists of drawing a used sheet of paper across a heated surface in order to cause the carbon to be redistributed evenly over the paper.

3. The method for renewing carbon and other similar paper which consists in drawing a used sheet of the paper from end to end over a rounded heated surface in order to cause melting of the binding material and redistribution of the carbon carried thereby.

4. The method for renewing carbon and other similar paper which consists in progressively subjecting a used sheet of paper to a heat so as to cause melting and flowing of the impression material carried thereby.

5. A method for renewing carbon and similar paper which consists in progressively applying to an inclined surface of a used sheet of the paper sufficient heat to cause the impression material carried by said paper to flow on said paper to form a smooth even surface.

6. The method of renewing carbon and other similar paper which consists in drawing a used sheet of the paper over a heated inclined surface in order to cause melting of the binding material whereby the same is caused to flow down said inclined surface and thereby redistribute the carbon carried thereby over said paper.

7. The method of renewing impression paper which consists in progressively applying heat to the surface of used sheets of said paper.

8. The herein described process of renewing used sheets of carbon paper, which consists in drawing the same over a straight narrow heated surface.

9. The herein described process of renewing used sheets of carbon paper, which consists in drawing the same over a hot rectilinear curved surface.

10. The method of renewing impression paper which consists in drawing a used

sheet of said paper over a surface heated to melt the binding material of said paper and cause the unused pigment to flow over the used portion of said paper, thereby to redistribute the coating carried by said paper over the same.

11. The method for renewing carbon and other similar paper which consists of drawing a used sheet of paper across a heated surface in order to cause the carbon to be redistributed evenly over the paper, said surface being heated to a uniform temperature that will not affect the chemical composition of the pigment or of the vehicle of said carbon paper.

In witness whereof, I hereunto subscribe my name this 5th day of September, A. D., 1919.

HARRY H. BUCKLEY.