

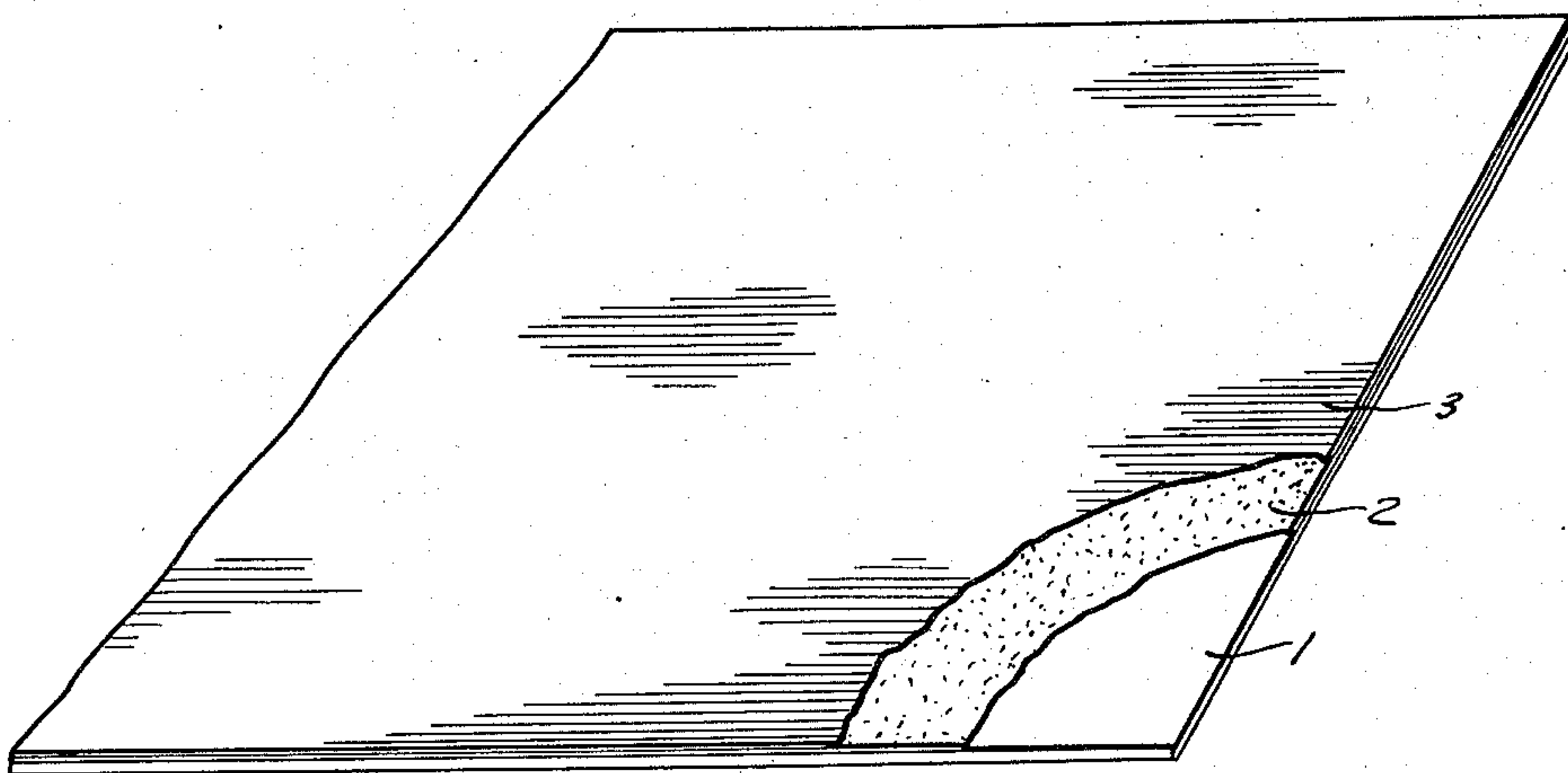
Nov. 26, 1935.

H. W. A. DIXON ET AL

2,022,276

ADHESIVE CARBON PAPER

Filed Nov. 3, 1932



Harold W. A. Dixon

INVENTORS

Robson & Moore

## UNITED STATES PATENT OFFICE

2,022,276

## ADHESIVE CARBON PAPER

Harold W. A. Dixon, Hollis, and Robson S. Moore,  
Great Neck, N. Y., assignors to Columbia Rib-  
bon and Carbon Manufacturing Company,  
Inc., Glen Cove, N. Y.

Application November 3, 1932, Serial No. 640,918

11 Claims. (Cl. 282—28)

Our invention relates to an improvement in means for receiving and duplicating the writing of typewriting machines, and particularly to a membrane capable of receiving and producing a copy of the writing and also capable of being attached to other surfaces.

One object of our invention is to provide a single membrane possessing two qualities which heretofore have not been successfully combined in one membrane, namely, adhesiveness and carbon copying ability.

Another object is to provide a simpler and cheaper medium for recording one or more copies of writings upon what is commonly called "gummed paper", or paper having a coating of an adhesive on one side thereof.

Our invention finds particular usefulness in the writing of typed messages on a narrow strip of paper, such as is now in very general use in the telegraph industry. It has heretofore been customary to typewrite either automatically or manually messages as received on one side of a narrow strip of paper having an adhesive upon the opposite side, cutting the paper strip into short lengths, moistening the adhesive and attaching the short strips to a telegraph blank form. In order to preserve a record copy of the message the typewriting machine is supplied with a roll composed of two strips of gummed paper having between them a free strip of carbon paper. Such a roll is made up of three separate strips, two of which are gummed paper and one carbon paper. As the three strips pass together in contact with each other through the typewriting machine, the message is typed on the uncoated side of one of the paper strips and by means of the carbon paper is duplicated or copied on the uncoated side of the other paper strip. After passing through the typewriter the carbon paper strip must be removed from between the two strips of gummed paper and disposed of since it is not used again. The two paper strips having the message printed thereon are severed into convenient lengths and attached to paper sheets by means of the adhesive on the back of each strip.

Our invention greatly simplifies and cheapens the method of producing copies of such messages by eliminating the strip of carbon paper and placing the carbon copying ink directly on the surface of one of the gummed paper strips. This reduces the operations necessary to manufacture the roll of strip paper, increases the length of strip on a roll of a given size by the elimination of one of the three membranes, eliminates the

necessity for disposing of the used carbon paper strip, and results in a simplification of the handling of messages.

While we have described our invention as being particularly applicable to use in recording messages on strips of paper, we do not confine ourselves to such application since the invention finds application to other purposes, wherever it is desired to duplicate writings, drawings or other markings on a membrane which is subsequently to be attached to another surface by means of an adhesive. For example, a billing form and an adhesive address label to be attached to a shipment of merchandise may be written simultaneously and without the use of a separate sheet of carbon paper by utilizing our invention. Other uses will suggest themselves to one skilled in the art or to one using our invention.

Our invention consists in a new article of manufacture and a method of making it. The new article is a membrane, such as paper or other suitable material coated on one side with an adhesive material or one which becomes adhesive when a solvent is applied to it, and with a transfer ink commonly called carbon ink. The two coatings may be separate, that is, superimposed one upon the other and separately applied to the membrane, or they may be combined as one coating having the required qualities of adhesiveness and copying ability.

In the accompanying drawing we show the construction of our new adhesive carbon paper. In the drawing, 1 represents a base medium, usually paper, 2 is a coating of adhesive material, and 3 is a coating of carbon ink. To make our new product, we coat a membrane such as paper with a layer or coating of a soluble adhesive material, such as a solution of gum arabic, dextrine, glue or other suitable adhesive, and allow it to dry. We then place over the adhesive a layer of carbon transfer ink of the type resembling that commonly used in making carbon paper, but which contains or is composed largely of a water miscible or water permeable, waxy or oily substance, into which is intimately mixed, preferably by grinding, a pigment material such as carbon black, lake pigments, aniline colours, or other suitable pigment. The water miscible or water permeable substance, with which the pigment or pigments are intimately mixed may be emulsifiable oil or wax, or a mixture of them. Or, we may accomplish the desired result by incorporating in the ink an emulsifying agent capable of rendering the waxy or oily portion of the



ink emulsifiable upon the subsequent addition of water. Or we may accomplish the desired result by adding an emulsifying agent to a carbon ink having a waxy or oily base to render it emulsifiable upon the addition of water. We have found that triethanolamine serves to produce the desired emulsification.

We have found that emulsifiable beeswax serves the purpose satisfactorily, but any substance which is suitable for carbon ink, and which permits the passage of water or other suitable solvent to the underlying layer of adhesive, meets the spirit of our invention.

In this specification and in the appended claims, when we use the term "soluble" or "water soluble", as applied to an adhesive, we mean one which, after being applied and allowed to dry, set, or harden, is still readily soluble and can be readily redissolved upon the application of the solvent. This excludes such adhesives as, for example, water-glass or sodium silicate and others, which, while water soluble before being dried, become insoluble or not readily soluble upon drying.

In this description and in the claims we use the term "emulsifiable wax" to mean a wax such as beeswax or other suitable wax or waxy substance which has been treated with an alkali or other suitable reagent to render it capable of emulsifying upon the addition of water. When water is added to a carbon ink containing an appreciable quantity of such a wax or waxy substance, the emulsifiable substance immediately forms an emulsion with the water, thus permitting the water to penetrate the coating of ink to the underlying layer of adhesive.

As an example of a formula for making our transfer ink, we give the following:

	Parts
Carbon black-----	15
Milori blue-----	10
Turkey red oil-----	27
Emulsifiable beeswax-----	20

To this mixture may be added a solvent, such as alcohol, to produce a consistency suitable for coating.

Having described our invention and the method of its making, so that one skilled in the art may make and use the same, we now state what we

claim to be new and novel, and for which we pray that Letters Patent be granted.

We claim:

1. An adhesive carbon paper comprising a base membrane, a layer thereon of a soluble adhesive material and a second layer superimposed thereon of transfer ink.

2. An adhesive carbon paper, comprising a base membrane, a layer thereon of a water soluble adhesive material, and a second layer superimposed thereon of transfer ink.

3. An adhesive carbon paper, comprising a base membrane, a layer thereon of a water soluble adhesive material and a second layer superimposed thereon of water miscible transfer ink.

4. An adhesive carbon paper, comprising a base membrane, a layer thereon of gum arabic, and a second layer superimposed thereon of water miscible transfer ink.

5. An adhesive carbon paper, comprising a base membrane, a layer thereon of dextrine, and a second layer superimposed thereon of water miscible transfer ink.

6. An adhesive carbon paper, comprising a base membrane, a layer thereon of gum arabic, and a second layer superimposed thereon of water penetrable transfer ink.

7. An adhesive carbon paper, comprising a base membrane, a layer thereon of dextrine, and a second layer superimposed thereon of water penetrable transfer ink.

8. An adhesive carbon paper, comprising a base membrane, and a layer thereon composed of a water soluble adhesive material and a transfer ink.

9. An adhesive carbon paper, comprising a base membrane, and a layer thereon of a transfer ink with which is incorporated a water soluble adhesive material.

10. An adhesive carbon paper, comprising a base membrane and a coating thereon of a water-soluble adhesive material and a water miscible transfer ink, said coating being capable of being rendered adhesive by the application thereto of water.

11. An adhesive carbon paper, comprising a base membrane and a coating thereon of transfer ink composition capable of being rendered adhesive by the application thereto of water.

HAROLD W. A. DIXON.  
ROBSON S. MOORE.