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J. Q. SHERMAN
MANIFOLDING MATERIAL

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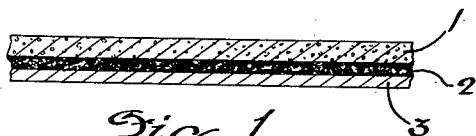


Fig. 1.

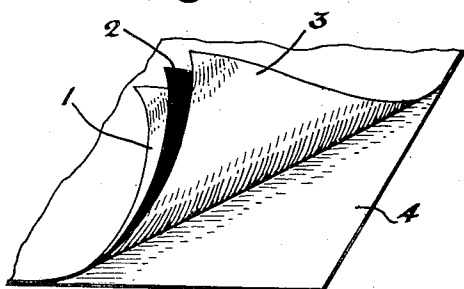


Fig. 2

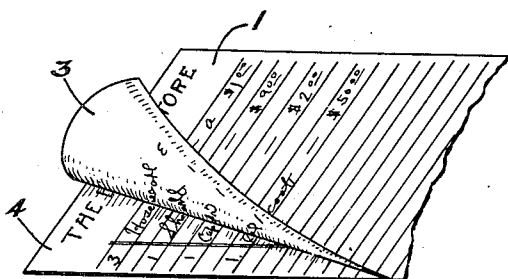


Fig. 3.



Fig. 4.

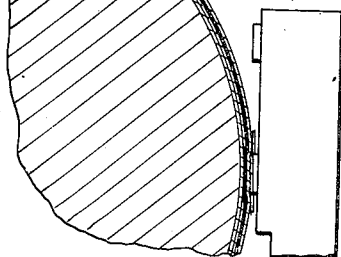


Fig. 5.

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MANIFOLDING MATERIAL

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My invention relates to manifolding, and more particularly to the provision of a carbon or transfer paper, the surface of which is protected against smudging or smearing and is preferably of a light color distinctively different from the pigment of the carbon or transfer material, thus disguising and concealing the character of the coating of transfer material and simulating the appearance of an ordinary piece of record paper.

There is a rapidly increasing use of "one time" carbon or duplicating material for manifolding records. Usually the deposit of carbon or transfer material is applied directly to the reverse face of the record sheet. Inasmuch as such record, data sheet and the like must be handled by clerks, auditors and accountants, such carbonized record sheets are objectionable since the material rubs off soiling the hands of persons who may have to handle such records. Moreover, when such carbonized sheets are superposed on each other there is a tendency for the faces of the sheets to become soiled and unsightly by their contact with the carbonized faces of adjacent sheets. Aside from the objection that such carbon material smudges, smears or rubs off, there is also an objection from an esthetic point of view to the dark color of the reversed sides of such carbonized record sheets.

Two of the primary objects of the present invention are to provide a protective coating or sizing over the deposit of carbon or transfer material which will prevent smudging or smearing of the transfer material by frictional contact, but which will be sufficiently yielding to permit the transfer material to be projected therethrough by the pressure incident to the writing upon the face of the sheet or on an overlying sheet and further to render such sealing coat opaque and of distinctively different color from the carbon or transfer material in order to disguise and conceal the deposit of transfer material and to simulate the appearance of the face or record receiving side of the sheet.

With the above primary and other incidental objects in view, as will more fully appear in the specification, the invention consists of the features of construction, the parts and

combinations thereof, and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

Referring to the drawing, wherein is shown the preferred, but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is an enlarged or exaggerated detail sectional view illustrating the successive strata comprising the composite manifolding sheets. Fig. 2 is a further detail perspective view illustrating the successive strata as though separated from each other to more definitely illustrate their relative arrangement. Fig. 3 is a perspective view of an original and duplicate record sheet, the carbonized undersurface of the original being upturned. Fig. 4 is an exaggerated detail view showing how the intermediate stratum of carbon or transfer material is projected through the sealing or surface coat by the pressure of the pencil point. Fig. 5 is a detail sectional view showing the invention applied to typewriter operation.

Like parts are indicated by similar characters of reference throughout the several views.

While the present invention is primarily designed for the manufacture of original and duplicate record sheets by applying to the reverse sides of such record sheets the necessary material to transfer the writing or inscription from one sheet to another, it will be understood that it is applicable to duplicating or manifolding sheets to be interposed or interleaved between other original and duplicate record sheets.

In the drawing, 1 represents the record sheet or supporting sheet, which is preferably, though not necessarily, a printed form on which is to be entered in writing various data. Ordinarily such forms are provided in a continuous succession to be fed through an autographic register or typewriter in association with one or more underlying sheets to which is to be transferred a duplicate of the inscription impressed upon the topmost record sheet. While this transfer may be made by an interposed sheet of transfer or manifolding material the customary and preferable method, especially for billing and

accounting purposes, and the like is to provide upon the reverse side of such original and duplicate record sheet a coating 2 of carbon or transfer material. In order to secure copies with minimum pressure it is necessary that the carbon or transfer material be of such character that it will be readily transferred to the contacting surface of the underlying record sheet 4.

This same characteristic, however, causes it to rub off upon the fingers of such persons who necessarily handle such records and upon other papers and desk tops upon which such carbonized records may be subsequently laid. To overcome this characteristic of smudging and smearing by frictional contact other than under the pressure of a writing pencil or stylus the surface of such carbon or transfer deposit 2 is sealed by a stratum 3 of material which will not have this characteristic of rubbing off or smudging and smearing the operator's fingers or other surfaces with which it may contact, but will nevertheless be sufficiently yielding and plastic to permit such sealing coat to be displaced by the pressure incident to writing upon the record sheet 1. This displacement of the sealing coat 3 enables the carbon or transfer material to be projected through such coat 3 into contact with the underlying duplicate record sheet 4. Various materials may be used for sealing the surface of the carbon or transfer stratum 2. This coating may be a thin coating of paraffine or other wax or of compounds having paraffine or other wax base.

There is some objection by users to the appearance of such carbonized record sheet, the desire being for a sheet which will not be markedly different from an ordinary sheet of paper. In order to simulate the appearance of an ordinary record sheet and to disguise and conceal the deposit 2 of carbon or transfer material the sealing coat 3 is preferably rendered opaque. This may be done by incorporating a pigment or a filler material in such sealing coat. A suitable material for this purpose has been found to be talc which may be incorporated directly in the coating 3, but is preferably, though not necessarily applied to the surface of the deposit 2 prior to the application of the paraffine or other wax coating. Obviously other materials, such as chalk or whiting may be employed in lieu of talc, or even materials of other colors, but distinctly different from the color of the carbon or transfer deposit 2, may be substituted. The opaque sealing stratum 3 thus disguises and conceals the transfer stratum 2 and gives to the reverse or coated side of the record sheet 1 approximately the same appearance as the face of the sheet.

If the stock used for the record sheet 1 is extremely thin or is porous there is a tendency for the dark colored carbon or transfer material 2 to show through the face of the record sheet 1, giving to such sheet a dark or

mottled appearance. To avoid such discoloration of the face of the record sheet the reverse side of such sheet may be coated with a light deposit of talc or similar material or by other suitable sizing in order to close the pores of such paper prior to the application of the stratum 2 of colored transfer material.

The sealing coat or stratum 3, as well as the interposed coating of talc or other opaque material may be applied in various ways. Such sealing coat may be applied by "floating" the carbonized stock upon a body of such coating material in liquid form or it may be sprayed in liquid form upon the surface of carbon or transfer material. Likewise it may be applied by passing the carbonized stock about a roller partially submerged in a liquid body of the sealing material as is common practice in paper coating art. The use of an intermediate deposit of talc or the like, either intermediate the stratum 2 of colored carbon or transfer material and the record sheet 1, or between such stratum 2 and the sealing coat 3, although desirable is not essential. It is quite feasible and entirely sufficient to coat the carbon or transfer material deposit with a thin deposit of wax, gum, or the like, having sufficient body or containing color material sufficient to disguise and conceal the underlying deposit.

It is to be understood that the present manifolding material is equally applicable to typewriter use. In such case the impact of the type face upon the surface of the uppermost sheet will displace the coating material by pressing it aside while thrusting the coating of transfer material into contact with the underlying sheet. While paraffine and other wax have been mentioned for illustrative purposes as preferable material it is to be understood that any other plastic material of suitable character of which many are available may be employed.

From the above description it will be apparent that there is thus provided a material of the character described, possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions and arrangement of parts, without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention is described in language more or less specific as to structural features it is to be understood that the invention is not limited to the specific details shown, but that the means and material herein disclosed comprise the preferred form of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim;

1. A record sheet, a coating of transfer pigment on the back thereof and a coating of cohesive, sealing material overlying the coating of pigment, said coatings being disposed in distinctive immiscible strata.
2. A record sheet, a coating of transfer pigment on the reverse side and an opaque coating of sealing material immiscible therewith overlying the coating of pigment, the transfer pigment and sealing material being disposed in distinctive layers.
3. A manifolding material comprising a supporting stratum, a stratum of colored transfer material, and a stratum of waxy protective material, said strata being closely united into a unitary sheet.
4. A manifolding material including a supporting sheet, a deposit of transfer material thereon, and a coating of opaque plastic material of a distinctively different color concealing the transfer material.
5. A manifolding material including a supporting sheet, a deposit of transfer material thereon, a sealing coat of non-smudging material overlying the deposit of transfer material and a deposit of opaque material interposed between the transfer material and the sealing coat.
6. A manifolding material including a supporting sheet, a deposit of transfer material thereon and a surface coating of differently colored wax-like substance covering the deposit of transfer material.
7. A manifolding material including a supporting sheet, a deposit of transfer material thereon and a surface coating of opaque wax-like substance covering the deposit of transfer material.
8. A manifolding material including a supporting sheet, a deposit of transfer material thereon and a light colored surface coating of wax-like substance covering the deposit of transfer material.
9. A manifolding sheet having a coating of transfer material and a stratum of plastic non transfer material overlying the coating of transfer material through which the transfer material may be projected onto a receiving surface by writing pressure applied to the back of the manifolding sheet.
10. A manifolding material comprising a supporting sheet and a stratified coating therefor including a stratum of transfer pigment interposed between two strata of sealing material.

In testimony whereof, I have hereunto set my hand this 3rd day of October, A. D. 1927.

JOHN Q. SHERMAN.