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STENCIL SHEET ASSEMBLY

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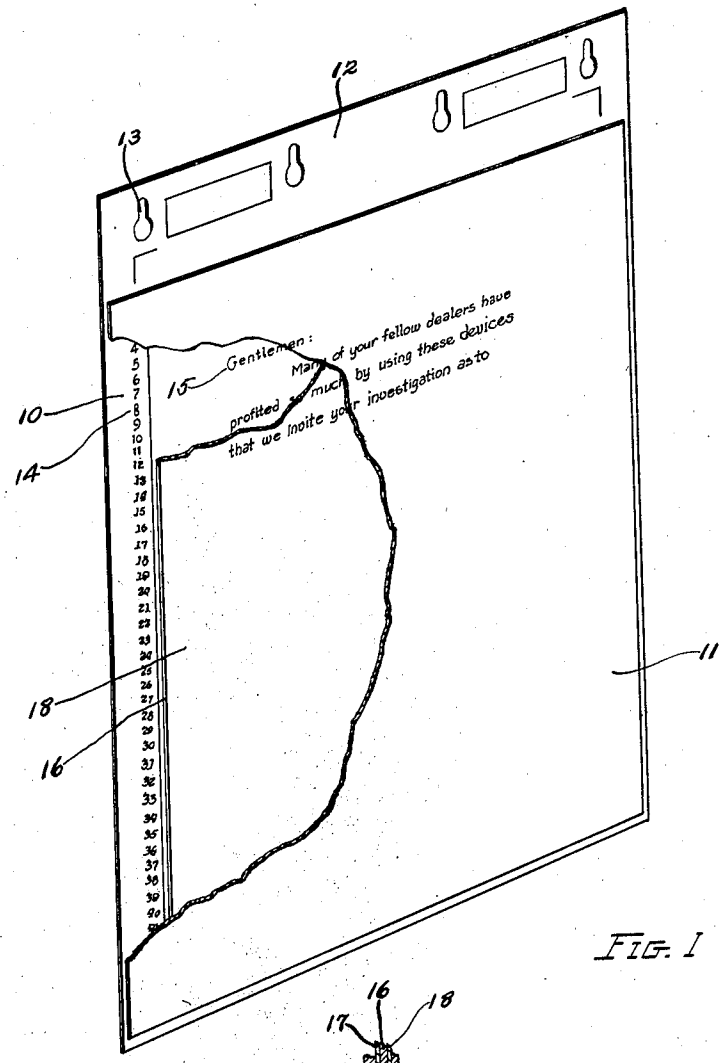

FIG. 1

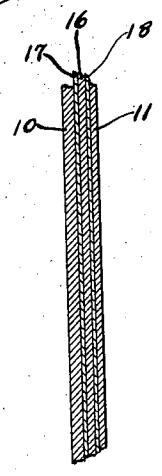

FIG. 2

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STENCIL SHEET ASSEMBLY

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7 Claims. (Cl. 41—3.5)

This invention relates to coated sheets, and more particularly to sheets adapted for use in connection with type or stylus impressible stencil sheet assemblies employed in duplicating machines.

Stencil sheet assemblies, as now commonly employed for the duplication of written and printed matter, include a type or stylus impressible stencil sheet proper, mounted upon a suitable backing sheet. In stencilizing such sheets, it is often difficult to read what has been written or typed thereon, and for purposes of proof reading it has been heretofore proposed to use ordinary carbon paper between the type impressible sheet and the backing sheet, to secure upon the backing sheet a carbon copy of what has been written. While this practice secures a record or proof copy on the backing sheet, it fails to improve the visibility of the written or printed matter during the writing or typing operation, and the stencil paper must be separated from its backing before the copy is available.

In some forms of type impressible stencil sheets, difficulty has sometimes been experienced in the cutting out of the loop letters, such as "o" and "e", under the blow of the type, leaving a hole in the stencil. When this occurs, it is a serious fault and has led to the common practice of inserting between the type impressible and backing sheets a so-called "cushion sheet", which tends to absorb the force and effect of the blow of the type and thus prevent cutting out. Such cushion sheets must be of right hardness, elasticity, and plasticity; if too hard a die effect is produced and the impression is stamped out, if too soft there is inadequate support and the impression is torn out.

The principal object of the present invention is to provide a sheet for use in stencil sheet assemblies which shall not only act as an efficient cushion sheet, but which shall also provide on the backing sheet a clear copy of the written or printed matter, and which shall furthermore serve to greatly improve the visibility of the writing or printing so that the operator may at all times see clearly and exactly just what is being written.

Other objects of the invention will appear from the following description taken in connection with the drawing, which forms a part of this specification and in which:

Fig. 1 is a perspective plan view of a stencil sheet assembly to which the invention has been applied, broken away to show the component parts thereof, and

Fig. 2 is a section to an enlarged scale, taken through a part of the stencil sheet assembly shown in Fig. 1.

The cushion sheet of the present invention consists primarily of a sheet of suitably homogeneous, elastic and semi-plastic material, as a cellulosic plastic such as the non-fibrous cellulosic material commonly sold under the name of "cellophane", to which has been applied a coating of some suitable material such as color bearing wax, adapted to yield, by offsetting in suitable color, or otherwise, a copy of applied impressions.

Preferably, the primary sheet, that is the "cellophane" or like material, is coated on both sides, one of the coatings being the copy yielding, or offsetting coating above mentioned, and the other coating being of a color which gives a sharp contrast with the type impressible sheet. This offset coating of color bearing material is, however, preferably somewhat more waxy and tougher than the oily material adapted for absorption in and coating of ordinary carbon paper, and its color is preferably dark in case the copy-receiving, or backing sheet is light, and vice versa.

The other color bearing coating need not be, and preferably is not, of such degree of offsetting softness, but is especially adapted to give contrast between the type impressions and the general appearance of the type impressible sheet. For example, if the type impressible sheet be a dark blue, such as is frequently used in commercial stencil sheets today, then a coating of bright yellow on the "cellophane" sheet will provide the desired contrast and coperative light absorption and reflection effects, and secure clear visibility of the written matter. In this case, the "cellophane" sheet would be coated in two colors, black or a dark color on one side and yellow or a light color on the other. If the stencil paper is opaque white, the transfer copy coating can be used on both sides, as the darker color would show in sufficient contrast through the stencilized openings in the white stencil and give the visibility required for easy proof-reading and correction.

Referring to the drawing, in Fig. 1 is shown a stencil sheet assembly comprising a backing sheet 10 on which a type or stylus impressible sheet 11 is mounted in the well known manner, as by pasting along one edge. The backing sheet 10 has a head portion 12, provided with the usual stamped holes 13 by which it may be secured to a duplicating machine after the stencil has been prepared. It may be also provided with suitable guide lines and reference numbers 14, printed thereon in the usual manner, and is adapted to receive a transferred or offset copy 15 of the

matter written. The type impressible sheet 11 consists of a sheet of Yoshino or porous Japanese tissue, impregnated with a suitable type-impressible coating to render it impervious to ink, as is well known in the art to which this invention relates.

A cushion sheet 16 is placed between the sheets 10 and 11. This cushion sheet is preferably a film of "cellophane" of suitable thickness. It is coated on one side with a coating 17 of any suitable composition capable of yielding a transfer copy. The other side of the sheet 16 is coated as at 18 with any suitable material, such as wax, of a color making a sharp contrast with the stencil sheet 11. As an example, if the sheet 11 is the usual dark blue, the coating 18 may be a bright orange-yellow, but it is to be understood that coating 18 may be of any color adapted to secure a decided contrast to the sheet 11. If the sheet 11 is of a light color, or white, both sides of the sheet 18 may be coated with a dark colored or black coating 17. The sheet 16 is placed between the sheets 10 and 11 with the coating 17 in contact with the backing sheet 10, and the coating 18 in contact with the stencil sheet 11.

The operation of the sheet assembly thus formed will be apparent from the foregoing description. When used in a type writing machine or stencilized with a stylus or other instrument, the pressure of the type displaces the coating material from the sheet 11, leaving openings in the stencil coating through which the contrasting effect of the coating 18 is plainly visible. In this way the operator can readily see each character of the matter being written as soon as it is formed. At the same time the impact of the type causes material from the coating 17 to be transferred to the backing sheet, leaving a record copy 15 of the written matter thereon. The force of the type blow is also absorbed to a large extent in the sheet 16 and its coatings, thus serving to cushion the impact and prevent the die effect of the type from cutting out the loop letters.

It has also been found that by suitable compounding of the soft coating 18, it serves to receive, attach and retain material from the coating of the stencil sheet 11 which may be expelled by impact of the type.

It has been discovered that the commercial cellulosic films known as "cellophane" are well adapted for ready conversion into coated sheets capable of yielding a number of copies. For example, the material known commercially as "No. 450 Plain Cellophane", sold by the Du Pont Cellophane Company of New York, has been used as above stated in thicknesses varying between 0.0012 and 0.0017 inch, and has been found well suited to the purpose. The invention is not limited, however, to the use of these particular sheets, as there are many forms of cellulose-bearing films which are adaped to the purpose and which may be substituted for "cellophane". The invention includes any suitably elastic and plastic material in the form of a thin sheet coated on one side with an offsetting color, including black and white, and on the other side with a material giving contrast between the stencilized opening and the undisturbed portions of the stencil sheet. The film may be used in thicknesses varying over a considerable range.

The coatings on the sheet 16 also may be formed of any suitable material capable of carrying the desired colors. By way of specific example, coatings of the following compositions have been used for the respective purposes with entirely satisfactory results:

Copy yielding coating 17

	Parts
Carnauba wax	200
Ceresine wax	225
Carbon black	65
Prussian blue	10
Victoria blue base	5.5
Methyl violet base	7
Linoleic acid	33.5
Petrolatum	50
Mineral oil	100

Yellow color coating 18

	Parts
Carnauba	325
Ceresine	300
Paraffine	200
Petrolatum	125
Mineral oil	175
Chrome yellow medium	700

It will be understood that the invention is applicable to all stencil sheets which are impressible to form stencils and that the term "type impressible sheet" as used in the specification and claims of this application is intended to include all sheets which may be stencilized by the impression of type, stylus, or any other instrument.

It is also to be understood that the terms "cellulosic film" and "cellulosic plastic", as used in the specification and claims of this application, are intended to distinguish from the ordinary, loose, porous paper partially or wholly impregnated and coated on one or both sides with a soft inky transfer mixture, but are intended to include a substantially homogeneous, elastic and somewhat plastic material such as may be produced in cellulose by various treatments, by heavy calendering when wet, esterification, compacting and de-esterification, solution followed by spreading and drying, or other suitable manipulations of cellulose and its esters, and also to include the use of other films or extremely thin sheets having substantially the same physical properties.

While a specific embodiment of the invention has been described herein, which is deemed to be new and advantageous and may be specifically claimed, it is not to be understood that the invention is limited to the exact details of the construction, as it will be apparent that changes may be made therein without departing from the spirit or scope of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a sheet coated on opposite sides with material of contrasting colors.

2. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a sheet between said backing and type impressible sheets having a copy yielding coating on one side and a coating providing a contrast to the type impressible sheet on the other side.

3. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a sheet of elastic and semi-plastic film between said backing and type impressible sheets having a transfer coating on the side adjacent the backing sheet and a coating colored in contrast to

the type impressible sheet on the side adjacent said type impressible sheet.

4. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a homogeneous cushion sheet between said backing and type impressible sheets having a transfer coating in offset color on the side adjacent the backing sheet and a coating colored in contrast to the type impressible sheet on the side adjacent said type impressible sheet.

5. A stencil sheet assembly comprising a backing sheet, a type impressible sheet impregnated with a colored material, and a homogeneous sheet of elastic material having a waxy color bearing coating on each side thereof, the coating on one side being colored to yield offset copies of applied impressions, and the coating on the other side colored to give contrast between the stencilized impression and the undisturbed portions of the type impressible sheet.

6. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a cushion sheet of homogeneous and non-fibrous cellulosic film, coated on both sides thereof, between said backing and type impressible sheets.

7. A stencil sheet assembly comprising a backing sheet, a type impressible sheet, and a sheet of regenerated cellulosic plastic between said backing and type impressible sheets, and having a coating on each side thereof.

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