May 12, 1936. F. A. RAPLEY 2,040,564

PRINTED WAXED PAPER

Filed June 7, 1933

Fig. 1.

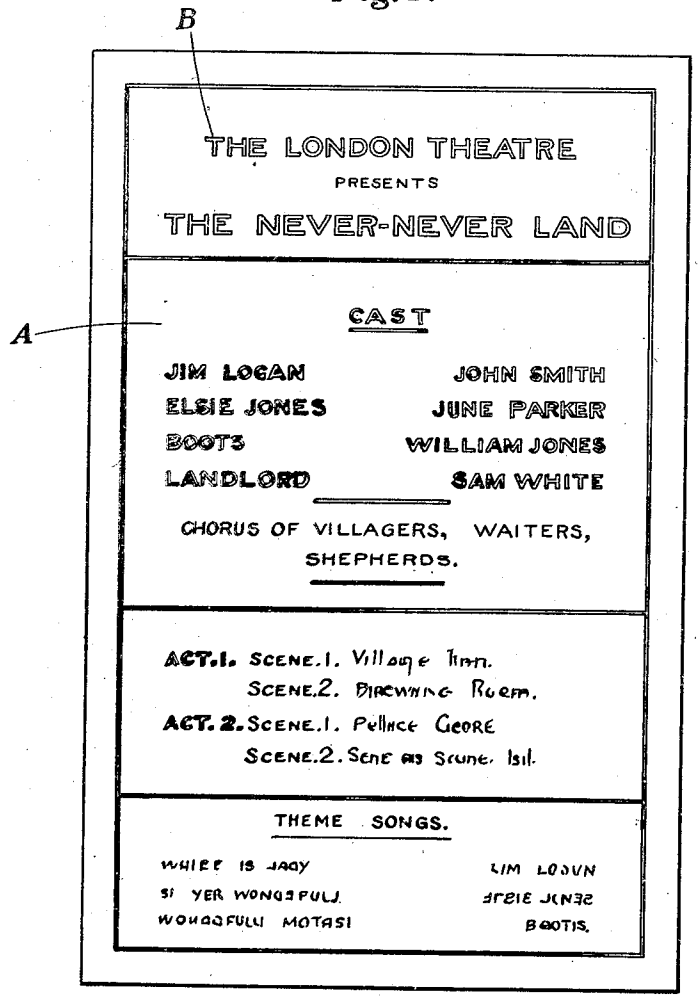


Fig. 2.

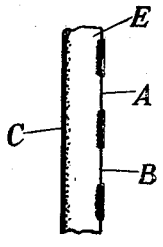


Fig. 3.

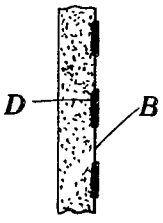


Fig. 4.

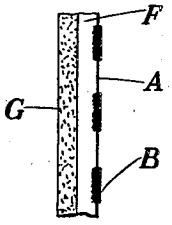
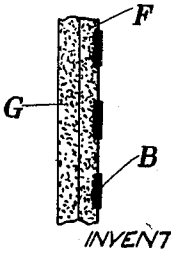


Fig. 5.



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Patented May 12, 1936 2,040,564

UNITED STATES PATENT OFFICE

2,040,564

PRINTED WAXED PAPER

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Application June 7, 1933, Serial No. 674,769
In Great Britain June 11, 1932

5 Claims. (Cl. 91—67.9)

It is often desired to produce from waxed paper, articles such as translucent window stickers for advertising purposes, translucent theatre and cinema programmes, wrappers for bread or other items to protect the contents from damp and dust and the like, or other articles of similar nature. In such cases, where the waxed paper is to be printed with any directions for use, cast of players, name of manufacturers, or other reading matter it may be desired to display, the usual procedure is to print on plain paper used as a base and then after printing to impregnate the paper with wax. This means in practice that the base paper has to be handled and printed in reels and that the ink has to be dried or allowed to dry on the surface without substantial penetration.

It is an object of the invention to provide for the production of translucent printed sheets which may be printed after wax has been applied to a surface of the sheets and rendered translucent subsequently to the printing.

It is a further object of the invention to prepare translucent printed sheets of paper by coating one surface of a sheet with wax, printing on the surface free from wax and subsequently heating the sheet to cause penetration of the wax through the sheet.

It is still further object of the invention to provide an improved printed translucent paper sheet which may be read by transmitted light even when it is too dark to be read by reflected light. The printed sheet is also clearly legible by reflected light when this is sufficient.

Further and other objects and advantages will be apparent from the specification and the claims.

The invention is especially applicable for the production of notices and of programmes, and the like for use in theatres, cinemas, lectures and other places of entertainment or instruction, or for use under any other conditions where the user may wish to read the printed matter when the light falling on the face of the printed matter is too weak to allow reading by reflection while the user remains in the best position for attending to the lecture or entertainment or other event at which he is present. Translucent printed sheets according to the invention may be read by transmitted light passing through the matter and coming from the place to which the user wishes to pay attention.

One method of producing printed translucent sheets according to the invention consists in providing waxed paper with a surface free from wax, printing on the surface free from wax thus giving more or less normal penetration and drying of the ink, and subsequently exposing the sheet to heat to produce penetration of wax through the sheet and thus develop its latent translucency.

By wax it is intended to include solid substances commonly known as waxes and fats which, by penetrating paper, render it translucent. By printing is meant any method of producing characters on a paper sheet.

Preferred forms of preparation of paper sheets will be described with reference to the accompanying drawing in which,

Figure 1 represents a plan view of a printed sheet prepared in accordance with the invention,

Figure 2 is an enlarged cross section through part of Figure 1 showing the sheet after waxing and printing but before treatment to cause penetration of wax through the sheet and,

Figure 3 is a view of the same in the finished condition after the above mentioned treatment,

Figures 4 and 5 are similar to Figures 3 and 4 respectively but showing an alternative construction of sheet.

Figure 1 shows the invention applied to a printed theatre programme, characters B being produced by printing on a sheet A, if desired though not essentially, in reverse, the ground being covered by substantially opaque printing ink or the like. The programme may be read by reflected light when this is sufficient or by light transmitted from a stage or the like when the auditorium is in darkness.

Figures 2 and 3 show a method of preparing such a printed sheet.

The paper is first coated with a layer of wax C on one side so that it penetrates slightly into the paper the section E of the paper being free from wax, it is then printed on the opposite or unwaxed side A to produce translucent characters B as shown in Figure 2. Approximately normal penetration and drying of the ink ensues and the sheet is then exposed to the influence of heat to melt the wax and cause it to penetrate into the region D (Figure 3) of the paper to develop the translucency thereof. After this treatment on holding the sheet between the reader and a source of light the characters B appear translucent against the opaque inked ground of the sheet and are clearly legible.

The programme is also legible if read by reflected light when this is adequate.

Figure 4 shows a section through a portion of a printed programme compounded of a waxed sheet of paper G and an adherent unwaxed sheet F. After the sheet is compounded by pressure or otherwise, characters B are printed on the un-

waxed surface A of the sheet F, and when dry the sheet is heated to produce penetration of the wax throughout the compound sheet as shown in Figure 5, and thus provide a translucent ground for the characters B.

If desired the sheet may be printed in reverse; the characters will then appear translucent against a black ground when the sheet is held against the light.

An additional advantage of printed sheets prepared according to the invention is that they do not rustle when bent or moved and are therefore especially suitable for use in places of entertainment or instruction.

It is to be understood that the invention is not limited to the specific embodiments herein described and illustrated but embraces such modifications as are defined by the following claims.

I claim:

1. The preparation of translucent printed paper sheets consisting in preparing paper waxed on one side only, printing on a side free from wax and subsequently completing penetration of the wax through the paper.

2. The preparation of translucent printed paper sheets wherein each sheet is compounded of a waxed sheet and an adherent sheet having an unwaxed surface bearing the print, the compound sheet being subsequently treated to complete penetration of the wax through the compound sheet.

3. The preparation of translucent printed paper sheets having each sheet compounded of a waxed sheet and a sheet having an unwaxed surface which includes causing adherence of the waxed sheet to the sheet having an unwaxed surface, printing on the unwaxed surface and subsequently treating the sheet to complete penetration of the wax through the sheet.

4. The preparation of translucent printed paper sheets comprising preparing paper waxed on one side only, printing on a side free from wax and subsequently exposing to heat to complete penetration of the wax through the sheet.

5. The preparation of translucent printed paper sheets having each compound sheet made up of a waxed sheet and a sheet having an unwaxed surface which includes causing adherence of the waxed sheet to the sheet having an unwaxed surface, printing on the unwaxed surface and subsequently heating the compound sheet to cause distribution of wax through the printed sheet.

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