

UNITED STATES PATENT OFFICE

SHINJIRO HORII, OF TOKYO, JAPAN

STENCIL SHEET

No Drawing.

Application filed August 4, 1927. Serial No. 210,728.

This invention relates to improvements in stencil sheets for use in duplicating manuscript and typewritten documents, drawings and the like.

Heretofore, such stencil sheets are generally made of thin tissue paper, such as Japanese paper, coated or impregnated with some substances impermeable to ink, which coating can be removed by the pressure of a hand stylus or the impact of the type of the writing machine.

The Japanese papers commonly used as the base material are made from the basts of the plants indigenous to Japan—viz the paper mulberry (*Broussonetia-papyrifera*), Mitsumata (*Edgeworthia-papyrifera*) and Gampi (*Wickstroemia-canescens*). The Japanese have made their characteristic papers from the earliest times by the most primitive means from the basts of these plants. The isolated tissue, consisting of a close network of fibers, is simply cut and hammered to produce a surface of the requisite evenness and the complete production of a web of paper.

The stencil sheet according to the present invention, comprises a base of thin Japan paper, consisting of highly hydrated long fibers and having the maximum felting and grease-proofing qualities, coated with a suitable coating composition which renders it ink-resistant.

In practice, the base material is prepared by the bast tissue of the paper mulberry, "Mitsumata" or "Gampi" being subjected to a definite wetness by a lengthy hydration process of the beating so as to produce a paper of the maximum felting and grease-proofing qualities, whereupon the paper is coated with a suitable coating composition including waxes or a gelatinous organic colloid, such as gelatine, or cellulose esters, combined with a suitable tempering agent.

In the beating process, the degree of hydration, or beating units which produce the maximum felting and grease-proofing qualities are 40 to 60 by the well-known Schoper-Riegler beating tester.

For purposes of illustration, the following examples are given:

Example 1.—The isolated bast tissue of a

mulberry (Japanese: *Kozo*) is beaten with a wooden hammer for about five hours, the wetness being carefully controlled so as to reach the definite point with the aid of the Schoper-Riegler beating tester. The degree of hydration, or beating units which produce the maximum felting and grease-proofing qualities are 40 to 45.

Example 2.—The isolated bast tissue of "Mitsumata" or "Gampi" is subjected to free beating for about 20 minutes in a beating engine which is followed by wet beating for about five hours, the wetness being controlled so as to reach the units of 50 to 60 by the Schoper-Riegler tester, which enables a paper of the maximum felting and grease-proofing qualities to be produced.

The degree of hydration may, of course, be varied within the scope of the invention, and there is also permissible a certain variation in the beating units described.

In the beating process, the cutting of the fibers must be avoided. It is advantageous to blend the different kinds of beaten stuffs in any suitable proportions to produce the required strength and toughness of paper. The paper is made in the usual Japanese manner, "Neri", a colloidal mucilage of some plants being added to the stuffs.

The Japanese paper commonly used as the base material is an absorbent paper which is poor in felting and grease-proofing qualities. The coating composition being readily absorbed thereby, it is impossible to form a thick layer of coating on the surface of paper. Practically, it is found to be of prime importance that in order to give a clear writing on a stencil sheet, the coating must be retained on one side of the base material.

According to this invention, particularly with the use of a thin Japanese paper of the newly prepared material, whereby the maximum felting and grease-proofing quality is insured the coating remains uniformly on one side of the base material, and a clear writing may be produced on the sheet by the pressure of the types of a typewriting machine. Moreover, the stencil sheet has considerable strength and durability and gives a large number of copies.

I claim:

1. A stencil sheet for stencilization by pressure, comprising a base of thin Japanese paper of the maximum felting and grease-proofing qualities, consisting of highly
5 hydrated bast fibres, and coated with a coating material impermeable to ink.

2. A stencil sheet for stencilization by pressure, comprising a base of thin Japanese
10 paper consisting of the bast tissue of a definite wetness so as to produce the maximum felting and grease-proofing qualities, and coated with a coating material impermeable to ink.

15 In testimony whereof I affix my signature.
SHINJIRO HORII.

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