H. A. W. WOOD.

MEANS FOR KEEPING MARGINS CLEAN IN INTAGLIO PRINTING.

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1,106,067.

Patented Aug. 4, 1914.

Fig. 1.

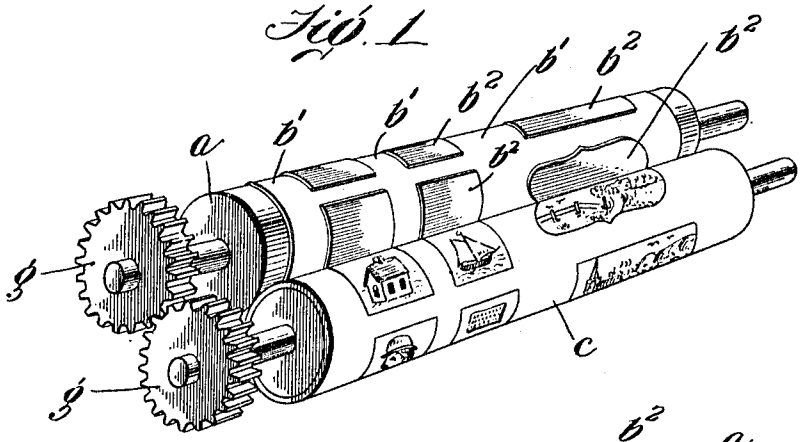
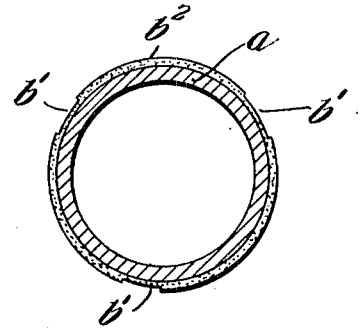


Fig. 2.



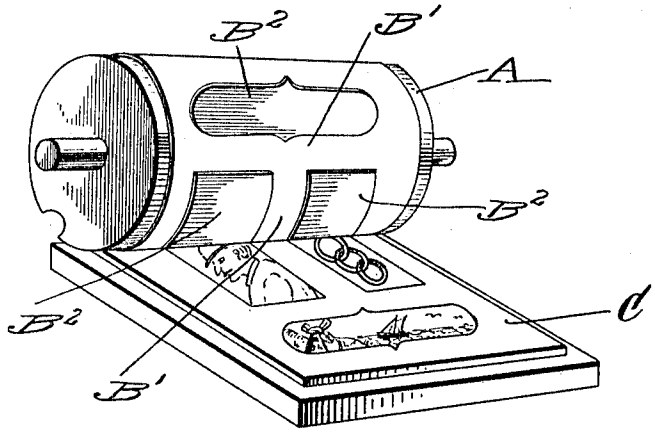


Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO. WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY A. WISE WOOD, OF NEW YORK, N. Y.

MEANS FOR KEEPING MARGINS CLEAN IN INTAGLIO-PRINTING.

1,106,067. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed January 23, 1907. Serial No. 353,631.

To all whom it may concern:

Be it known that I, HENRY A. WISE WOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Means for Keeping Margins Clean in Intaglio-Printing, of which the following is a specification.

Rotary intaglio printing is used in making silk and cotton prints, and also, I believe, for wall paper, the machines usually comprising a large impression cylinder upon which runs an endless blanket against which bears a printing cylinder for each color. Each printing cylinder runs in a trough of dye and is cleaned by a cleaning blade. In this type of machine the printing cylinders are not positively geared with respect to the impression cylinder, but are driven by their surfaces contacting therewith. These printing cylinders or rolls are formed of continuous copper shells which can be used up almost completely, because in this style of printing when these shells are turned down for receiving a new design, they can all be turned exactly to the same diameter, and when adjusted they will run in harmony with each other and register perfectly. This state of affairs is widely different from that which exists in printing for magazine, newspaper, and other forms of periodicals and commercial papers. In the latter art margins are necessary, and are separated by a predetermined distance which must be maintained independently of the size of the printing shells. In the fabric or wall paper printing it does not matter whether the design registers with any particular spot on the impression cylinder, as no make-ready upon the impression cylinder is necessary in this variety of printing. In the more exact kinds of printing, however, it is absolutely requisite that a design meet a fixed point of the impression cylinder at each operation of printing, because a make-ready has to be attached to the impression cylinder. This is necessary because the cleaning blade which is depended upon to remove ink from the non-printing portions of an intaglio printing plate for fabric or wall paper does not do so with sufficient cleanliness for the more particular kinds of periodical, book or job printing. After the plate has passed there always remains a slight tint. This is a serious obstacle to the success of intaglio printing, as applied to the finer classes of work, as it results in soiled margins, which are inadmissible.

The principal object of this invention is to provide means for overcoming this difficulty, so that intaglio printing may be practically applied to these classes of work. This I accomplish by making the packing of the impression cylinder higher where the same registers with the printing surface than at other points, notably the margins.

Reference is to be had to the accompanying drawings for an illustration of preferred ways of carrying out this invention, in which—

Figure 1 is a perspective view of an impression cylinder constructed in accordance with this invention, and showing how the printing cylinder with an intaglio printing surface registers therewith. Fig. 2 is a transverse sectional view of the impression cylinder on an enlarged scale, and Fig. 3 is a view similar to Fig. 1 showing the invention applied to flat surfaces.

Referring first to Figs. 1 and 2, it will be seen that the impression cylinder *a* is provided with a packing which is cut away at points b' which are under the margins of the intaglio printing shell or plate *c* while the packing is high at points b^2 under the illustrations of the same. In this way the illustrations are properly printed, and at the same time clean white margins are obtained, because where the packing is thin there is not sufficient pressure to transfer the little ink remaining upon the plate to the paper. It is, of course, necessary under this system to make the printing surface register perfectly with the impression surface. This is preferably done by gearing the intaglio plate cylinder with the impression cylinder by means of gears *g* so that they may register the packing as arranged with the design on the intaglio surface. The invention may be carried out either by cutting away the packing under the margins, or building it up under the illustrations or otherwise making the same thin at the first mentioned points and thick or solid at the others.

In the form shown in Fig. 3 the same principle is applied to a flat printing surface, an impression cylinder A being provided with a packing made thin at certain points B′ which are to register with the margins of the intaglio surface on the printing plate C, and thick at other points B^2

which are to register with the illustrations thereof. In both of these forms the printing surface is substantially uniform, in these cases either cylindrical or in a plane, so that the cleaning blade can accurately clean the intaglio surface.

While I have illustrated and described certain forms in which the invention can conveniently be embodied, I am aware that many modifications may be made therein within the scope of the same, as expressed in the claim. Therefore I do not wish to be limited to the particular forms shown, but

What I do claim is:—

In an intaglio printing machine, the combination with a substantially uniform intaglio printing member having a plurality of illustrations and margins all of the same height, of an impression member having the surface of its packing which comes directly in contact with a sheet to be printed cut away to a definite sharp outline along lines registering with the edges of the illustrations, whereby it is of reduced height under the margins, and means for causing the elevated portion of the impression member to be positively registered with the illustrations of the printing member.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

H. A. WISE WOOD.

Witnesses:
MARY E. MCCADDEN,
ANNIE B. WALTERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."