No. 648,381. Patented May 1, 1900.

J. W. BLACKFORD.

OVERLAY.

(Application filed Mar. 31, 1899.)

(No Model.)

Fig. 1.

THE Universal EDUCATOR

Fig. 2.

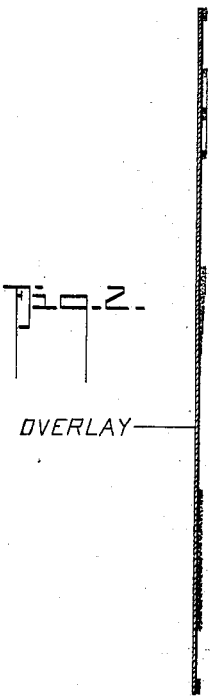
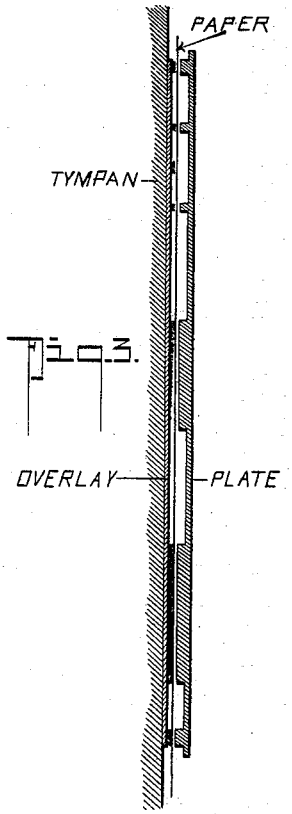


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN W. BLACKFORD, OF CHEBOYGAN, MICHIGAN.

OVERLAY.

SPECIFICATION forming part of Letters Patent No. 648,381, dated May 1, 1900.

Application filed March 31, 1899. Serial No. 711,293. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN W. BLACKFORD, residing at Cheboygan, in the county of Cheboygan and State of Michigan, have invented certain new and useful Improvements in the Art of Making Overlays, of which the following is a specification.

This invention relates to improvements in the method of "making ready," or, as technically known in printing, "the overlay."

Since the general adoption of engraved plates produced by different mechanical processes it has been found necessary by reason of the shallow depth of the plates, especially those called "half-tone," to exercise great care and skill in making ready the form, so as to obtain impressions showing up the delicate lights and shadows of the plates to the very best advantage. The process now commonly employed, meaning providing the tympan with the "blanket" formed of a number of sheets or layers of paper cut to suit the lights and shades of the engraved plate and varying in thickness accordingly, requires excessive amount of time and a degree of artistic skill not generally found in the ordinary run of printing establishments. Other processes of forming the overlay have been attempted, among which may be named the application of paint to the foundation-sheet in layers appropriate in thickness to the graduation of the impression desired, the forming upon the foundation-sheet a plastic relief film of varying thickness throughout and hardening the same to form a facing for the tympan, another being the providing of a hard base having one or more coverings of paper to provide for depressions formed therein agreeing in depth and position with the corresponding height and position of the type or lines of the picture produced on the cut from which the impressions are to be taken. So far as I know none of the latter-named processes have been put into practical use, their method of production requiring, as it were, skill equal or greater than that required for the ordinary make-ready and frequently more time in the completion thereof than is necessary to produce the ordinary overlay.

My invention seeks to provide a make-ready or overlay which will equip the tympan with an imprinting-face having a graduated surface calculated to secure a far more accurate impression, particularly as to the blending of the lights and shadows of the cut, than has been heretofore accomplished by a careful overlay as ordinarily made.

Another and most essential feature of my invention lies in the making of the overlay in such a manner that the same can be produced by unskilled labor in a few minutes and a more perfect overlay produced than formerly consumed hours, and sometimes days, to produce by the ordinary method of cutting and pasting backing-strips.

My invention therefore consists in an overlay and the process of making the same, as will be hereinafter first described in detail and then particularly specified in the appended claims.

In the accompanying drawings I have illustrated diagrammatically the overlay and the method of producing the same,

Figure 1 represents a finished overlay, the thickened or higher portions thereof being indicated by the differential shading. Fig. 2 represents a longitudinal section of the same on a somewhat-enlarged scale, and Fig. 3 is a diagrammatic sectional view illustrating the overlay as a part of the tympan and showing how the same impacts with the face of the cut during the operation of making an imprint.

The process of making the overlay by my method is best explained as follows: The cut is locked up in the usual way and the rollers well supplied with ink. After the cut has been made properly ready type-high a clean and firm impression is taken directly upon the tympan upon which the job is to be run.

Having made a suitable impression on the tympan and while the said impression is yet wet, a pinch of powder, composed of a base part having no absorbing qualities (such as emery-flour) and a suitable quantity of soluble blue or any other material that will not form a pasty matter to create bunches on the tympan, soluble blue being used as it adheres to the emery without forming in any injurious quantity, it being the medium of absorption between the ink and emery, is spread over every part of the impression that requires an overlay. In doing this, however, it is not necessary to exercise great care to keep the powder from touching those parts of the

impression not desired to overlay for the reason that it is the heavy or thick ink that retains the powder to make the necessary overlay, while the lights, drying the most quickly and having the least ink, will not retain the powder. After having sprayed the powder over the impression at the points required all of the powder that can be is blown off by an ordinary effort. This removes all excessive powder and leaves only the thickly-inked portions equipped with the powder, the degree of absorption of powder being of course governed by the differences between the heavier and lighter inked surfaces. While I have specified soluble blue as the ingredient to be used with the emery-flour to produce the absorption between the emery and the ink, I do not limit myself to such particular ingredients, as any other ingredients having like qualities may be used—as, for example, dragon's-blood, (*Sanguis dracones*). After the foundation impression has been thus treated a thin sheet of paper, which forms the facing, is drawn firmly over the impression. This completes the overlay, and the printing may be then proceeded with.

It should be stated that by providing a powder composed of a base having no absorbent quality and mixing with it sufficient quantity of an ingredient which will produce the absorption between the emery and the ink a firm relief will be produced upon the tympan opposing the relief face, varying proportionately to the different degrees of the thick or black surface of the cut.

In the practical application of my invention I proportion the ingredients by mixing in bulk ninety-five parts of emery-flour with five parts of soluble blue, it being, however, obvious that these proportions need not be strictly adhered to. The action of the two ingredients is such that the soluble blue adheres to the emery only lightly and not in a harmful quantity, its sole office being to aid the ink in retaining the emery.

This method of producing the overlay avoids the necessity of hardening or baking the overlay, as has been attempted heretofore. Furthermore, as the impression is made directly on the tympan the same need not be removed therefrom, and as the surplus powder is blown off from the impression it will not be necessary to exercise any skill in placing the powder upon the thickened part of the impression. It thereby does not require an expert to make the overlay, as it does by the old method. Again, the smaller parts of the overlay, very often left out in the old method, are effectively brought out, which avoids any slighting of the work when one is in a hurry and at the same time producing that gradual blending of the high with the dark lights necessary to effect a perfect printing of the cut. Again, the ingredients specified are in no way injurious to the most delicate cut, and as the compound from which my overlay is formed hardens the same will not wear out, as do those made in the old way.

I am aware that an overlay having a raised portion formed of a viscid compound impregnated with a pasty substance has heretofore been provided. My invention differentiates from such form of overlay in that a surface formed of a viscid compound must be removed from the tympan and subjected to a baking process before it will have a sufficient tenacity or be hardened so it will stand as an overlay, while by my process the overlay is formed on the tympan and need not be removed therefrom for any special treatment, the body or compound being initially of a harder material requires no baking or hardening process to put it in condition for use.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The method of forming an overlay, consisting in constructing the raised portion thereof on the tympan from a compound having as its base an extremely-hard granular material impregnated with an ink-absorbing ingredient, substantially as set forth.

2. The method of forming an overlay, consisting in making an impression on the tympan; adding a powdered compound to the surface of the impression at such portion where the overlay is to be had, said compound having as its base an extremely-hard granular substance impregnated with an ink-absorbing ingredient, substantially as set forth.

3. The process of forming an overlay consisting in making an impression on the foundation-sheet; spraying a pulverulent compound composed of a hard granular substance impregnated with an absorbent material over those portions of the impression to be overlaid, then blowing off the non-absorbed compound, for the purposes specified.

4. The process of forming an overlay, consisting in making an impression on the foundation or tympan sheet; spraying the said impression at the points to be overlaid with a compound having as its base emery-flour and an absorbent material such as soluble blue impregnated therewith, then blowing off the unabsorbed powder and then drawing a thin sheet over the same, substantially as set forth.

JOHN W. BLACKFORD.

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