Nov. 16, 1926. 1,607,267

R. LUBLINTZ ET AL

METHOD OF AND MEANS FOR SETTING UP AND HOLDING DIE AND TYPE FORMS

Filed Nov. 4, 1924 2 Sheets-Sheet 1

Fig. 1.

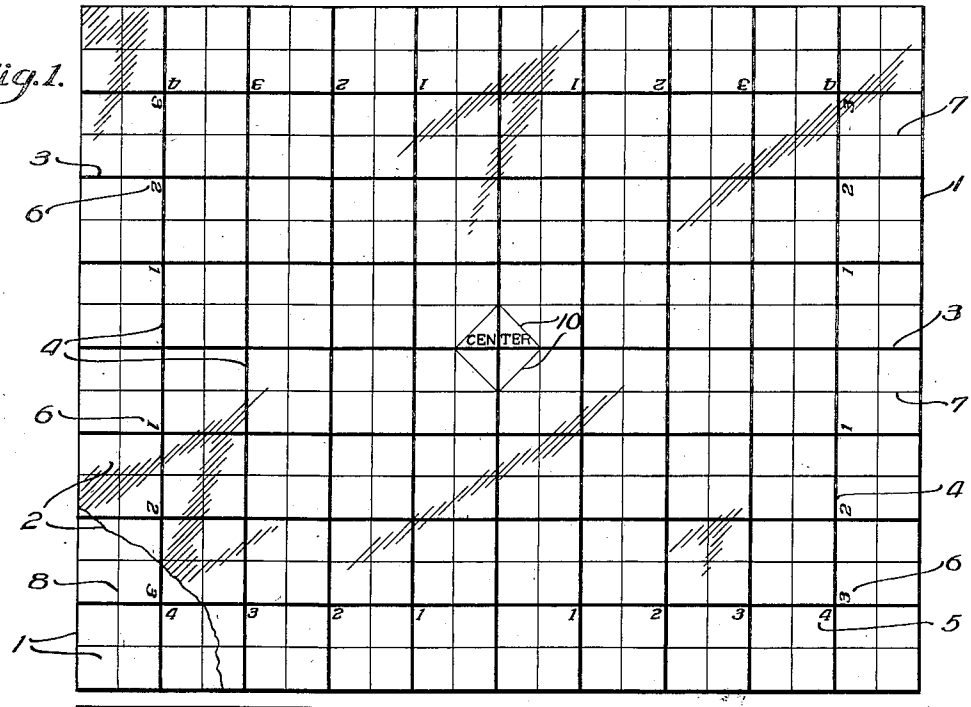

Fig. 2.

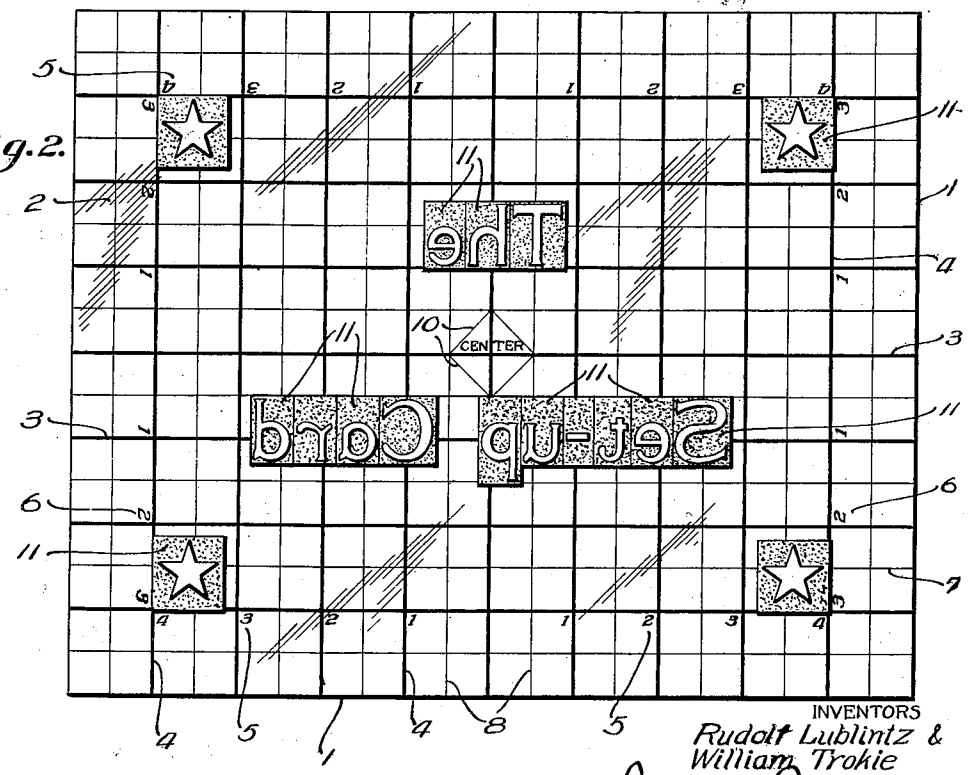

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Fig. 3.

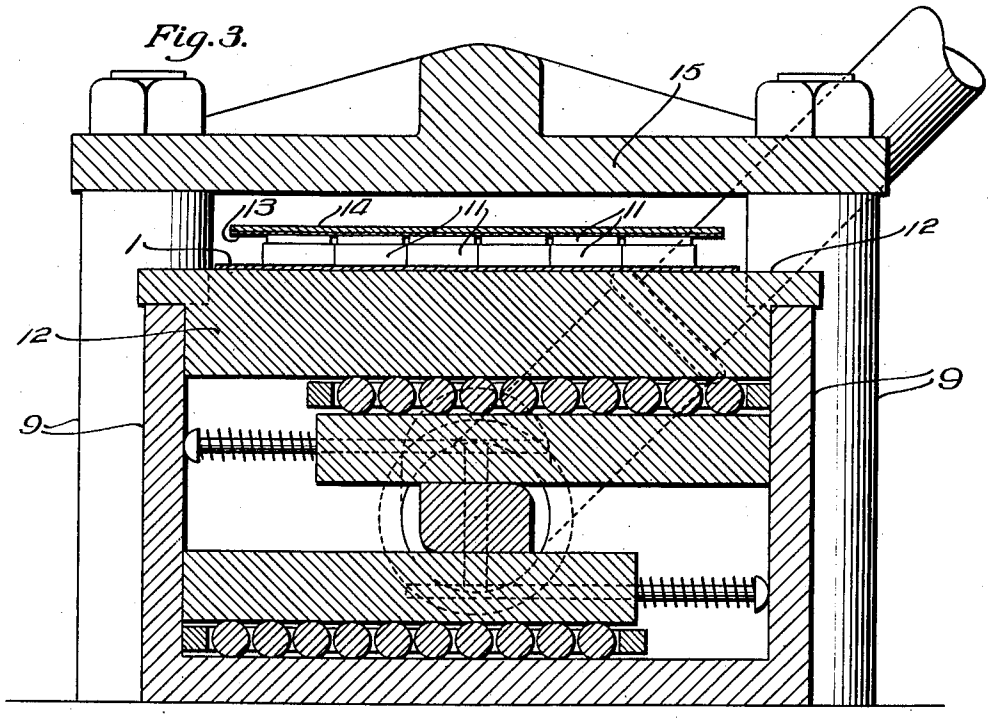


Fig. 4.

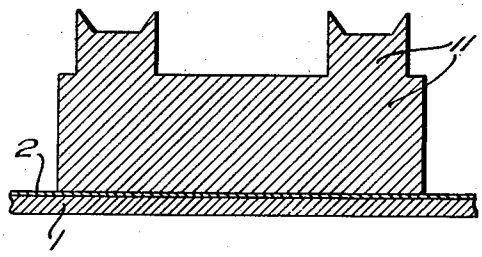


Fig. 5.

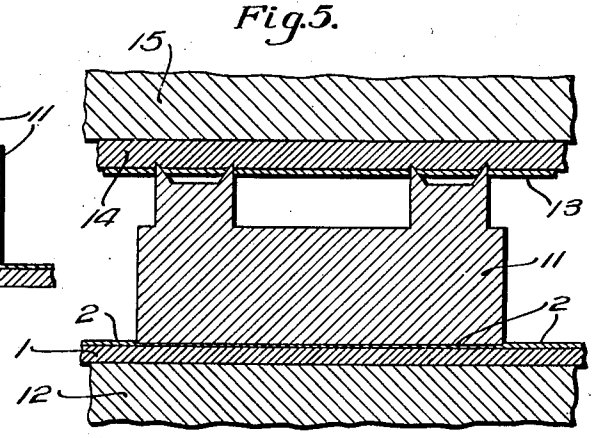
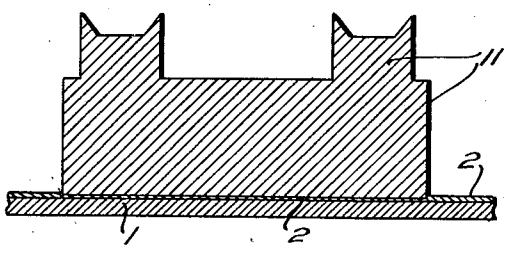


Fig. 6.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND MEANS FOR SETTING UP AND HOLDING DIE AND TYPE FORMS.

Application filed November 4, 1924. Serial No. 747,806.

The invention relates to improvements in methods of and means for assembling embossing dies and printing types for use and securely holding the same in position for use.

The principal objects of the present invention are to provide an exceedingly simple, efficient, economical and rapid method of assembling embossing dies, types, or the like, in desired relation for use in presses; to provide a simple, inexpensive and efficient support and holding means for the types or dies; to provide a cheap, transportable, supporting and holding means for dies and types comprising a backing member treated with a normally non-tacky adhesive material; to provide a supporting and holding means comprising a flat card or sheet having a coating on one face permanently plastic throughout the ordinary range of temperature but non-flowing and non-viscous or non-tacky, or substantially non-tacky, during such temperature range, and preferably inelastic, so that the backs of dies or types will securely adhere thereto when pressed firmly against the coated face of the card; to provide a set-up card having die or type positioning markings on one face and a transparent coating of normally non-tacky solid or substantially solid material applied to said marked face, said material becoming tacky when subjected to a heating medium or upon forcible pressing of types or dies against the coated face of the card; to provide a flat holder treated with an adhesion-facilitating medium of such character that types or dies will firmly adhere to the holder when pressed thereagainst but may be readily removed with none or substantially none of the adhesion-facilitating medium adhering to the types or dies; and to provide a simple, rapid and economical method of producing forms of dies or types capable of repeated use without derangement of the dies or types.

In the drawings:

Figure 1 is a plan view of the card or plate;

Fig. 2 is a plan view of the card or plate with a form of embossing dies, or so-called embossing type, assembled loosely thereon;

Fig. 3 a vertical sectional view of a well-known form of embossing press, showing the card or plate placed on the bed of the press with the dies resting loosely on the card or plate and a sheet of the usual character-forming paper and a cardboard sign backing sheet resting on the faces of the dies ready for taking the initial impression from the form;

Fig. 4 a fragmentary vertical sectional view on an enlarged scale of the card or plate and a single die resting loosely thereon;

Fig. 5 a fragmentary vertical sectional view showing the form supporting card, dies, paper and sign backing under pressure in the press during taking of the initial impression; and

Fig. 6 a view similar to Fig. 4 showing the die cemented to the card or plate after the taking of the initial impression.

Referring to the drawings by numerals, 1 designates a flat rectangular supporting or backing member, and 2 designates a coating in the form of a thin film of normally non-flowing, permanently plastic, and preferably transparent and inelastic, adhesion-facilitating material, non-tacky or non-viscous throughout the ordinary range of temperature, but becoming viscous or tacky when subjected to substantial pressure or to the influence of heat.

The member 1 shown in the drawing consists of a sheet of relatively stiff cardboard eight inches wide, ten inches long, and one-sixteenth of an inch thick, and the film of adhesion-facilitating material 2 thereon consists of a transparent, colorless or substantially colorless, solid, waxy adhesive, normally non-tacky but capable of becoming adhesive or tacky when subjected to heat. This adhesive material is applied to one face of the sheet of cardboard while heated and in a fluid condition, only enough of the adhesive in the preferred form of the card shown in the drawing being applied to form a very thin film (or waxy, glaze-like coating) over the surface of the cardboard sheet and to slightly penetrate the cardboard sheet or impregnate and interlock with the surface fibers of the cardboard sheet.

Before the adhesive coating 2 is applied, the face of the cardboard sheet which is to be coated is printed with parallel longitu-

dinal lines 3 and parallel transverse lines 4, said lines dividing the card into square sections of uniform area to facilitate the arrangement of single types or dies or the setting up of forms consisting of a plurality of types or dies. The transverse lines at either side of the central line are preferably numbered progressively toward the ends of the card, and the longitudinal lines at either side of the central line are preferably numbered progressively toward the sides of the card, these printed numerals being indicated by the reference characters 5 and 6. Preferably the surface of the card 1 is further sub-divided by longitudinal lines 7 and transverse lines 8, these lines being finer or lighter than lines 3 and 4, as shown, or otherwise contrasting therewith. More than one light line may be provided between each two adjacent heavy lines if desired. A suitable marking indicating the center of the cardboard sheet is also preferably provided. As shown, this marking comprises a diamond-shaped figure 10 printed at the center of the cardboard sheet having the designation "Center" printed therein. It will be obvious that other forms of symmetrical markings and center indications may be provided. It will also be obvious that the backing member may be square, round, or other shape in plan, if desired.

While the adhesive material is preferably transparent and substantially colorless, it need not necessarily have these characteristics, as an unmarked backing member may be used, if desired, having a normally non-tacky adhesion-facilitating coating which is not transparent and not colorless. It will be obvious that various known normally non-tacky adhesive or adhesion-facilitating materials or compounds may be employed, such as paraffin, compositions including paraffin and other materials, vegetable waxes, bees wax, and other wax-like materials and compounds. Various known normally non-tacky rubberized glues or cements may also be used, preferably the transparent varieties. In the drawings, the film has been shown thicker than is preferred to facilitate illustration thereof. While comparatively thick coatings of the adhesion-facilitating material may be employed with more or less success, a very thin film such as above described is preferred, as it will permit pressing the types or dies against the holder without lateral slippage, will hold the types or embossing dies with sufficient security to prevent derangement of the form during the taking of successive impressions, and will permit the types or dies to be readily forced or knocked off of the card when the form is no longer needed, the backs of the metal types or dies being entirely or substantially entirely clean or free from adhering particles of the coating material owing to the thinness of the coating film and also partly to the nature of the coating material and the fact that the coating will adhere more strongly to the cardboard sheet than to the metal dies or types.

Owing to the normally non-tacky or non-viscous and non-flowing condition of the material 2, the complete set-up card or plate (which constitutes a perfectly flat, unitary, plate-like chase substitute for use in embossing or printing presses) may be manufactured and sold for future use, and may be packed, stored and handled readily.

While it is preferred to employ relatively thin but stiff cardboard for member 1, as above described, so that a very inexpensive and light device may be made which may be discarded after taking the desired number of impressions from a single form set up thereon, either thin or thick cardboard backings may be employed, or metal, wood, leather, or fiber plates may be used. Paper backings may be used, but where paper or other very flexible sheets or plates are used the forms could not be conveniently set up at points distant from the press and conveyed to the press without some danger of derangement of the form, but would preferably be set up on the bed of the press or on the form carriage of the press where presses having traveling form carriages were used.

The types or dies may be affixed in desired position on the coated backing member or holder by firmly pressing or squeezing the backing member and dies together or, where the nature of the coating material requires it, by first heating the coating or the backs of the types or dies in any suitable or convenient manner and pressing the backs of the types or dies against the coated face of the backing member.

Preferably, however, the types or dies are affixed to or locked on the backing member or chase automatically during the act of taking the first impression from a form set up on the chase, thus saving time and labor and avoiding the necessity and expense of providing and maintaining some form of heating device. This preferred mode of setting up and securing types or dies in desired relation on the flat backing is illustrated in the drawings, wherein the invention is illustrated in connection with the production of embossed signs or display cards with a press 9 constructed as shown in the patent to Pollock No. 1,168,740, and employing embossing dies for forming the several characters of gummed paper and affixing the characters to a cardboard backing.

This preferred mode of operation comprises loosely seating the dies 11 with their cutting faces uppermost in the desired positions on the coated face 2 of member 1 while said member is held in the hand, or lies upon

a table or other support, placing member 1 on the bed or form supporting member 12 of the press, placing the gummed paper 13 on the die faces, placing the cardboard sign back 14 on the colored paper, then actuating the press to squeeze the card 1—2, dies 11, paper 13 and sign back 14 between the bed 12 and platen 15 of the press as shown in Fig. 5. The dies are thus subjected to pressure between the impression receiving material and the card 1; so as not only to form the embossed sign, but to also generate sufficient heat between the contacting backs of the dies and the coated face of card 1 to render the coating tacky and simultaneously press the backs of the dies against the sticky face of the card. The dies are thus caused to firmly adhere to the card 1 by the initial impression taking operation so that when the parts of the press are restored to normal position (Fig. 3) the embossed sign may be removed and material for forming another sign from the same form may be placed on the dies without deranging the form. In Fig. 4 a die is shown resting loosely on the face of card 1 and in Fig. 6 a die is shown affixed to the card, having been pressed into the coating film while the coating was tacky.

When the set-up form is no longer required for use, the dies or types may be readily forced or knocked off the card or backing 1, and the backs of the types or dies will be free or substantially free from adhesive material so that ordinarily it will be unnecessary to clean the types or dies before restoring the same to the usual receptacles or again using them.

While the improvements are particularly useful in connection with embossing presses of the type shown in the Pollock patent above referred to or presses of the kind shown in the patent to H. M. Seagers, No. 1,554,235, granted September 22, 1925, it will be obvious that they may be employed in other forms of presses for embossing display cards, leather, and other materials or articles, and in printing presses. It will also be obvious that the member 1 may be coated or treated with the selected adhesion-facilitating material not only as above described but in any other suitable manner. Owing to the normally solid but plastic character of the material 2, which as above described is mechanically interlocked with the top face of the holder, said material will be forced into the small cavities or pits usually present in the backs of dies or types when the dies or types are pressed against the holder and thus become interlocked therewith, thus increasing the security with which the chase and types are held together.

While, as above set forth, and for the reasons stated, it is preferred to treat the backing member with a relatively thin film of permanently plastic but normally non-tacky adhesive material capable of being rendered adhesive by heating the coating either before pressing the type against the backing, or by heating the coating simultaneously with pressure of the types against the backing through the medium of heat generated by the pressure to which the backing and type are subjected, both as heretofore described, the backing may be coated with a film of various known adhesives or cements that are normally non-tacky and become tacky when moistened with water or other liquid, in which case the coated face of the holder would be moistened before pressing the dies or types thereagainst.

Cards having a film of adhesive material of the character set forth are inexpensive and may be discarded after taking the desired number of impressions from a single form, but it will be found that they can be successfully used a number of times, that is, after one form has been removed other forms may be successively set up on the card and impressions taken therefrom.

What we claim is:

1. The method of producing die or type forms for repeated use comprising setting up the dies or types on a support and affixing the same to the support by the initial impression taking operation of a press.

2. The method of employing a die or type in taking a plurality of impressions therefrom including squeezing the die or type between a support and impression receiving material to take the initial impression and simultaneously affix the die or type to the support.

3. The method of temporarily holding dies or types for use comprising providing a backing member having a normally non-tacky substance thereon capable of becoming adhesive when subjected to pressure, and pressing the back of a die or type against said substance on the backing member.

4. The method of setting up type or die forms comprising providing a flat backing member having a coating on one face thereof of a normally non-tacky substance adapted to become tacky under the influence of heat, setting up types or dies in desired relation on the coated face of said member, and temporarily subjecting the assembled member and form to the influence of force and heat to unite the same.

5. The method of setting up type or die, forms comprising providing a form support having a flat form-supporting surface, treating the form-supporting surface of the support with a heated permanently plastic adhesion-facilitating medium, which is non-flowing and non-tacky at ordinary temperatures, in such manner as to present said medium at the form-supporting surface of

the support, allowing the medium to cool, and forcing the backs of types or dies against the treated flat surface of the support in desired relative positions.

6. The method of setting up type or die forms comprising providing a flat backing plate having a coating on one face thereof of a normally non-tacky substance adapted to become tacky under the influence of heat, setting up types or dies in desired relation on the coated face of said backing plate, and forcing the types or dies against the coated backing plate under pressure sufficient to generate enough heat to render the coating between the backing plate and types or dies adhesive.

7. The method of setting up type or die forms comprising providing a flat backing plate having a coating on one face thereof of a normally non-tacky substance adapted to become tacky under the influence of heat, setting up types or dies in desired relation on the coated face of said backing plate, placing the backing plate and assembled types or dies in a press together with the work, and actuating the press to simultaneously take an initial impression from the form and cause the types or dies to adhere to the backing plate as a result of the pressure applied thereto during the initial impression taking operation of the press.

8. A type or die holder comprising a support having a coating of normally non-tacky and non-flowing, wax-like material on one face thereof capable of becoming adhesive upon subjection of the coated support to pressure.

9. A support and holder for types or dies comprising a plate-like backing member provided with type or die locating markings on one face thereof, and a coating of transparent material on the marked face of said member normally non-tacky but capable of becoming adhesive under the influence of heat.

10. A device for use in setting up and supporting types or dies comprising a rectangular plate-like supporting member having one face thereof divided symmetrically by longitudinal and transverse lines and provided with a marking indicating the center of the symmetrically divided face of the member, rows of numerals being provided around the edges of the member adjacent uniformly spaced lines for numbering said lines progressively from the middle to the ends of each edge of the member.

11. A device for use in setting up and supporting type or dies comprising a rectangular supporting plate having one face thereof divided symmetrically by longitudinal and transverse lines and provided with a marking indicating the center of the symmetrically divided face of the plate, said plate having a coating of transparent waxy material on its marked face.

12. A backing and holding device for types or dies comprising a thin, flat, and substantially stiff member of fibrous material having a very thin film of waxy material covering one face thereof and impregnating the surface fibers of said member.

13. A form support and holder for use in embossing presses, comprising a substantially rigid member having a die-receiving surface coated with a permanently plastic but non-flowing form-securing material non-tacky within the common range of room temperature but adapted to become tacky under the influence of heat generated by embossing pressure upon the taking of an impression from a form carried by the support.

14. A form support and holder for use in embossing presses, comprising a relatively stiff fibrous plate treated with a normally non-tacky form-retaining material to provide a thin form-cementing film of said material at one face of the plate, said material being inelastic and permanently plastic and capable of being rendered tacky upon subjection of the support to pressure.

15. A support and holder for types or dies comprising a flat and substantially stiff member of fibrous material having type or die locating markings printed on one face thereof, said member being treated with a transparent form-cementing material to provide a thin form-cementing film at one face of the member through which the markings may be observed, said material being non-tacky within the common range of room temperature but capable of being rendered tacky by heat.

In testimony whereof we hereunto affix our signatures.

RUDOLF LUBLINTZ.
WILLIAM TROKIE.