A. K. TAYLOR.

METHOD OF AND APPARATUS FOR PREPARING REGISTERING IMPRESSION FORMS.

APPLICATION FILED MAR. 1, 1915.

1,199,943.

Patented Oct. 3, 1916.

2 SHEETS—SHEET 1.

FIG. 1.

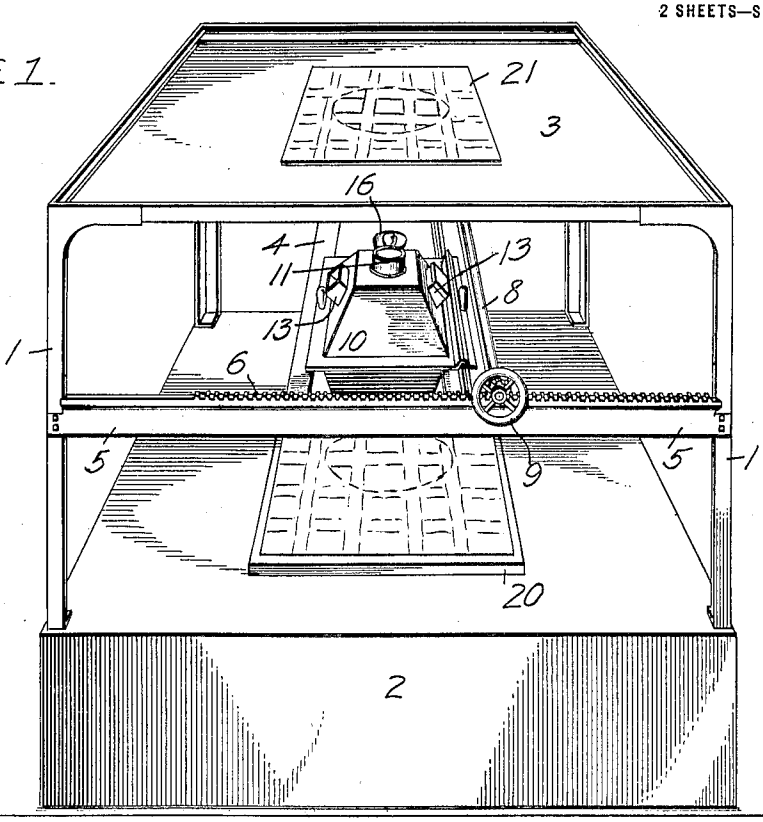
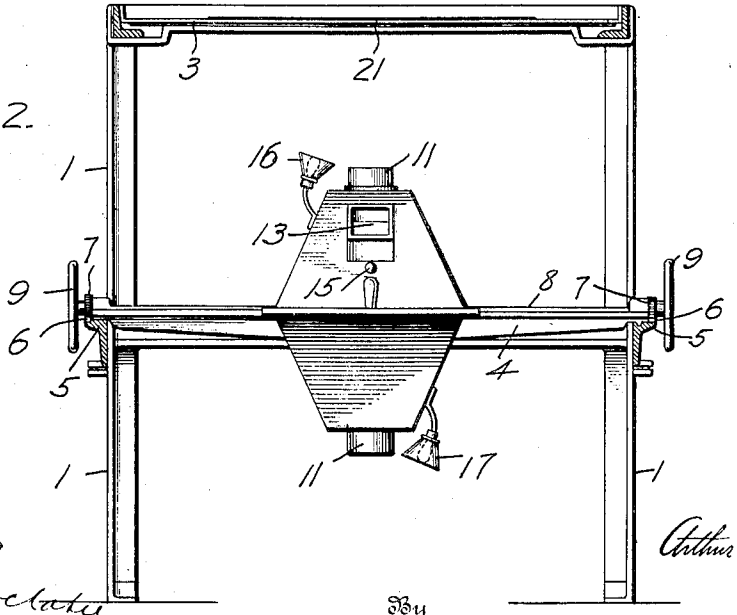


FIG. 2.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 3.

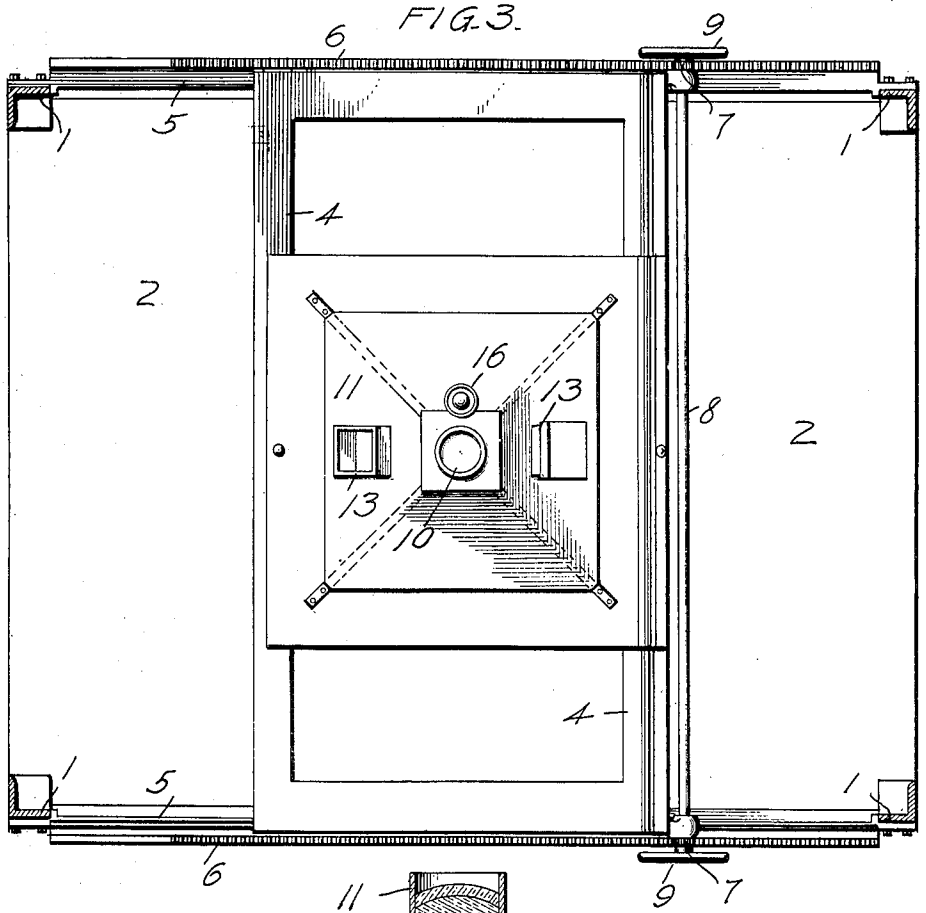
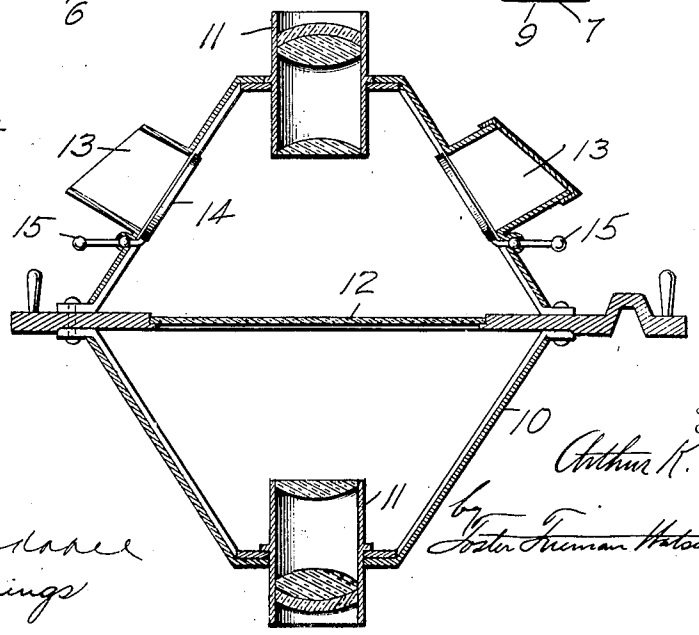


FIG. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR PREPARING REGISTERING IMPRESSION-FORMS.

1,199,943. Specification of Letters Patent. Patented Oct. 3, 1916.

Application filed March 1, 1915. Serial No. 11,264.

To all whom it may concern:

Be it known that I, ARTHUR K. TAYLOR, a citizen of the United States, residing at the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Methods of and Apparatus for Preparing Registering Impression-Forms, of which the following is a specification.

The present invention relates to an improved method of and apparatus for preparing registering impression forms and is particularly an improvement upon the method and apparatus described and claimed in an earlier application.

By the invention hereinafter described it is possible to rapidly arrange the movable members of an "impression form", such as is employed in printing, embossing, dieing and creasing, lithographic or similar work, so as to insure accurate register of an impression therefrom with an impression or impressions from a similar form or forms.

According to the method described in the earlier application referred to, a representation of an impression from the form to be made up, for example, is supported in a horizontal position above the work table and an image of a sufficient portion thereof is projected onto a form on said table as a guide by which the proper or correct position of the corresponding movable member of the form may be determined. It has been found that by the method hereinafter described the apparatus required to carry out the method of said earlier application may be considerably simplified.

In the accompanying drawings: Figure 1 is a perspective view of an apparatus embodying the present invention; Fig. 2 is a transverse, vertical sectional view of the apparatus; Fig. 3 is a horizontal, section, view; Fig. 4 is a detail sectional view, on an enlarged scale.

Referring to the drawings, it will be seen that the embodiment of the invention therein illustrated comprises a substantially rectangular frame 1 adapted to be supported on the usual work or imposing stone or table 2 and provided at its top with a glass plate 3. The frame 1 may be constructed in any suitable manner and the transparent top thereof held in place by any desired means.

A carriage-like frame 4 is mounted to move along side rails 5 secured to end posts of the frame 1, one or both of said rails being provided with a suitable rack 6 with which meshes a pinion 7 secured on a shaft 8 carried by the carriage 4. By actuating suitable hand wheels 9 secured on the ends of the shaft 8, the carriage 4 and all parts supported thereon may be adjusted longitudinally of the rails 5.

The carriage 4 is provided with a centrally arranged housing or casing 10 that is supported to move thereon in a direction transverse to the length of the rails 5 and the line of movement of the carriage by the shaft 8. Said housing includes similar upwardly and downwardly directed sections each of which terminates in a projection device or lens tube 11. Within the casing 10 is arranged a translucent plate 12, preferably of ground glass. Inspection of the images projected on the ground glass plate 12 by the lenses in the tubes 11 may be had through openings provided in opposite walls of the upwardly extending portion of the casing 10, said openings being preferably surrounded by outwardly projecting tubes 13 of such size as to receive an operator's face.

As it frequently happens that the detail of the images appearing on the ground glass plate 12 is small, a magnifying glass 14 is preferably arranged within the casing 10, adjacent each of said openings, each of the glasses being supported so that it can be readily moved to and from a position across the adjacent sight or inspection opening of the casing. The handle 15 of each magnifying glass, as shown, extends to the outside of the housing so that the device may be readily manipulated by the operator, as desired. The housing excludes light from the ground glass plate 12, except such as passes through the lens tubes 11 and the inspection tubes 13. Either of the latter may be closed by a suitable cap and the other is practically completely closed when the apparatus is in use. Means are provided whereby objects within the fields of the lens tubes may be illuminated, if desired. As shown, the housing or casing 10 has mounted thereon suitable electric lights and reflectors 16, 17 for this purpose.

In using the apparatus a drawing 21 or other representation of an impression from the form to be made up, or a sheet bearing suitable and sufficient registering detail to indicate the proper relative positions in a

form of the movable part or parts thereof, is placed upon the glass top plate 3. The carriage is then adjusted so that images of portions of said guide sheet and the form 20 are displayed on the ground glass 12, the sheet and form, or the areas thereof within range of the lens systems, being illuminated if desired or necessary. The operator then adjusts or shifts the movable member of the form the image of which, or of a sufficient portion of which, is displayed on the ground glass 12 until such image and the image thereon of the corresponding part of the sheet 21 are properly superimposed. The movable member of the form is then secured in position. The carriage and means thereon are so arranged that the lens tubes can be easily shifted so as to bring any desired portion of the areas of the form and guide sheet within the range of the lens systems.

It will be evident that there can be considerable variation in the details of the apparatus herein illustrated without departing from the spirit of the invention.

The term "impression form" is intended to include any holder, container, or base adapted to receive one or more movable members and retain the same in any adjusted position, so that impressions can, by aid of a suitable press, be obtained therefrom. In particular the invention is employed in preparing forms for multi-color printing, embossing and cutting or creasing blanks or sheets which have been or are to be printed and in which careful register of successive operations is necessary.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. The herein described method of determining the correct position in an impression form of a movable member comprising superimposing in register an image of a sufficient portion of such member on an image of a corresponding part of a representation of an impression from the form.

2. The herein described method of determining the correct position in an impression form of a movable member comprising arranging a suitable surface in such relation to an impression form and a representation of the impression to be produced by the form that images of portions of both said representation and form will be received thereon and manipulating said movable member until the image on said surface of sufficient registering detail thereof coincides with the image of corresponding parts of the representation of an impression to be obtained from the form.

3. The herein described method of determining the correct position in an impression form of a movable member comprising arranging a translucent plate between the form and a representation of an impression to be produced by the form, projecting onto opposite faces of said plate images of portions of said form and representation, and manipulating said movable member until the image of sufficient registering detail thereof on the plate coincides with the image thereon of corresponding parts of the representation of the impression from the form.

4. The combination with a support for an impression form, of means for supporting a guide sheet or representation of an impression from such a form, and means adapted to superimpose images of corresponding parts of said sheet and a form on the support, to determine the correct position in the form of a movable impression member.

5. The combination with a support for an impression form, of means for supporting a guide sheet above said support, a translucent plate, and means for displaying on said plate images of portions of the sheet and a form on said support, to determine the correct position of a movable impression member in such form.

6. The combination with a support for an impression form, of means for supporting a guide sheet, a casing or housing mounted to move relative to both said sheet and form supports, and two lens systems carried by said casing and adapted to display on a common surface images of portions of a guide sheet and a form on said supports, for the purpose described.

7. The combination with a support for an impression form, of means for supporting a guide sheet, a casing or housing mounted to move relative to both said sheet and form supports, a translucent plate within said housing, and two lens systems carried by the housing and adapted to respectively display on said translucent plate images of portions of a guide sheet and a form on said supports, for the purpose described.

8. The combination with a support for an impression form, of means for supporting a guide sheet in a horizontal position above said support, a casing or housing arranged in planes between said supports and movable longitudinally and transversely thereof, said housing being provided with an interior translucent plate and a lateral opening through which said plate is visible, and two lens systems carried by the housing and adapted to respectively display on the translucent plate therein images of portions of a guide sheet and impression form on said support, for the purpose described.

9. The combination with a support for an impression form, of means for supporting a guide sheet in a horizontal position above said support, a casing or housing arranged in planes between said supports and mov-

able longitudinally and transversely thereof, said housing being provided with an interior translucent plate and a lateral opening through which said plate is visible, two lens systems carried by the housing and adapted to respectively display on the translucent plate therein images of portions of a guide sheet and impression form on said supports, for the purpose described, and means for illuminating the areas within the range of said lens systems.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR K. TAYLOR.

Witnesses:
HOWARD G. BISHOP,
AGNES M. MOORE.