

No. 778,415.

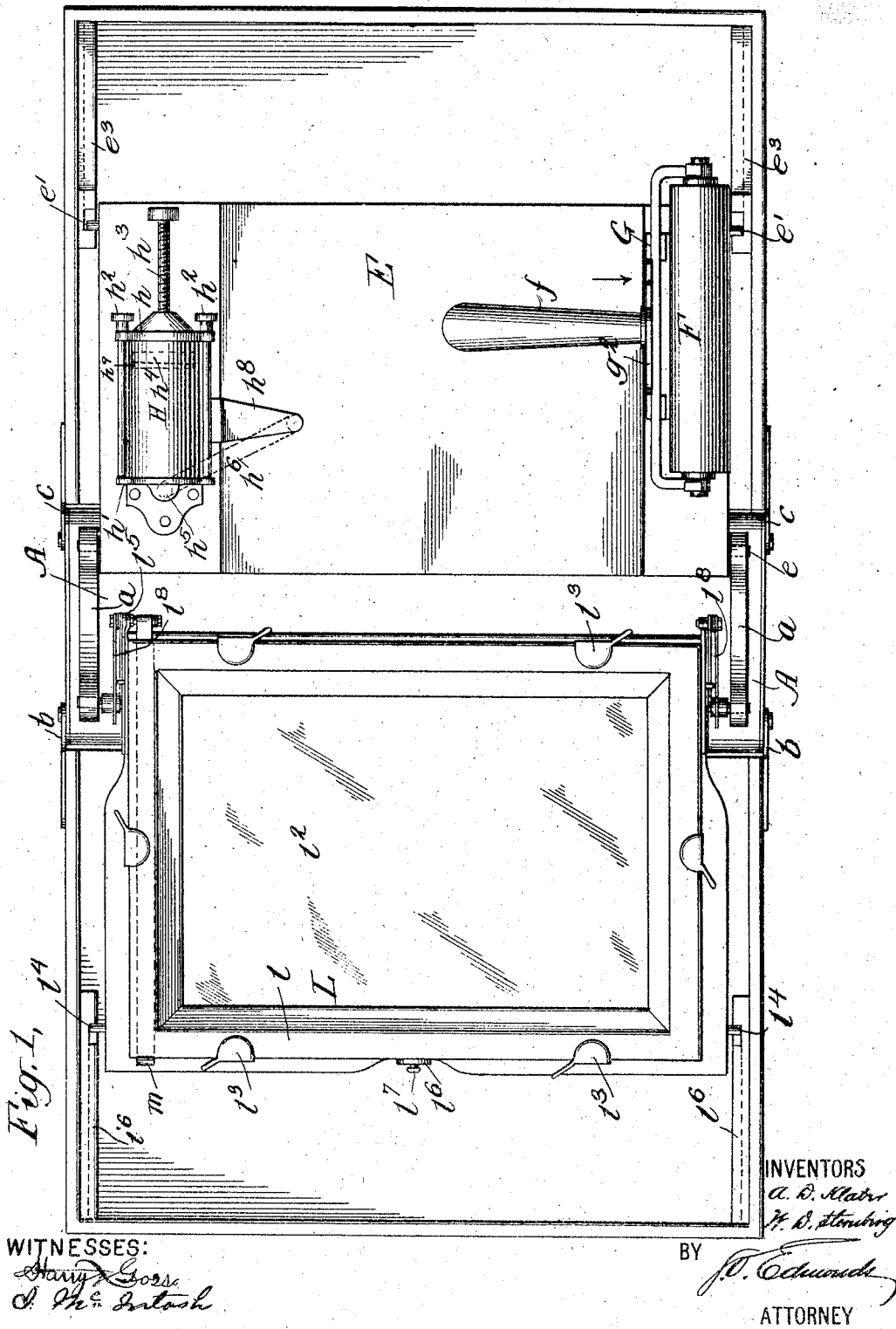
PATENTED DEC. 27, 1904.

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DUPLICATING APPARATUS.

APPLICATION FILED MAR. 30, 1904.

3 SHEETS—SHEET 1.



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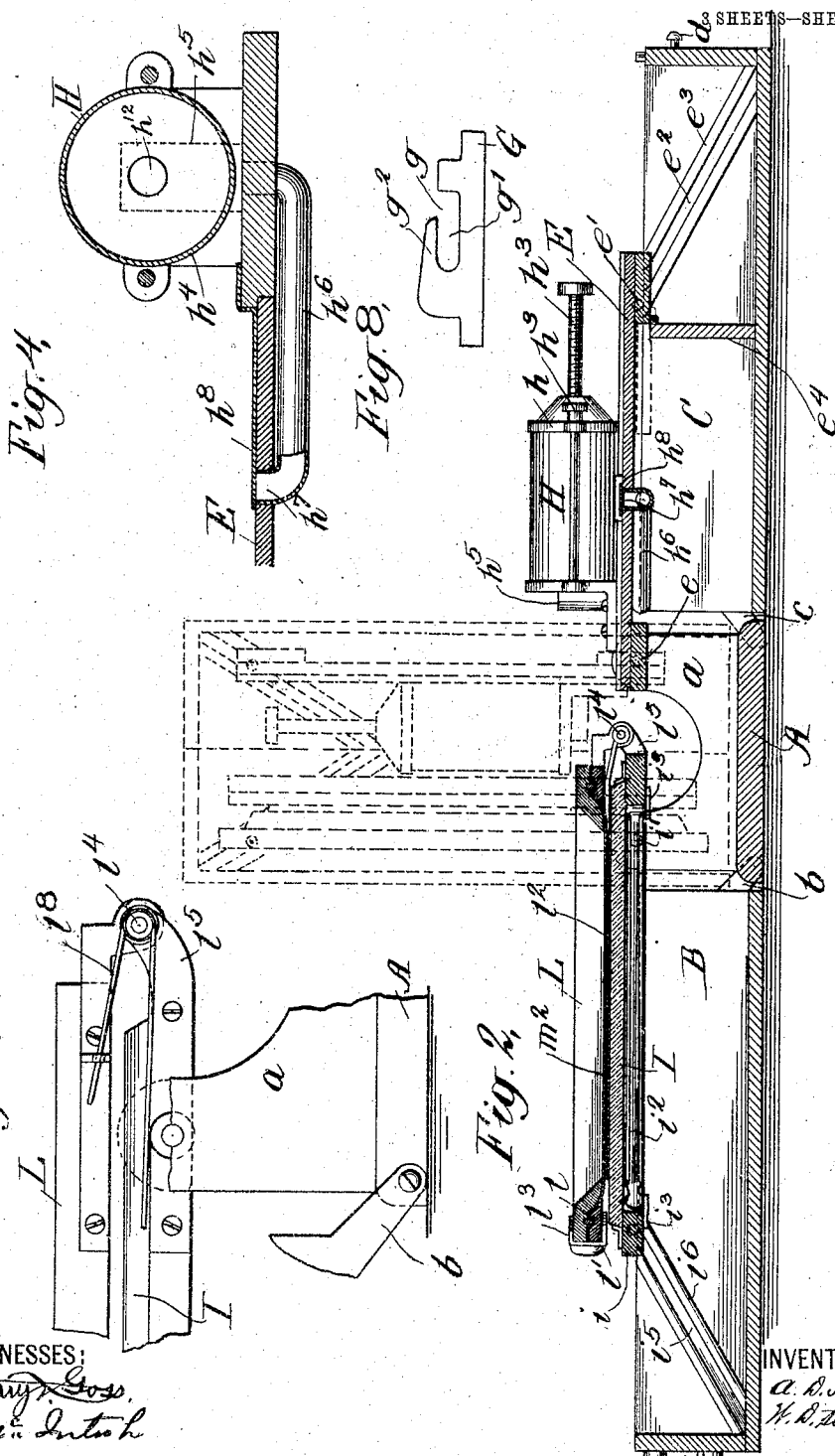
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SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6

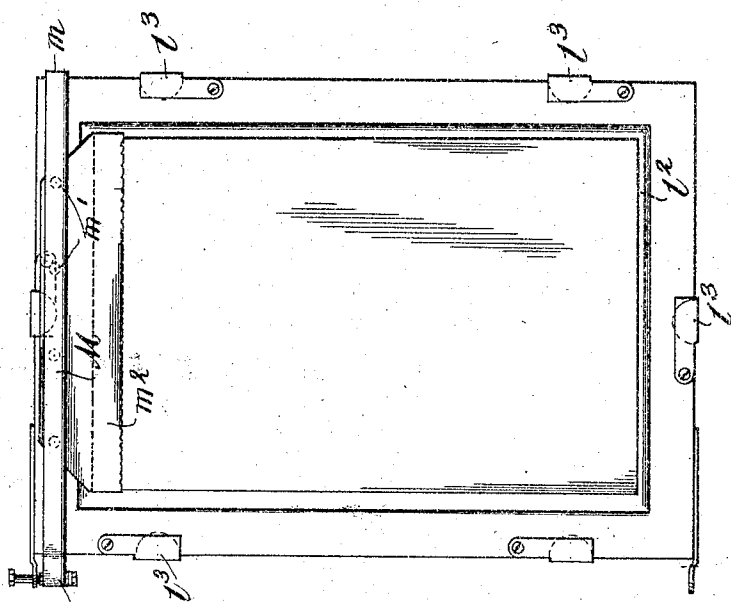


Fig. 5.

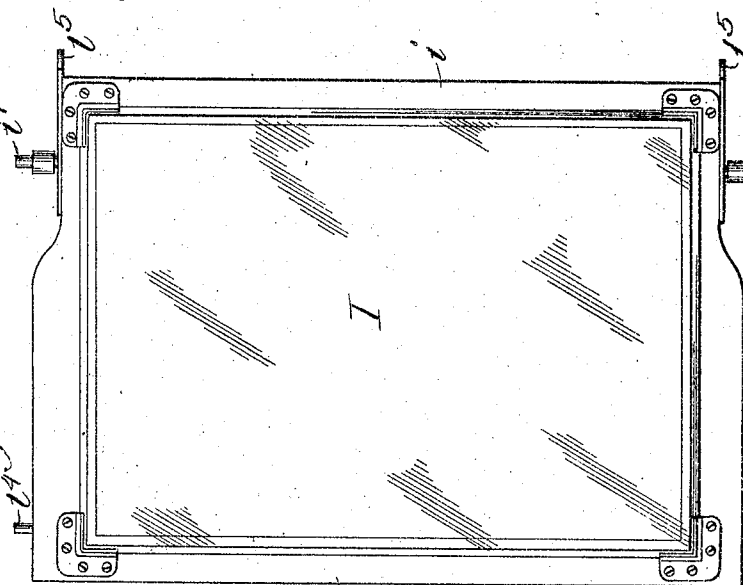
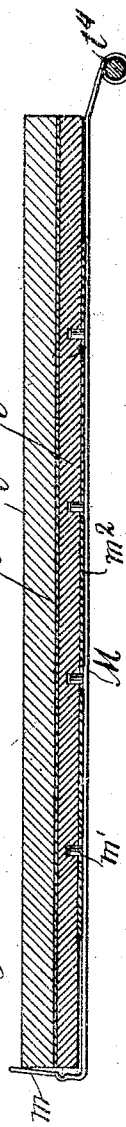


Fig. 7



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UNITED STATES PATENT OFFICE.

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DUPLICATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 778,415, dated December 27, 1904.

Application filed March 30, 1904. Serial No. 200,857.

To all whom it may concern:

Be it known that we, AUGUSTUS D. KLABER, a subject of the King of Great Britain, and WILLIAM D. STERNBERG, a citizen of the United States, both residing at London, England, have invented a certain new and useful Improvement in Duplicating Apparatus, of which the following is a specification.

The object of the present invention is to provide a stencil-duplicating apparatus or outfit which shall be compact and yet complete, containing within itself all the necessary mechanism and appliances for the production of multiple copies from a stencil-sheet.

A further object is to so arrange such mechanism or appliances within a suitable inclosing case as that every part thereof shall be guarded against accidental injury when such case is closed, but be moved to operative position upon the opening of such inclosing case for the performance of such duplicating operation.

In carrying out the invention we employ a suitable base to which in a preferred form is hinged a two-part inclosing case, said base and said inclosing case between them supporting the inking-slate, the stencil-frame, and the top-sheet frame, and, if desired, a portfolio for the reception of stencil-sheets or impression-paper and coacting with the inking-slate an inking-roller and an ink-reservoir or other source of ink-supply. These are so supported within the base and frame as that when the latter is closed they will be separated from injurious contact with each other, whereas upon opening said inclosing case the parts will without requiring further attention from the operator automatically assume operative position.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view illustrating the duplicating apparatus referred to, the inclosing case being open. Fig. 2 is a cross-section on the line 2 2, Fig. 1, the closed position of the parts being illustrated in dotted lines. Fig. 3 is an enlarged detail illustrating the manner in which the stencil and top-sheet supports may be hinged to the base. Fig. 4 is a cross-

section on the line 4 4, Fig. 1, on an enlarged scale, however. Fig. 5 is a plan view illustrating the glass plate and its supporting-frame, and which plate is designed to receive the impression-paper to be printed upon. Fig. 6 is an under side view of the stencil and top-sheet-supporting frame, showing the stencil-sheet secured in position thereto. Fig. 7 is a cross-section taken through the line 7 7, Fig. 6, illustrating the stencil and top-sheet-supporting frame and the clamp coacting therewith to secure the stencil-sheet in position; and Fig. 8 is a detail view of the inking-roller support looking in the direction indicated by the arrow, Fig. 1.

Referring to the drawings, in which similar letters denote corresponding parts, A designates the base, provided adjacent to each end with the brackets *a*. To this supporting-base are hinged at *b c* the members of the sectional casing B C, each comprising a bottom and three sides. These members B C of the casing are capable of being moved together (in the closed position of the apparatus) and may be provided with a securing means—as, for instance, the latch D, coacting with pin *d*.

E designates the inking-slate, pivoted at *e* to the bracket *a* of the base A. Near its outer corners this slate is provided with pins *e'*, coacting with slots *e''*, formed in oblique guides *e'''*. As shown in Fig. 2, when the parts assume open position, the pins *e'* ride out of the slots *e''*, thereby supporting the outer end of the slate upon the sides of said guides. If desired, however, the under side of the slate may be provided with a gravity-foot *e''''*, (illustrated in dotted lines, Fig. 2,) which will fall when the parts assume this position, and thereby not only support the outer edge of the inking-slate, but also coact with the prints fed into the casing to the left of such foot, as hereinafter described.

F designates the inking-roller, provided with the handle *f*.

G designates a bracket secured to the surface of the inking-slate (or to the frame forming part of such slate) and provided with an opening *g* and slot *g'*.

To secure the roller in position after using, the neck of the handle f may be introduced through the opening g and then pressed into the slot g' , so as to be securely retained therein by means of the lip g^2 .

H designates an ink-can. This is detachably mounted between two heads h h' , said heads being secured together by means of the screws h^2 . Operating through the head h is a screw h^3 , coacting with a threaded perforation in said head and provided at its end with disk h^4 , which bears against the movable top h^5 of the ink-can H.

The head h' is provided with an opening h^{12} , communicating with a passage h^5 , which in turn communicates with a tube h^6 , terminating in an orifice h^7 in the inking-slate. Secured to the inking-slate or to the frame thereof is a spring-plate h^8 , whose end terminates over the orifice h^7 . To supply the slate with ink, the screw h^3 is turned so as to expel a quantity of such ink from the can H and pass it through the tube h^6 , and thence to the slate through the orifice h^7 against the pressure of the spring-plate h^8 .

I designates the printing-plate, (preferably of glass and mounted in a frame i), pivoted at i' to the bracket a of the base A. The under side of said frame and plate may support a portfolio i^2 , held in position by clips i^3 , carried by said frame.

L designates the stencil and top-sheet frame, here shown as made in two parts l l' , between which is secured the top sheet l^2 , the edges thereof being confined between the members l l' of said frame. Said parts are secured together by means of the clamps l^3 . Said stencil and top-sheet frame is pivoted at l^4 to an arm l^5 , carried by the frame i of the printing-plate I. Mounted upon the pivot l^4 and coacting with the under side of the stencil and top-sheet frame is a spring l^6 , exerting a tendency to separate the frame L from the printing-plate I.

Preferably a latch and pin l^6 l^7 will be provided to secure the frame L and the frame i together as against the tendency of said spring to separate them. If desired, there may be one of the springs l^6 at each end of the stencil and top-sheet frame.

M designates the stencil-sheet clamp, here shown as pivoted at l^4 and having an angular end m , which engages with the edge of the frame L to secure said stencil-sheet clamp in position. If desired, the upper surface of said clamp M may be provided with a series of teeth, bosses, or other projections m' , with which may coact similarly-spaced perforations formed in the end of the stencil-sheet m^2 . To secure the stencil-sheet in position, the outer angular end m may be disengaged from the frame L and said frame raised, whereupon the stencil-sheet may be placed in position with the pins m' projecting through the perforations in the end thereof, whereupon the

clamp may again be engaged with the frame L. If desired, the distant end of this stencil-sheet may be secured in any suitable manner to the frame L, although we do not consider this strictly necessary, as the same will be held in position by ink transmitted thereto, as hereinafter described.

The frame i of the printing-plate I, like the inking-slate on the under side of the apparatus, may be provided with pins i^1 , coacting with slots i^5 , formed in oblique guides i^6 .

In operation a stencil-sheet is secured in position in the manner above indicated and the sheet of impression-paper, upon which the imprint is to be made, is laid upon the plate I. The two-part frame carrying the top sheet and stencil-sheet is then pressed downwardly upon said plate, and the roller, previously provided with ink, passed over such top sheet in order to force the ink through the same and through the interstices in the stencil-sheet to the surface of the impression-paper below. On ceasing to press the top-sheet and stencil-sheet frame downwardly, the same will be raised by the springs l^6 and the sheet of impression-paper will follow the same a certain distance. As said frame assumes its upper position, however, the impression-sheet will slip therefrom and pass between said stencil-sheet frame and the printing-plate frame into the receptacle formed by the member C of the casing below the printing-plate. If desired, the under side of the printing-plate I may be provided with a registering-sheet, which may be adjusted with reference to the stencil cut upon the stencil-sheet and fixed in such adjusted position by any suitable means—as, for instance, an elastic band. Thereafter the impression-paper may be laid on the upper surface of said plate directly over said registering-sheet and the position of the impression thereon accurately determined.

What we claim, and desire to secure by Letters Patent, is as follows:

1. In duplicating apparatus, the combination with a base, of a two-part inclosing case pivotally connected with said base at either side thereof, and a stencil-frame pivotally mounted therein, substantially as set forth.
2. In duplicating apparatus, the combination with a base, of a two-part inclosing case pivotally connected with said base at either side thereof, and a stencil-frame and inking-slate pivotally mounted therein, substantially as set forth.
3. In duplicating apparatus, the combination with a base, of a two-part inclosing case pivotally connected with said base at either side thereof, and a stencil-frame, printing-plate and inking-slate pivotally mounted therein, substantially as set forth.
4. In duplicating apparatus, the combination with a base, and a two-part casing movably connected therewith and provided with

guides, of a frame pivotally mounted at one end within said casing and coacting at its other end with said guides, substantially as set forth.

5 5. In duplicating apparatus, the combination with a base, and a two-part casing movably connected therewith and provided with guides, of a frame and an inking-slate, each pivotally mounted at one end within said casing, the other ends of said frame and slate co-
10 acting with said guides, substantially as set forth.

6. In duplicating apparatus, the combination with a base provided with end brackets, and a two-part casing each part pivotally connected with one of the brackets on said base, of a frame pivotally mounted at one end on said brackets, substantially as set forth.

7. In duplicating apparatus, the combination with a base provided with brackets, and a two-part casing connected with said base, of a frame and an inking-slate, each pivotally mounted on said brackets, substantially as set forth.

8. In duplicating apparatus, the combination with a base provided with brackets, and a two-part casing connected with said base, of a printing-frame, a stencil-frame and an inking-slate, pivotally mounted on said brackets, substantially as set forth.

9. In duplicating apparatus, the combination with a base provided with brackets, of a two-part casing movably connected therewith, each member being provided with guides, a printing-plate, a stencil-frame, and an inking-slate, pivotally mounted on said brackets and coacting with said guides, substantially as set forth.

10. In duplicating apparatus, the combination with a base, of a two-part casing hinged thereto and adapted in closed position to lie in parallelism, a printing-plate, a stencil-frame and an inking-slate, pivotally mounted,

and means for maintaining the same substantially parallel with said two-part casing either in opened or closed position of the same, substantially as set forth.

11. In duplicating apparatus, the combination with a base, of a two-part casing, a printing-plate, a stencil-frame and an inking-slate, pivotally mounted within said base and casing, and means for moving said plate, frame and slate to operative position automatically upon the opening of said two-part casing, substantially as set forth.

12. In duplicating apparatus, the combination with an inking-slate, of an ink-can secured thereto, a passage from said can to said slate, and means, including a disk within said can and an operating device therefor, for forcing ink from said can through said passage, substantially as set forth.

13. In duplicating apparatus, the combination with an inking-slate, of an ink-can secured thereto, a passage from said can to said slate, a closing device for said passage, and means, including a disk within said can and an operating device therefor, for forcing ink from said can through said passage, substantially as set forth.

14. In duplicating apparatus, the combination with a base, of a two-part casing pivoted thereto, a stencil-frame and inking-slate pivotally mounted within said base and frame, and means carried by said two-part casing for guiding said frame and slate into operative and inoperative position, substantially as set forth.

This specification signed and witnessed this 15th day of March, 1904.

AUGUSTUS D. KLABER.
WILLIAM D. STERNBERG.

Witnesses:

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