

No. 665,596.

Patented Jan. 8, 1901.

L. D. CLARK.
COMPOSITE PRINTING PLATE OR BLOCK.

(Application filed Feb. 15, 1900.)

(No Model.)

Fig. 2.

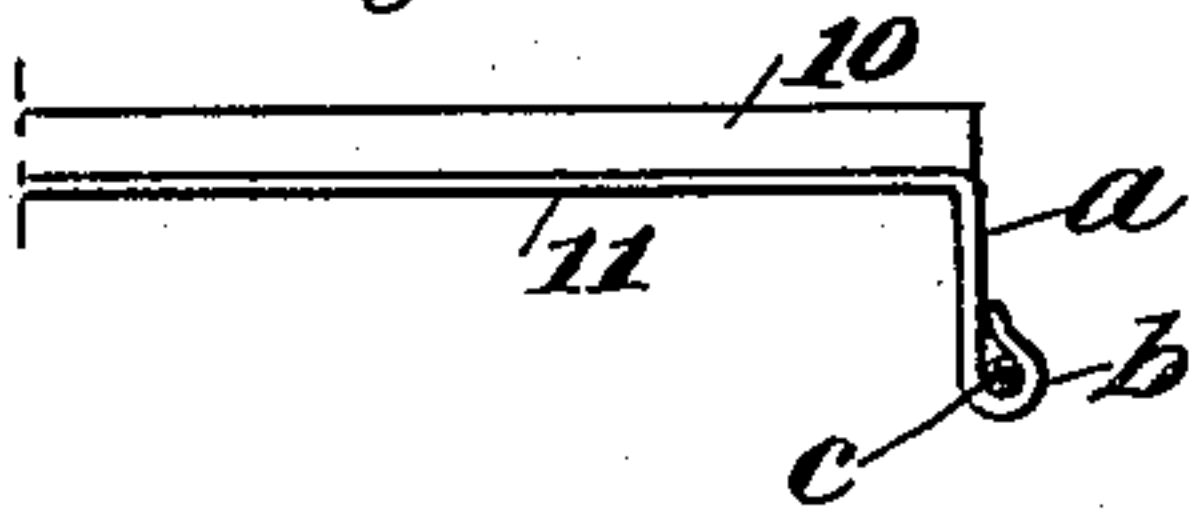


Fig. 1.

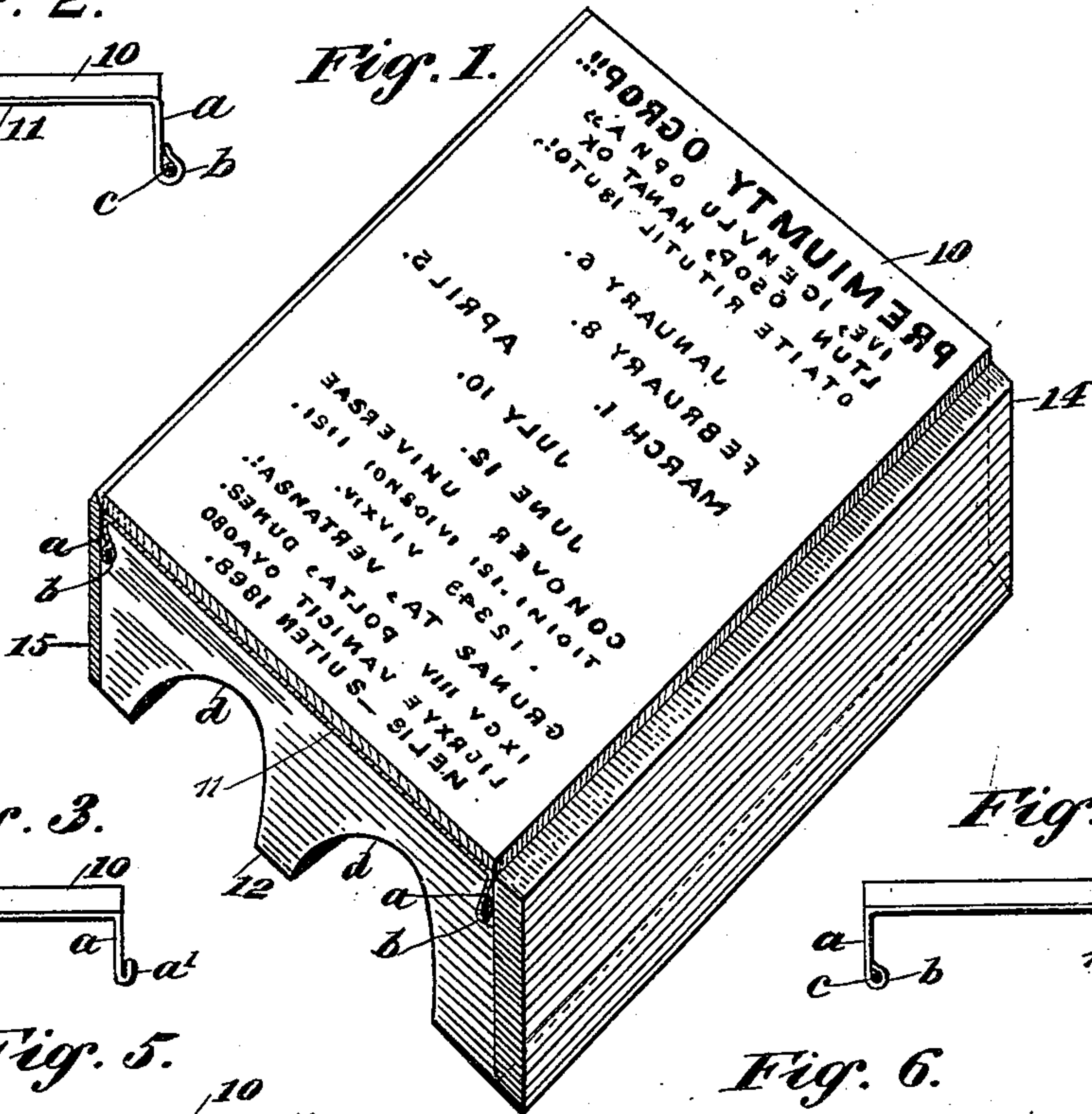


Fig. 3.

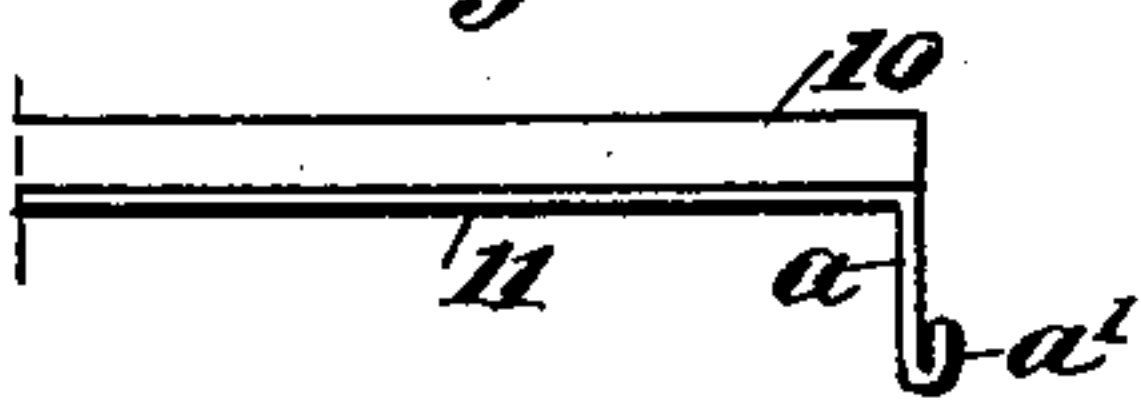


Fig. 4.

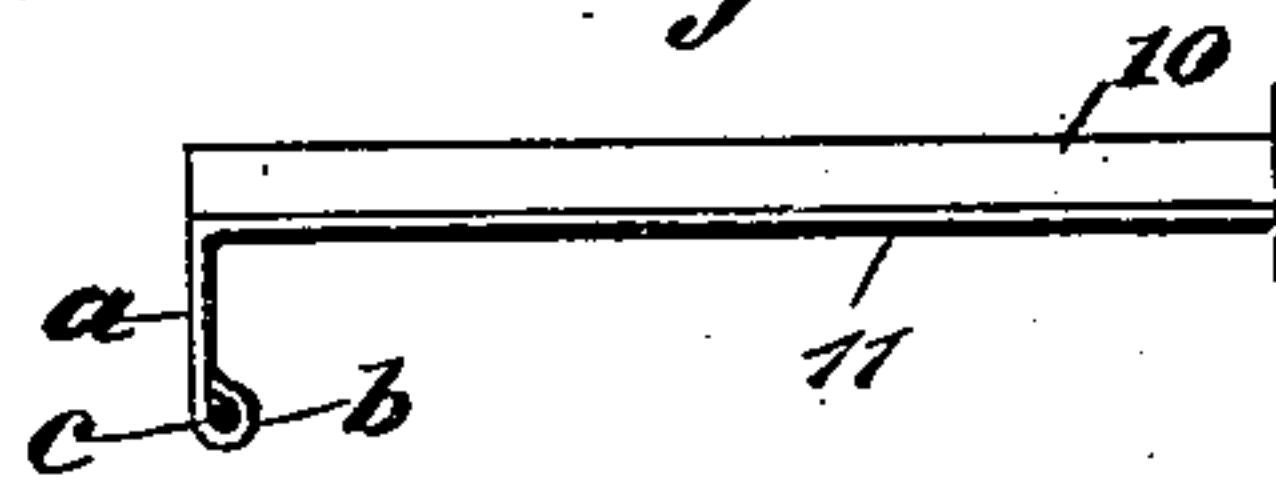


Fig. 5.

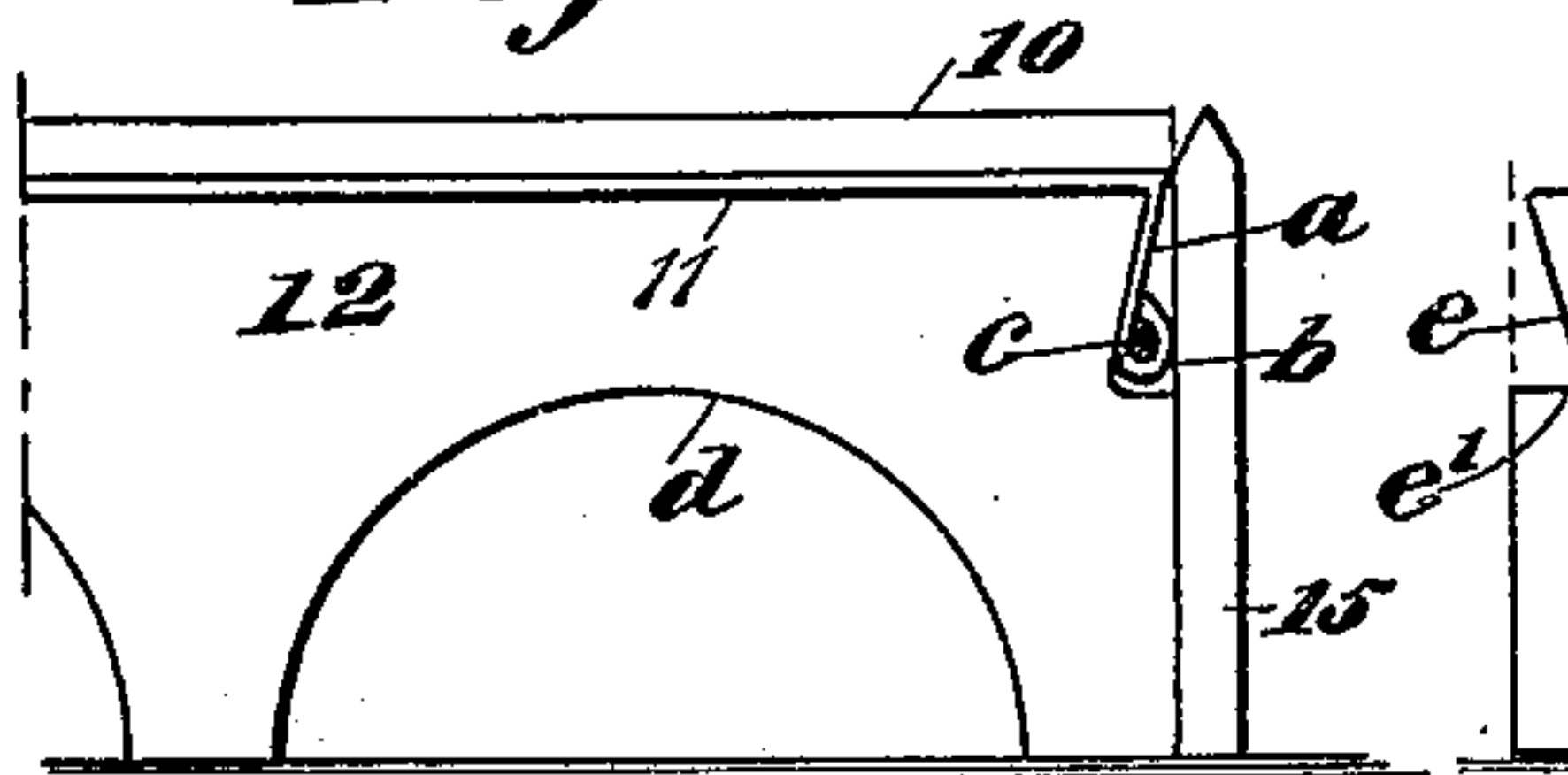


Fig. 6.

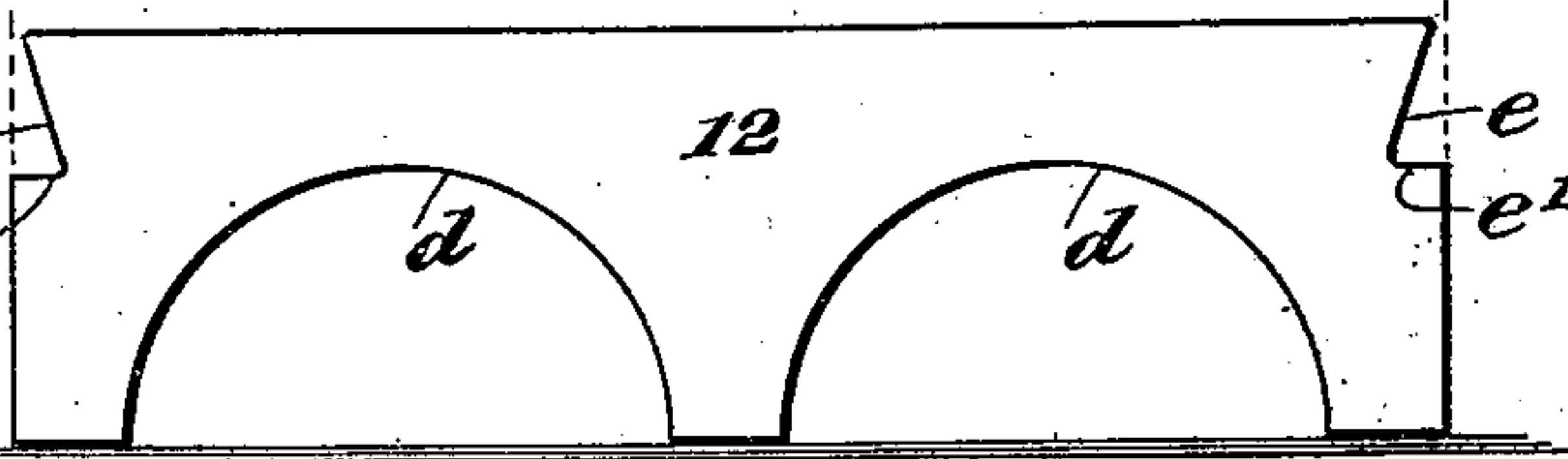


Fig. 7.

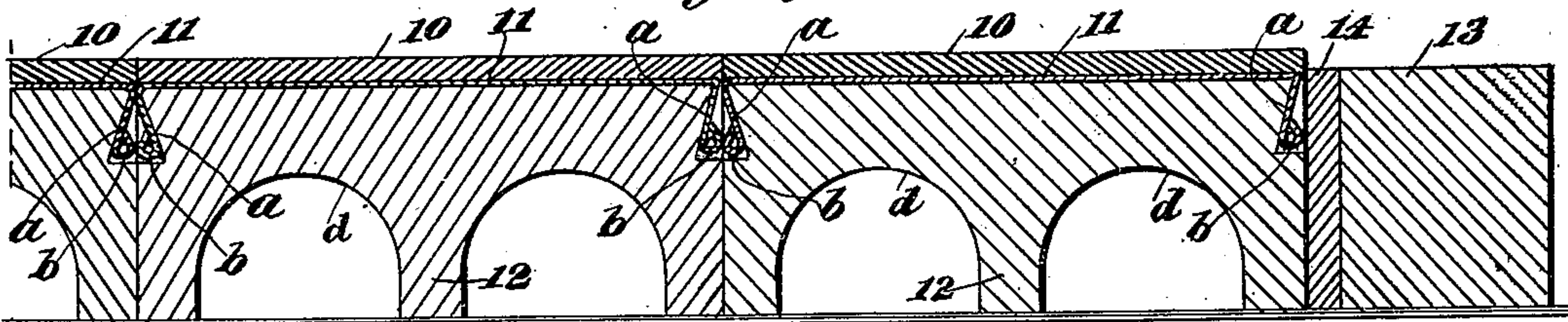
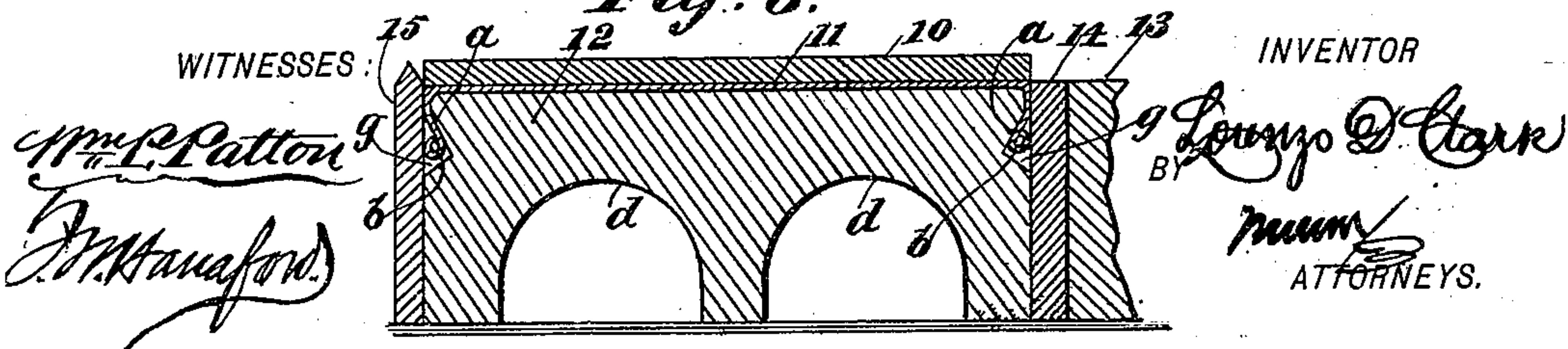


Fig. 8.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LORENZO D. CLARK, OF RED BLUFF, CALIFORNIA.

COMPOSITE PRINTING PLATE OR BLOCK.

SPECIFICATION forming part of Letters Patent No. 665,596, dated January 8, 1901.

Application filed February 15, 1900. Serial No. 5,327. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. CLARK, a citizen of the United States, and a resident of Red Bluff, in the county of Tehama and State of California, have invented a new and Improved Composite Printing Plate or Block, of which the following is a full, clear, and exact description.

This invention relates to printing plates or blocks having surfaces for printing formed in matrices by the stereotype or like process.

The invention has for its primary object to provide simple, novel, and practical means whereby a printing-plate of metal or other material may be detachably secured upon a base-block in such a manner as will adapt the clamping furniture used in the lock-up of a form, when suitably adjusted, to draw the printing-plate forcibly upon the base-block therefor and hold said plate or a plurality of such plates firmly clamped on their complementary base-blocks and the latter bound within a border-frame or chase.

A further object is to so construct the novel device in detail that it may readily be produced in flat or curved form and singly or in numbers, be adapted for a convenient and reliable assemblage or make-up, be used on a rotary or other printing-press that is run at high speed, and in service afford an indefinite number of impressions, fully equaling in appearance the best work executed upon a form wherein type-set composition is held.

The invention essentially consists in a printing medium mounted upon and secured to a measurably-flexible binding-sheet which is detachably securable upon the top and opposite edge portions of a rigid base-block when the complete device is put into service.

The invention further consists in certain novel details and combinations of the same, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improvement and clamping devices at opposite sides thereof. Fig. 2 is a detached end view of the printing medium in part and an attached binding-sheet therefor. Fig. 3 is an

end view substantially similar to that shown in Fig. 2, the binding-sheet being slightly changed. Fig. 4 represents an end view of the printing medium and binding-sheet in part, the latter being slightly altered from the construction shown in Figs. 2 and 3. Fig. 5 is an end view of the printing medium and binding-sheet therefor, shown clamped upon the base-block by lateral pressure applied thereto. Fig. 6 is an end view of the improved base-block, the printing medium and binding-sheet being removed therefrom. Fig. 7 is a transverse sectional elevation of a plurality of the improved composite printing plates or blocks assembled and laterally clamped; and Fig. 8 is a sectional end view of the improved composite printing device, showing a slight structural change in the base-block therefor.

In the drawings exemplifying an application of the essential features of improvement, 10 indicates the printing surface, piece, or medium. Said piece is in the form of a plate the dimensions of which are proportioned to suit the service it is to perform. As said medium may in some printing-work be rendered capable of containing the entire reading matter or illustration to be printed from it or may be of such proportions as to require a number of like mediums for the production of the complete composition or picture to be produced on a printing-press by their assemblage and use, means for such assemblage and use is provided by this device.

The printing medium 10 is to be formed on its impressing-surface by casting it from metal in a stereotype-matrix or by forming it of any other available material in any suitable manner whereby a printing-plate of correct dimensions is produced. For effective service the printing medium 10 should be rectangular and have its top and bottom surfaces substantially parallel with each other and be either level or truly curved, as the case may require. On the side of the printing medium 10 opposite from its printing-surface a comparatively thin sheet 11 of material measurably pliable, but otherwise unyielding, is secured. The sheet 11 may be of thin plate metal, parchment, cardboard, or any other natural or manufactured material found well adapted for the service required.

At opposite edges of the essentially rectangular printing medium 10 the sheet 11 is extended downwardly therefrom preferably to an equal degree, and the free lower edges of these depending portions or wings *a* are thickened. The thickened lower edges of the wings *a* may, if the material admit of it, be bent upon themselves, as shown at *a'* in Fig. 3, whereby a narrow rib is formed, and this formation may be on the inner or on the exterior surface of each wing, as may be preferred.

Preferably the lower edges of the opposite depending wings *a* of each sheet 11 are each tubulated, as shown at *b* in the several figures except Fig. 3, and said tubulations may be formed either upon the inner or outer sides of the wings. If the material from which the sheet 11 is produced is not sufficiently substantial to enable the tubulations *b* to resist lateral compression, a core *c* is preferably introduced within each tubulation, and said cores may be of cord, wire, or other material, as may be deemed preferable.

The base-block 12 provided for each printing plate or medium 10 is of a height proportioned to suit the combined thicknesses of the medium 10 and sheet 11, so that when said parts are located upon the base-block the printing-face of the medium 10 will be sustained at a correct distance from the face of the press bed or cylinder whereon the composite printing-block is imposed for service. The base-block 12 is rectangular and of equal area to that of the printing medium 10 and may be lightened in the usual manner, if made of metal composition, by cutting the same away, as shown at *d* in the drawings. At opposite sides, whereon the depending wings *a* of the sheet 11 are to engage the walls of the base-block 12, said walls are indented, as shown at *e* in Fig. 6. The indentations or recesses *e* in the side walls of the base-block 12 are preferably in the shape of undercut formations, and they may each extend from the upper side of the base-block downwardly and inwardly and end in a shoulder *e'*, as shown in Fig. 6, or they may be substantially in the form of V-shaped grooves *g*, as represented in Fig. 8. The depth of the undercut recesses *e* or *g* should be slightly greater than the length of the depending wings *a*, so that when said wings are forced into contact with the inclined sides of the recesses the ribs or tubulations on the lower edges of said wings will not forcibly contact with the shoulders at the bottoms of said inclines.

At the upper corners of the base-block 12, where the inclines *e* commence, said corners are slightly rounded to avoid cutting the sheet 11 where the wings *a* are bent downwardly thereon, and as indicated by dotted lines in Fig. 6 space is afforded for the wings at said rounded corners, so that the wings do not project beyond the plane of the sides of the block wherein the undercut recesses are formed.

In service the composite printing-blocks, if used in quantity for the production of printed matter, may be assembled as shown in Fig. 7. In this arrangement of the printing-blocks it will be seen that the tubulation of a depending wing *a* on one sheet 11 contacts with a similar tubulation on the wing of a sheet 11 upon an adjacent base-block 12. Now if the assembled printing-blocks are locked up in a rectangular border-frame or chase 13 by means of the usual furniture, of which the strip 14 and rule 15 may be parts, it will be evident that the lateral pressure thus produced in an ordinary manner will cause all the ribs or tubulations *b* to slide down the inclined sides of the undercut recesses *e* or *g* and draw forcibly upon the surface of the sheets 11 imposed upon the base-blocks. It will be understood that in the locking-up operation the wings *a* are first bent inwardly by the contact of their tubulations one with another adjacent thereto, or slugs may be introduced, as preferred. It will be apparent that the downward draft at the sides of the sheets 11, produced in the manner explained, will hold the printing plates or mediums 10 upon the base-blocks 12 in a solid manner, so that in a "make-up" comprising a large number of printing-blocks spacing-rules may be omitted, if this is desired, and economy of space be thus attained, as well as the avoidance of superfluous parts that add weight to the form.

It is obvious that a single large printing-plate 10 may be provided to contain a special composition and that one large base-block 12 may serve to support the special job and its clamping-sheet 11. Furthermore, if desired, the number of base-blocks 12, that take up valuable space in a job-office, may be largely reduced, as a number of the printing-plates 10 and their clamping-sheets 11 may be used successively on the same base-block in the production of different articles of printed composition.

In brief I desire it understood that my invention provides for printing with great facility by means of a printing-plate 10, constructed of any suitable material, substantially as shown in Fig. 1, and held in position on the single base 12 by pendent tubulated wings *a*, which may be given either of the forms indicated in Figs. 2, 3, and 4; furthermore, that the plate 10 may be locked up with or without the column-rule 15 (represented in Fig. 5) or on a broad base, as shown in Fig. 6; also, that a plurality of bases may be assembled together and a single large plate held imposed thereon by lateral pressure upon the pendent wings *a*, contacting with slugs, reglets, or furniture 14, as may be best suited for the make-up of the form; and, if preferred, that the form may be locked directly against the chase 13, dispensing with the use of the intervening adjuncts mentioned. I also desire to specify that the shape and angular degree of the indents or undercut formations

e shown in the drawings may be varied so long as the cumulative draft upon the pendent wings is effectively produced by the lateral pressure due to the ordinary process of locking up forms, which may contain the improved plates 10, imposed on one or more supporting-blocks, and that one or more of said plates may be employed for printing purposes, with or without rules or other furniture between the blocks or sides of the chase, as may be required for the use of the improvement in printing illustrated, tabulated, or other matter from plates of such dimensions as may be required.

15 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A composite printing-block, comprising a printing medium in plate form, a clamping-sheet having depending wings at opposite sides and secured upon the bottom of the printing medium, a base-block recessed on opposite sides, said recesses each having an upwardly and outwardly inclined wall, and 25 means, whereby the wings of the clamping-sheet are forced into contact with the inclined walls of the recesses, as and for the purpose set forth.

2. A composite printing-block, comprising 30 a printing plate or medium, a clamping-sheet whereon the printing-plate is affixed, and having depending wings at opposite edges, a thickened enlargement or rib along the free edge of each wing, and a base-block having 35 undercut formations wherein the wings and

the ribs thereon may be compressed, so as to produce draft upon the clamping-sheet, substantially as described.

3. A composite printing-block, comprising a plate-like printing medium, a slightly-pliable non-elastic clamping-sheet therefor, secured on the lower side of the printing-plate, opposite depending flanges or wings on the clamping-sheet, tubulations on the lower edges of the said wings, and a base-block having an inclined undercut formation on each of two opposite sides, wherein the wings may be compressed and forced down with cumulative draft force by lateral compression, substantially as described.

4. The combination with a locking-up mechanism, of a plurality of printing-blocks, each comprising a printing medium in plate form, a non-elastic but pliable clamping-sheet secured upon the lower surface of the printing-plate, two depending wings opposite on the clamping-sheet, tubulations on the free edges of said wings, and a base-block having two undercut formations in opposite sides, wherein the tubulations and wings may be 60 compressed by the locking-up mechanism, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LORENZO D. CLARK.

Witnesses:

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W. A. BAKER.