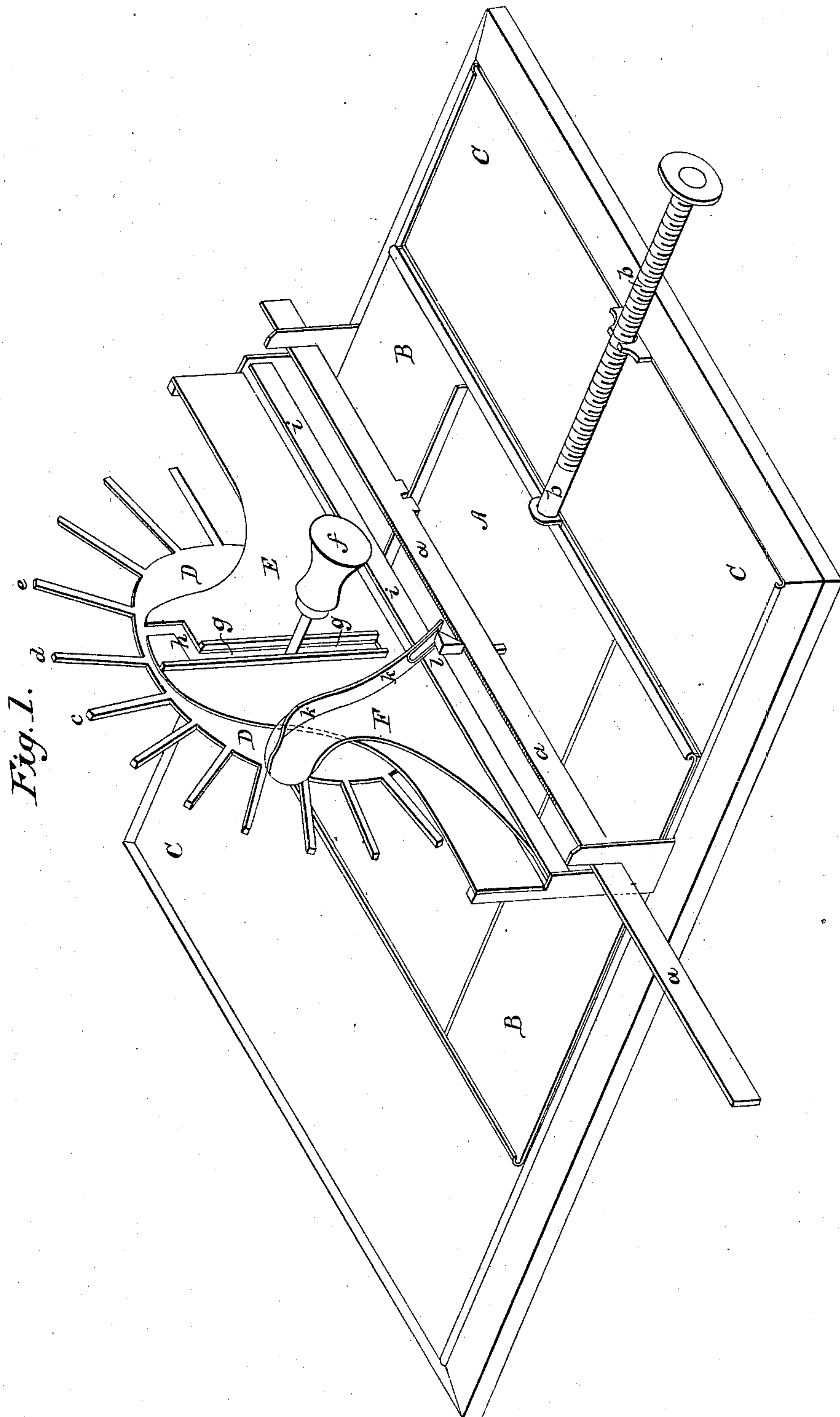


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No. 21,208.

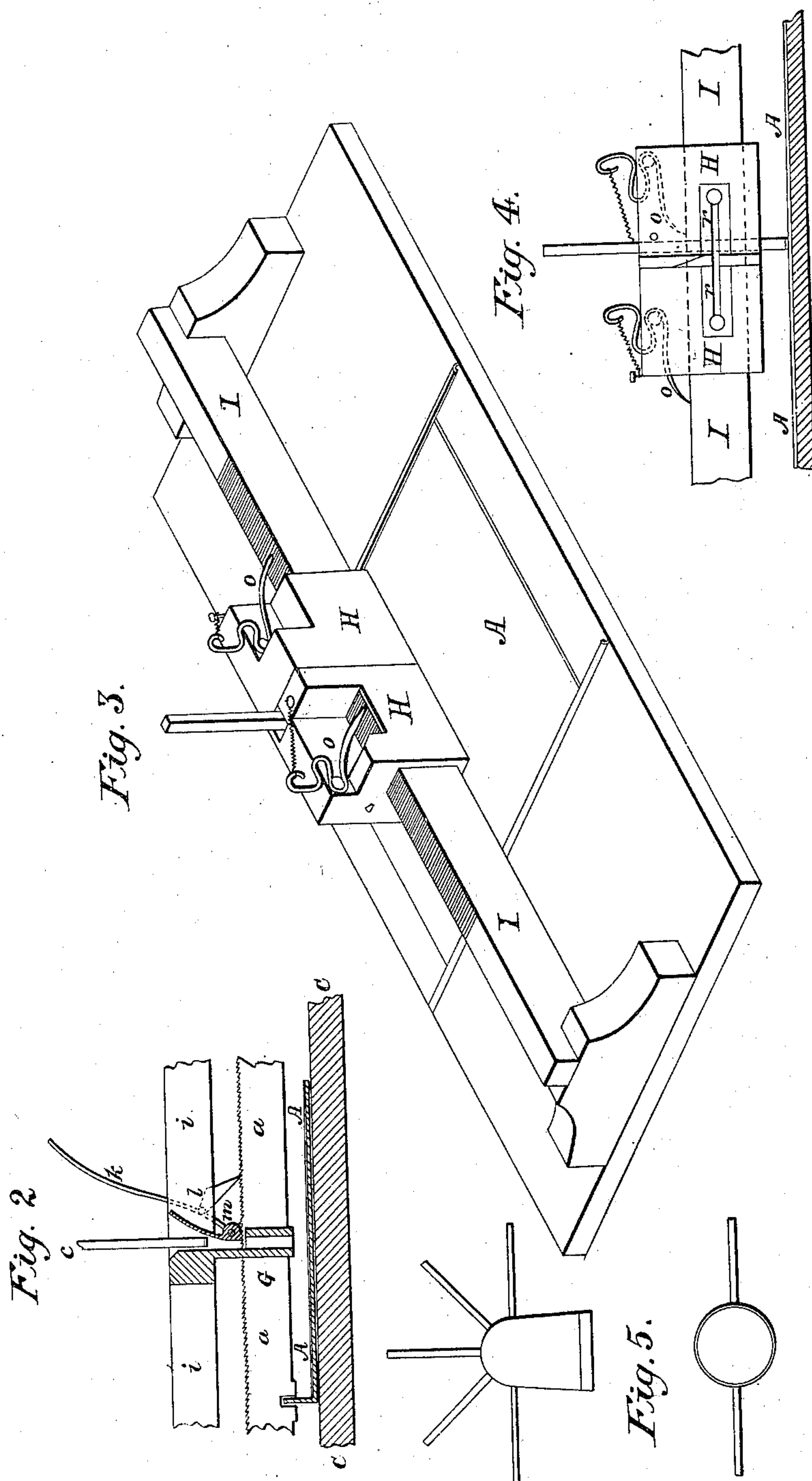
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# UNITED STATES PATENT OFFICE.

JOHN McELHERAN, OF BROOKLYN, NEW YORK.

## FEED-MOTION FOR CEROTYPOGRAPHY.

Specification forming part of Letters Patent No. 21,208, dated August 17, 1858.

*To all whom it may concern:*

Be it known that I, JOHN McELHERAN, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Typography, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 represents a view in perspective of one arrangement of means for the application of my improvement, and in which the impression surface is fed by the type in a novel and automatic manner. Fig. 2 represents a view of the type-receiving socket and surface-plate-actuating mechanism shown in Fig. 1 in section and detached. Fig. 3 shows a view in perspective of a modified arrangement of means for carrying out my improvement, and in which the impression-surface plate is a fixture relatively to the feed produced by the insertion of the type and the type-holder fed in lieu thereof; and Fig. 4 shows a detail view of such appliance in part. Fig. 5 represents one of a series of type knuckles or thimbles to be used in place of the type-wheel shown in Fig. 1.

My improvement is here shown as applied to printing by type on plastic surfaces, or plates coated with wax or other plastic material, to form matrices for the production of electrotpe impression-plates, as fully described in the specification or specification of Letters Patent of the United States previously granted me for processes for producing surfaces to be printed from, and which I call, respectively, "graphotype," "granotype," and "cerotypography," and in which the style, type, or marker is actuated in any suitable manner to produce its impression on the wax, the granotype process, however, merely referring to shading or graining by "lines" or "dots," and which may be produced by a roughened periphery and handle to guide it, or a ruler with lines or dotted indentations to be rolled over the plastic surface-plate.

As here applied my improvement may be called a "cerotypographer," for facilitating the printing by types on the wax or plastic surface for the after production of electrotpe

"forms" or impression-plates, as before referred to; but it will be obvious from the following description that my improvement is not of necessity restricted to such process of producing printing-surfaces, but that it may be applied to other, and by suitable inking provision or appliances, to printing by type direct on the sheet or paper to be printed without the intervention or use of an electrotpe impression-plate.

Referring to Fig. 1 in the accompanying drawings, the waxed matrix or surface mold-plate A is shown to slide in direction of the length of a feeding-bar, *a*, on or across an under sliding plate, B, which traverses at right angles to the upper plate, A, on and along a bed-plate, C. These right-angled movements are for the purpose of giving the necessary feed or adjustment to the plastic surface plate or matrix A for impression of the type thereon, at suitable distances apart, as in printing by type in lines, the lower sliding plate, B, which may be adjusted by a screw, *b*, serving to give the "line" feed at intervals to the matrix A, and the type serving, in a novel manner, to adjust, by the act of impression, the matrix A each succeeding letter, character, or sign that is made in the same line.

A set of type, *c d e*, is here shown as arranged in a radially-projecting manner round a wheel, D, which is hung so as to freely turn as well to rise and fall, and which may be operated by playing on or striking a set of keys connected therewith and corresponding in sign or character with the types *c d e* on the wheel; or which, as here shown, may be operated by hand direct, by means of a knob or handle, *f*. The turning of the wheel is to bring a fresh type over the point or line to receive the impression, and the rising-and-falling motion of the wheel is to press down the type to produce the impression on the wax, and to afterward free the type from the impression-surface and out of the way for the action of a succeeding type.

One such wheel may contain all the types required to produce an ordinary or required impression, or a series of wheels armed with types of different character may be used. The wheel D shown in Fig. 1 having its shaft



working through a guiding-slot, *g*, which, while it admits of the wheel turning and directs it in its rising-and-falling stroke, and arrests it at the limit of its up-and-down stroke, admits, by means of a crooked extension-outlet, *h*, at the top, of the wheel being readily removed to change or adjust the type or to substitute a wheel with different type. This slot *g*, with its extension *h*, is made in a cross frame or plate, *E*, which may be raised or lowered to suit various requirements.

Connected with the socket-supports to the plate *E*, at either end, is a cross-bar, *i*, having an upright standard, *F*, to which is fastened a spring, *k*, that has connected with it at its bottom, on one side of the bar *i*, a pendent weighted pawl, *l*, and is connected on the other side of the bar *i* with a movable half or portion, *m*, of a type-socket, *G*, whose other half or portion is shown fast to the cross-bar *i*.

The pawl *l* drops into gear with the feeding-bar *a*, whose upper edge may be indented or roughened to secure bite of the pawl thereon. This feeding-bar *a* is made to clip a raised edge of the impression-carrying plate *A* to effect the cross-feed thereof by the action of the type in the following manner: The lower sliding plate, *B*, having been adjusted by the screw *b* to bring the matrix-plate *A* to its required position for printing the first or top line on the matrix, and the sliding matrix-plate adjusted transversely for commencing to print at the right-hand edge of the said plate, and the type-wheel *D* being raised in its shaft-guiding slot *g*, and turned so as to bring any required one of the several types in it over the type-socket *G*, said wheel is depressed sufficiently to cause said adjusted type to descend through the socket to produce the required impression on the wax surface of the plate, after which the wheel is raised and the type with it out of the type-socket, and the type-wheel turned to bring the next required type over the socket, to be pressed down therein and through, as before, and so on, in succession, until an entire line is printed by the types on the matrix *A*, the feed of the matrix for each succeeding type in the same line of printing across the matrix being produced by the action of each impressing-type on the divided socket *G* by the movement of the type through the socket and its pressure on the movable portion *m* of the socket, which, acting on the spring *k* and the pawl *l*, to give gripe to and actuate the latter, urges forward or cross-feeds the matrix-plate the required distance by means of the feeding-bar *a*, operated by the pawl and operating said plate.

According to the thickness or narrowness of the type entering the socket *G*, will the movable portion *m* of said socket be more or less actuated to one side, and thus the "cross" or "letter" feed in the line being printed is regulated to the width occupied by each letter, to secure a proper disposition of the sev-

eral letters apart and uniformity in printing, by the thickness of each type proportioning the movement of the pawl *l* and feeding-bar *a*, which actuates the matrix-plate. After one line has been printed the pawl *l* may be raised out of gear with the feeding-bar *a* and the matrix *A* be run back to the right-hand side again, and its "line" feed or adjustment by the screw *b* be given it for the printing of the succeeding line, and so on till the whole surface of the matrix is impressed.

Instead of the type-wheel *D*, the operator may use type knuckles or thimbles on the several fingers of his one or both hands, the several types corresponding to all the required signs, and projecting radially from each thimble, as shown in Fig. 5, for use by insertion of any required one of the types in the type-socket *G*, in like manner as before, to give the required impression and letter feed of the matrix corresponding to the width of the letter or mark on the type.

In Figs. 3 and 4 the matrix or impression-surface plate *A* is shown as stationary or not partaking of cross or letter feed; but each succeeding type of a series of loose types, *n*, is made to feed or adjust itself, according to its width or thickness, to a proper distance from the impression produced by each next previously-used type, by the action of the type in its insertion down or through a divided socket, *H H*, held together by an elastic strap or spring, *r*, and which divided socket the type, in the act of pressing it down and through the socket, serves to separate or open more or less, according to the width or thickness of the impressing-type, and so to regulate the feed of the type to its proper position on or over the impression-surface, the separation or opening of the socket by the type giving the feed by means of spring-pawls *o o*, attached to either divided portion of the socket and biting on a roughened or toothed socket-guiding bar *I*.

It is immaterial, in fact, whether the impression-surface or the type be fed, so long as the type serves automatically and directly, as it were, to effect the feed or arrangement at uniform distances of these several letters apart by the varied insertion or movement of the several types composing such letters, in the manner described, to produce successively an impression; and the mechanical means or equivalents by which a series of type or types may be made thus to adjust themselves, as it were, relatively to the impression-surface may be varied at pleasure irrespective of line of feed or description of feed, which latter might consist of a screw adjustment or arrangement set in action by the type, instead of the roughened feeding-bar arrangement here shown. These, however, and other changes, it is not necessary for me here to mention, and such modifications may be numerous without departing from the character of my invention.

Having now fully described my improve-



ment, what I claim as new, and desire to secure by Letters Patent, is—

The manner herein described of causing the type, by their insertion in an adjustable type-socket or its equivalent, to regulate their own required position relatively to the impression-surface, substantially as specified.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

JOHN McELHERAN.

Witnesses:

JOHN BRANIQUE,  
J. C. BLAIKLY.