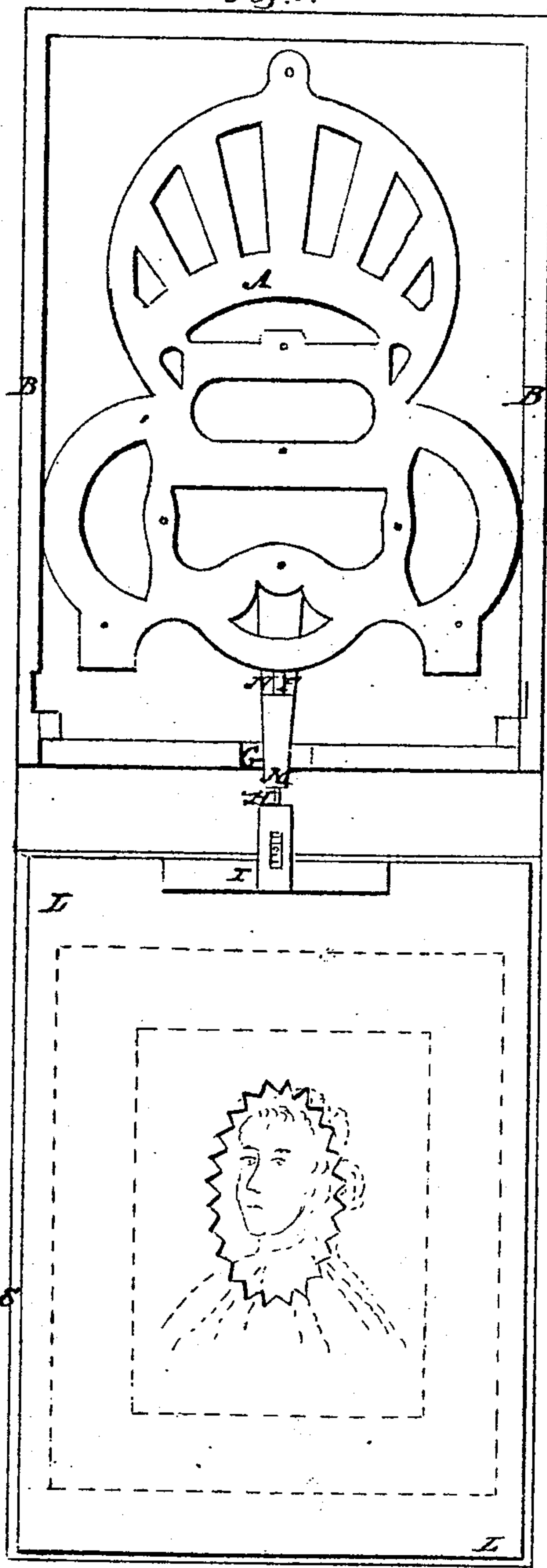


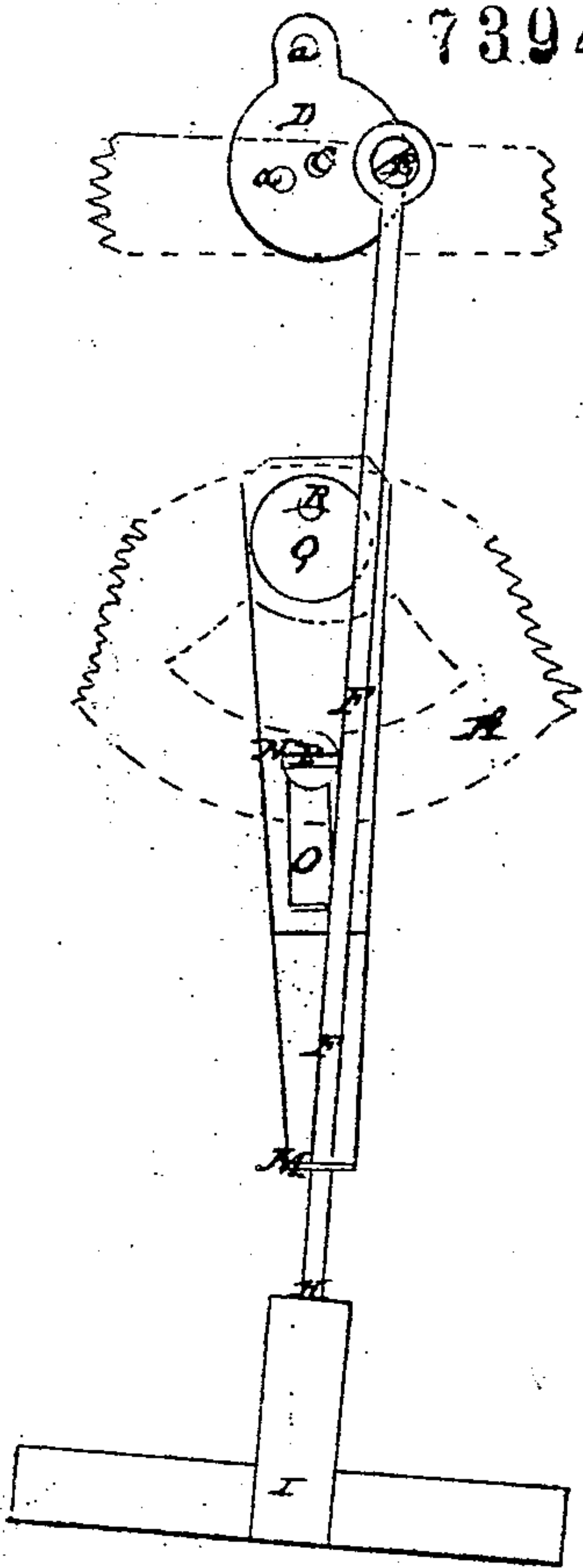
*E. & E. W. Brown's Photographic Printing Apparatus*

*Fig. 1.*



*Fig. 2.*

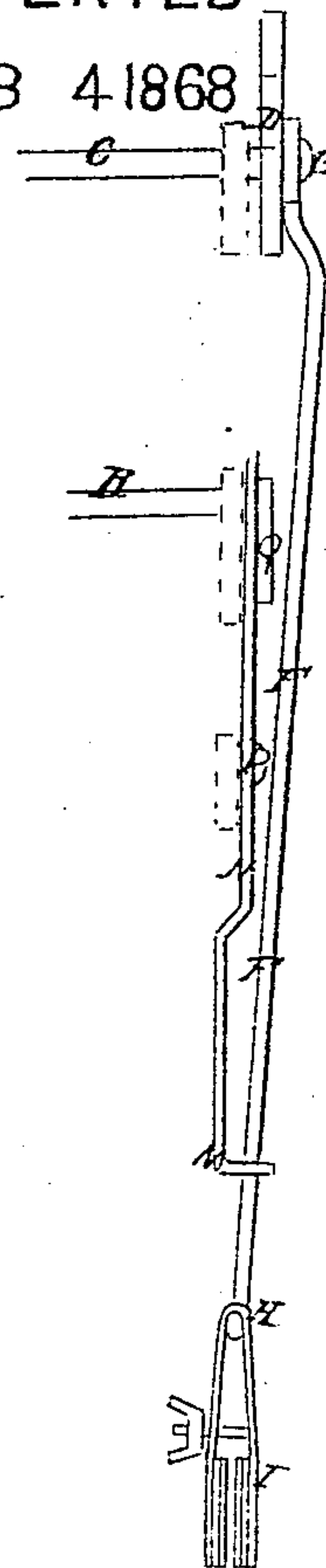
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*Fig. 3.*

PATENTED

FEB 4 1868



Witnesses

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Inventor

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# United States Patent Office.

EDWIN BROWN, OF ROXBURY, AND EDWIN W. BROWN, <sup>of Boston, Mass.</sup> ASSIGNORS TO  
EDWIN W. BROWN, OF BOSTON, MASSACHUSETTS.

*Letters Patent No. 73,948, dated February 4, 1868; antedated January 24, 1868.*

## IMPROVEMENTS IN PHOTOGRAPHIC-PRINTING APPARATUS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, EDWIN BROWN, of Roxbury, Norfolk county, Massachusetts, and EDWIN W. BROWN, of Boston, Suffolk county, Massachusetts, have invented a new and improved "Photographic-Printing Apparatus;" and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to an apparatus for printing of photographs, and to that class of such printing known as and commonly called by photographers "sketching." Heretofore, this "sketching" has usually been done either by blocking, so termed, or by moving, with the hands, the sketching-frame or card over the plate while exposed to the sun, in such a manner as to cause the outline to the picture to be sufficiently broken, and rendered obscure or indefinite, or, in other words, "sketched," as it is termed. But by "blocking," much care is required to adjust and set the sketching-frame or block upon the plate, for if it be not properly set, an imperfect picture or "sketch" is the result. And although to sketch by "blocking" requires less time and attention on the part of the operator or printer, than to sketch by moving the frame, for reasons which are self-obvious, the latter mode has nevertheless been generally preferred, especially for the best work or printing, by photographers, as by it more perfect and satisfactory prints or sketches could be secured than by blocking. But as "sketching," by moving the frame with the hands over the plate, required necessarily the constant attendance of the printer, or at least some person, it has therefore not been so generally adopted or practised as it would have been if to the frame the motion could have been imparted automatically. Therefore, the object of the present invention, and which is satisfactorily accomplished thereby, is to so connect and arrange the sketching-frame or card, to and with any suitable driving-power or mechanism, that it will be automatically moved over and across the plate with the motion that is required, in order to produce the proper "sketch" or print therefrom; the arrangement and construction of the parts being also such as to enable them to be properly adjusted to pictures of various sizes, and to "sketching" more or less of the impression upon the plate.

In the accompanying plate of drawings our improved mode of automatically operating the sketching-frame is illustrated, it being shown in connection with a train of gearing similar to the common movement of a clock, and as adapted to receive its motion therefrom.

Figure 1 is a plan or top view of the case to the clock-movement, showing the means of connection with a sketching-frame, and also the outlines of an ordinary frame for holding the negative-plate.

Figure 2, a plan or top view of the connecting parts between the sketching-frame and operating-mechanism, that in fig. 1 were not shown, owing to their location; and

Figure 3, an edge view of the parts shown in fig. 2.

Similar letters of reference indicate corresponding parts.

A, in the drawings, represents a frame or skeleton box, which encases or encloses a train of gearing similar to the ordinary works or movement to a clock, for operating which, one or more coiled springs or other suitable means are employed. B, a box or case, in which the skeleton frame A is placed and secured; this box B being simply used for protecting the works or gearing from injury. C, one of the spindles or shafts to the train of gearing or clock-movement, to which spindle a disk or plate, D, is fixed, having a series of holes or apertures,  $\alpha$ , through it at different distances from the centre, in one of which, according as may be desired, for a purpose to be hereinafter stated, is hung by and upon a pin, E, one end of a connecting-rod, F. This rod F passes out through an opening, G, in the front end, to the box B, and at its outer end, H, has screwed or otherwise fixed to it, a clamp, I, for being clamped or fastened to an ordinary sketching-frame or card, such as shown in the drawings, fig. 2, and marked L. The rod F, hereinabove referred to, between the end at which it is hung to the shaft-wheel D, and the end by which it is clamped to the sketching-frame, passes through a guide, M, at one end of an arm, N, placed under the said rod F. This arm is extended through the opening G in the box B, and by a slot, O, moves upon a pin, P, fixed in the under side of the frame A, when, through the revolution of the eccentric Q, to which it is hung, it is operated. This eccentric, Q, is fixed to one, R, of the spindles or shafts of the clock-movement. The dotted line in fig. 1 represents the frame for the negative-plate, which



frame, in any suitable manner, is to be secured to the extension S of the box B, under the plane of movement of the sketching-frame L, with the opening to the sketching-frame over the part of the picture which it is desired to print by sketching. By the running of the clock-movement, the rod F is made to move in and out through the guide M, carrying the sketching-frame with it over the plate, in the direction of its length, while, at the same time, by the revolution of the eccentric, Q, the said guide M to the rod is continually changed in position, not only from right or left, but to positions more or less distant from the operating centre C, to the frame carrying rod F, correspondingly changing the course or movement of the sketching-frame over the plate, or, in other words, causing it to have a rolling motion across the plate from one side to the other, and from end to end, greatly resembling the motion which has heretofore been imparted to the sketching-frame by hand-labor, and which it is absolutely necessary it should have, in order to perfectly break up the outline to the picture, or to "sketch" it, as it is termed.

From the above description of our improved connection, and the manner in which the same operates to "sketch" a picture, it is plainly apparent that if the gearing for running the two shafts to which the frame-carrying-rod is hung, and the guide for such rod be properly calculated as to their relative sizes, such a movement can be given to the sketching-frame, that, for the complete running down of the operating-springs or their equivalents, it will not pass over exactly the same course or line more than once, but will be moving always upon a different line, thus insuring the more perfect breaking up of the outline, and consequently the better sketch or print. And furthermore, it may be here remarked, that although we have described the sketching-frame as receiving its power through a train of gearing similar to clock-movement, other forms of driving-mechanism may be employed, and in that, therefore, we do not intend to limit ourselves, either to any one particular motor, or to any arrangement of mechanism between the motor and rod carrying the sketching-frame, as well as the guide to such rod, the present invention consisting simply in so connecting a sketching-frame with any suitable operating-mechanism, that to such frame the requisite motion over the photographic plate, will be automatically given, substantially as and by the means, or their equivalents, hereinabove particularly described.

The purpose of the several holes hereinabove described, as in the wheel D, is to enable a longer or shorter stroke to be given to the frame-carrying rod F, according as may be desired for sketching this or that print.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. So connecting a frame suitable for sketching photographic prints, to and with any proper operating-mechanism, that such frame will be moved over and across the picture as it is being printed substantially as and for the purpose described.

2. We also claim the rod F, carrying the sketching-frame and guide M, or their respective equivalents, in combination with each other, and when so arranged together, and with reference to the operating-mechanism, as to impart to the frame the movement requisite for sketching, substantially as described.

The above specification of our invention signed by us, this      day of April, A. D. 1867.

EDWIN BROWN,  
EDWIN W. BROWN.

Witnesses:

ISAAC WOODWARD,  
R. F. RAYMOND.