

No. 627,414.

Patented June 20, 1899.

S. D. HEARING.

DEVICE FOR PRODUCING DUPLICATE MANUSCRIPT.

(Application filed Sept. 19, 1898.)

(No Model.)

FIG. 1.

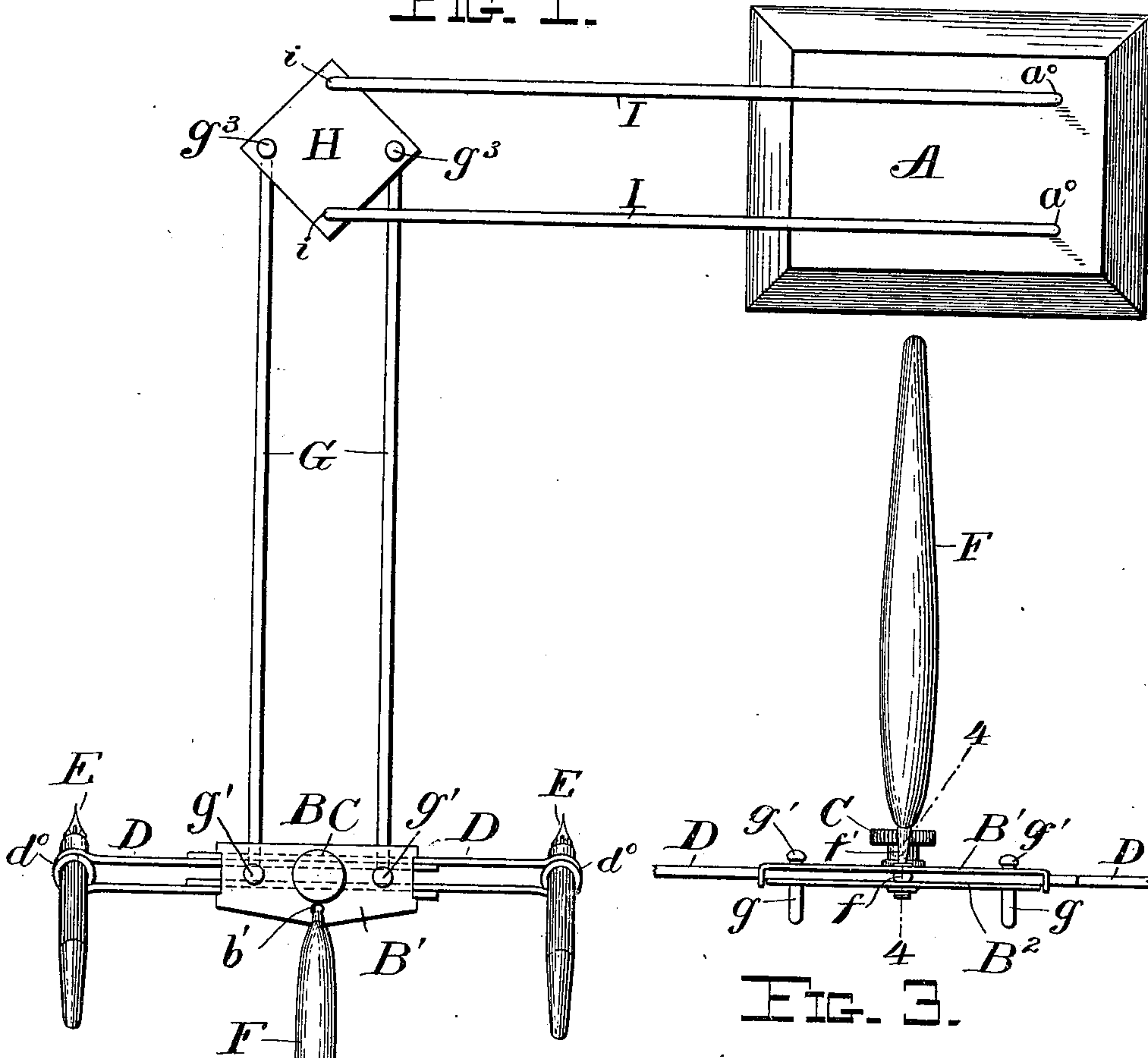


FIG. 3.

FIG. 2.

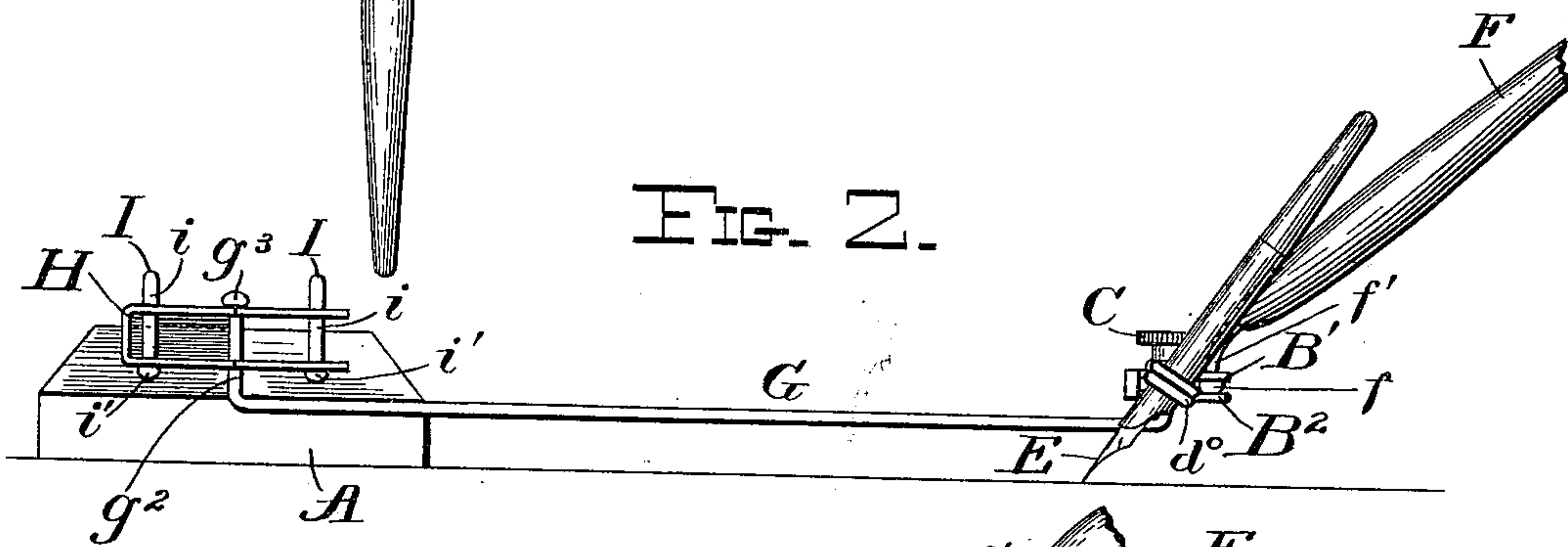
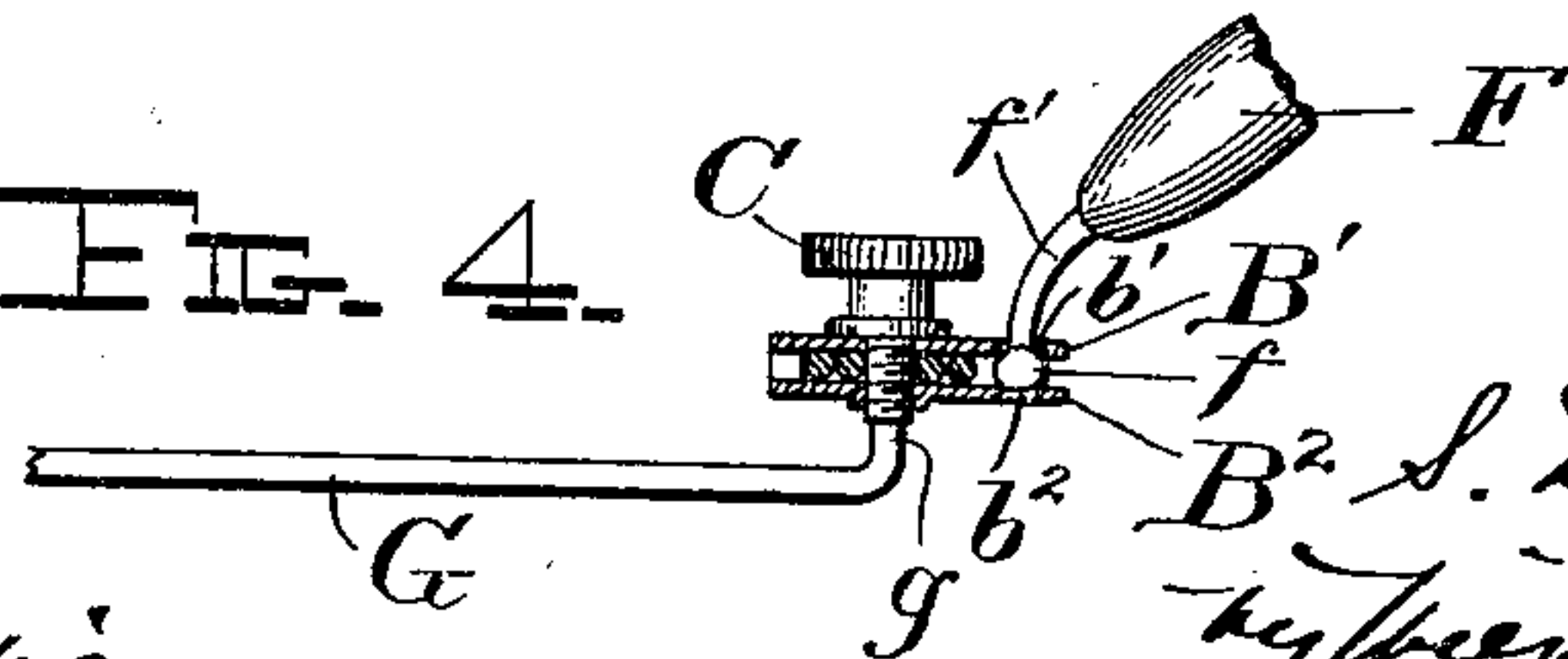


FIG. 4.



Witnesses  
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# UNITED STATES PATENT OFFICE.

SAMUEL D. HEARING, OF NELSONVILLE, OHIO.

## DEVICE FOR PRODUCING DUPLICATE MANUSCRIPT.

SPECIFICATION forming part of Letters Patent No. 627,414, dated June 20, 1899.

Application filed September 19, 1898. Serial No. 691,328. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL D. HEARING, a citizen of the United States, residing at Nelsonville, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Devices for Producing Duplicate Manuscript; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in devices for producing duplicate manuscript; and it consists of the novel devices herein-  
after described and claimed.

My invention will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a top plan view of my apparatus. Fig. 2 represents a side elevation as seen from the left in Fig. 1. Fig. 3 represents an enlarged detail view in elevation of the frame which carries the adjustable arms for the writing instruments and to which the stock to be grasped by the hand is connected, and Fig. 4 is a section taken on the line 4 4 of Fig. 3 through the said frame.

A represents a solid block or board which rests upon either the surface whereon the writing is to be done or a surface adjacent thereto and acts as a support for the swinging guides hereinafter more fully described. This support A may be either a block of sufficient weight to hold it steady without any extraneous means, or it may be a board secured upon a surface by means of screws or otherwise.

B represents a metallic frame composed of upper and lower plates  $B'$  and  $B^2$ , respectively, through both of which pass a thumb-screw C, having a milled head for turning. From opposite ends of the said frame a pair of arms D D enter the said frame, between the plates thereof, and overlap and are adjustably clamped between the said plates by means of the screw C. These adjustable arms may be of any convenient construction; but I have shown them as being made of pieces of light wire coiled midway of their length, as at  $d^0 d^0$ , to receive the writing instrument, the ends of said wire being brought to a parallel position a short distance apart, as shown more

clearly in Fig. 1. A slight twist might be given to each of the arms D D at their outer ends, if desired, in order to allow the pen or other writing instrument to have the proper inclination. I have shown in Figs. 1 and 2 pens E E as being used; but I do not wish to limit the use of my invention to such an instrument, as a pencil or any other suitable writing-point might be used. For manipulating the instrument a handle or stock F to be grasped by the hand is provided. This handle or stock has a short curved shank  $f'$ , terminating in a knob or ball  $f$ , which knob or ball is held loosely between the two plates  $B'$  and  $B^2$  of the frame B. Circular openings  $b'$  and  $b^2$  of somewhat less diameter than the knob or ball  $f$  in the lower and upper plates, respectively, form a bearing for the said knob. This knob is put in position by the shank  $f'$  being inserted upwardly through the opening  $b'$  in the upper plate  $B'$  and then inserted into the stock or handle F. When the two plates of the frame are clamped together upon the arms D D, the knob  $f$  of the handle will still have a free motion between the said plates, and the operator may turn the frame in any direction without changing the position of the hand or wrist by reason of this ball-and-socket joint.

The frame carrying the writing-points is connected to the stationary supporting-block A in the following manner: A pair of rods G G of equal length have one of their ends  $g g$  bent upwardly at right angles and passing through both plates of the holding-frame B, the said rods being held in said frame by knobs  $g' g'$ , formed on the ends of the said rods, as shown most clearly in Figs. 1 and 3. Said rods are similarly connected to another frame H by bent-up portions  $g^2 g^2$ , secured into said frame by knobs  $g^3 g^3$ . The said frame H may be solid or any other construction; but for the sake of lightness I have constructed it of a single plate of thin metal bent over at one side, as seen most clearly in Fig. 2. The ends of the rods work loosely in both of the frames B and H. A second pair of rods I I have bent ends  $i i$  passing through the frame H at points equidistant from the points of connection of the rods G G and held loosely by knobs  $i' i'$ . The simplest and most preferable arrangement is that shown most



clearly in Fig. 1, where the frame H is shown as in the form of a square and the rods G G being connected to two opposite corners of the square, while the rods I I are connected to the intermediate opposite corners of the square. In this way the frame H may turn in either direction freely, as desired.

The rods I I are pivotally connected at their remaining ends to the support A in any suitable manner; but I have shown them as simply having these ends bent at right angles and fitted in sockets at  $a^0 a^0$  in the supporting-block.

In use the supporting block or board A is rested upon either the writing plane or a surface adjacent thereto. The stock or handle F is grasped by the hand of the writer, and writing is produced by the same movement as with an ordinary pen or pencil, the two points E E producing in duplicate upon the writing-surface the line traversed by the hand of the operator.

It will be seen that by varying the length of the rods G and I the range of the writing-points may be varied within large limits.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an instrument for producing duplicate manuscript, the combination with a pair of rods of equal length pivoted horizontally to a stationary object at a short distance from each other, a swinging frame H to which the rods are also pivoted at opposite corners thereof, a pair of rods also of equal length pivoted to said swinging frame at opposite corners equidistant from the first-named rods; of a frame to which the second pair of rods are also pivoted, a pair of oppositely-extending arms carried by said latter frame for holding a plu-

ality of writing-points, and a stock to be grasped by the hand connected to said latter frame, substantially as described.

2. In an instrument for producing duplicate manuscript, the combination with a stationary block, a pair of parallel rods pivoted horizontally upon said block, a horizontal swinging frame H to which said rods are pivoted at opposite corners, a second pair of parallel rods pivoted to the swinging frame at opposite corners equidistant from the first-named rods; of a second swinging frame to which said second pair of rods are pivoted, a pair of oppositely-disposed arms adjustably held by said second frame for carrying writing-points, a thumb-screw for clamping said arms, and a stock to be grasped by the hand of the operator, connected to said second frame, substantially as described.

3. In an instrument for producing duplicate manuscript, the combination with a movable frame, a pair of arms each composed of a piece of wire coiled in the middle to form a spring-loop for receiving a writing instrument, and having its ends bent toward each other, said arms being adjustably mounted in said frame, a clamping-screw for securing said arms at various adjustments, and a stock to be grasped by the operator, of a stationary pivot-block, a movable pivot-frame, horizontally-swinging rods connecting said movable frames, and horizontally-swinging rods connecting said pivot-frame with said block, substantially as described.

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

SAMUEL D. HEARING.

Witnesses:

WILL WALLACE,  
C. L. WITHERS.