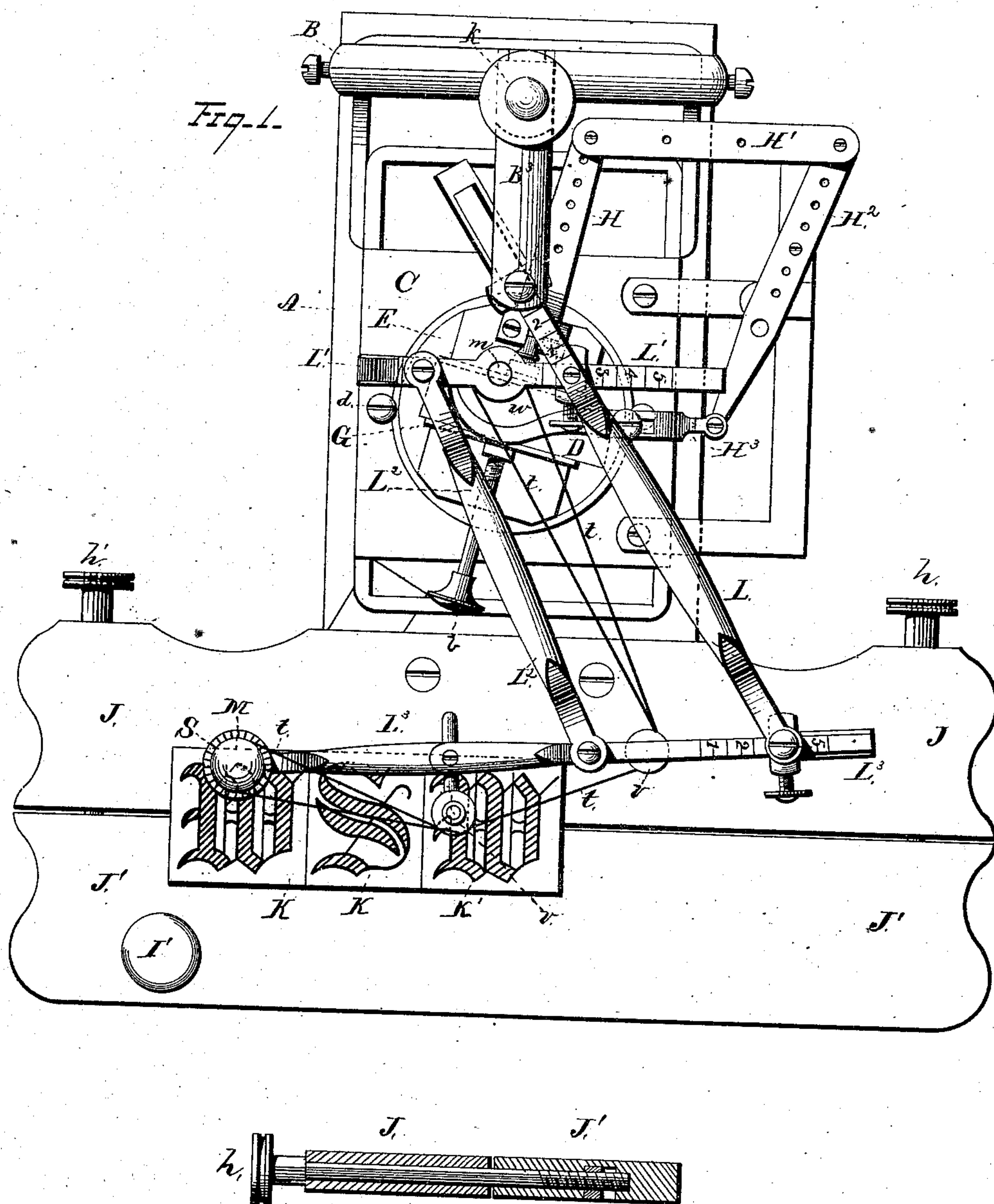


W. S. WIGHT.
Engraving-Machine.

No. 159,488.

Patented Feb. 2, 1875.



WITNESSES

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R. M. Barr.

INVENTOR

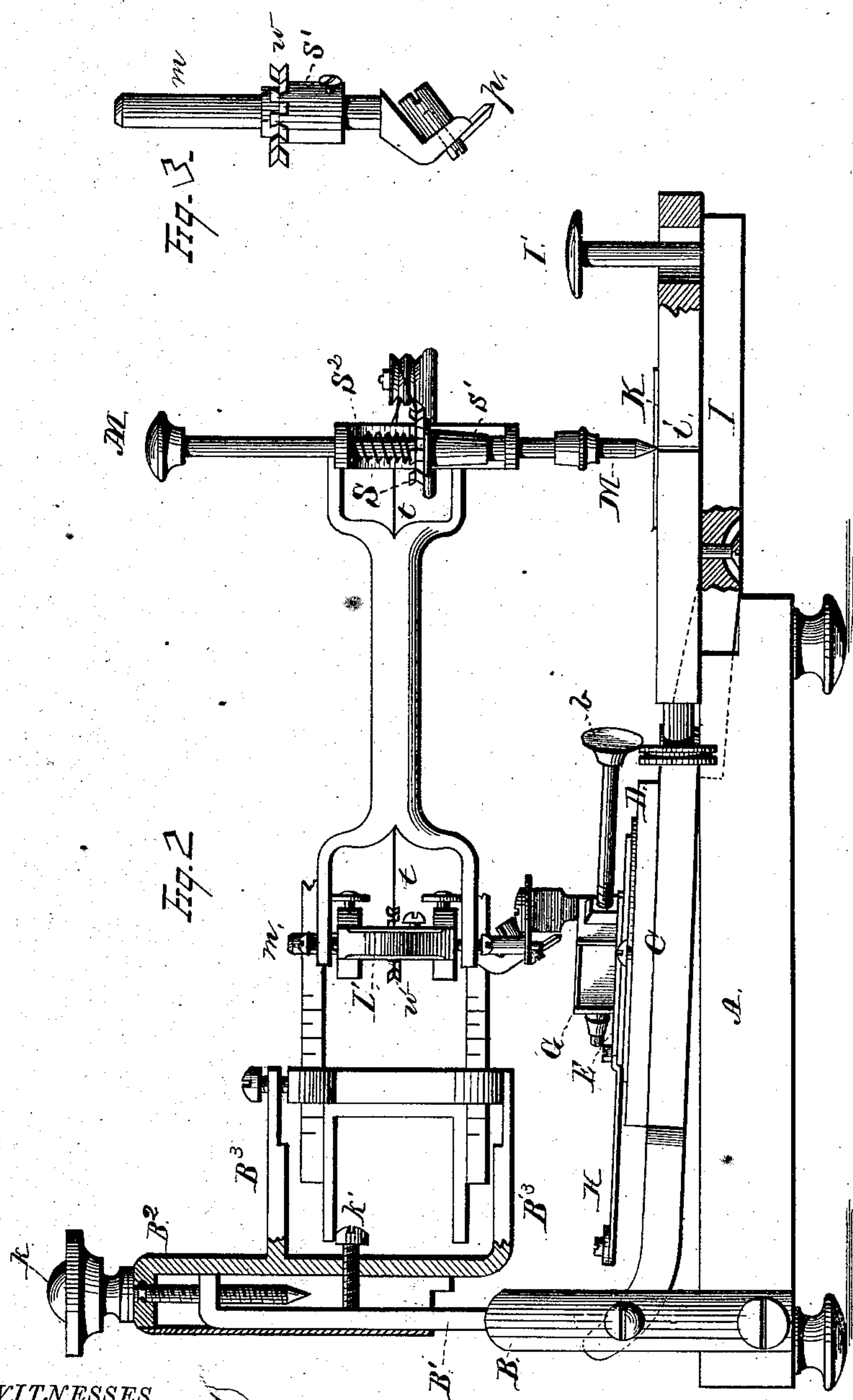
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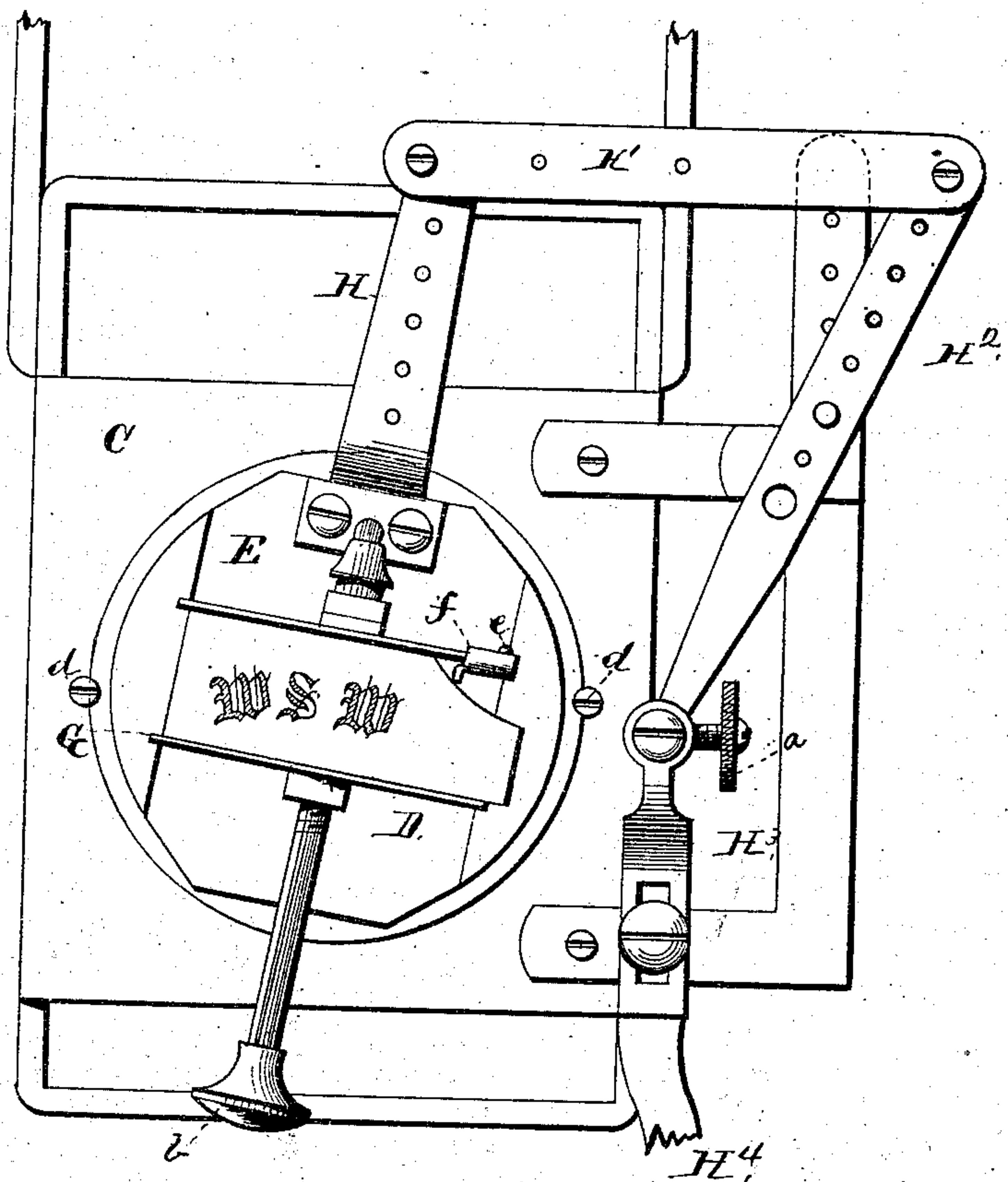
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM S. WIGHT, OF CHARDON, OHIO.

IMPROVEMENT IN ENGRAVING-MACHINES.

Specification forming part of Letters Patent No. **159,488**, dated February 2, 1875; application filed June 30, 1874.

To all whom it may concern:

Be it known that I, WILLIAM S. WIGHT, of Chardon, in the county of Geauga and State of Ohio, have invented certain new and useful Improvements in Engraving-Instruments; 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 pertains to make and use it, reference being had to the accompanying drawings which form part of this specification.

The nature of my invention consists in the construction and arrangement of a pantograph or engraving machine, as will be more fully hereinafter set forth.

Figure 1 is a plan view of my invention with a detached sectional view of the platform. Fig. 2 is a side elevation of my invention. Fig. 3 is a detached view of my graver and its shaft. Fig. 4 is a plan view of a portion of my invention, showing the arrangement of adjustable levers and revolving platform.

A represents the base of the machine, at the rear end of which is secured an arched beam or frame, B. In this frame is pivoted the bed C, which extends forward and rests on the base A when the machine is not in use. D represents the working-table, which is arranged to slide on the base C, and is fastened by a set-screw, *a*, on one side of the bed. By this arrangement, after the article to be engraved is fastened in or by the holding vise or clamps, the table can be instantly moved to the desired position under the graver, and fastened by the set-screw *a*. G G represent the clamps for holding the article to be engraved, which clamps are worked by a set-screw, *b*. These clamps are attached to a rotary plate or disk, E, turning around a center-pin on the working-table D, and held in position by means of set-screws *d d*. The article to be engraved can, by this device, be instantly brought to a position parallel with the tracing-table at the front end of the base A, and fastened by the set-screws. By turning the plate E one-fourth around the article will be engraved crosswise instead of lengthwise. To the rotary table or plate E is attached an arm, H, which, by a pivoted bar, H¹, is connected to a lever, H². This lever is pivoted to a bar, H³, attached to the work-

ing-table D, and the other end of said lever connected by an arm, H⁴, with one of the arms of the pantograph. When this connection between the rotary plate and the pantograph is used the set screws *d d* should be loosened, so as to allow the plate to turn by the movement of the pantograph, and thereby the engraving will be done on a curved line. This curved line may be regulated to any desired form by changing the connecting or pivoting points between the bar H¹ and the arm H, the lever H² and bar H³, and by lengthening or shortening the arm H⁴, which, for this purpose, is made in two parts, and adjustably united together. To the back or stationary jaw of the clamps G is fastened a sliding block, *f*, by means of set-screw *e*, which may be adjusted to any desired point on the jaw for the purpose of holding tapering articles, such as spoons, &c., from slipping in the clamps; and this block also serves as a guide for setting in other articles of the same set. In the front part of the base A is a lever, I, pivoted to the left front corner of the base. The rear end of this lever extends through a groove in the base A under the front part of the bed C; and to the front end of the lever I is attached a knob, I', which extends up through the tracing-table near the front and left-hand corner thereof, to be used to press the work up to the graver when in operation. The tracing table is made in two parts, J J', united longitudinally by means of screw-rods *h h*, for clamping the tracing-letters K K, which are provided with vertical central flanges *i* for this purpose. On the center of the arched beam B is a post or standard, B¹, upon which is a slide, B², adjusted up and down by means of a screw, *k*, and from which slide project forward two parallel horizontal arms, B³ B³, for holding the pantograph. By means of the slide B² the pantograph may be raised and lowered at will to adjust it to thick or thin articles, and when so adjusted the slide is held firmly by means of a set-screw, *k'*. L, L¹, L², and L³ represent the arms of the pantograph, L being the one pivoted in the arms B³ B³ of the slide B²; L¹, the arm holding the graver-stock *m*; L³, the arm holding the tracing-bar M, and L² connecting the arms L¹ L³. The pantograph-arms are constructed sub-

stantially in the same manner, with the exception that the arm L is adjustable between the slide-arms $B^3 B^3$, and the arms $L^1 L^3$ adjustable in the arm L, by which means the pantograph may be taken up or let out at will for enlarging or diminishing the size of the engraving. The adjustable arms of the pantograph have each a corresponding scale, suitably numbered, and pass through mortises made in perpendicular rotating shafts N N, and held in position by set-screws $n n$. The lower end of the graver-stock m is bent on an incline, so as to fasten the graver p to it in an inclined position. A piece of a common graver may be used for this purpose. S represents the belt-pulley attached to the tracing-bar M, the socket S^1 of said pulley being extended down, so as to rest on the lower bearing of the tracing-bar when not in use, thereby protecting the belt-cord from disarrangement by the pulley dropping down too low, by the action of the spring S^2 interposed between the pulley and the upper bearing of the tracing-bar. The belt-cord t is run from the pulley S down on the tracing-arm L^3 of the pantograph to pulleys $v v$ on the same, and thence directly to the pulley w on the graver-stock m , by which arrangement the displacement of the cord, when taking up or letting out the pantograph, is entirely obviated.

I claim—

1. The vertically-adjustable slide B^2 , to which the pantograph is connected, adjusted by means of screw k , and held in position by set-screw k' , as specified.

2. In combination with a pantograph, the mortised revolving shafts N N, in which the arms of the pantograph are adjustable, as shown and specified.

3. The graver-stock m , having its lower end bent on an incline to allow the attachment of the graver in an inclined position, as specified.

4. The rotary plate E, carrying the clamps G G, and arranged on the table D, in combination with the set-screws $d d$, as specified.

5. The combination, with the rotary table E and pantograph, of the arm H, bar H^1 , lever H^2 , bar H^3 , and arm H^4 , all as shown and specified.

6. The adjustable block f , in combination with one of the jaws of the clamp G, for the purposes herein set forth.

7. The combination, with the base A, bed C, and tracing-table J J', of the pivoted lever I and knob I', as specified.

8. The plates K K', bearing the tracing-letters, provided with vertical central flanges i , as shown and specified.

9. The pulley S, provided with extended socket S^1 , in combination with the spring S^2 , tracing-bar M, and its bearings formed on the pantograph-arm L^3 , as shown and specified.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of April, 1874.

WILLIAM S. WIGHT.

Witnesses:

L. E. PARSONS,
C. W. OSBORNE.