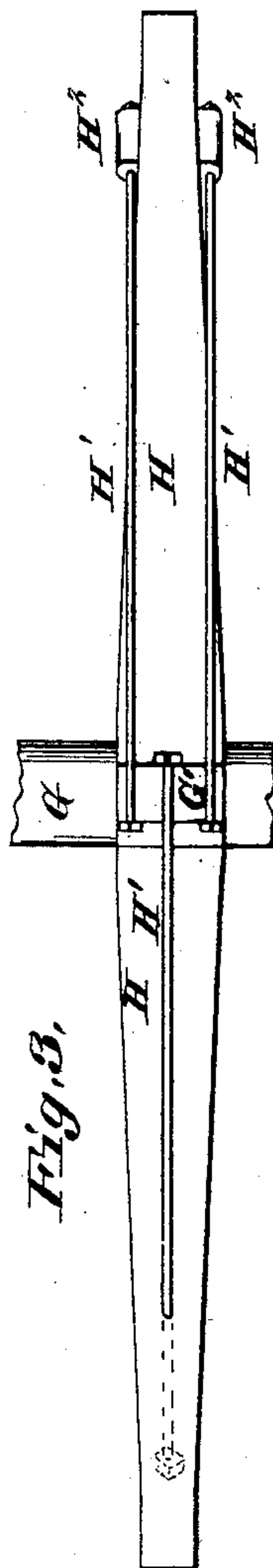
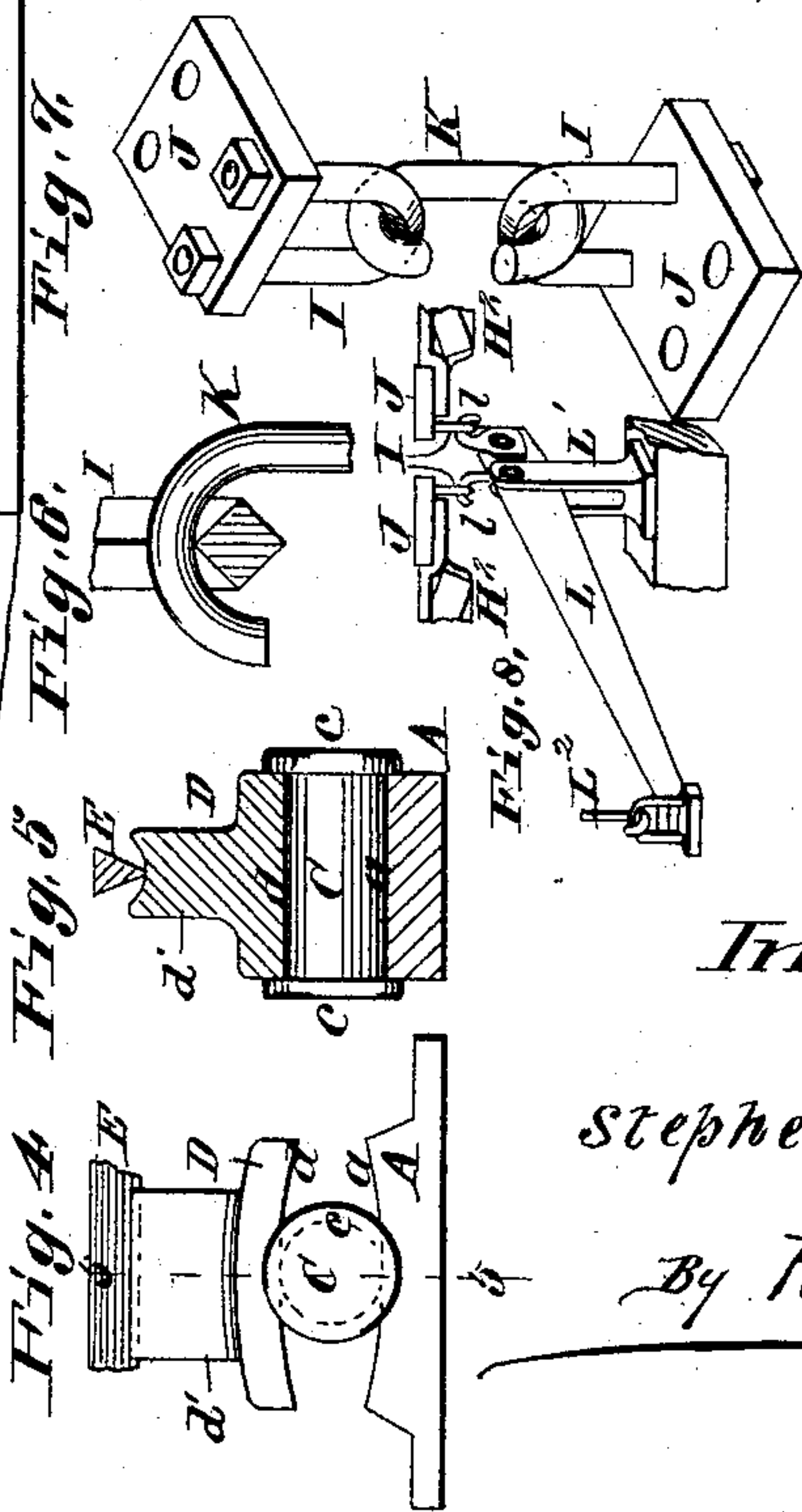
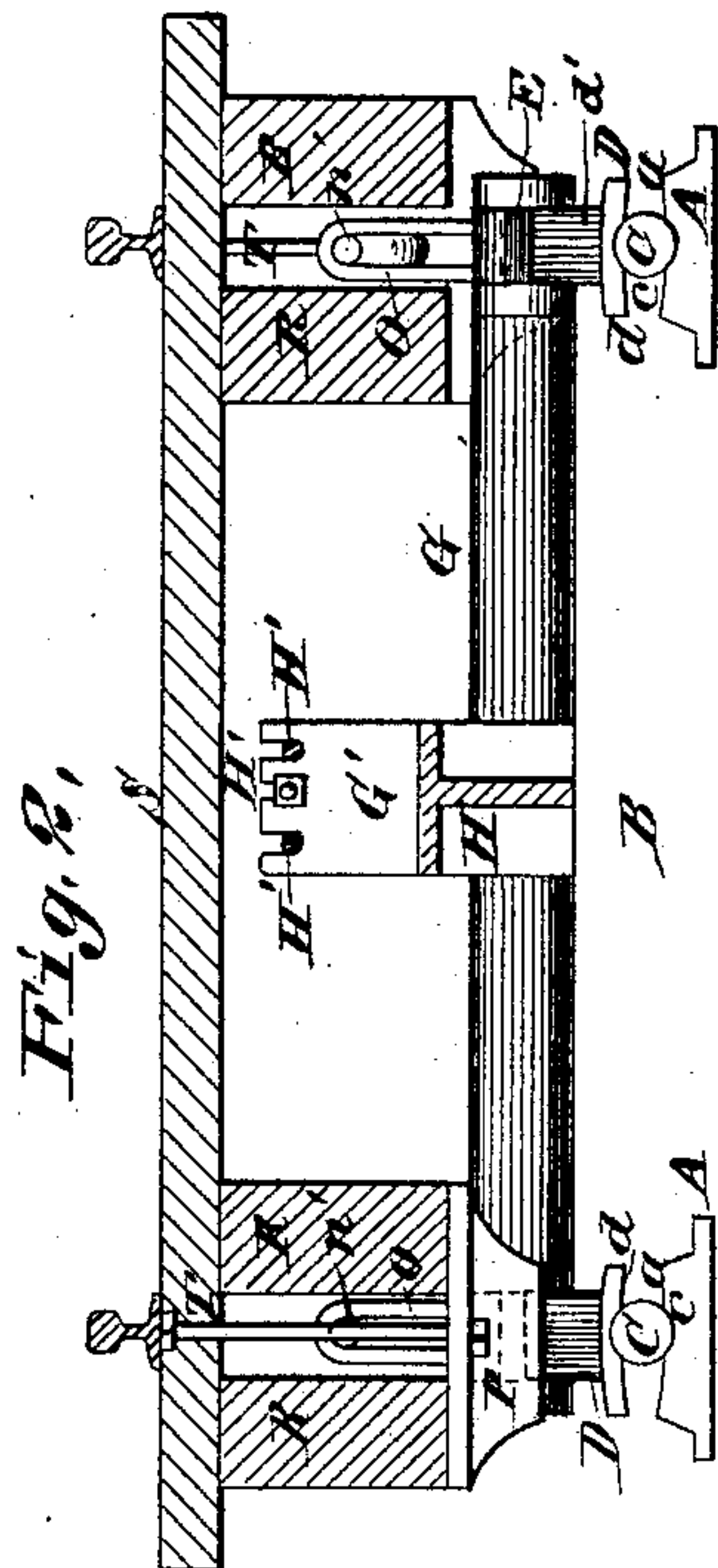
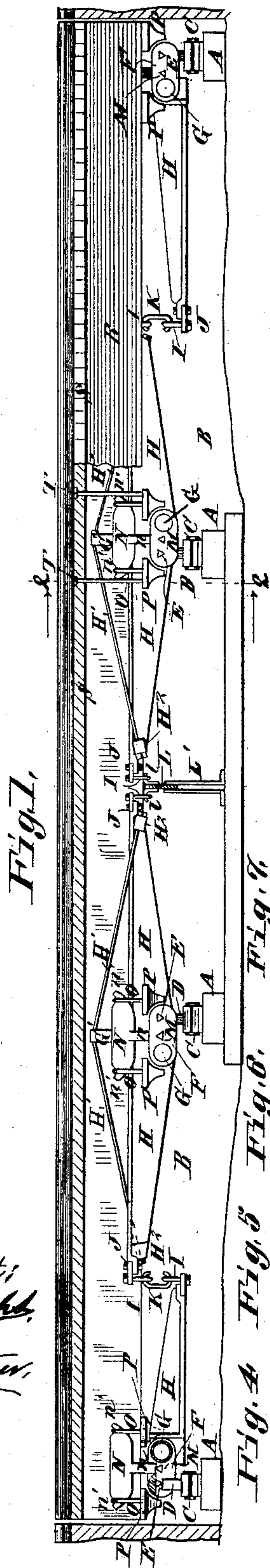


(No Model.)

S. J. AUSTIN.  
PLATFORM SCALE.

No. 372,055.

Patented Oct. 25, 1887.



Attest;  
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attys.



# UNITED STATES PATENT OFFICE,

STEPHEN J. AUSTIN, OF TERRE HAUTE, INDIANA.

## PLATFORM-SCALE.

SPECIFICATION forming part of Letters Patent No. 372,055, dated October 25, 1887.

Application filed December 20, 1886. Serial No. 222,092. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN J. AUSTIN, of Terre Haute, in the county of Vigo and State of Indiana, have invented a certain new and useful Improvement in Platform-Scales, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side view of a platform-scale with parts broken away, exhibiting the improvement. Fig. 2 is a transverse section at 2 2, Fig. 1, looking in the direction of the arrows, the right-hand bracket and supporting-bolt being omitted. Fig. 3 is a top view of one of the levers. Fig. 4 is an end view of the lower bearing. Fig. 5 is a vertical section at 5 5, Fig. 4. Fig. 6 is an enlarged detail vertical section through one of the square steel coupling-staples of the levers. Fig. 7 is a detail perspective view of the coupling device of the ends of the levers. Fig. 8 is a perspective view of the beam-rod lever with its connections.

This is an improvement on my patents of May 18, 1875, No. 163,440, and February 26, 1878, No. 200,683.

A are foundation plates or blocks, which are upon a firm foundation at the bottom of the pit B. The top *a* of the foundation-blocks forms a bearing for the gravitating rollers C, the said bearing being curved in a direction transverse to the axis of the roller, as seen in Fig. 4, and straight in a direction parallel with said axis, as shown in Fig. 5. The roller will of course tend to rest in the lower (or central) part of the bearing and to return to this part when carried away by the movement of the platform.

D is a bearing-block having a bearing-surface, *d*, similar to the bearing-surface *a*, which rests upon the roller C. The roller C has end flanges, *c*, which, by bearing against the edges of the blocks A and D, prevent the endwise displacement of the rollers.

At the top of the bearing-blocks D is a post, *d'*, having a shallow rounded trough, forming a bearing for the knife-edge E, which is secured in a pair of arms, F, extending from the twist or torsion pipe G, extending transversely from one bearing to another. (See Fig. 2.)

H are lever-arms firmly attached at the inner portion to the twist-pipes, and coupled together in pairs at the other ends by means of

staples I and open links K. The staples I are secured to nose-pieces J, which are in turn bolted to the ends of the levers. The open links are made of round steel and simply hooked into the staples. The staples are made of bars of square steel, which are bent into a curve in such manner that the plane of the curve passes through two opposite angles. Thus one of these angles forms the outer and the other the inner circumference of the curve, and the latter forms the knife-edge upon which the open link bears. There are four of these twist-pipes shown, each supported upon two foundation-blocks by means of the described intermediate devices, the knife-edges E forming the fulcrums of the levers.

It will be seen that a single longitudinal series of levers is all that is needed to make connection between the different twist-pipes and the lever L, which is connected to the scale-beam by rod L<sup>2</sup>. (See Fig. 8.)

M are knife-edges near to and parallel with the knife-edges E, and also secured to the same pair of arms, F. The bearing-edges of the knife-edges E are of course turned downward, while the bearing-edges of those M are turned upward, and each knife-edge M rests at the foot *n* of a bearing-block, N, the foot having a groove to receive the edge of knife-edge M. The foot *n* has sufficient length to give it an extended bearing upon the knife-edge M. The length of the head of the bearing-block N is at right angles to that of the foot, and at its ends are horns *n'*, upon which are hung the links O, to which are hung the hanger-brackets P, upon which the platform-timbers R rest. S is the platform. The timbers and platform are secured by bolts T or any other suitable means. The brackets P are thus placed on opposite sides of the bearing-block N, and the two platform-timbers also placed equidistant from the block N on the other side, so that there is equal bearing on each side of the block.

The outer twist-pipes have each a single lever-arm, H, extending inward, while the two inner twist-pipes have each two of the arms H H, forming a lever, H H, rocking on its fulcrums E and coupled at its ends with the outer lever H and with the lever L. The levers H H have truss-rods H', whose upper ends rest in recesses made in the top of the post G', extending upward from the middle of the lever



H H. The lower ends of the truss-rods pass through lugs  $H^2$  in the lever-arms H, (see Figs. 1 and 3,) and have nuts which may be screwed up on the rods to slightly raise the ends of the lever. The lever L is fulcrumed on a standard,  $L'$ . One of its ends is connected to the scale-beam rod  $L^2$ , and the other end has hooks  $l$ , which engage in the staples I at the inner ends of the levers H H. It will be seen that a weight upon the platform will depress the ends of the lever-arms H of the outer and end bearings, and also depress the outer ends of the lever H H to which those lever-arms are coupled, and the same thing will elevate the inner ends of the levers H H and the inner end of the lever L, to which they are coupled, thus depressing the end of lever L which is connected to the rod  $L^2$ .

It will be seen that the length of the two lever-arms H which are connected to the beam-rod lever L may be varied at pleasure with-

out varying the length of the other levers H, the scale-rod lever and scale being constructed to give the proper result upon the scale.

I claim as my invention—

1. The coupling consisting of a pair of plates or nose-pieces, J, a pair of squared staples, I, forming knife-edge bearings, and a link, K, substantially as described.

2. The combination of the outer twist-pipes having outwardly-extending bearing-arms, single levers secured at the inner side of the outer twist-pipes, inner twist-pipes having inwardly-extending bearing-arms, double levers secured to the inner twist-pipes and coupled to the single levers, and the beam-rod lever coupled to the inner ends of the double levers, substantially as described.

STEPHEN J. AUSTIN.

Witnesses:

ROBERT SNIDER,  
S. T. REESE.