

W. H. STEWART.
WEIGHING SCALES.

No. 438,248.

Patented Oct. 14, 1890.

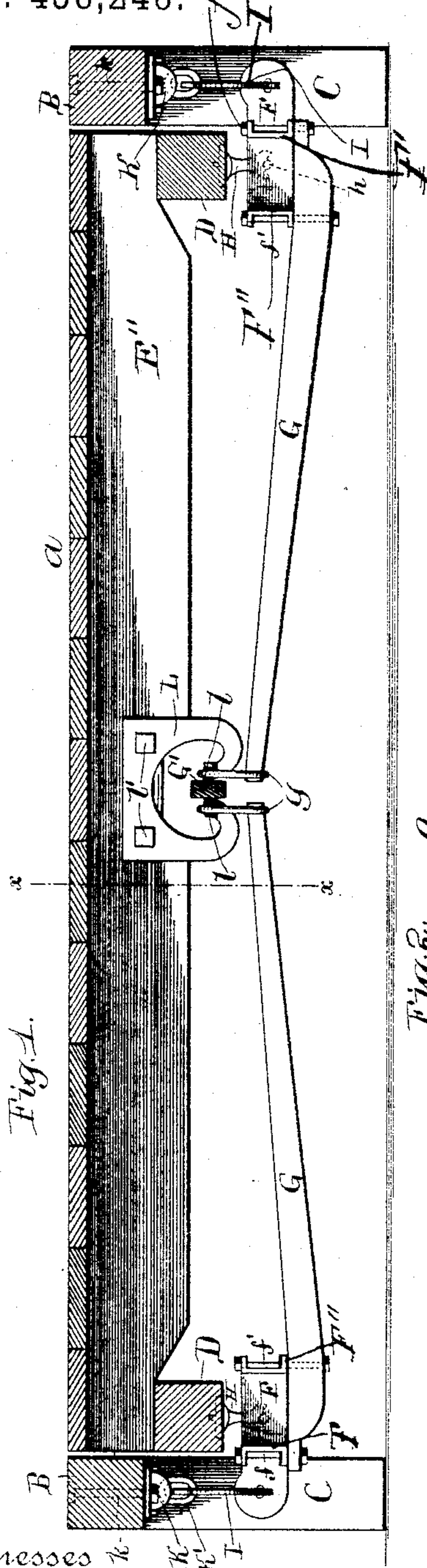


Fig. 1.

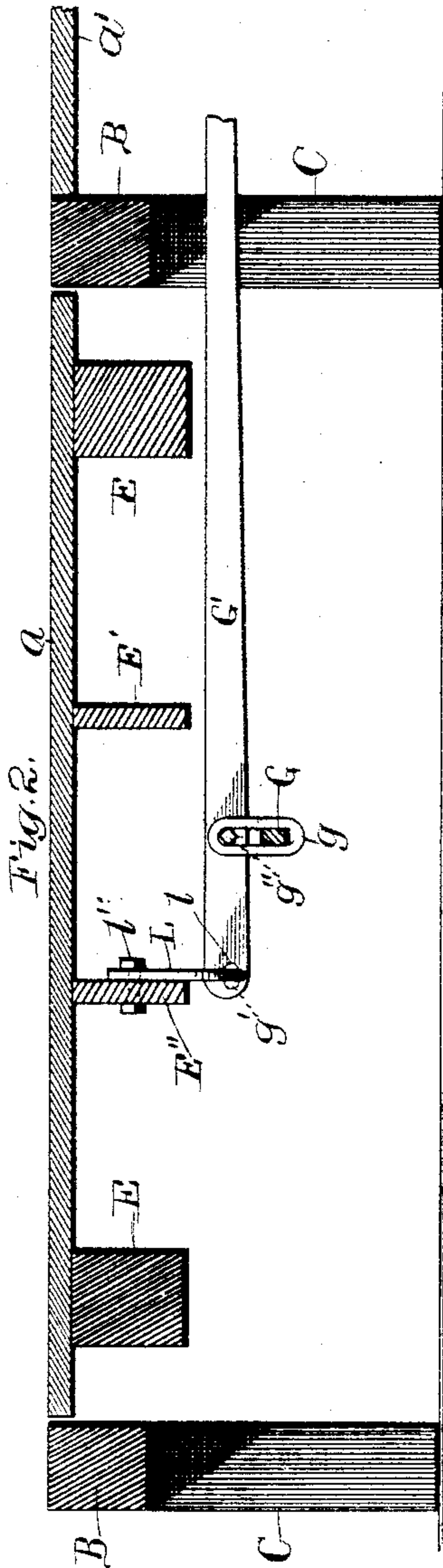


Fig. 2.

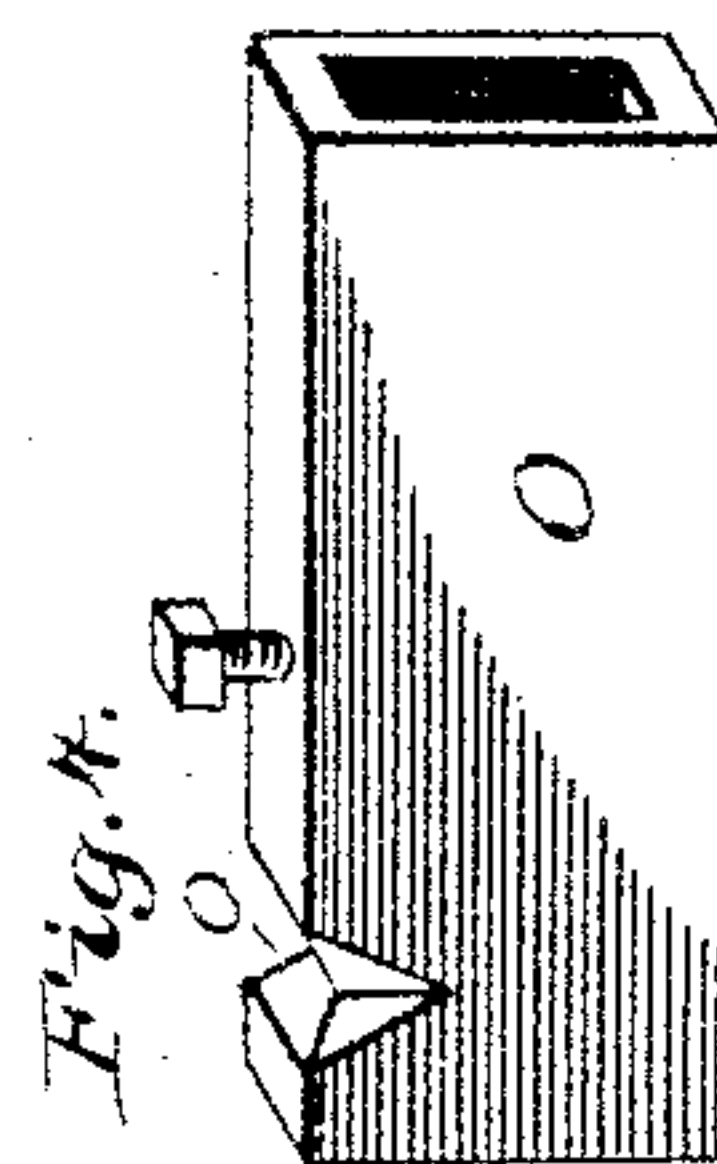


Fig. 3.

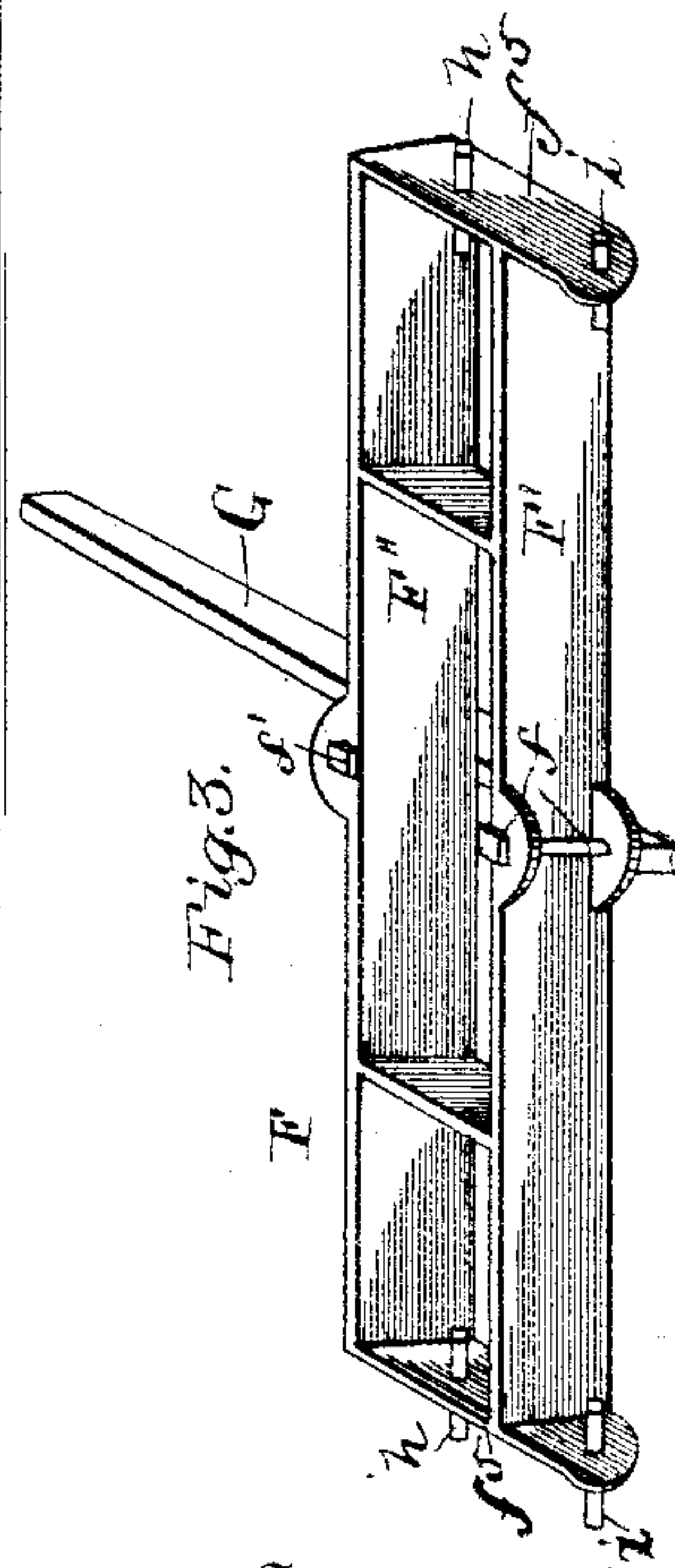


Fig. 4.

Witnesses
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Fig. 5

M

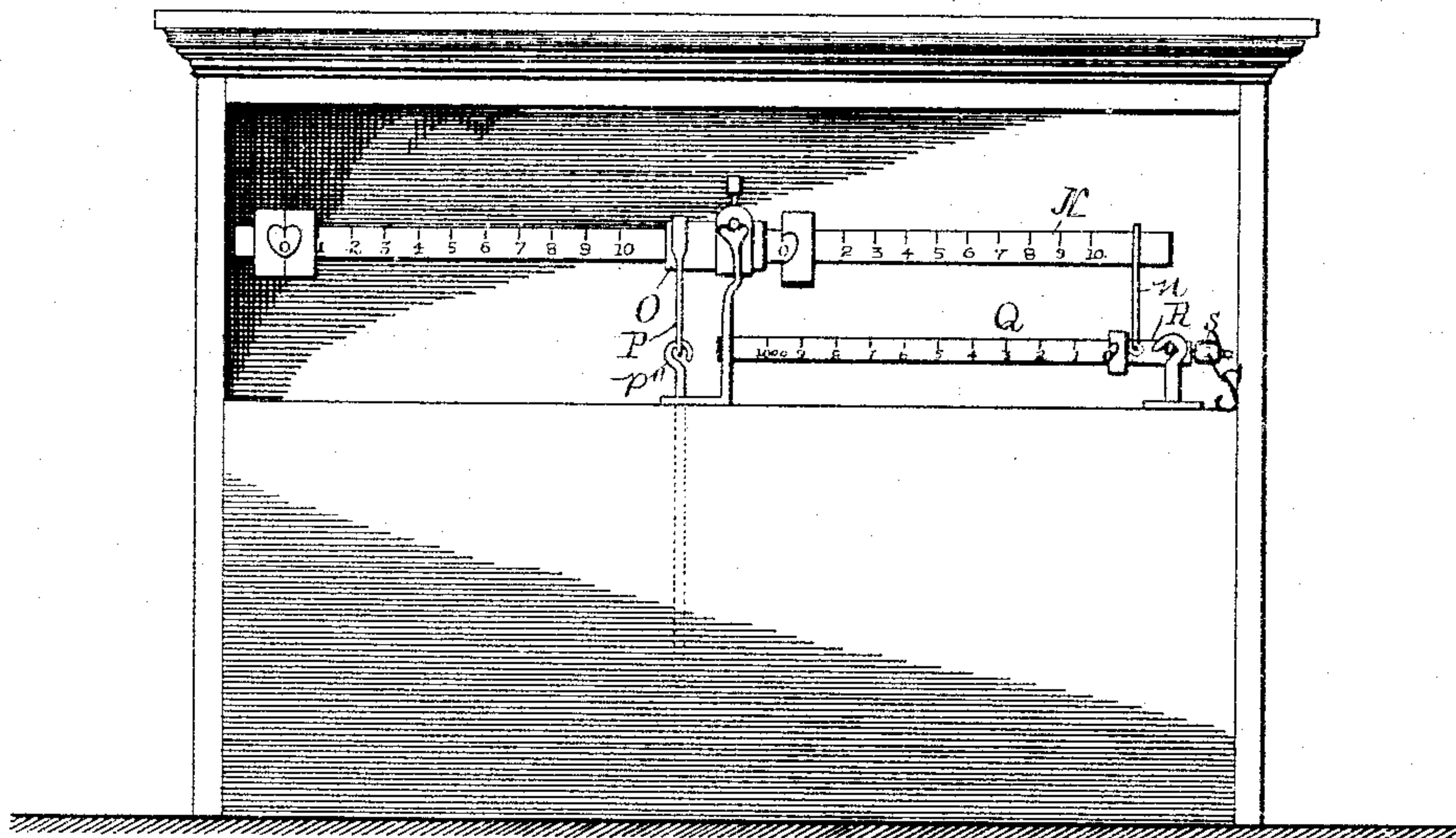


Fig. 6

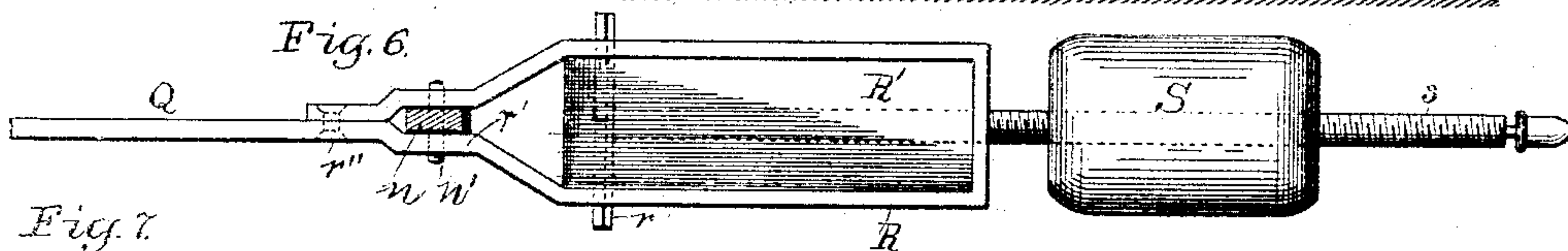


Fig. 7

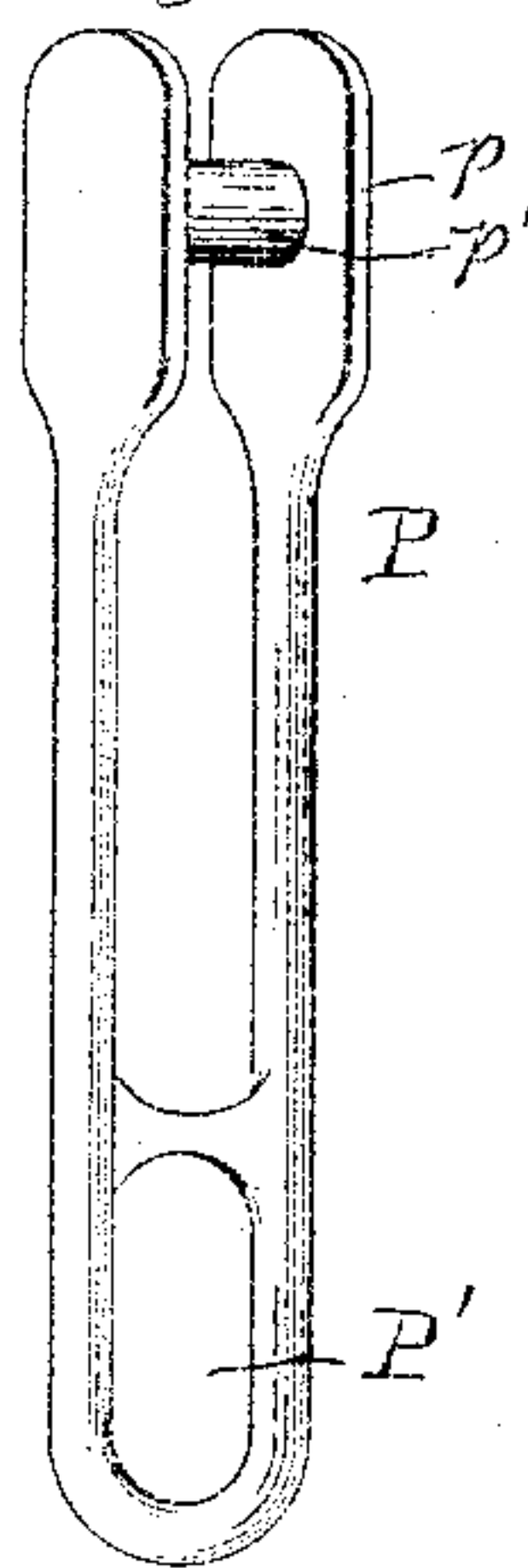


Fig. 8

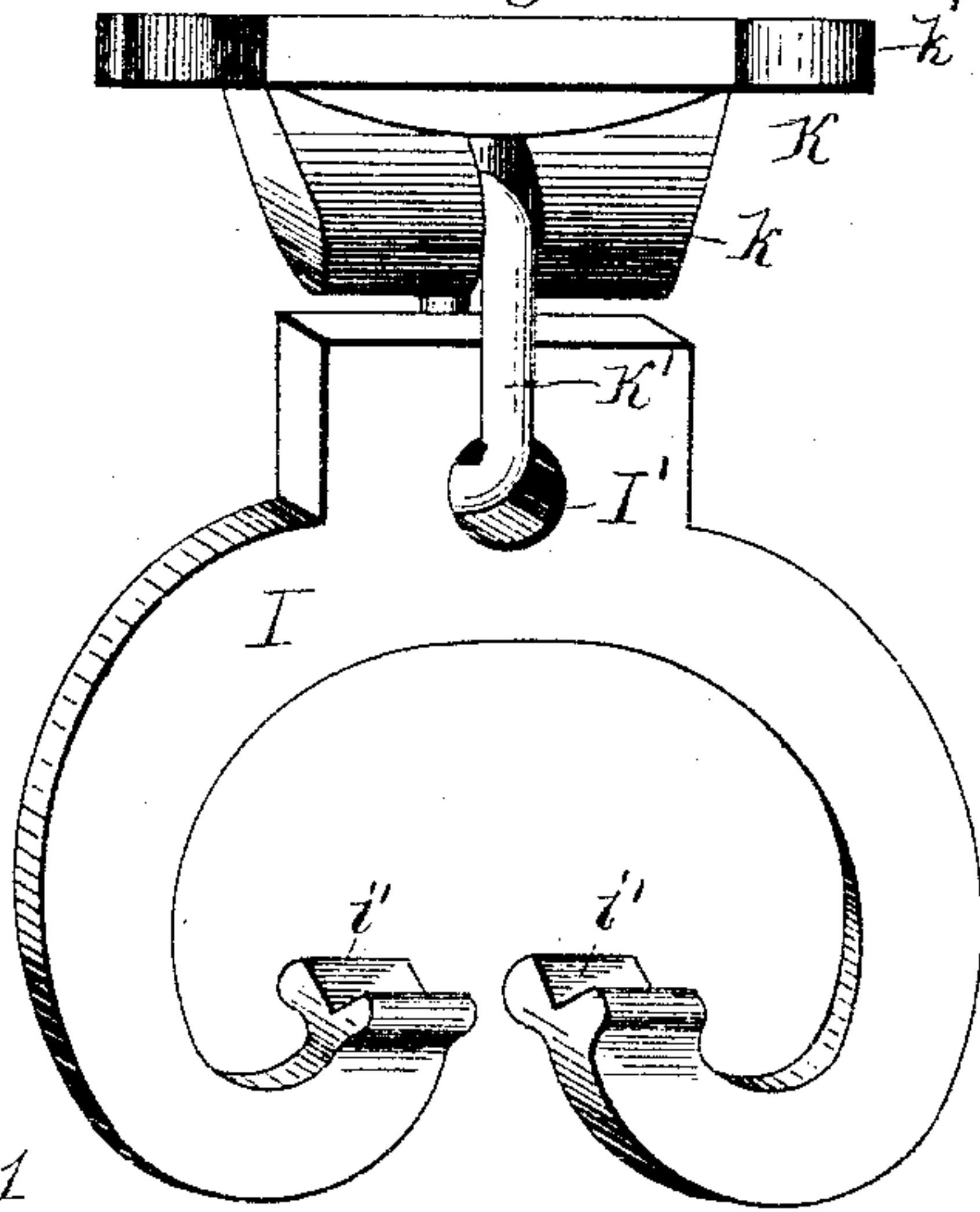


Fig. 9

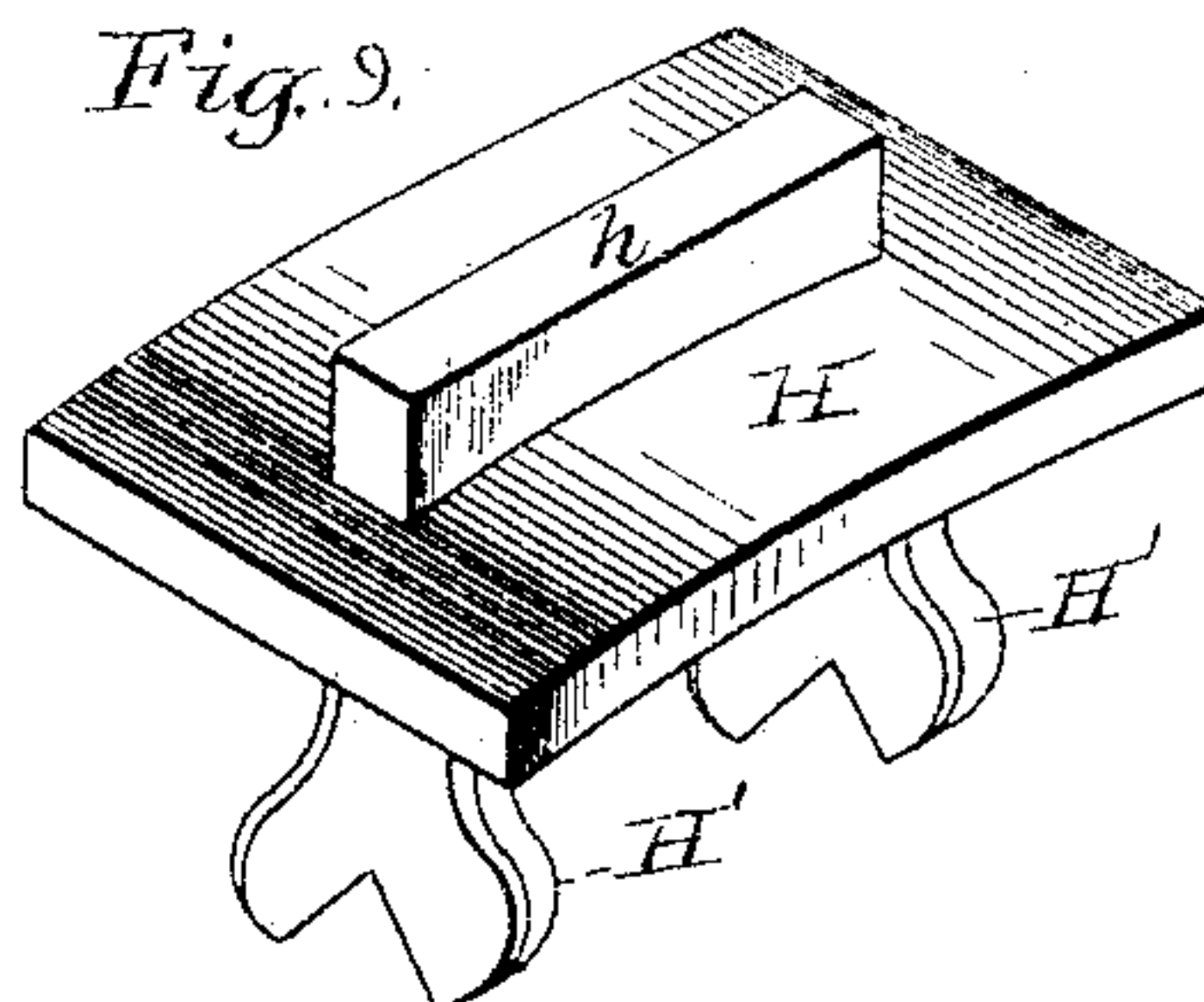


Fig. 10

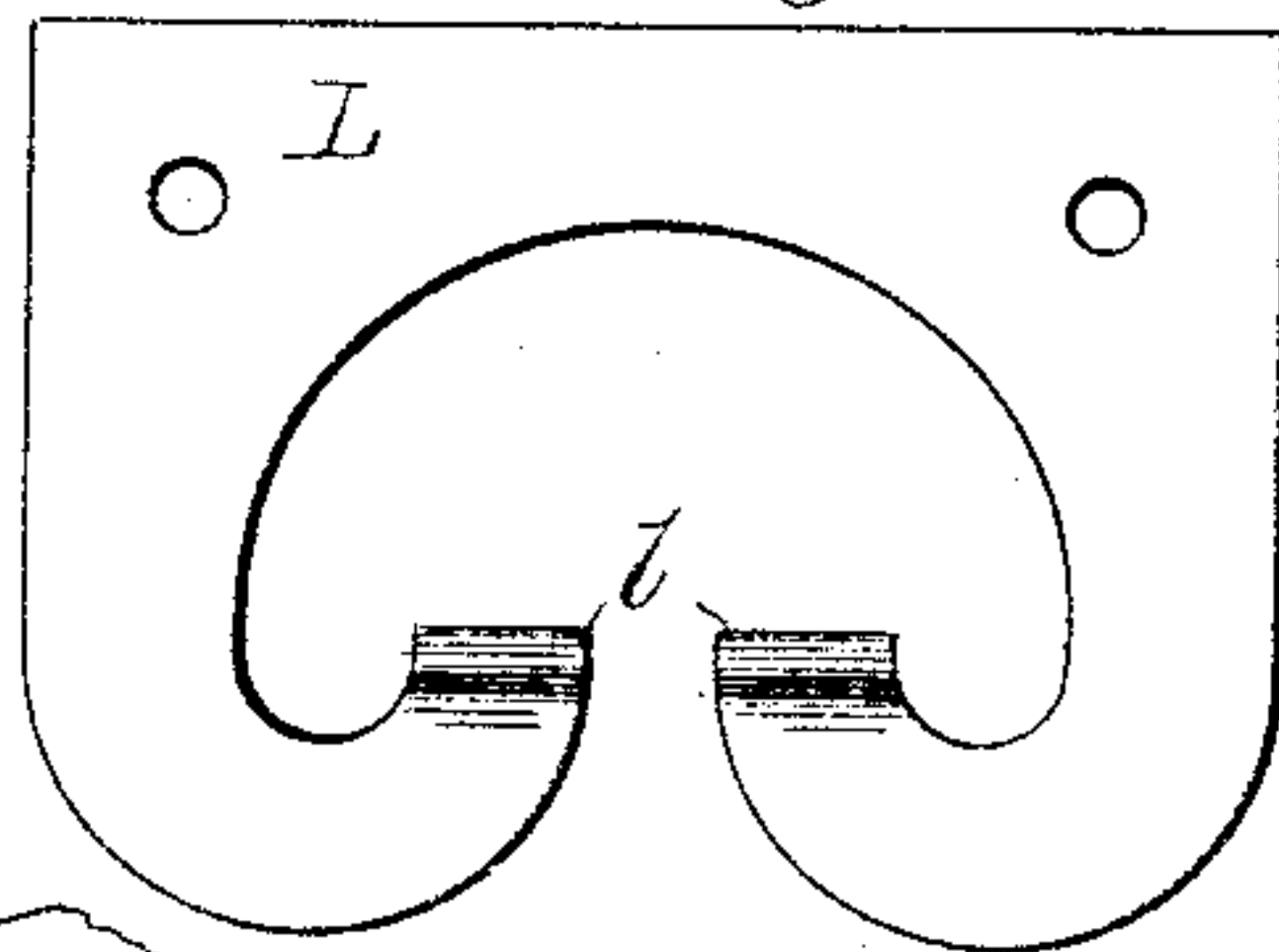


Fig. 11

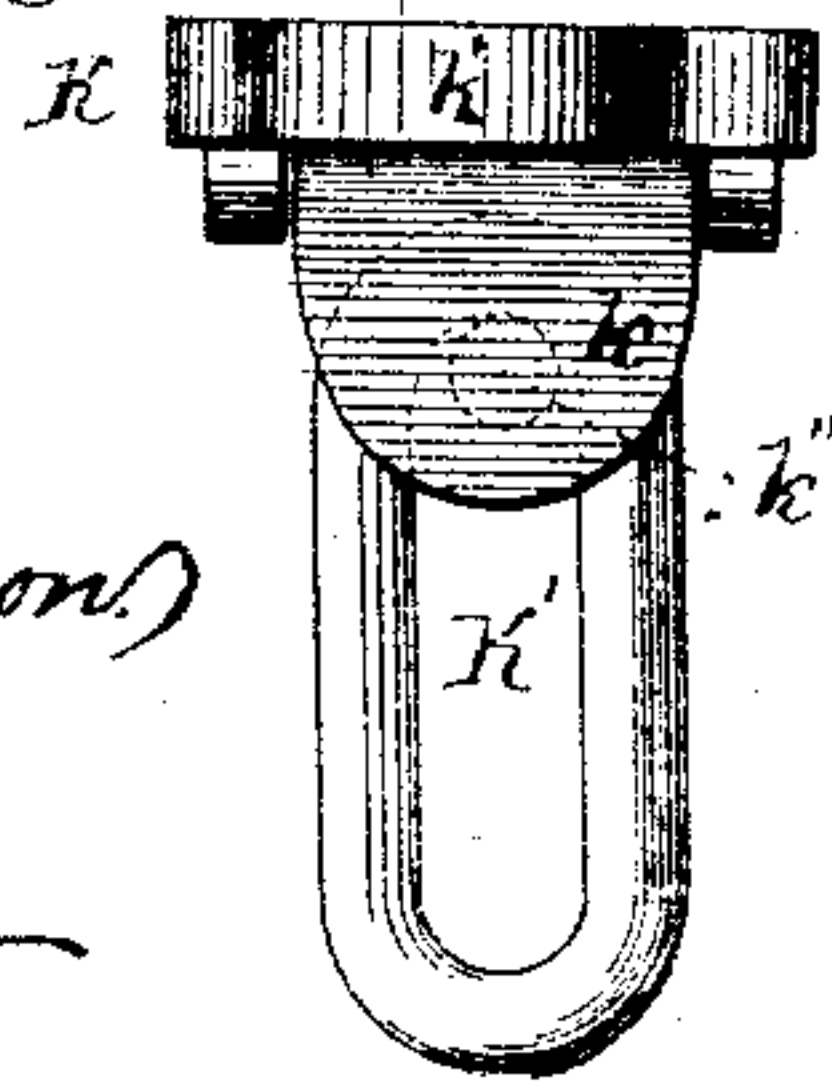
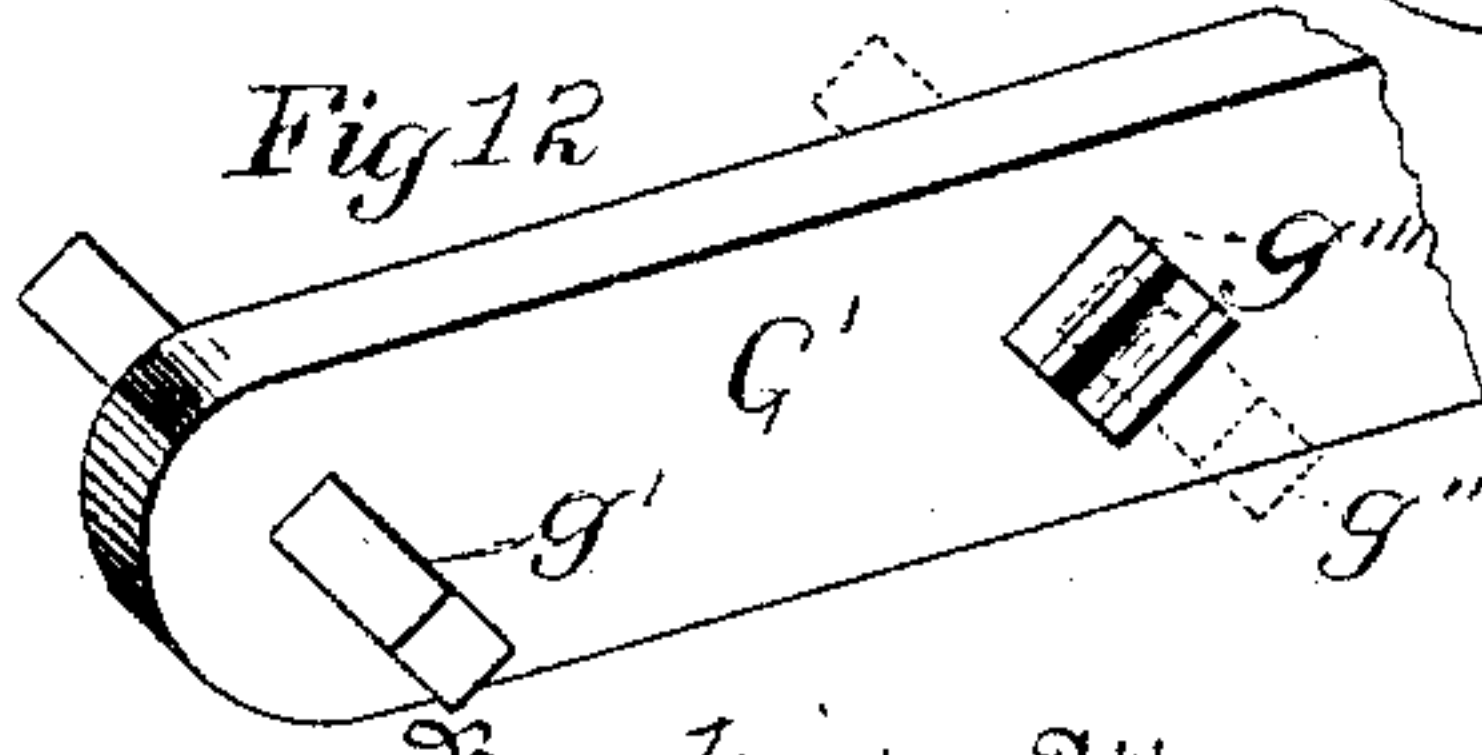


Fig. 12



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM H. STEWART, OF KANSAS CITY, KANSAS, ASSIGNOR TO H. N. STRAIT,
OF SAME PLACE.

WEIGHING-SCALES.

SPECIFICATION forming part of Letters Patent No. 438,248, dated October 14, 1890.

Application filed January 18, 1890. Serial No. 337,304. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STEWART, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Weighing-Scales, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in weighing-scales; and it consists in the novel construction and arrangement illustrated in the accompanying drawings and hereinafter described.

In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a central longitudinal section of my scales designed for weighing heavy materials—such as coal, hay, large quantities of grain, livestock, &c.—showing the manner in which the lever G' is secured to the platform-beams. Fig. 2 is a cross-section through the same, taken on line $x x$ of Fig. 1, showing more clearly how the lever G' is secured and held in position. Fig. 3 is a detail view of the castings which are hung under the framework of the scales. Fig. 4 is a detail in perspective of the fulcrum-sleeve which fits over the scale-beam. Fig. 5 is a front view of a beam-casing. Fig. 6 is a detail view of the auxiliary beam, showing the balance-weight which regulates the scales. Fig. 7 is a detail in perspective of the clevis by which the lever G' is hung to the scale-beams. Fig. 8 is a detail in perspective of the hanging-hook by which the levers used in operating my scales are hung. Fig. 9 is a detail in perspective of the bearing-plate which is secured in the timber D . Fig. 10 is a detail view of the stationary hook from which the lever G' is suspended. Fig. 11 is a detail view of the casting in which is secured the link for suspending the hooks used in hanging the scales; and Fig. 12 is a broken-off detail in perspective of the lever G' , showing how the pivots are secured in position.

Referring to the drawings by letter, B represents the timbers which form the frame of my scales, properly secured on posts C , which may be braced in any suitable manner.

D are suitable timbers on which are secured

the timbers $E E$ and joists E' and E'' , said timbers and joists $E E' E''$ forming suitable bearings for the platform a .

F is a casting, made in the manner illustrated in Fig. 3, and provided with a rear F' and a front F'' , together with suitable ends and connecting-partitions requisite for strength, said casting F being also provided with suitable lugs, through which pass the bolts $f f'$ for securing the levers in position, these being more clearly illustrated in Figs. 1 and 3, and also having upon each of its end pieces f^5 front and rear pivots h and i , the said pivots extending through the end pieces and extending on both sides thereof, the front pivots serving to support the bearings H' upon the base of the plate H , and the rear pivots being supported by the bearings i' on the hooks I .

G' is a lever fulcrumed by pivot g' , which rests in the notches l of the suspending-hook L , said hook L being secured to the joists of the platform in a suitable manner by bolts l'' .

g' are links resting on pivots g'' on the lever G' . These links serve to hold the levers $G G'$ in position.

H is a bearing plate or stand, having its upper surface curved, as illustrated in Fig. 9, for the purpose of making it adjustable to the plane or surface of the timbers D at all times, said bearings H being provided with a lug, which is inserted in a mortise cut in said timbers D . This serves to keep the plate in position without the use of bolts or screws.

I is a swinging hook, having a perforation I' , provided with a suitable link K' , which is properly secured in the casting K , fastened to the platform-timbers by bolts k , thus allowing only a slight "side" swaying motion, the radius of the links being too short to allow the platform to bump sidewise against the frame. Hooks I suspend the entire platform, and being made in the manner illustrated give the platform a slight motion from side to side, the swinging motion being regulated by the short radius of link K' . Said links K' , being secured in the hooks I in the manner described and illustrated, give also a longitudinal swinging motion. This motion, however, is longer than the side motion.

M represents a suitable casing, which protects the scale-beams, poises, and the other parts illustrated in Fig. 5 from the weather.

N is a scale-beam provided with a suitable poise, fulcrum-sleeve O, and slides, said fulcrum-sleeve O being connected with the lever G' by the link P, resting in the slot o (see Fig. 4) therein and rod p'', as illustrated in Fig. 5.

Q is an auxiliary beam provided with a suitable poise. This beam is hung to the scale-beam N by a suitable clevis n.

R is the looped end of the auxiliary beam Q, (illustrated in Fig. 6,) designed to receive a suitable quantity of lead or other metal R', which helps to balance said auxiliary beam. This loop R is also for the purpose of suspending the auxiliary beam Q to the scale-beam N by the clevis n, said clevis n being hung centrally in said loop R, thereby obviating all irregularity in the scales when the auxiliary beam Q swings laterally.

n' is a pivot properly secured through the bent end of the auxiliary beam Q. Said beam is hung to the main scale-beam N by the clevis n, said clevis n being secured by a pivot n'.

r' are the shoulders or jaws where the clevis n is secured, and r'' is a suitable pivot which secures the bent end of the auxiliary beam together, these being clearly illustrated in Fig. 6.

S is a balance-weight secured on the threaded rod s, which is properly secured in the lead R'. This weight S and rod s are for the purpose of regulating the auxiliary beam Q and keeping the scales properly pivoted.

All the pivots in my scales, especially those in the large beams and castings, are to be secured in position by the use of softer metals being cast around them. The perforations which are to receive these are made larger than the pivots and may if necessary be made larger at the center than at the edges of the holes. The pivots are then placed in position and the softer metal poured around them, thus holding them rigidly in position. In Fig. 12 one pivot is shown in position, and one perforation is shown with the pivot dotted ready to receive the softer metal for holding it rigid, as described.

In my invention the lever G' is swung to the platform in such a manner that all the levers are free to swing together, thus obviating the friction caused by swinging.

Having thus fully described my invention what I claim as new, and desire to secure by Letters Patent, is—

1. A weighing-scale having a platform and frame-work constructed in the usual way, provided with levers G, the castings F, having lugs on their sides, the levers G, secured to the castings by suitable bolts passing through the lugs, the hooks I, the casting K, and the link K', by means of which the casting F is swung from the scales frame-work, substantially as described.

2. Scale-levers G, the castings F, secured to the levers G, the hooks I, the castings K and links K', by means of which the levers G are swung from the scales frame-work, substantially as described.

3. The combination, with a scale frame and platform, of castings secured to the said frame, a link secured to each of the said castings, a hook suspended by each of the said links, a hollow casting having a plurality of pivots upon its ends, a lever secured to each of the said hollow castings, the rear pivots upon the said castings being supported by the said hooks, and plates having their tops slightly curved from end to end and having lugs thereon secured to the said platform, the said plates having bearings upon their lower surfaces carried by the forward pivots upon the said casting, as described.

4. The combination, with a scale frame and platform, of castings secured to the said frame, a link secured to each of the said castings, a hook suspended from each of the said links, having opposite bearings i' thereon, a plate having its upper surface slightly curved from end to end and having a lug thereon secured to the said platform, and having opposite bearings H' upon its base, a hollow casting having front and rear pivots projecting upon both sides of each of its ends, the rear pivots being received by the bearings i' and the forward pivots carrying the bearing H', and a lever secured to each of the said hollow castings, as described.

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

WILLIAM H. STEWART.

Witnesses:

R. A. BALDERSON,
JOHN A. ZERBE.