

(No Model.)

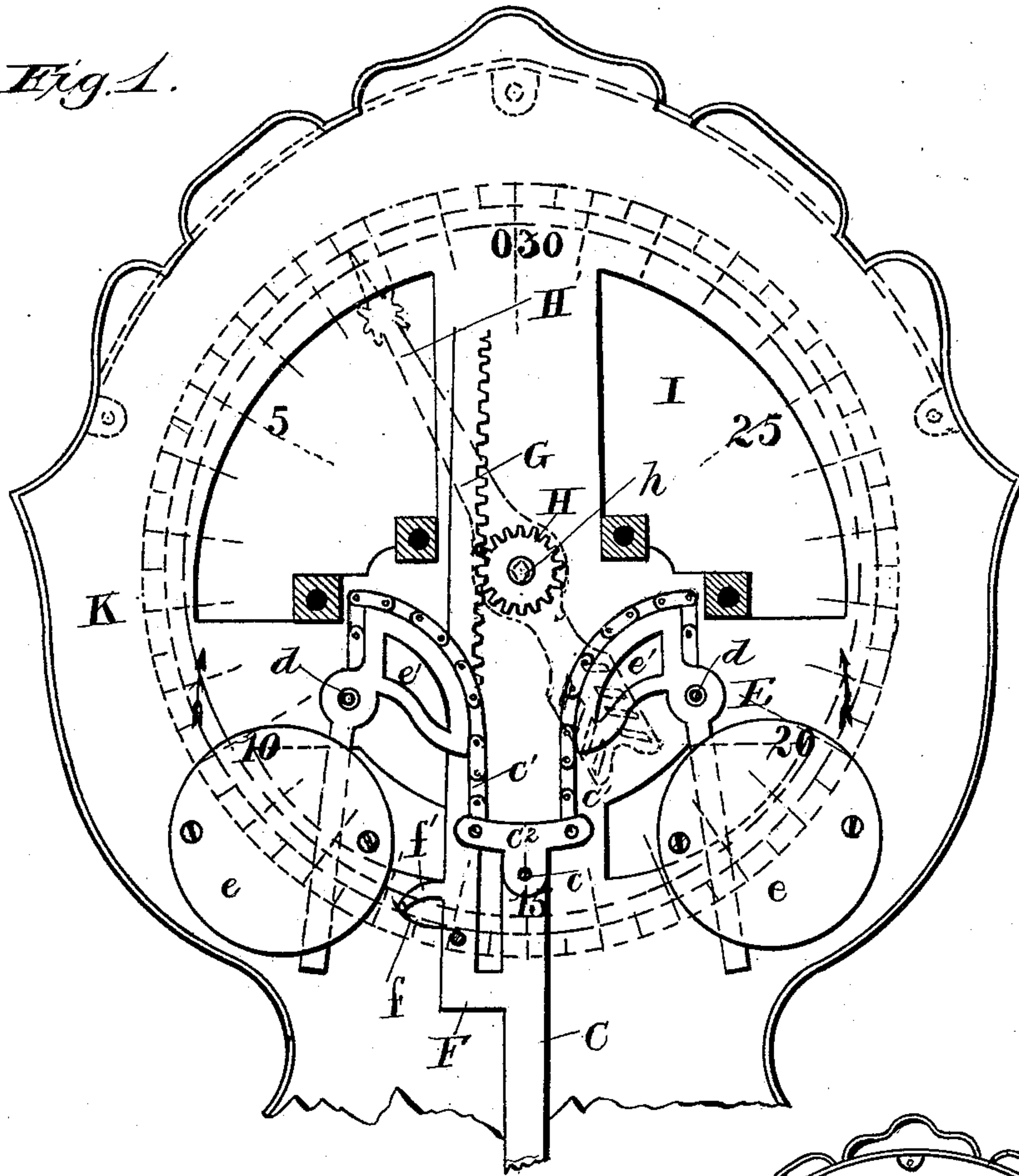
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PLATFORM SCALE.

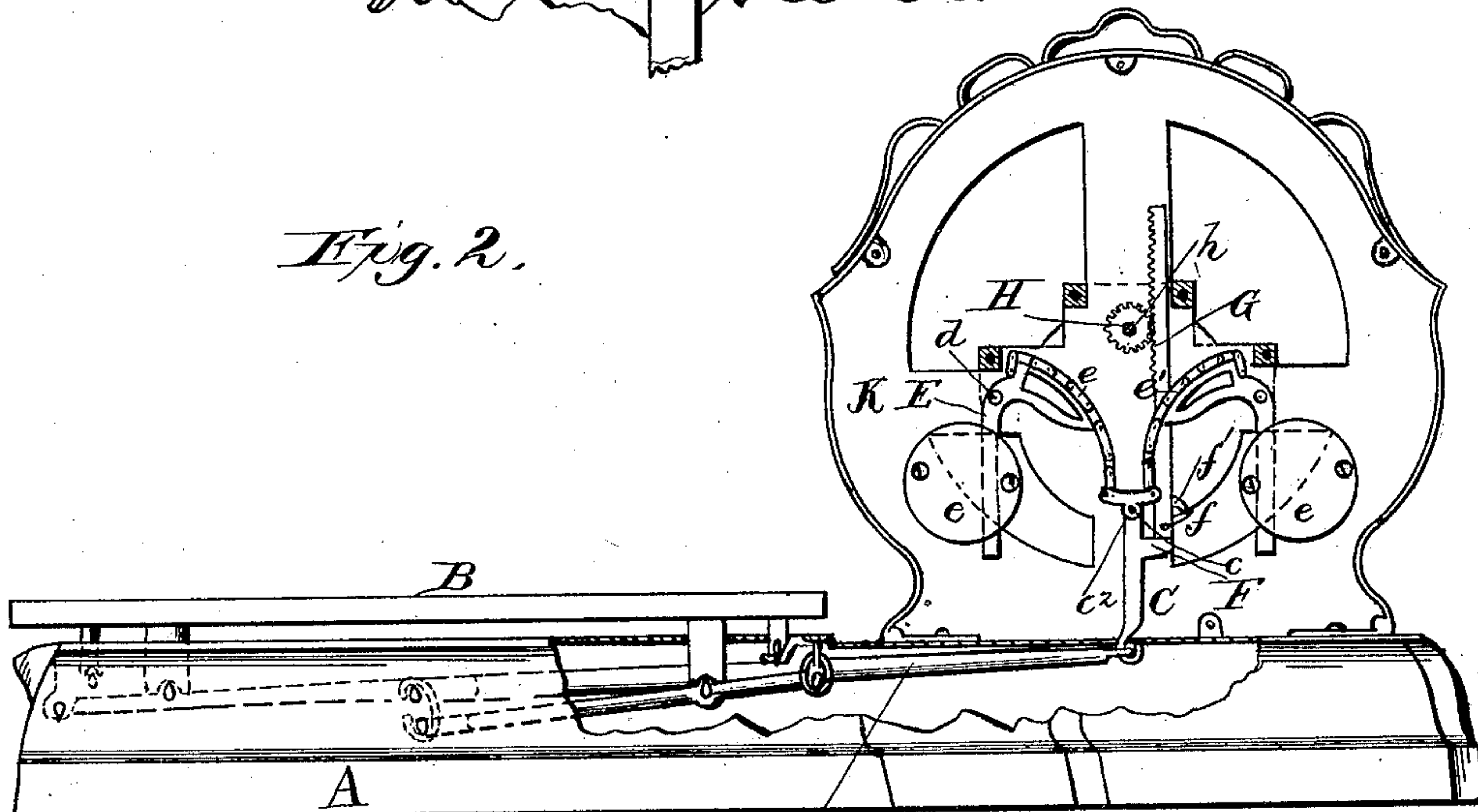
No. 246,318.

Patented Aug. 30, 1881.

*Fig. 1.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

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## PLATFORM-SCALE.

SPECIFICATION forming part of Letters Patent No. 246,318, dated August 30, 1881.

Application filed May 16, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES F. KLEINSTEUBER and FREDK. HUEBNER, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Platform-Scales; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates particularly to that class of weighing-scales known in the trade as "platform-scales," and will be fully described hereinafter.

In the drawings, Figure 1 is a rear view of the upright portion of a platform-scale in which is embodied our invention. Fig. 2 is a like view of the same and the base thereof, part of which is broken away to show the connection of the platform-levers with our improvement. In both views the back plate is removed.

A is the base of a platform-scale, and B is the platform, which latter may be connected with the vertical rod C by a lever, D, and any known system of compound levers. The vertical rod or strap C is suspended, by chains  $c'$  and a rocking lever,  $c''$ , pivoted to it at  $c$ , from the scale beams or pendulums E, which have cam-shaped or eccentric segmental heads  $e'$  at one end and adjustable counterpoises  $e$  at the other.

The chains  $c'$  are attached to the beams or pendulums above their axes, are carried up over the heads  $e'$  and down upon their faces to a vertical, and each to an arm of the rocking lever  $c''$ , to which it is secured.

Near the top of rod or strap C we provide it with an L-shaped offset, F, slotted to receive one end of a small spring,  $f$ , which is designed to engage with a projection,  $f'$ , near the lower end of the rack-bar G. The rack-bar G is pivoted to the offset F, and, extending up between one of the segmental heads  $e'$  and the dial-plate I, as shown in dotted lines, is kept in engagement with pinion H by the pressure of spring  $f$  upon the end of the projection  $f'$  on its lower end. This pressure is just sufficient to do its work without causing undue friction.

The weights or counterpoises may be moved up and down upon the scale beams or pendulums to properly adjust our scale as it is put together.

The operation of our improved scale is as follows: When the article to be weighed is placed upon the platform it depresses the lever D through the system of levers which support it, and causes lever D to draw upon rod or strap C, and as this descends it carries the rack-bar G with it, the rack-bar, in turn, revolving the pinion H and pointer H', and in its descent the rod or strap C is opposed by the scale-beams or pendulums E, from which it is suspended by the chain  $c'$  and rocking lever  $c''$ , the latter acting as an equalizing-bar to prevent any binding should one lever yield more readily than the other.

In Figure 1 of the drawings I have shown the rod or strap C sufficiently depressed to hold the pointer almost at two and a half pounds, and it will be seen that the lowest point of contact of the chains  $c'$  with their respective supports (the segmental heads  $e'$ ) is just opposite, on a horizontal line, to the axes  $d$  of the beams or pendulums E. If a further weight be added, the heads  $e'$  will be drawn farther over, and while the point of contact and strain shifts upon the heads it remains on a horizontal line with the axes.

We may double the capacity of our scale by duplicating the pendulums—that is, we may increase the depth of the case K, lengthen the axes  $d$ , and place an additional pendulum on each, and by means of additional chains connect them with the rod or strap C, through an intermediate rocking lever,  $c''$ , of suitable size to accommodate two chains at each end, instead of one, and in this way we may increase the capacity of our scale still further and yet have a compact counter-scale.

It will be seen that the segmental heads of the beams or pendulums will insure a constant leverage, and the dial-plate may therefore be regularly spaced, since the pointer will be carried the same distance about its axis by a given weight, no matter whether it be added to a pound on the platform or to ten or twenty.

By reason of the bearing-surface of the segmental heads being eccentric, instead of being on the arc of a circle, the chain will always approach the pivotal point of the beam in regular and exact proportion to the regular and uniform spaces on the dial-plate, and the platform will be depressed the same relative dis-



tance between six and seven pounds, for instance, as between one and two pounds, and the index-finger will move over the dial-plate at the same time just the same distance between any two pound-marks on the said plate, which it would not do if the segmental head were cast on the arc of a circle.

In Fig. 1 of the drawings we have shown the rack-bar G arranged to the left of the pinion H, and in Fig. 2 to the right of it, as it will operate equally well in either position.

We are aware that pendulum-scales have been constructed having weighted arms or beams, to the eccentric ends of which scale-pans were attached by straps or chains, and indications given on a semicircular plate by a pointer receiving its motion from a strap or chain. In this case the pointer is operated by the descent of the scale-pan; but on the return of the pan after weighing it will not resume its position at zero on the scale by reason of having no positive attachment to the pan or beam. In our device the platform is attached to a rigid vertical bar, which is compelled to rise and fall with it, and this bar having a rack engaging with the pointer-pinion, all the connections are positive, and every movement of the platform is correctly indicated by the pointer; hence, when the platform, after weighing, resumes its normal position the pointer automatically returns to zero—a result not possible by the device described.

What we claim as our invention is—

1. In a platform-scale, the combination of two or more beams or pendulums having counterpoises, cam-shaped or eccentric segmental heads, and chains, with a rod or strap, C, and a rack-bar, pinion, and pointer-shaft, and a lever connecting them with the platform-supports, as set forth.

2. In a platform-scale, the combination of the rod or strap C, rack-bar pivoted thereto, spring *f*, and a beam or pendulum, E, having cam-shaped head and counterpoise, and its chains, as set forth.

3. In a platform-scale, the combination of the beams or pendulums E, having cam-shaped or eccentric segmental heads and counterpoises, the suspending-chains, rack-bar G, rod or strap C, having offset F, and spring *f*, and the rocking lever *c''*, with the lever D and platform, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 6th day of May, 1881.

CHARLES F. KLEINSTEUBER.  
FRED HUEBNER.

Witnesses:

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