

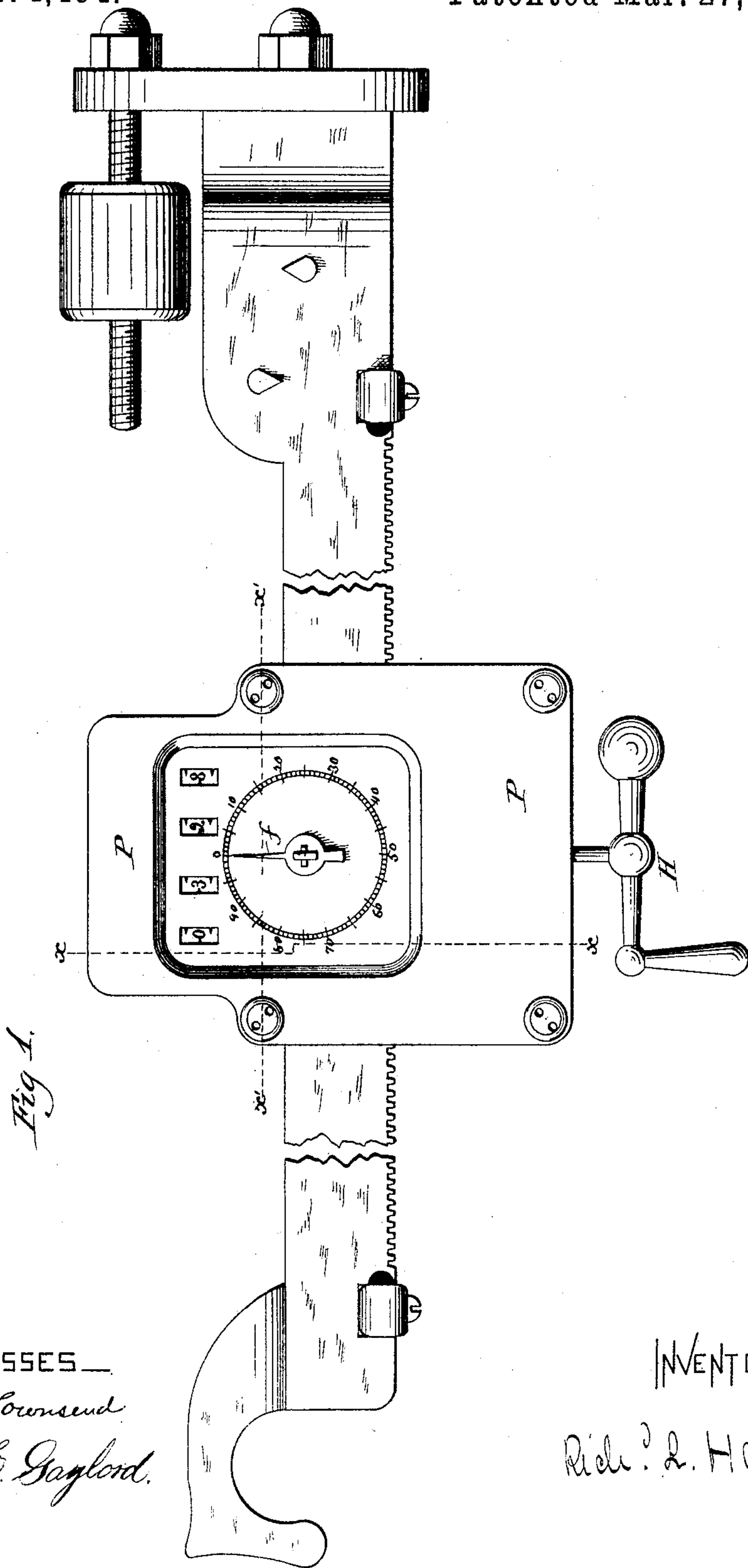
(No Model.)

4 Sheets—Sheet 1.

R. L. HASSELL.
INDICATING SCALE WEIGHT.

No. 274,494.

Patented Mar. 27, 1883.



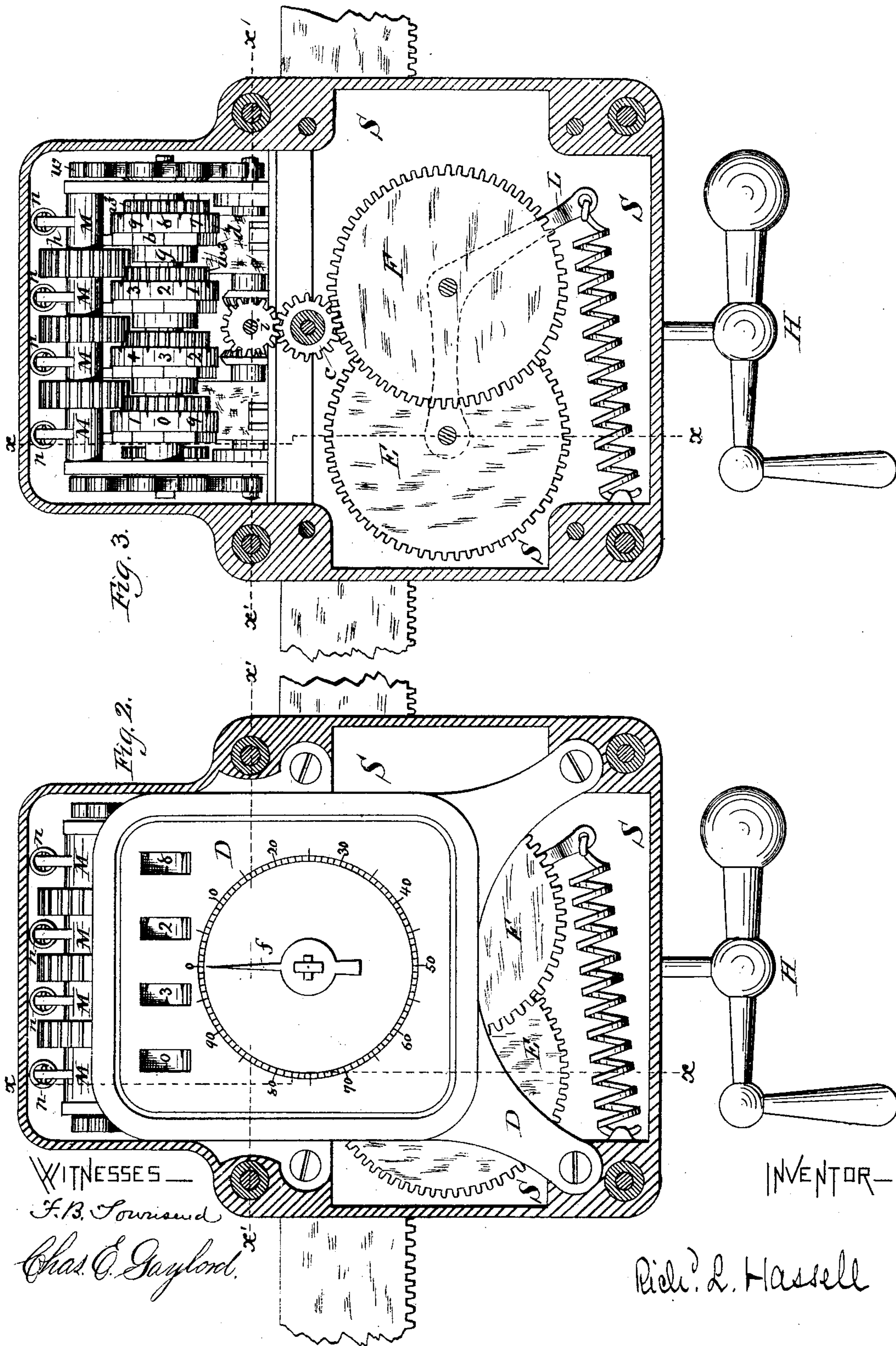
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INVENTOR—

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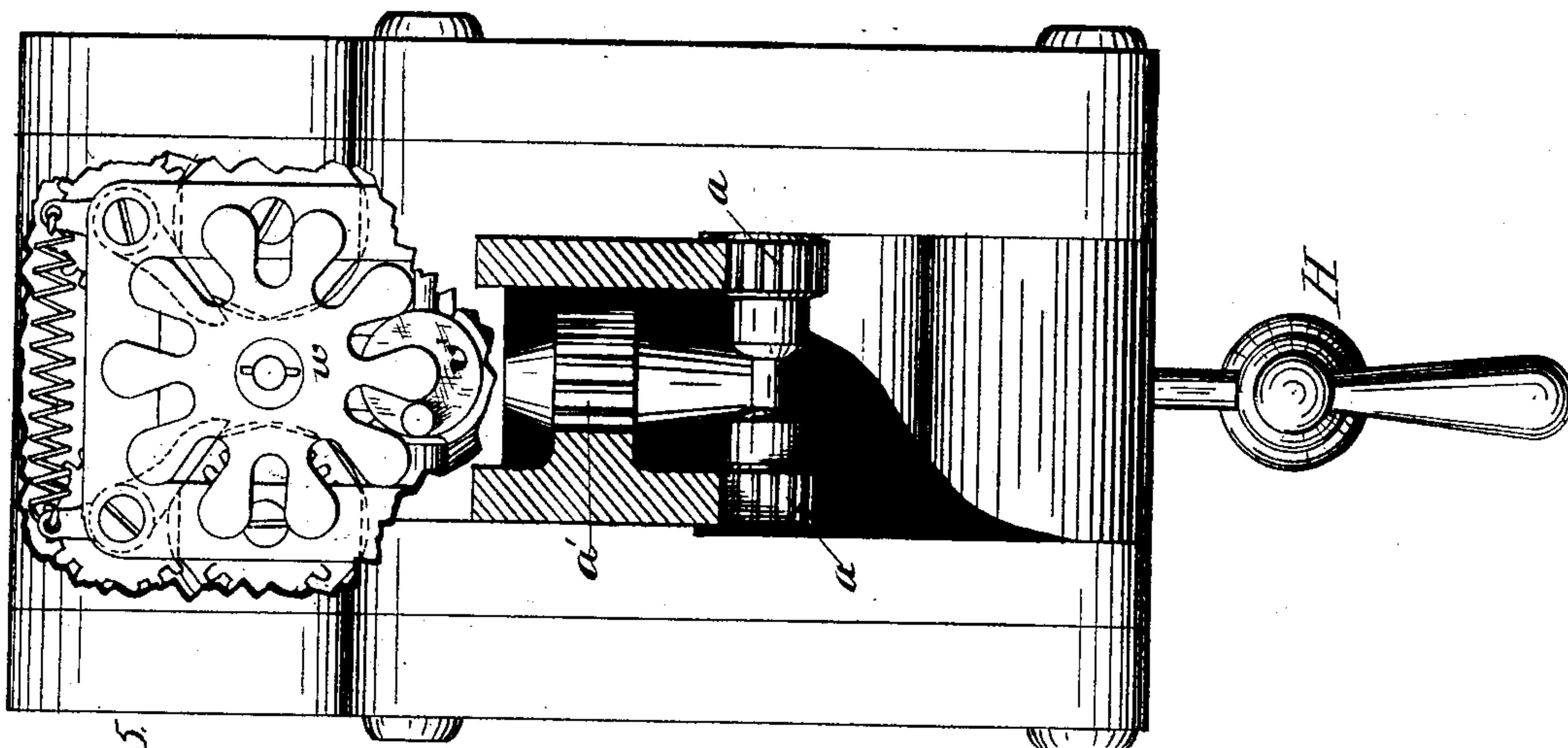


Fig. 5.

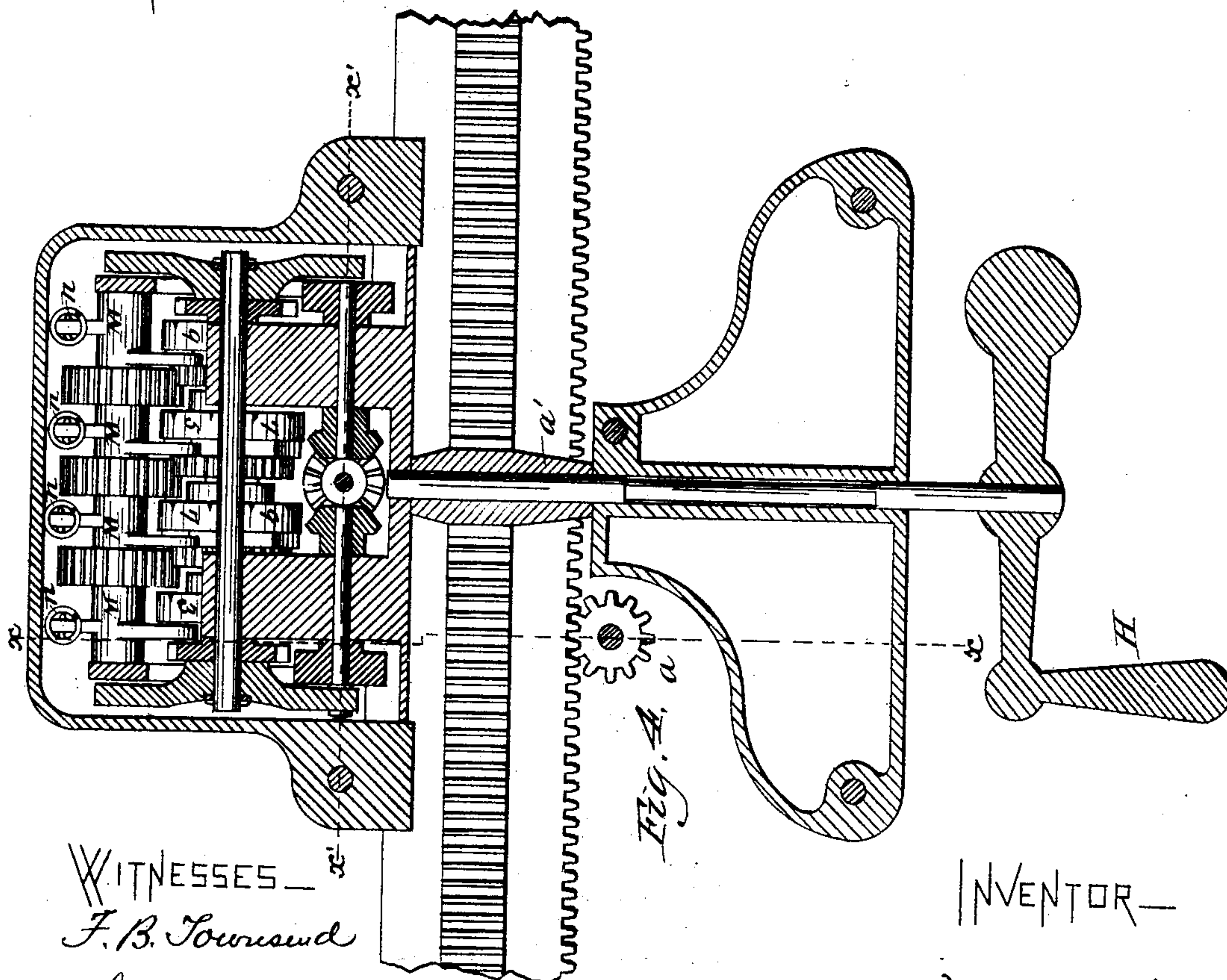


Fig. 4.

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(No Model.)

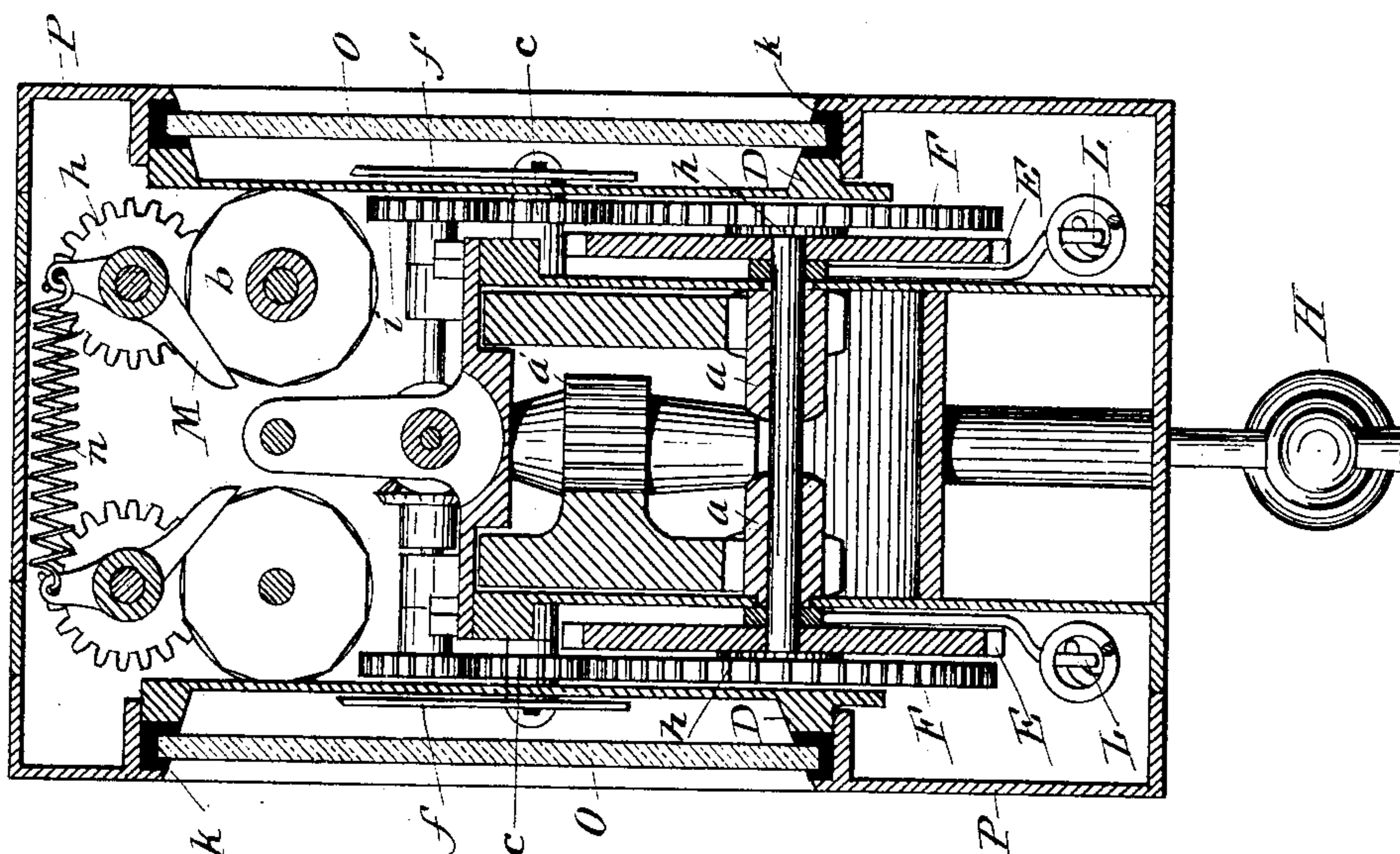
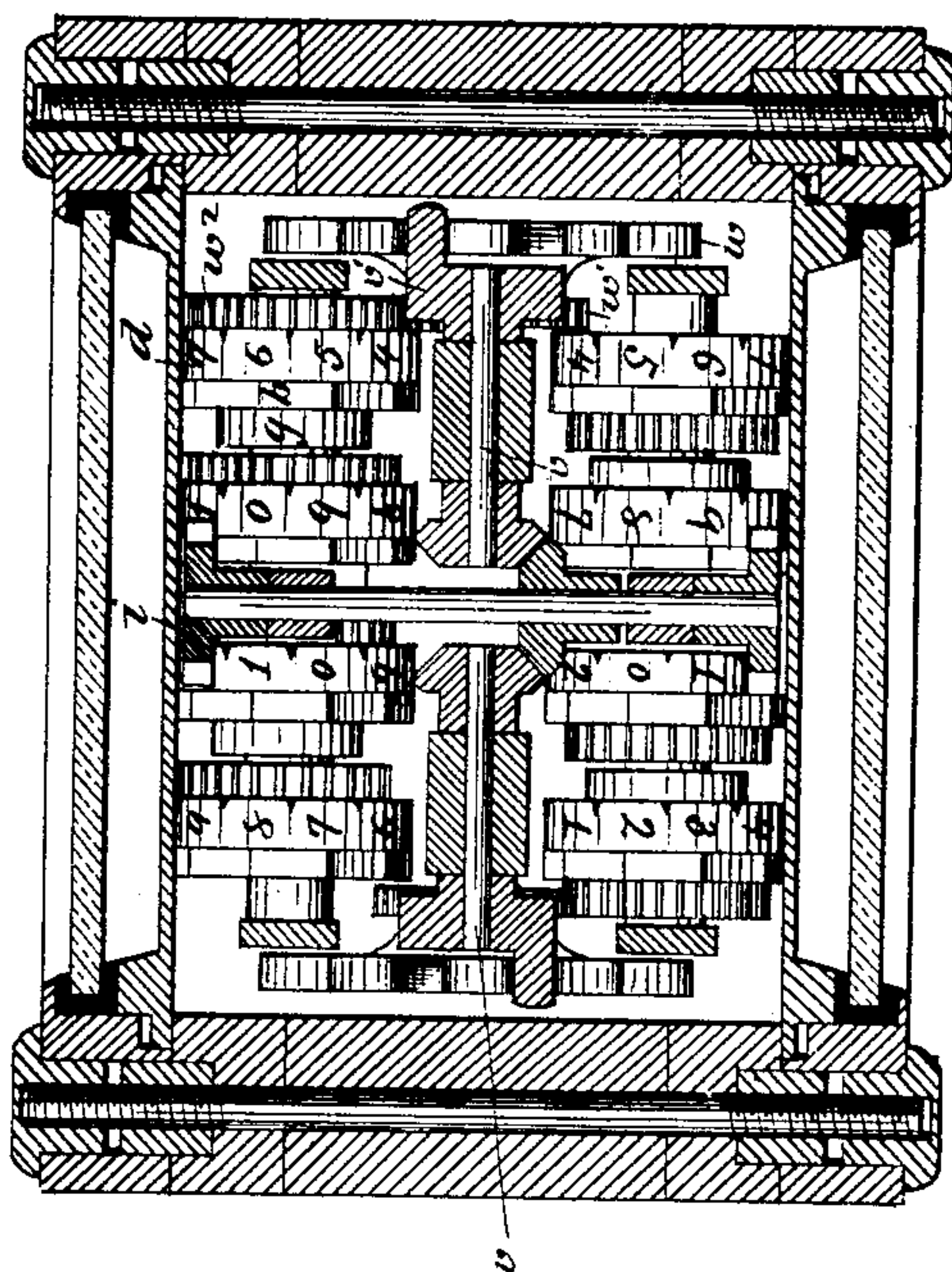
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UNITED STATES PATENT OFFICE.

RICHARD L. HASSELL, OF CHICAGO, ILLINOIS.

INDICATING SCALE-WEIGHT.

SPECIFICATION forming part of Letters Patent No. 274,494, dated March 27, 1883.

Application filed May 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD LITTELL HASSELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Scale-Beams, of which the following is a specification.

My present invention consists in providing a weighing-scale with a beam-bar carrying intermittingly-revolving figured disks or dials, and mechanism connected therewith.

The object of my improvement is to provide convenient means for recording or indicating high numbers or heavy weights without the necessity of using detachable or separate weights on the counterpoise, or having figures or graduating-marks on the beam-bar itself.

My invention also consists in providing a scale-beam with separate racks for performing the separate duties of moving the poise along the beam and giving motion to the revolving indicating mechanism. The object of this part of my invention is to lessen the wear of the teeth in the rack or racks which give motion to the revolving indicating mechanism.

Figure 1 is a face view of a scale-beam provided with my improvements. Fig. 2 is an enlarged face view of the poise shown in Fig. 1 as it appears after the removal of the face-plate P, the glass O, and rubber ring *k*, Fig. 6. Fig. 3 is the same as Fig. 2, with the dial-plate D and revolving hand *f* removed. Fig. 4 is a vertical longitudinal section through the center of the poise. Fig. 5 is an end view of the poise, with the upper portion partly broken away to show a part of the intermittingly-revolving mechanism. Fig. 6 is a vertical transverse section taken at the line *x x*; Fig. 7, a horizontal section at line *x' x'*.

Like characters indicate like parts in the different views.

In another application for patent, of even date herewith, I have described certain improvements in scale-beams, most of which improvements will be found in the present patent, and all of which, when desired, may be incorporated with it. Such improvements will not be further explained or referred to here, except so far as may be necessary to explain the working of the present device.

The poise rests on a double-barred beam, as seen in Figs. 5 and 6. The shaft to which the

handle H is attached passes up through the poise and has fastened to its upper end the gear *a'*, which meshes with teeth on the side of one of the bars, as seen in Figs. 4, 5, and 6. By turning the handle H, therefore, the poise will be moved along the beam. The gears *a a* and E E, Fig. 6, are fastened to one shaft, as seen in the figure. The gears *a a* mesh with teeth cut in the lower edge of each bar. Moving the poise along the beam therefore causes the gears *a a*, and consequently E E, to revolve. The gear E meshes with the pinion *h*; fastened to the back of the gear F, and F, as will be seen, meshes with the gear *c*, to which is attached the hand *f*, which revolves before the dial.

I will now describe the mechanism for converting the continuous rotary motion of the gear *c* into the intermittent motion of the figured disks. I shall confine my description to the mechanism on one side of the poise, as the mechanism on either side is substantially the same.

The gear *c* meshes with the gear *i*, and, as will be seen by referring to Fig. 7, the same shaft to which is fastened the gear *i* has also fastened to it a miter-gear which meshes with the miter-gear fastened to the shaft *v*, and to the other end of this shaft *v* is fastened a wheel, *v'*. This wheel *v'* has a projecting pin which engages with the peculiarly-shaped wheel *w*. The action of this wheel *v'* and wheel *w* will be more clearly understood by referring to Fig. 5. The diameters of the gear *i* and the miter-gears are so proportioned that the wheel *v'* makes one revolution for each revolution of the hand *f* before the dial. Referring now to Fig. 5, it will be seen that at each revolution of the wheel *v'* the projecting pin engages with the wheel *w* and moves it through the tenth part of a revolution. The wheel *w* revolves free on its shaft, and has fastened to it a gear, *w'*, (partly seen in Fig. 7,) which meshes with the gear *w²*. It will be best now to refer to Fig. 3, where the gear *w²* is seen at the right-hand side of the poise. The gear *w²*, the figured disk *d*, next to it, the ten-sided wheel *b*, and the wheel *g*, are fastened together and revolve on the shaft. The gear *w²*, and consequently the figured disk attached to it, revolve at the same rate of speed as the wheel *w*, and therefore for each complete revolution of the hand

f before the dial the figured disk *d* makes the tenth part of a revolution. The wheel *g* has a projecting tooth or teeth, which at each complete revolution of the figured disk *d* engages with the gear *h*, which meshes with the gear *w*³, fastened to the next figured disk, and moves it through the tenth part of a revolution. Therefore for each complete revolution of the hand *f* before the dial *D* the figured disk *d* makes the tenth part of a revolution, and for each complete revolution of the figured disk *d* the next figured disk makes the tenth part of a revolution, and so on through the series as far and as many as may be desired. In the drawings I have shown four figured disks; but when the graduated dial *D* is used it will rarely be necessary to have as many.

M M M M, Fig. 3, are pawls which engage with the ten-sided wheels or disks *b*, as shown in Fig. 6, retaining the figured disks *d* in their places and preventing their accidental movement. The upper ends of these pawls have a spring, *n*, attached to them, as shown.

It will be observed that the wheel *w*, driven by the pin-wheel *v'*, differs from an ordinary ten-toothed wheel driven by an ordinary single-toothed wheel or mutilated gear. The wheel *w* consists of a circular disk of metal, in which is cut a number of slots or notches which receive the projecting pin of the wheel *v'*. The form and position of these slots or notches will be clearly seen by referring to Fig. 5, in which the wheel *w* is represented having ten of such slots. The advantage of giving the wheel *w* this peculiar shape is the avoidance of all sudden shock or jar to the registering mechanism. When the projecting pin of the wheel *v'* engages with the wheel *w* it does not strike it with a sudden impact, like the cog of an ordinary mutilated gear engaging with the cogs of an ordinary gear-wheel; but when the projecting pin of *v'* enters one of the slots of the wheel *w* it acts at first with a gradual sliding motion, and moves the wheel *w* from a state of rest, with a gradually-increasing speed, up to the point when the pin reaches

the bottom of the slot, and then moves it with a gradually-decreasing speed until it again leaves the slot. When the projecting pin of *v'* is not engaged with the wheel *w* the registering mechanism is prevented from moving by the action of the pawls on the ten-sided wheels *b*.

The dial *D* and the intermittingly-moving disks may be graduated and figured in any desired manner, and the dial *D* may be entirely dispensed with when desired.

I claim—

1. In a weighing-scale, a beam bar or bars carrying an intermittingly-moving disk or disks, such as *d*.

2. In a weighing-scale, a beam bar or bars carrying an intermittingly-moving disk or disks, such as *d*, in combination with a graduated dial or dials, such as *D*.

3. In registering mechanisms, the combination of an intermittingly-moving disk or disks, the peculiarly-shaped wheel *w*, and the ten-sided wheel *b*.

4. In a weighing-scale, a beam bar or bars carrying the combination of an intermittingly-moving disk or disks, the ten-sided wheel *b*, the pawl *M*, and spring *n*.

5. In registering mechanisms, the combination of an intermittingly-moving disk or disks, the peculiarly-shaped wheel *w*, the pin-wheel *v'*, the mutilated gear *g*, and the gear *w*³.

6. In registering mechanisms, the combination of an intermittingly-moving disk or disks, the peculiarly-shaped wheel *w*, the pin-wheel *v'*, the ten-sided wheel *b*, the pawl *M*, the spring *n*, the mutilated gear *g*, and the gear *w*³.

7. A scale-beam carrying two or more toothed racks, one or more of such racks being used for the purpose of moving the poise along the beam, and one or more of such racks being used for the purpose of giving motion to the revolving indicating mechanism.

RICHARD LITTELL HASSELL.

Witnesses:

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D. H. HENSHAW.