

2 Sheets—Sheet 1.

No. 381,673.

Patented Apr. 24, 1888.

Fig. 1.

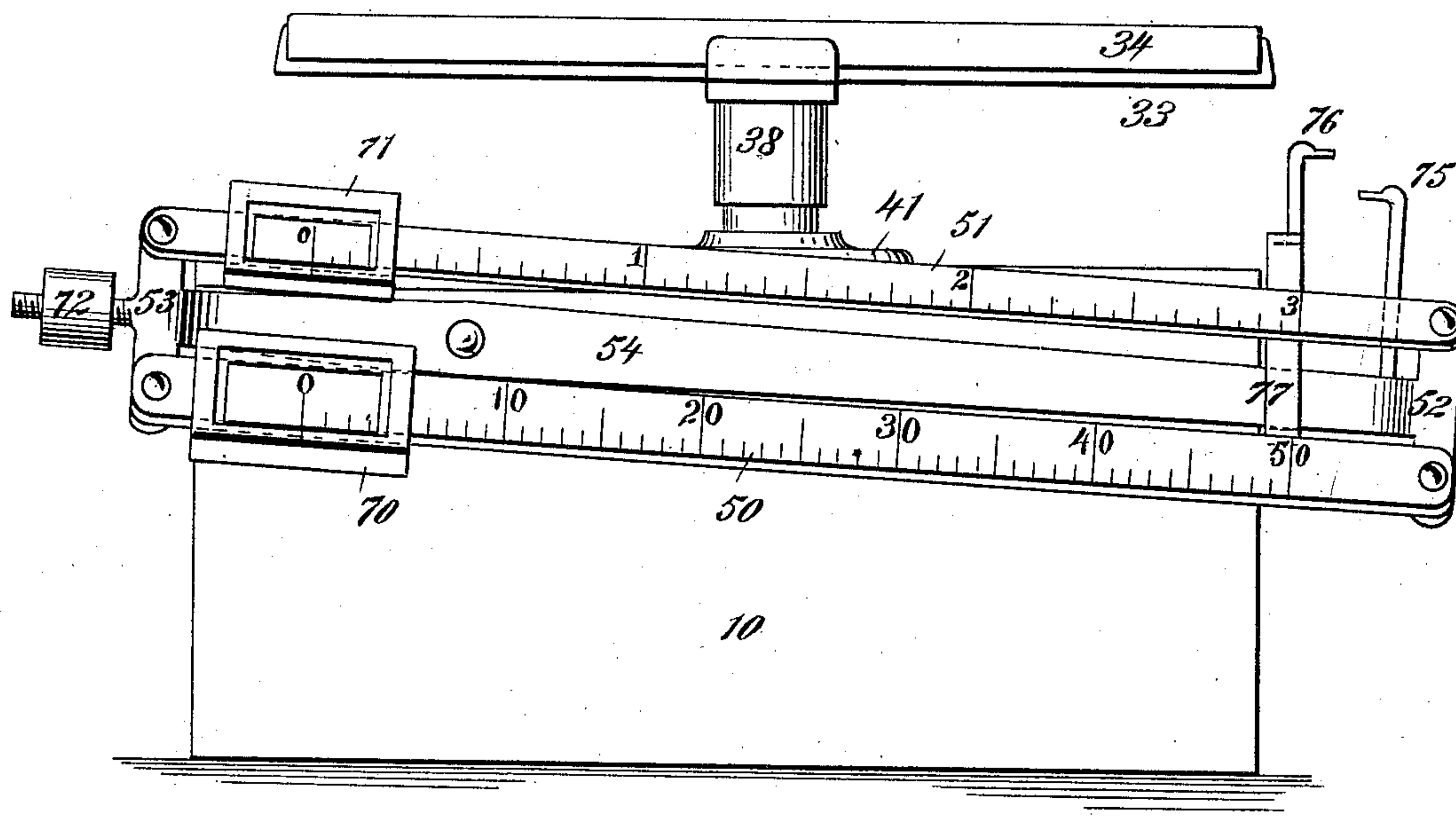
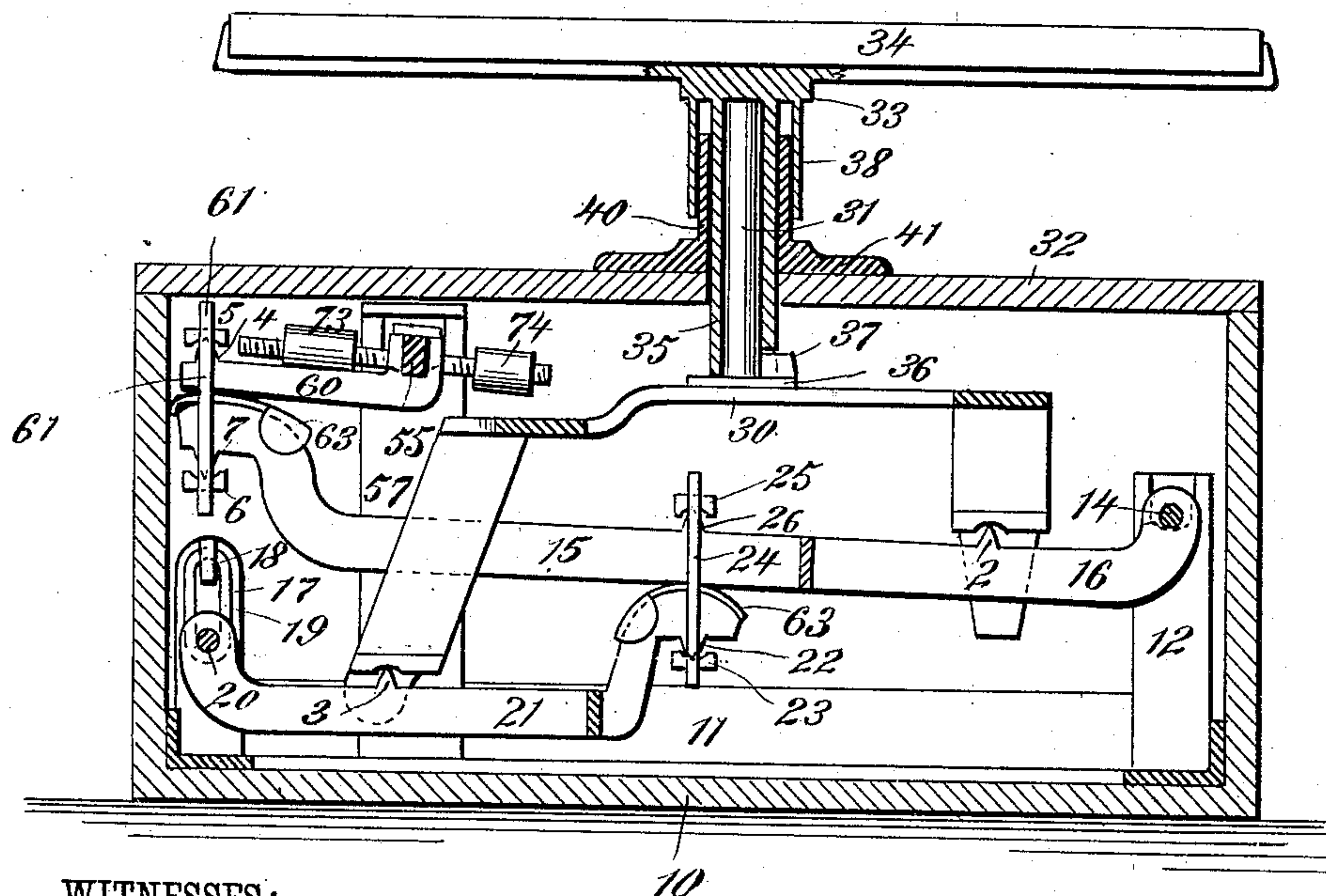


Fig. 2.



WITNESSES:

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INVENTOR:

INVENTOR:
J. F. Butenschon
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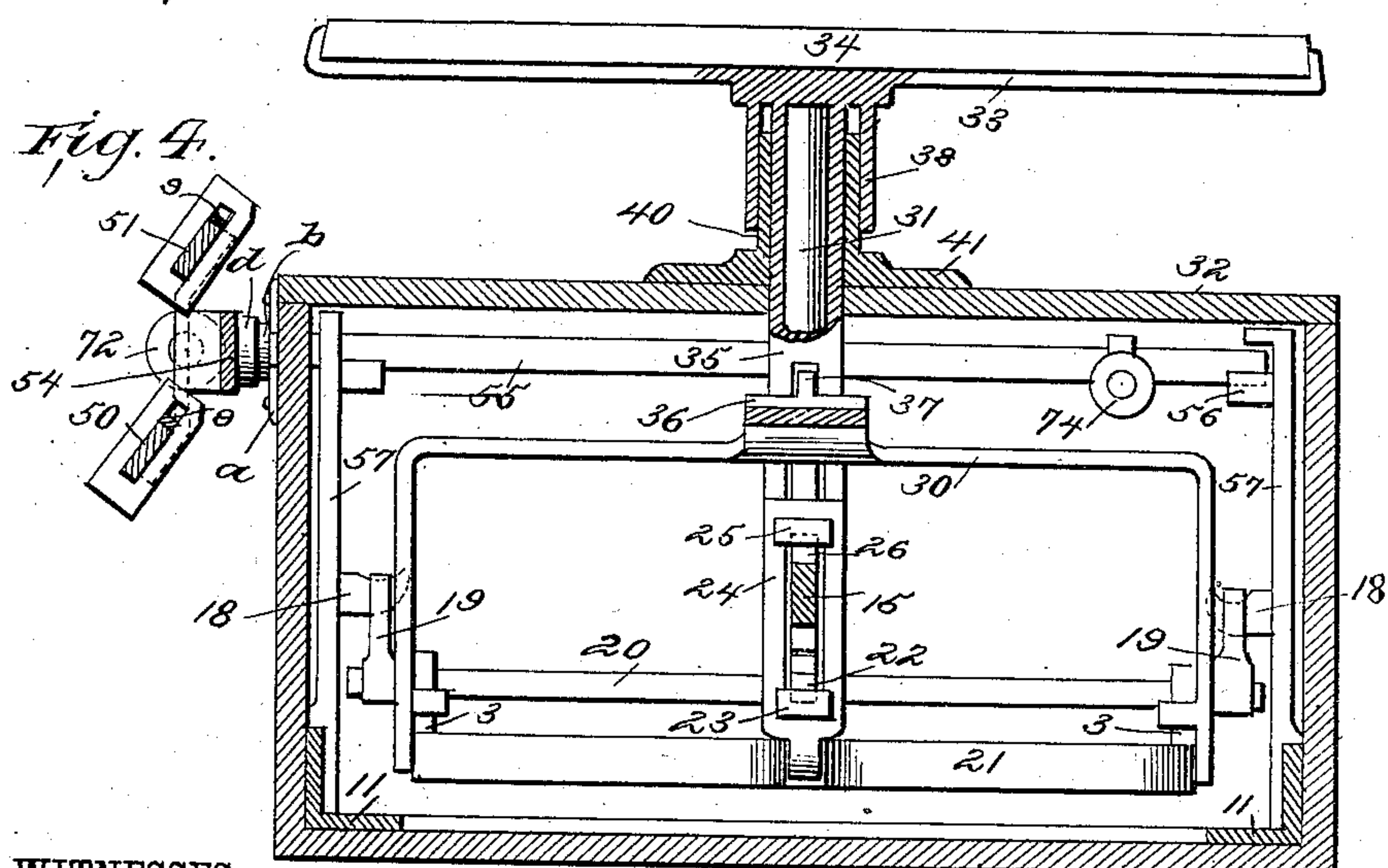
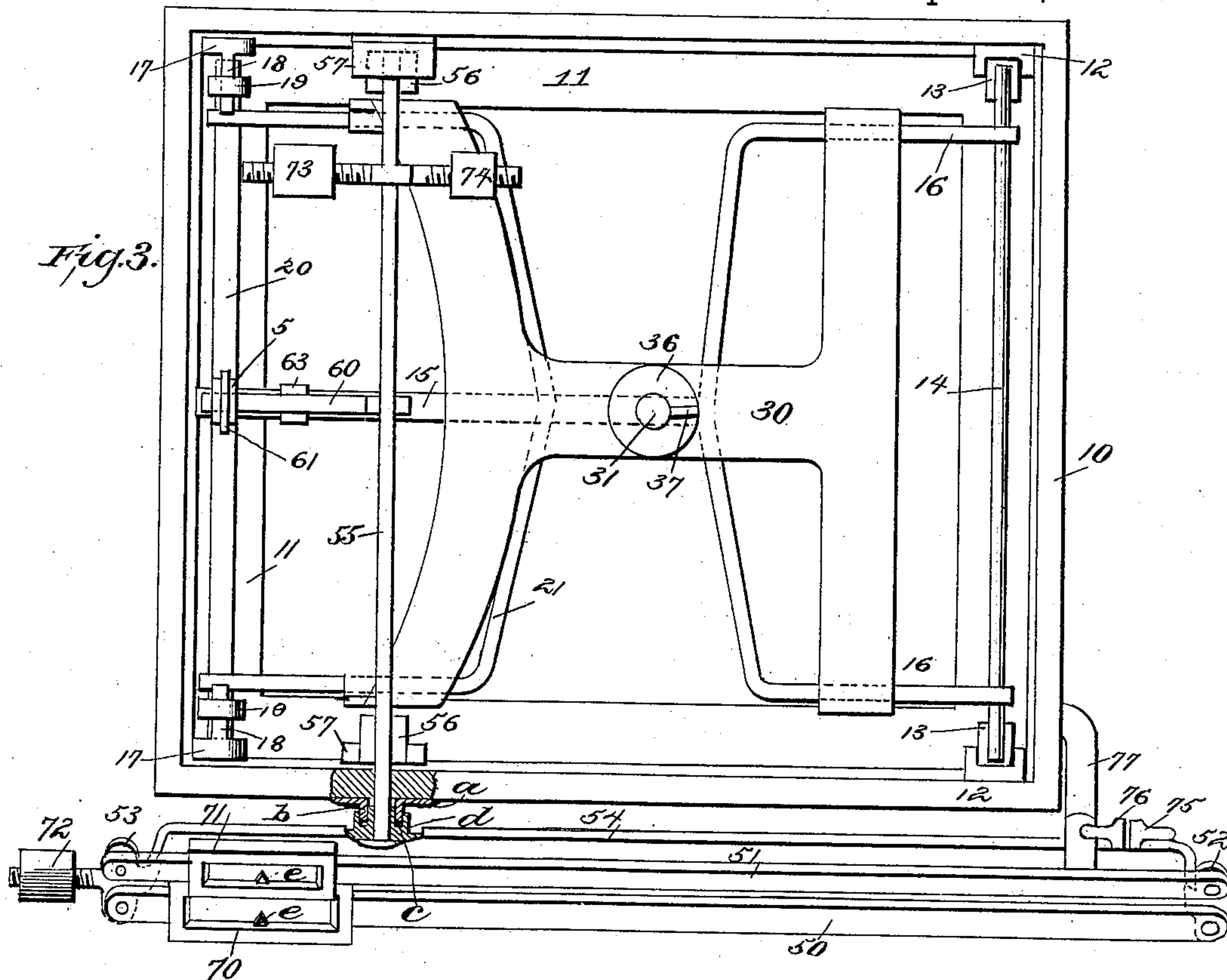
(No Model.)

2 Sheets—Sheet 2.

J. B. BUTENSCHON.
COUNTER SCALE.

No. 381,673.

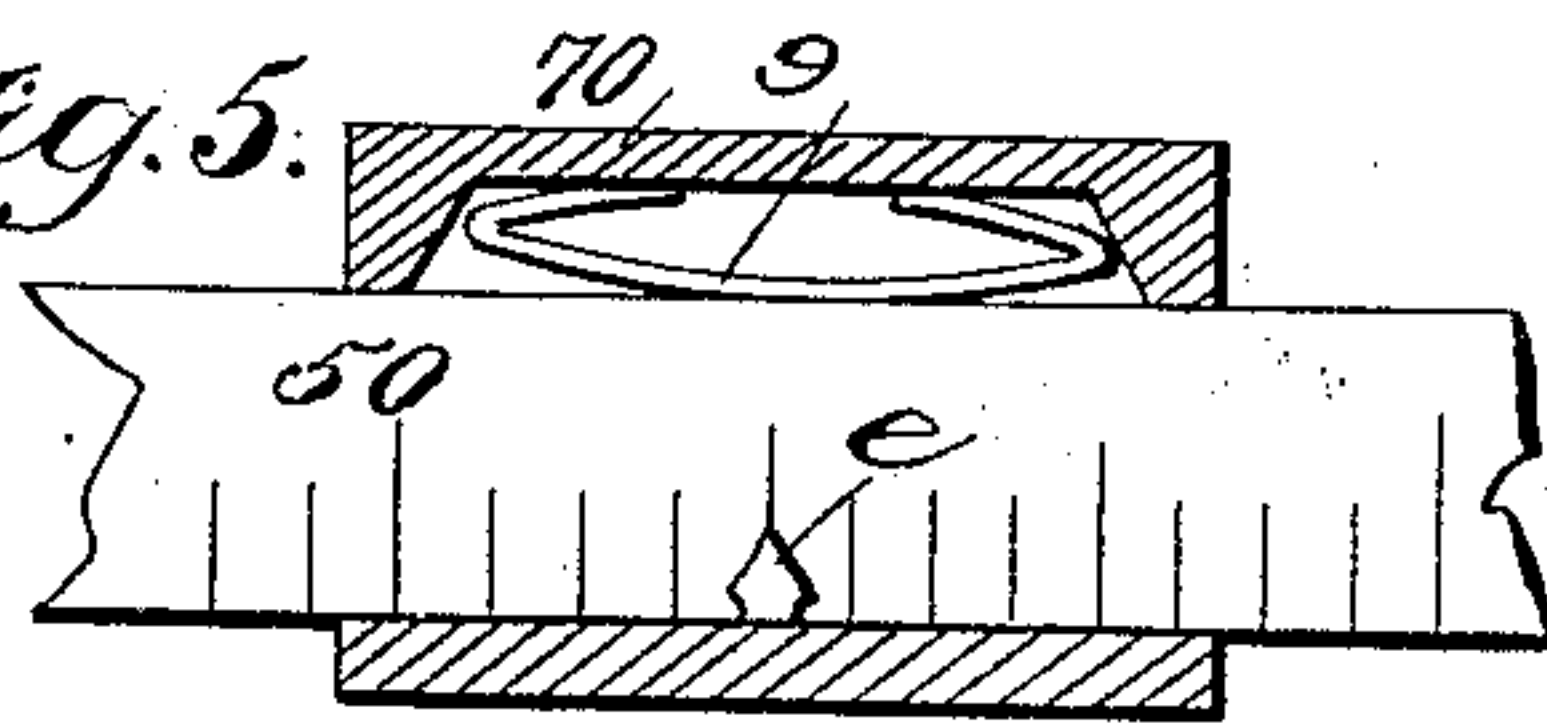
Patented Apr. 24, 1888.



WITNESSES:

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Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN B. BUTENSCHON, OF PORTLAND, OREGON.

COUNTER-SCALE.

SPECIFICATION forming part of Letters Patent No. 381,673, dated April 24, 1888.

Application filed October 15, 1887. Serial No. 252,437. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. BUTENSCHON, of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Counter-Scale, of which the following is a full, clear, and exact description.

This invention relates to a novel form of counter-scale, one of the main objects of the invention being to provide for the secure boxing or housing of the levers and at the same time to provide such a connection between the levers and the scale-plate that while the plate will be free to move vertically it will be impossible for dust or moisture to enter the case in which the levers are disposed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the scale. Fig. 2 is a central sectional elevation of the scale. Fig. 3 is a plan view of the scale as it appears when the case-cover and the plate are removed, the outer bearings of the beam cross-bar being shown in section. Fig. 4 is a cross-sectional view of the scale; and Fig. 5 is a view of one of the beam-weights, said weight being shown in central longitudinal section.

In the drawings above referred to, 10 represents the case, within which there is fitted a scale foundation or frame, 11, that is provided with two vertical standards, 12, having bearing-faces 13, which support the cross-shaft 14 of the main lever 15, this lever being formed with two branch arms, 16, that are rigidly connected to the shaft 14. At the other end of the frame 11 there are two other vertical standards, 17, which carry hooks 18, from which hooks I suspend links 19, which serve as supports for a shaft, 20, to which there is rigidly secured a secondary lever, 21, which extends outward beneath the lever 15, and is provided with a knife-edge bearing, 22, which rests in a plate, 23, that is carried by a loop, 24, said loop in turn resting upon a plate, 25, that is supported by a knife-edge, 26, formed upon the lever 15.

At equal distances from the shafts 14 and 20 I form knife-edges 2 and 3, and upon these knife-edges I place a four armed spider, 30, which spider is provided with an upwardly-

extending vertical standard, 31, said standard projecting beyond the cover 32 of the case 10.

The frame 33, upon which the plate 34 is supported, is formed with an inner sleeve, 35, which surrounds the standard 31 and rests against the upper face of a plate, 36, that is secured to the spider 30, this plate 36 being formed with a lug or projection, 37, that enters a recess formed in the sleeve 35. An outer sleeve, 38, extends downward, so as to partially surround the sleeve 35, and in the space between the sleeves 38 and 35 I arrange an upwardly-extending sleeve, 40, that is secured to the cover of the case, said sleeve being made integral with a base-plate, 41, the arrangement being such that while the frame of the plate is free to move vertically all dust and moisture will be prevented from entering the case in which the levers above described are housed.

The main beam 50 and the light-weight beam 51 are rigidly connected to the cross-arms 52 and 53 of a beam, 54, said beam 54 being in turn rigidly connected to a cross-bar, 55, that is formed with knife-edges, which rest upon proper bearings, 56, that are carried by standards 57, which extend upward from the frame 11. In order to prevent the entrance of moisture and dust at the opening where the beam cross-bar 55 passes out of the case 10, I fix a casting, *a*, about said opening, said casting being formed with a flange, *b*, that enters an annular groove, *c*, formed in a casting, *d*, that is secured to the beam, as shown in Fig. 3.

The bar 55 carries a rigidly-mounted arm, 60, upon which there is suspended a link, 61, the end of the arm 60 being formed with a knife-edge, 4, which is borne upon by a plate, 5, that is carried by the link, while the link supports a second plate, 6, that is borne upon by a knife-edge, 7, formed upon the lever 15. The ends of the levers 15 and 21 may, if desired, be protected by plates 63, as illustrated.

The weights 70 and 71, carried by the beams 50 and 51, are formed with central apertures, through which the beam passes, and in these apertures I fit a spring, 9, which tends to hold the weights close against the beams, thus preventing the accidental slipping of the weights after they have once been adjusted, but per-

mitting of their adjustment to proper positions upon the beams. Each weight is provided with a pointer, *e*.

The beam 54 is provided with the usual counterbalance-weight, 72, for the general adjustment of the scale, the original adjustment being obtained by means of weights 73 and 74, that are carried by threaded arms that are rigidly connected to the bar 55, these weights being shown best in Fig. 2.

The beam 54 carries a pointer, 75, in connection with which there is arranged an indicator, 76, said indicator being made integral with a bracket, 77, that is rigidly connected to the case 10, the beam 54 being free to move between the arms of the bracket 77; but these arms serve as stops to limit the motion of the beam.

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

1. The combination, with an inclosing-case, of a system of scale-levers mounted therein, a standard extending upward from the scale-levers and through the cover of the case, a sleeve surrounding the standard and extending downward from the plate frame, and a second sleeve connected to the case cover and extending upward about the first-named sleeve, substantially as described.

2. The combination, with an inclosing-case, of a system of scale-levers mounted therein, a standard extending upward from the scale-levers and through the cover of the case, a sleeve surrounding the standard and extending downward from the plate frame, a second sleeve

connected to the case-cover and extending upward about the first-named sleeve, and a third sleeve extending downward from the plate-frame and about the second sleeve, substantially as described.

3. The combination, with an inclosing-case, of a system of sectional levers, a spider supported by said levers and formed with an upwardly-extending standard, a lug arranged at one side of the standard, a sleeve surrounding the standard and engaging said lug, a plate-supporting frame carried by the sleeve, a sleeve connected to the case-cover and surrounding the first-named sleeve, and a downwardly-extending sleeve carried by the plate-frame and surrounding the first-named sleeve, substantially as described.

4. The combination, with a frame, 11, formed with standards 12, 17, and 57, of a lever, 15, having a cross-bar, 14, that is supported by the standards 12, a lever, 21, that is supported by loops that are upheld by the standards 17, a loop, 24, connecting the levers 15 and 21, a beam, 54, carrying the weight-beams, a bar, 55, to which the beam 54 is rigidly connected, said bar being supported by the standards 57, an arm, 60, extending outward from the bar 51, a loop connecting the arm 60 and the lever 15, a spider supported by the levers 15 and 21, and a plate supported by the spider, substantially as described.

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Witnesses:

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