

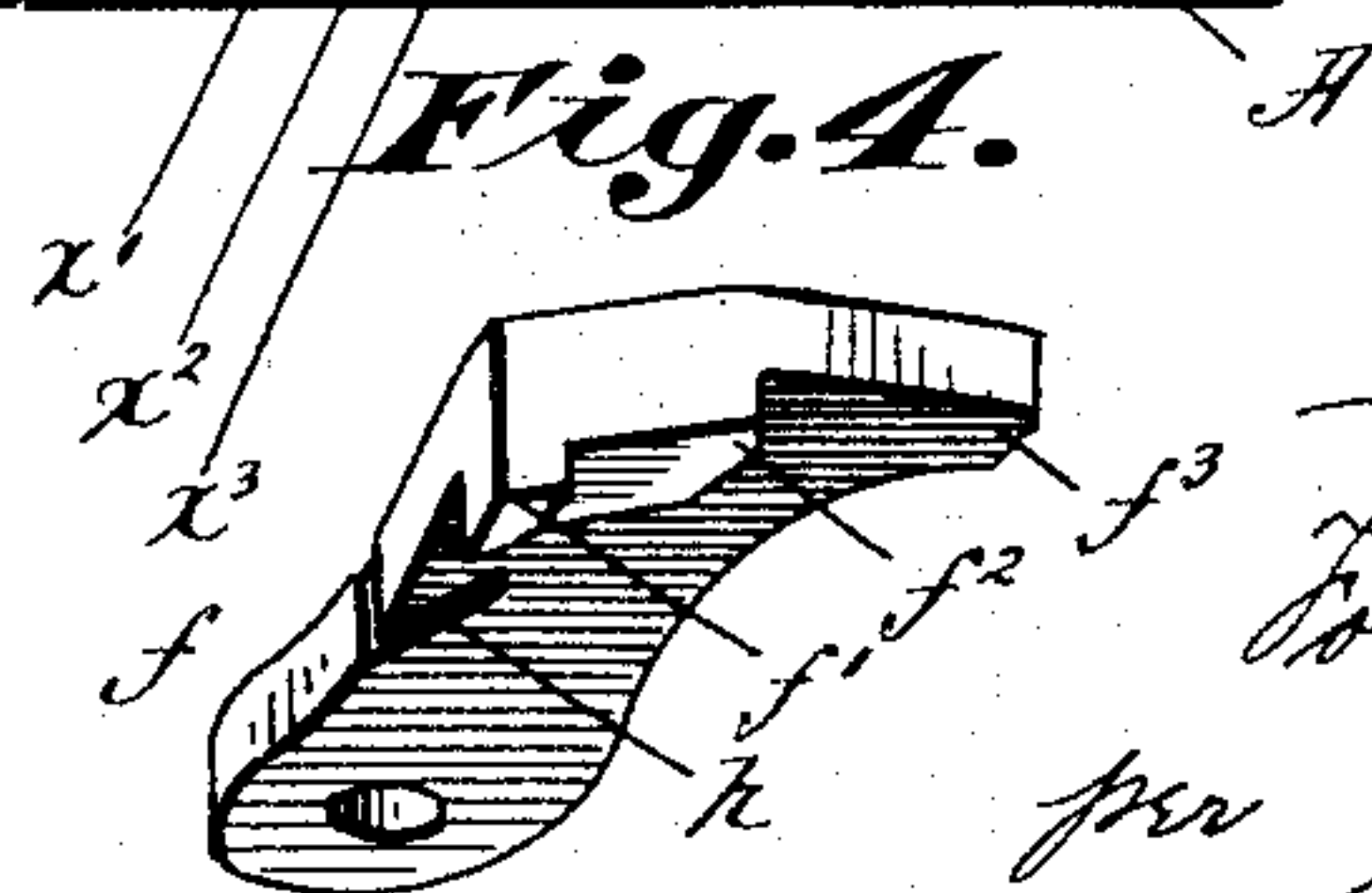
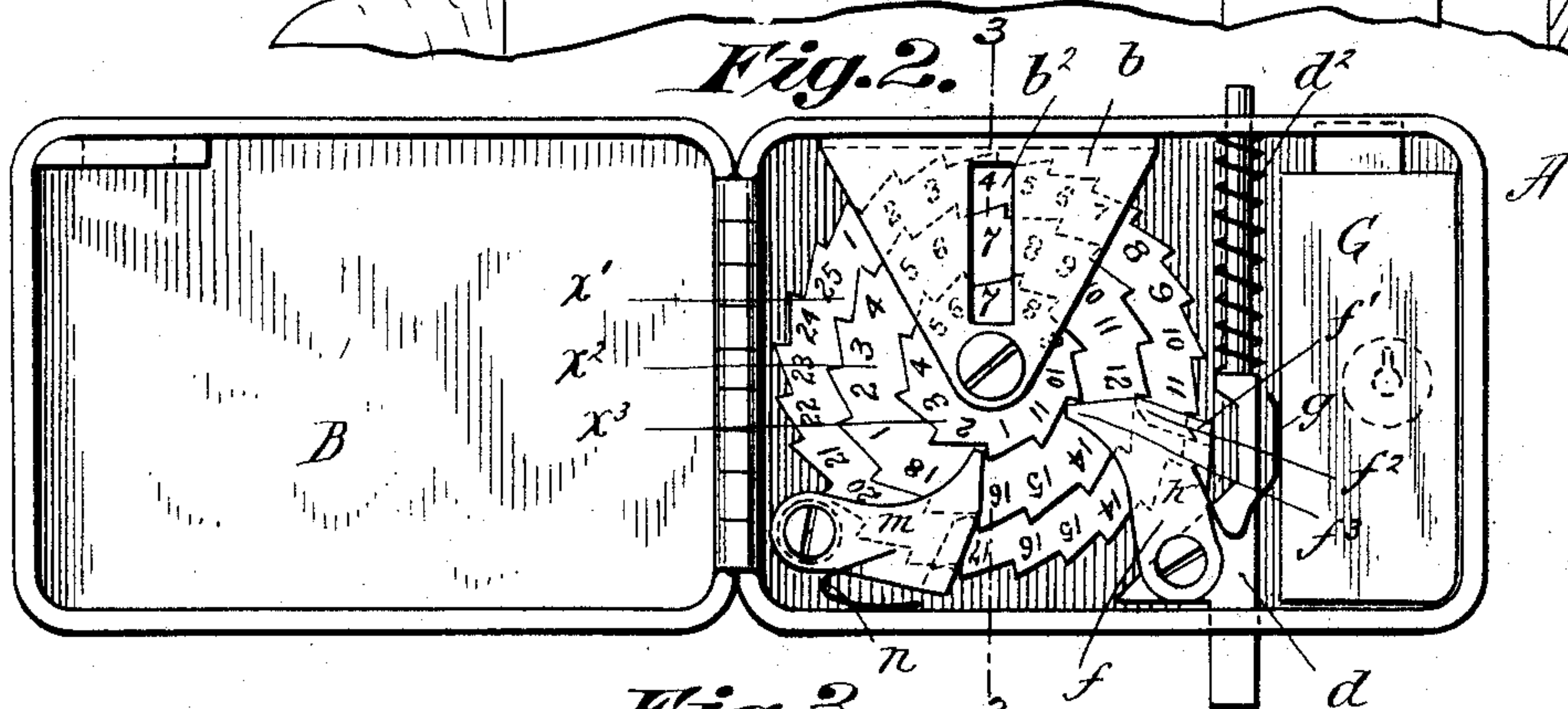
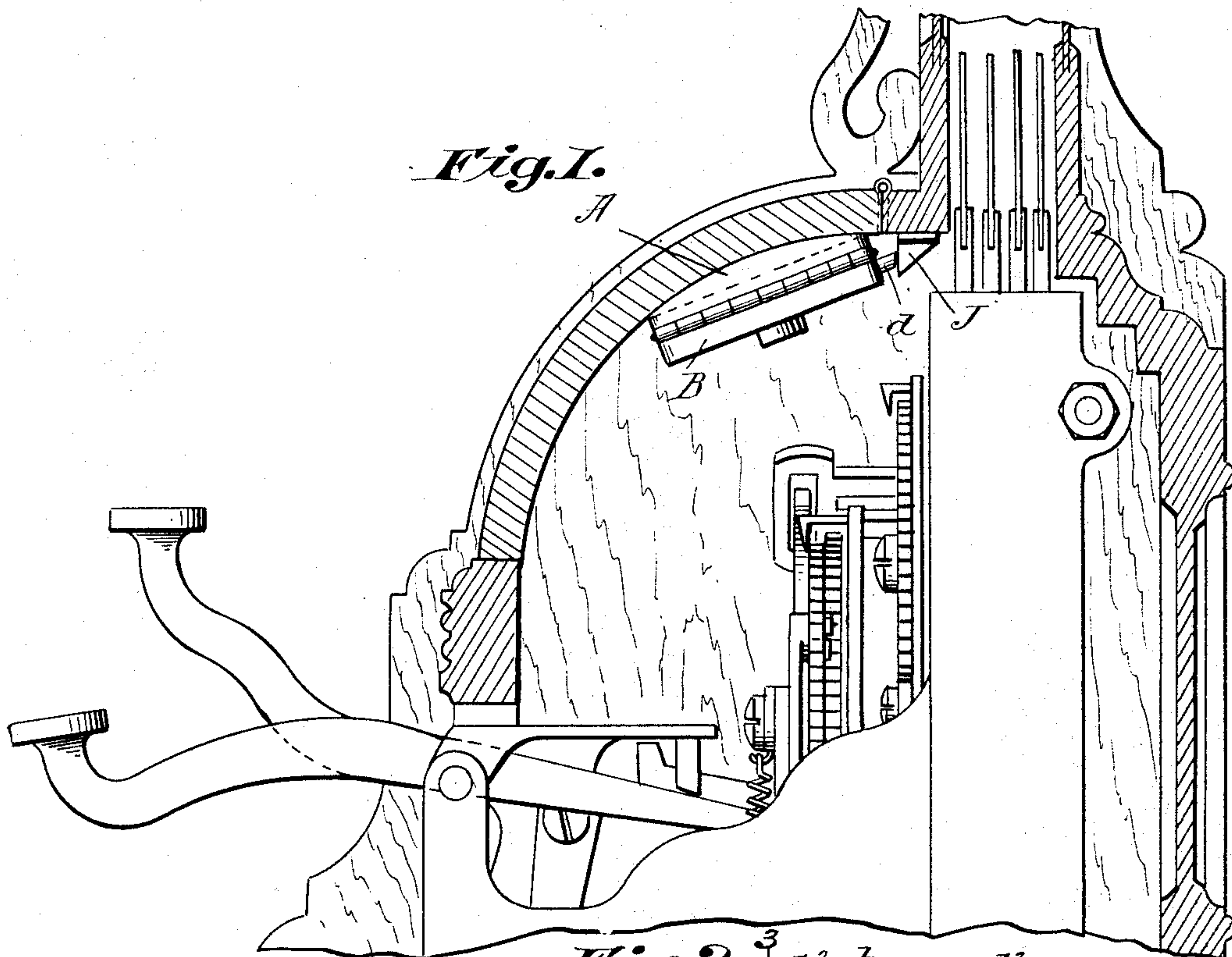
(No Model.)

F. L. BAILEY.

DETECTIVE DEVICE FOR CASH REGISTERING MACHINES.

No. 506,618.

Patented Oct. 10, 1893.



Witnesses:

J. R. Garfield
H. J. Clemens

Inventor,

Fortune L. Bailey

per Chapman & Co. Attys.

UNITED STATES PATENT OFFICE.

FORTUNE L. BAILEY, OF NORTHAMPTON, MASSACHUSETTS, ASSIGNOR TO
THE BOSTON CASH REGISTER COMPANY, OF SAME PLACE.

DETECTIVE DEVICE FOR CASH-REGISTERING MACHINES.

SPECIFICATION forming part of Letters Patent No. 506,618, dated October 10, 1893.

Application filed January 23, 1893. Serial No. 459,318. (No model.)

To all whom it may concern:

Be it known that I, FORTUNE L. BAILEY, a citizen of the United States, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented new and useful Improvements in Detective Devices for Cash-Registering Machines, of which the following is a specification.

This invention relates to an improved device comprising numbered indicating wheels which are adapted to be actuated in the manner of a mechanical counter and from which readings may be taken. The utilization of this device is relative to the lid and within the cabinet of a cash register machine so that openings and closings of the lid may be determined by the person in authority who has the key by which to lock and unlock the cabinet. In indicator or detective counters of this class heretofore employed, usually having a comparatively small numerical capacity, say of one hundred, it has been possible for a dishonest operator, who may have surreptitiously opened the cabinet, to give a number of operating impulses to the detective indicator, say one hundred, or otherwise equal to its capacity, when the indicating characters will be brought around to the positions they occupied before the mechanism was tampered with.

The object of the present invention is to provide, by very few, simple, and inexpensive parts, an indicating device which will have, to all intents and purposes, such an infinite numerical capacity that it becomes practically impossible to tamper with it without so changing the relations of the characters exhibited thereby as to render certain the detection of the undue manipulation. And to these ends the invention consists, in an indicator of the character referred to, having several independently and rotatably mounted disks or wheels of unequal diameters having unequal numbers of indicating characters arranged at equal intervals thereon, and means for imparting, intermittently, rotational movements to all of said wheels so that each thereof is moved a distance between the characters respectively thereon; and the invention otherwise and furthermore

consists in certain combinations or arrangements of parts and the construction of some of the parts all substantially as will hereinafter more fully appear and be covered by the claims.

I will now proceed to describe the improved detective counter in detail with reference to what I deem to be the preferred form of construction although limitation is not to be strictly had to these details.

Reference is to be had to the accompanying drawings in which the present indicator device is illustrated for application in a cash registering machine.

Figure 1 is a sectional elevation of a part of a register and inclosing cabinet showing the indicator in its application relative to the closing lid. Fig. 2 is a plan of the indicator on a larger scale with the cover of the inclosing case therefor shown as swung open. Fig. 3 is a sectional view on the line 3—3, Fig. 2. Fig. 4 is a perspective view in detail of the form of pawl employed in this device.

This device embodies a box or support, A, which is provided with a lid, B, shown as hinged thereto and adapted to be locked by a suitable key. In this box, A, is rigidly fixed a stud or shaft, *a*, on which are several disks or wheels, three, *x'*, *x*², *x*³, here being shown, of unequal diameters and rotatable independently of each other. These wheels are preferably ratchet-wheels, and, as shown, the one which rests against the bottom or base of the box, A, has twenty-five teeth, the one next thereto has eighteen teeth and the upper one has eleven teeth,—the teeth of all of the wheels being of the same length. On the face of each wheel against, or corresponding to, each tooth is set a number, the numbers running respectively from one to twenty-five, one to eighteen, and one to eleven, inclusive.

b represents a plate covering a part, at least, of the surfaces of the several wheels and having an aperture *b*² through which may be seen one character of each of the wheels.

d represents a bar which constitutes a carrier for the actuating pawl, the same being guided in suitable apertures or ways therefor of the box, A, and one end thereof is pro-

jected beyond the edge of the box being normally so maintained by the spring, d .

f represents the actuating pawl pivotally hung upon the said bar, d , as more clearly shown in the perspective view, Fig. 4. This pawl has teeth, f^1 , f^2 and f^3 , in different planes relative to its thickness, and at different points along its outer end, whereby it simultaneously engages one tooth of each of the said ratchet-wheels, x^1 , x^2 and x^3 at every working movement of the pawl-carrier. The pawl is spring-pressed to its working engagement, one end of the V or U-formed spring, g , being engaged within the slit or kerf, h , formed in the pawl and its other extremity has a sliding engagement against the lock-casing, G , in the box, A . Of course the spring may be otherwise applied.

m represents a detent pawl which may be, and as shown, is, a counterpart of the actuating pawl, f , with its three teeth in different planes and in different extensions from the pivot to engage the three ratchet-teeth at other edgewise portions thereof which are suitably removed from the actuating pawl. This detent-pawl is pivoted on the base or supporting-wall of the box, A , and has the spring, n , applied thereto for keeping it to its detaining engagement.

As seen in Fig. 1 this detective counter or indicator is secured to the inner side of the lid near the edge at which the lid is hinged to the main part of the casing; and J indicates an abutment piece, here shown as in the form of a lug screwed to the inner side of the casing near the border of the opening at which the lid is hinged,—and the disposition of this lug is such, relative to the pawl-carrying-bar, d , that when the lid is closed the bar will be forced forwardly or inwardly to operate the indicator, the retraction of the bar occurring at each opening of the cabinet lid. Each impulse of the pawl moves each wheel the distance of one of its teeth. It will be noticed, in the combination of numbers of the ratchet-wheels, viz., 25, 18 and 11, that there is no common divisor of any two thereof greater than one, and, therefore, it will require a number of impulses of the operating pawl equal to the multiplication of all thereof (that is twenty-five multiplied by eighteen multiplied by eleven equals four thousand nine hundred and fifty) to bring the numbers shown through the apertured plate again in conjunction. This, of course, is such a peculiarity as renders it practically impossible for a dishonest clerk to evade the indication by the device of undue manipulations which may have been had within the register cabinet. Now, as an example, when the proper reading of the detective counter to be seen by the proprietor on the next opening, by him, of the cabinet and indicator box should be, as in Fig. 2, 477, (he having noted that the registration on his last opening was 366,) and he finds it otherwise, he becomes aware that there is cause for investigation.

Of course it is not essential that the combination of numbers here specifically given be adhered to, and in fact instead of numbers, 70 other characters, having known connective orders, may be employed, as, for instance, letters of the alphabet.

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

1. In an indicator, in combination, several independently rotatable disks or wheels, of unequal diameters, having unequal numbers of indicating characters at equal intervals thereon, and a means for imparting, intermittently, rotational movements to all of said wheels so that each thereof is moved the distance between the characters respectively thereon, substantially as and for the purpose set forth.

2. In an indicator, the combination with several independently rotatably mounted disks or wheels of unequal diameters, having unequal numbers of indicating characters at equal intervals thereon, of a means for imparting, intermittently, rotational movements to all of said wheels so that each thereof is moved the distance between the characters respectively thereon, and a part overlying said wheels and having an aperture through which may be seen one character of each of the wheels, substantially as and for the purpose set forth.

3. In an indicator, several wheels of unequal diameters having at regular intervals thereon different numbers of indicating characters, for all of which there is no common divisor greater than one, and means for imparting intermittent rotational movements to each of the wheels, respectively, equal to the distance between the characters thereon, substantially as described.

4. In an indicator, several ratchet-wheels of unequal diameters having teeth of uniform length and characters set against each tooth, a reciprocatory pawl-carrier having a pawl pivoted thereon which has teeth in different planes whereby it simultaneously engages one tooth of each of the said ratchet-wheels, substantially as described.

5. In an indicator, several ratchet-wheels of unequal diameters having teeth of uniform length and characters set against each tooth, a reciprocatory pawl-carrier having a pawl pivoted thereon which has teeth in different planes whereby it simultaneously engages one tooth of each of the said ratchet-wheels, and a stop-pawl for each of said ratchet-wheels, substantially as described.

6. In an indicator for the purpose substantially as described, the combination with the box or case having the stud, a , several ratchet-wheels of unequal diameters, and unequal numbers of teeth of uniform length independently rotatable on the stud, and having successive indicating characters corresponding to the ratchet-teeth, the plate, b , overlying the ratchet-wheels and having the aper-

ture to permit view of a number on each wheel, the reciprocatory spring-retracted bar, *d*, with the pivoted pawl, *f*, having teeth in different planes and at different points along
5 its end to engage, simultaneously, a tooth of each ratchet-wheel and the spring, *g*, applied thereto, and a similarly formed spring-pressed-pawl pivotally supported in the box

and having retrograde-preventing engagements with a tooth of each ratchet-wheel, substantially as described and shown.

FORTUNE L. BAILEY.

Witnesses:

WM. S. BELLOWS,
K. I. CLEMONS.