

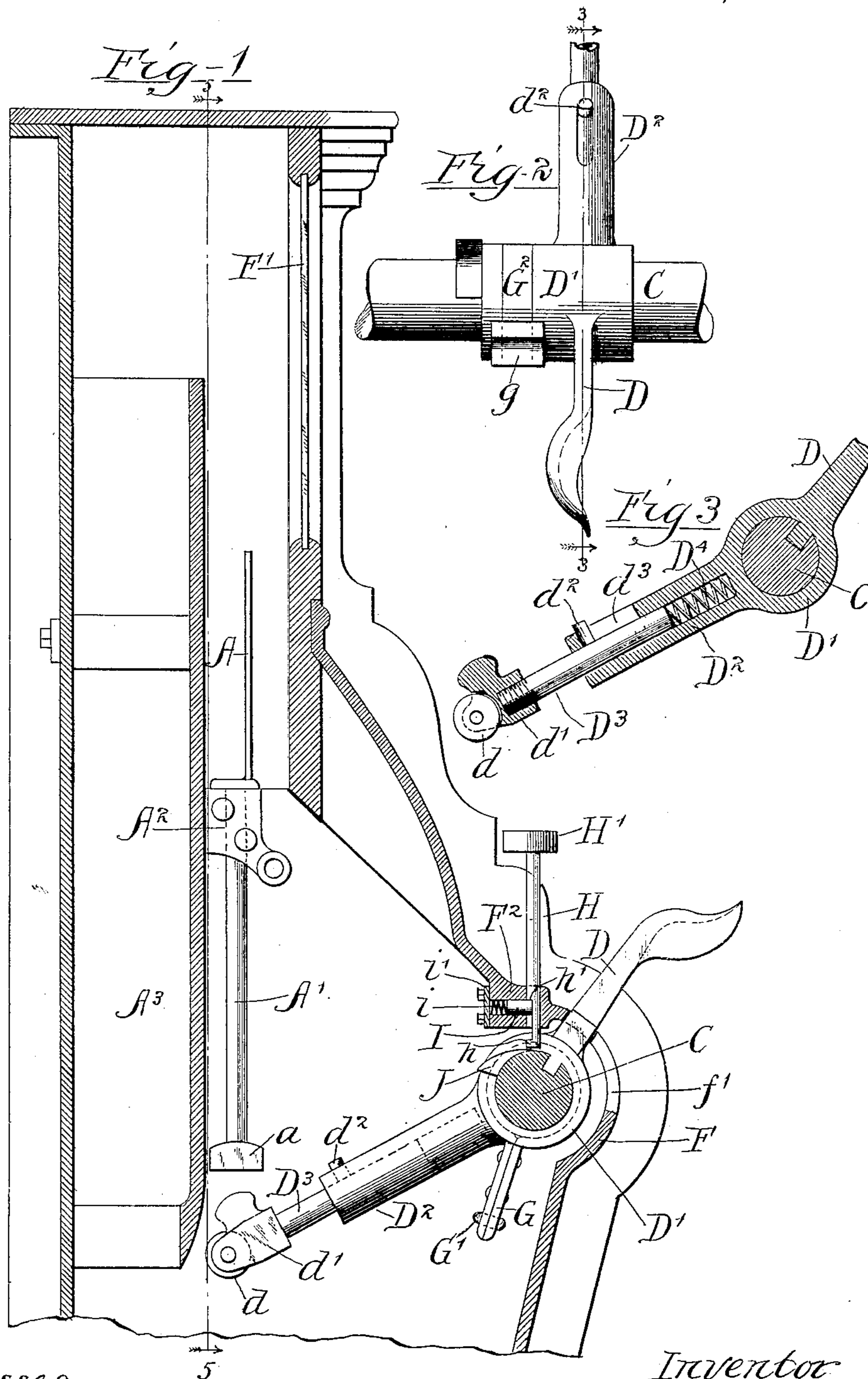
(No Model.)

2 Sheets—Sheet 1.

A. C. HANSEN.
CASH REGISTER.

No. 597,976.

Patented Jan. 25, 1898.



Witnesses

Harold G. Barrett,

Charles G. Mason.

Inventor

Adolph C Hansen

By Poole & Brown
his Att'y's.

(No Model.)

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Fig-4

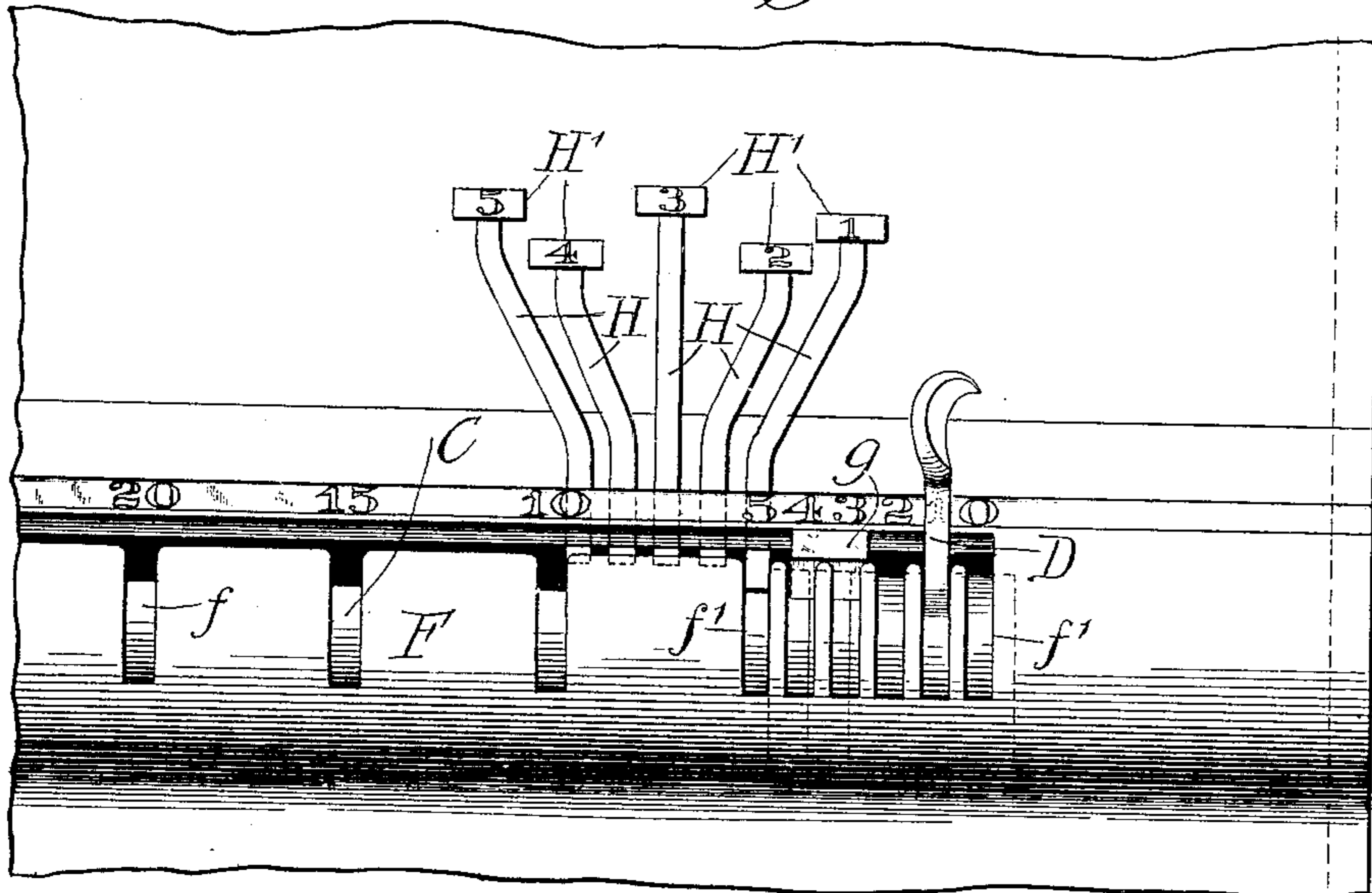
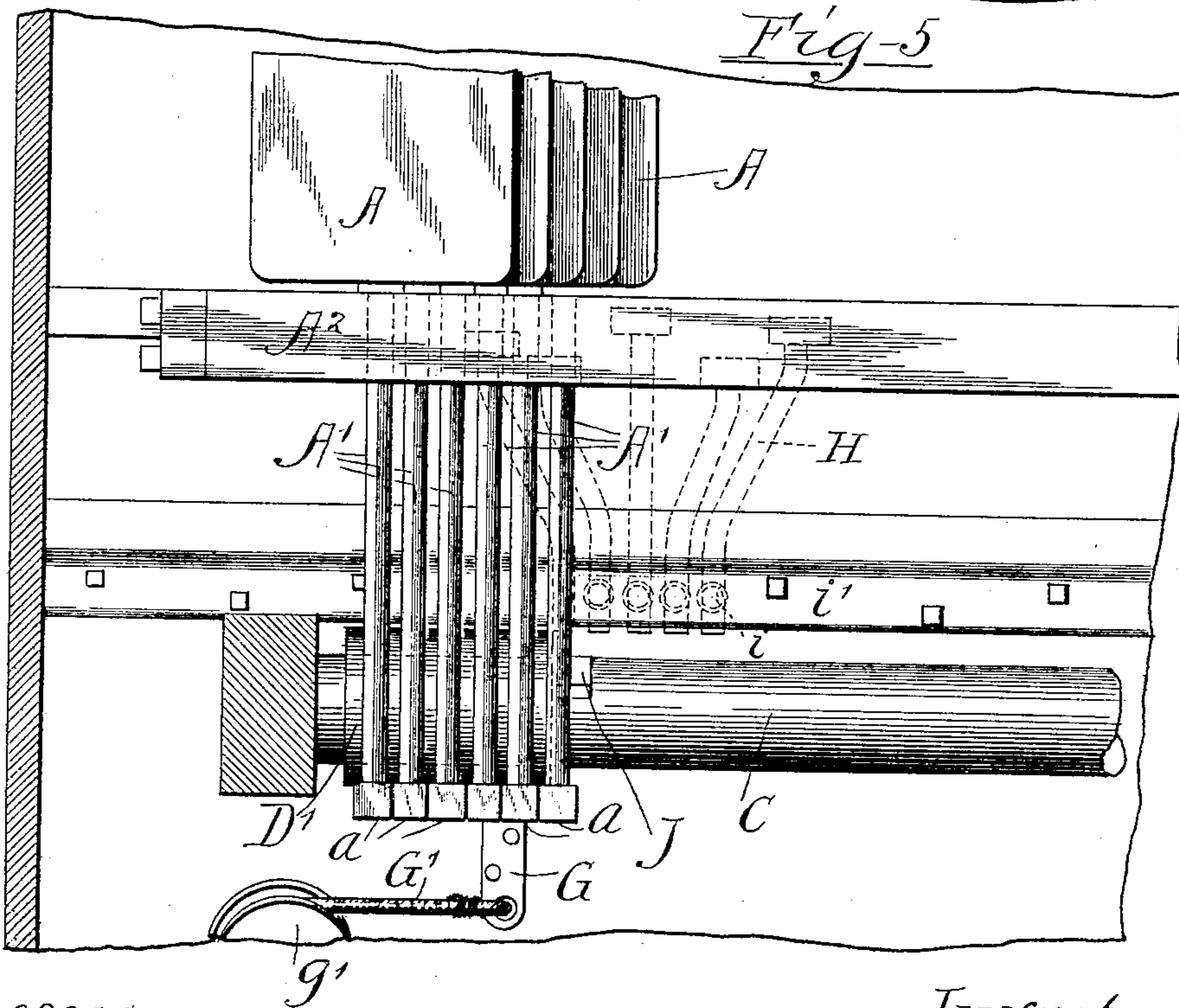


Fig-5



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UNITED STATES PATENT OFFICE.

ADOLPH C. HANSEN, OF CHICAGO, ILLINOIS.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 597,976, dated January 25, 1898.

Application filed April 9, 1897. Serial No. 631,376. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH C. HANSEN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cash-Registers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to cash indicators and registers of that class embracing a plurality of separately-movable price-tablets, a registering device, and an operating-lever for actuating the same, which lever has both a vibratory movement and a bodily lateral movement, and in which the bodily movement serves to operate the registering device and to set the lever in position to actuate either one of the tablets that it is desired to bring into view, and its vibratory movement serves to actuate the said tablets.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In cash indicators and registers of the kind referred to as heretofore constructed the operating-lever has been arranged to vibrate in a vertical plane and to be moved horizontally across the casing or housing of the indicator, which casing or housing is provided with a front wall, through which the operating-lever protrudes, and which is provided with a horizontal slot, through which the lever moves when shifted sidewise, and a plurality of vertical slots or notches, which communicate with the horizontal slot and into which the lever is moved or carried when vibrated to actuate the tablets, the said notches being arranged at distances apart corresponding with the positions required for actuating the several tablets and being numbered or marked to indicate to the operator the position at which the lever must be arrested in its movement in order to afford the desired registration or indication. An apparatus possessing the features herein referred to is illustrated, for instance, in prior Letters Patent granted to myself August 22, 1893, and numbered 503,598. The employment for the purpose stated of numbered notches has been

found objectionable from the fact that an operator who attempts to operate the indicator hastily or who is careless in his movements is very liable to carry the operating-lever too far in moving it along the horizontal slot and to thereby give an erroneous indication or registration. Moreover, in such devices the lever must in all cases be moved carefully up to a point opposite the slot marked with the price it is desired to indicate or register, with a necessary loss of time on the part of the operator in so doing. Where the slots are wide apart, this can be done with reasonable quickness and ease; but where the slots are closer together, as in the case of those used to indicate or register amounts differing from each other by one unit or a few units only, it is very difficult to quickly and certainly move the lever to a point opposite the proper notch. Furthermore, in cases in which the lateral movement of the lever is utilized to actuate a registering device (as in the Letters Patent referred to) the lever must be moved in every case up to the point at which the desired indication will be made and not beyond it in order to register a sum corresponding with the one indicated.

My present improvement concerns more particularly devices for insuring the stoppage of the operating-lever at the proper point in its lateral movement, and to this end a device embodying the same embraces generally a series of separate finger-actuated stops, either one of which may be thrown into position to engage the operating-lever in its lateral movement and which may be employed to arrest the said lever at a point for indicating or registering any desired amount or price.

The invention may be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view in vertical section of the upper part of the casing of a register and recorder, showing the parts of the same more particularly relating to my improvement. Fig. 2 is a detail plan view of the operating-lever, showing also the shaft on which it is mounted. Fig. 3 is a section of the lever, taken on line 3 3 of Fig. 2. Fig. 4 is a fragmentary front elevation of the machine-casing, showing the parts constituting my invention. Fig. 5 is a view of the parts within the casing

as seen from the rear, this view being taken on the section-line 5 5 of Fig. 1.

As shown in said drawings, A A indicate a plurality of vertically-movable price-tablets, and A' A' a plurality of vertically-arranged and vertically-sliding tablet-supporting rods.

C indicates a horizontally-arranged rock-shaft, and D an operating-lever which is attached to a sleeve D', which turns with the rock-shaft and also slides laterally thereon. Said lever D is provided with an arm D², which extends rearwardly from the sleeve D' and is adapted to engage and actuate the slide-rods one at a time. The bodily movement of the operating-lever on the shaft serves to set the arm D² for engagement with either one of the slide-rods, according to the price to be indicated, while the vibratory movement of the said lever serves to raise said arm D² into contact with one of said rods and to lift the same and its attached tablet. To said sleeve D' is connected an arm G, to which is secured a cord or flexible connection G', through the medium of which a registering or recording device is operated, said arm being attached, preferably, to a ring G², which fits within a groove in the said sleeve, whereby the sleeve may turn in the ring when the operating-lever is vibrated without giving any corresponding movement to said arm G.

E indicates the front wall of the housing or casing, the same being provided opposite or adjacent to the shaft C with a horizontal slot F and with a plurality of vertical slots or notches *f f'*, which intersect the said main slot. The actuating-lever D projects forwardly or outwardly through the slot F and is adapted to enter either one of the notches *f* when vibrated downwardly for the purpose of lifting one of the tablets. The parts shown are those which operate in indicating or registering prices from one cent up to one dollar, it being the intent to provide a separate actuating device and set of tablets to indicate dollars and multiples thereof, as shown in my said prior patent. The notches *f f'* may be disposed at such distances apart as to indicate any number of cents less than one hundred, but the device shown is arranged to indicate cents to the number of five only and above that number to indicate multiples of five, the notches *f f'* for the cents being close together, while those indicating multiples of five being spaced much wider apart, as is necessary to operate a recording or registering mechanism wherein the amount recorded or registered is determined by the extent to which the operating-lever is laterally moved. My invention is herein shown as arranged to act at the points indicated by the closely-spaced or cent notches only, such notches being retained in connection with the novel arresting devices constituting my invention in order that the latter may be used or not, according to the wishes or convenience of the operator.

The front-wall casing or housing above the rock-shaft is provided with a pane of glass F',

through which the price-tablets may be seen when elevated. The rods A', which support the price-tablets, are arranged to slide in a guide-bar A², and said rods are provided at their lower ends with heads *a*, against which the arm D² of the actuating-lever acts in lifting the tablets. The said arm is shown as made extensible and contractible and is held in its extended position by a spring, while its free end is provided with an antifriction-roller *d*, adapted to act upon or bear against a vertical guide-plate A³, which is located behind and parallel with the rods A' and which serve to give a vertical movement to the outer end of said arm D² and to thereby maintain it in position for engagement with the slide-rod when it is swung or moved upwardly and downwardly in actuating the same. Said arm D² is shown as made of tubular form and is provided with a sliding extension-rod D³, having at its end a head *d'*, which carries the roller *d* and is adapted for contact with the lower ends of the slide-rods. Within the tubular arm D² is located a spring D⁴, which acts upon the inner end of the extension-rod in a direction to throw the latter outwardly, and the said rod is provided with a stud or stop-pin *d'*, which slides in a slot *d'* in the arm and by contact with the ends of said slot serves to limit the outward movement of the extension-rod. The extension-rod and its actuating-spring are so arranged that the roller *d* will be held in contact with the guide-plate A³ as the said arm is thrown upwardly for actuating the tablets, said rod sliding inwardly and outwardly in the tubular arm as the roller moves in a straight line along the vertical front face of the guide-plate. Said sleeve is shown as provided at one side of the lever with a groove which is engaged by the ring G², which ring is made in two parts and loosely engages the sleeve, so that the latter may turn without the turning of the ring, said ring being provided with a forwardly-extending lug *g*, which projects into and slides in the slot F to hold the ring from turning with the sleeve. The cord G', which, as before stated, extends to and operates a registering device by which a record is made of the transactions indicated by the apparatus, is shown as extending horizontally from the arm G to a guide-roller *g'*, Fig. 5.

In connection with the features of construction above described suitable auxiliary mechanisms will be provided for temporarily holding the tablets in their elevated position when lifted and for afterward releasing the same, together with devices necessary to constitute a complete indicating and recording apparatus—such, for instance, as shown and described in said above-mentioned patent; but these features constitute no part of the present invention and are not therefore illustrated in the drawings.

Now referring to the parts relating more especially to the present invention, H H indicate a plurality (five are shown in the draw-

ings) of movable stops which are adapted to be separately moved into and out of the path of the sleeve D' or some other part moving with the operating-lever D to stop said lever positively at varying distances from its starting-point. Said stops, as shown, have the form of rods which are provided with buttons or keys H' at their upper ends and are adapted to slide vertically in guide-apertures formed by a thickened part E² of the casing-wall E, located above and adjacent to the shaft C. Said stops are movable toward and from the rod and are held by a pressure or friction device, so that they may be readily moved either inwardly or outwardly, but will remain in the position to which they are shifted unless pressure be applied for changing the position thereof. The friction device illustrated consists of a series of sliding plugs or blocks I, mounted in recesses in the part F² and held in contact with the side faces of the stops by springs i, which are also located in said recesses and confined therein by removable plate i', secured to the inner face of the housing. Above and below said friction-blocks I are located upwardly and downwardly facing shoulders h h', which by contact with the said friction-blocks serve to limit the movement of the stops in either direction. In the construction illustrated, wherein the stops H consist of round rods, the said shoulders are conveniently formed by cutting away the rods at one side of the same, so as to form flat faces against which the friction-blocks bear and also to form said shoulders. The several details of construction described in the means for frictionally holding the stops from movement and for limiting their movement are, however, merely herein shown as illustrating a simple and convenient construction in the parts, and devices for producing the same results may be constructed in many other different forms.

The inner ends of the stops H are so disposed and arranged with respect to the sleeve D³ that when the stops are thrust inwardly they will extend into the path of said sleeve, but when lifted or drawn outwardly they will be free from or out of the path of said sleeve, the intent being that the actuating-lever should be arrested in its movement by contact of the sleeve with that one of the stops which shall have been thrust into its path while other stops are out of the way of the sleeve, thereby insuring the arrest of the lever at a desired point without attention on the part of the operator in moving the lever, excepting to move the same until arrested by the stop which has been previously moved or shifted by pressure of the finger thereon. The stops are shown as applied to arrest the actuating-lever at points for operating the first five tablets of the series, which are marked to indicate one, two, three, four, and five cents, and for this purpose said stops will be spaced to correspond with the notches f' hereinbefore referred to; but preferably such stops will be

used in connection with at least the first ten tablets. As the stops will in practice need to be placed close together sufficient room may not be afforded in this arrangement for the keys or finger-pieces at their upper ends, and to afford room for the same the rods will usually be bent laterally or offset at their upper ends, as clearly shown in Fig. 4.

In order to insure the return of the stop to its original position after it has been thrust inwardly and has served to arrest the actuating-lever at a desired point, I have provided means for automatically restoring said stops, the same consisting of a cam projection J, which is attached to and moves with the sleeve D³ and is so located as to stand opposite the inner end of the stop and at the time the sleeve rests in contact with said stop. Said cam is so located on the sleeve that it will act upon the stop and thrust the latter outwardly as the lever is depressed or vibrated for lifting the tablet, and its outer part projects beyond the surface of the sleeve, so as to certainly carry the stops far enough to prevent possibility of contact of the sleeve therewith.

In the use of the stop mechanism described it is only necessary for the operator to press his finger upon the stop corresponding with the amount to be indicated before moving the operating-lever, and the vibratory movement of said lever required for lifting the tablet will restore the stop which has been moved and thereby leave the stop mechanism in readiness for subsequent operation without any attention whatever on the part of the operator. While I have shown five only of such movable stops, yet it will of course be understood that the same may be increased in number and may be applied to arrest the actuating-lever in position for operating all or any desired portion of the tablets of the machine, as may be found convenient or desirable.

It will be obvious that the device described may be applied to an apparatus in which the lateral movement of the operating-lever operates an indicating device alone or to one in which such lateral movement serves to actuate a registering device only, the general result obtained being the same in both cases.

I claim as my invention—

1. A cash indicator or register, comprising an operating-lever having both a lateral bodily movement and a vibratory movement, and a plurality of separately-movable stops adapted to arrest the lateral movement of the lever at varying distances from its starting-point.

2. A cash indicator or register, comprising an operating-lever having a lateral bodily movement and a vibratory movement, and a plurality of separately-movable stops adapted to arrest the lateral movement of the lever at varying distances from its starting-point, said stops being provided with spring-actuated pressure devices by which they are frictionally held from movement.

3. A cash indicator or register, comprising an operating-lever having both a lateral bodily movement and a vibratory movement, a plurality of separately-movable stops adapted
5 to arrest the lateral movement of the lever at varying distances from its starting-point, and means actuated by the said lever for restoring the said stops after the same have been moved or shifted by hand.
- 10 4. A cash indicator or register, comprising an operating-lever having both a lateral bodily movement and a vibratory movement, a plurality of separately-movable stops adapted

to arrest the lateral movement of the lever at varying distances from its starting-point, and 15 a vibrating cam moved by the said lever and adapted to act on the said stops to restore the same after they have been moved by hand.

In testimony that I claim the foregoing as my invention I affix my signature, in presence 20 of two witnesses, this 5th day of April, A. D. 1897.

ADOLPH C. HANSEN.

Witnesses:

BERTHA A. PRICE,
WILLIAM L. HALL.