

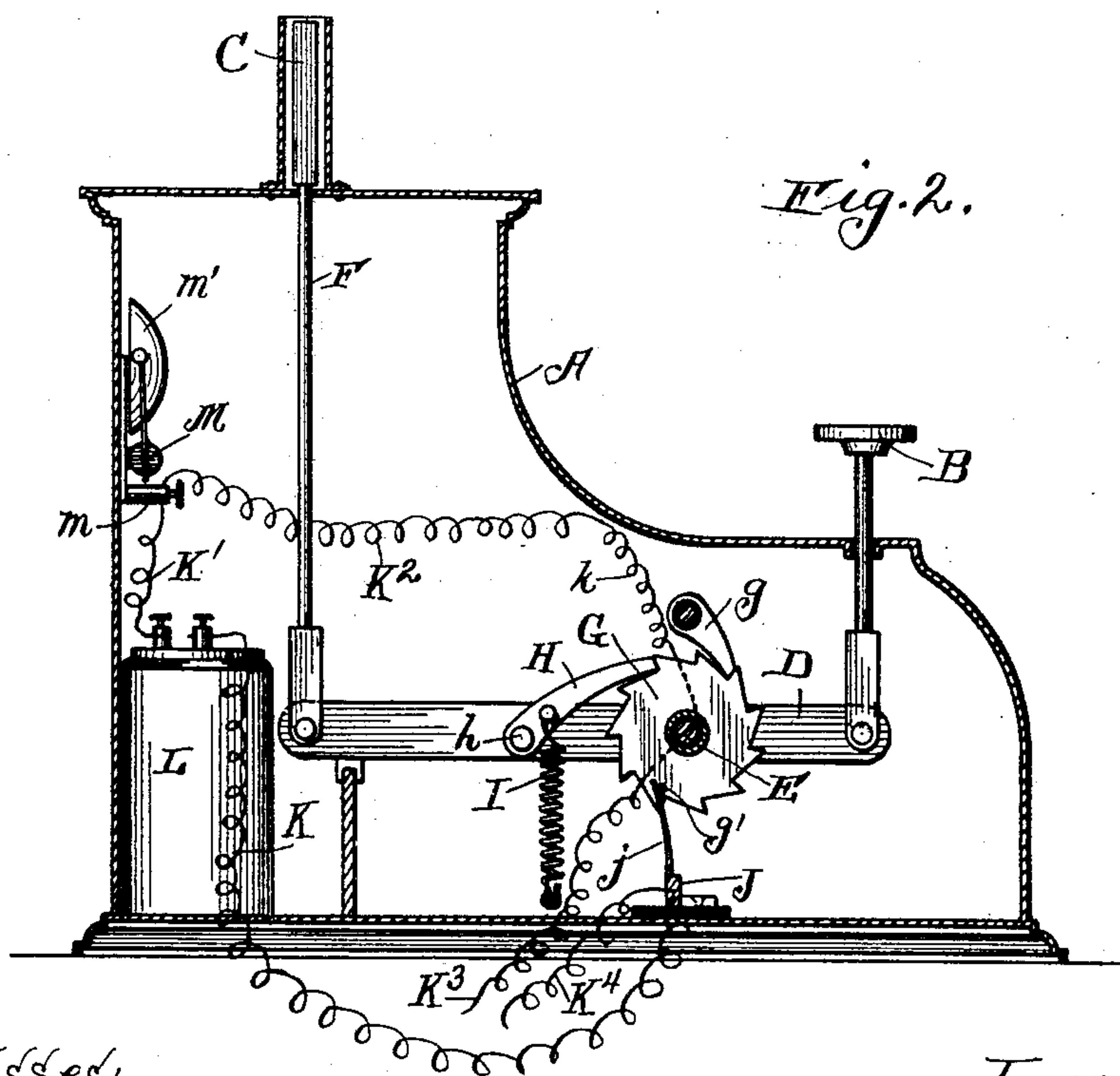
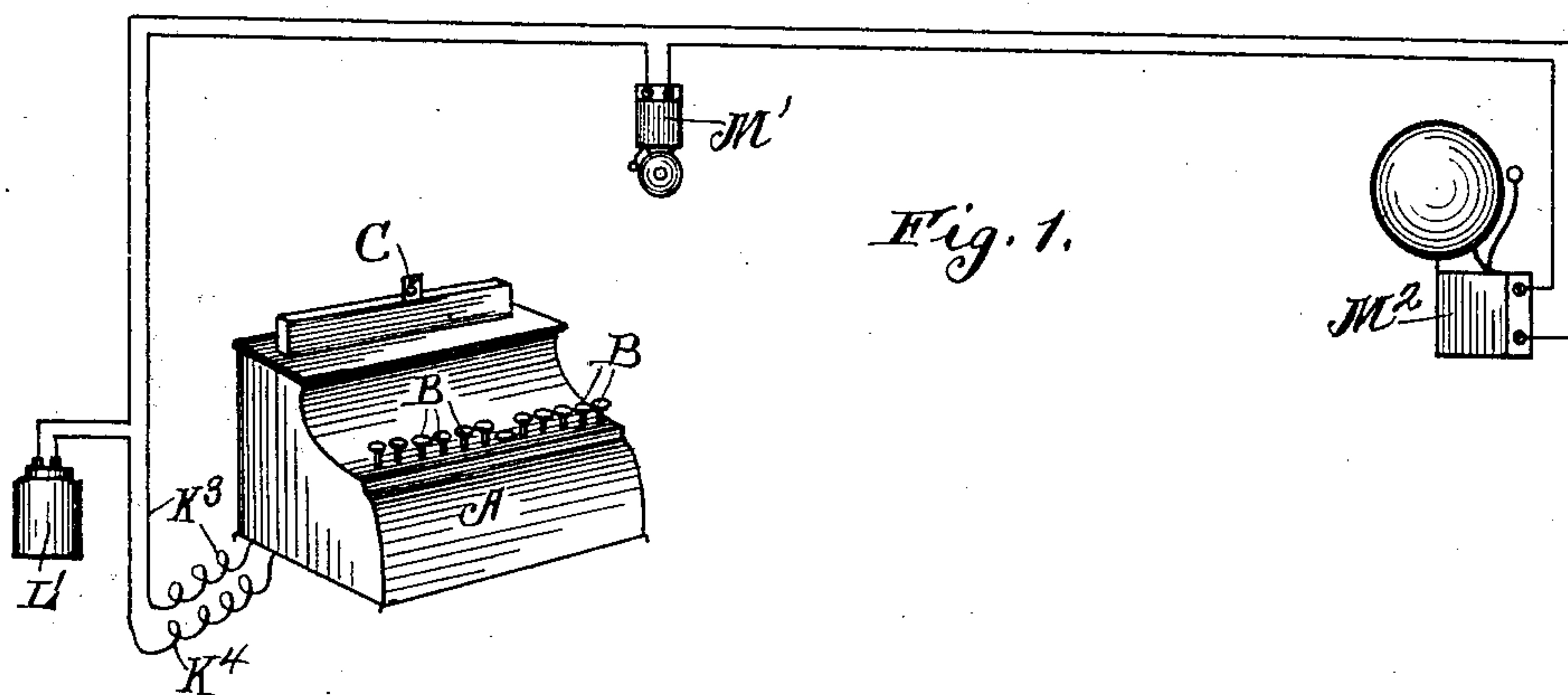
(No Model.)

2 Sheets—Sheet 1.

C. F. DAVIS.
SALES INDICATOR AND ALARM.

No. 560,195.

Patented May 19, 1896.



Witnesses:

R. J. Jacker,

A. L. Brown.

Inventor:

Carroll F. Davis,

By Charles Turner Brown,
Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

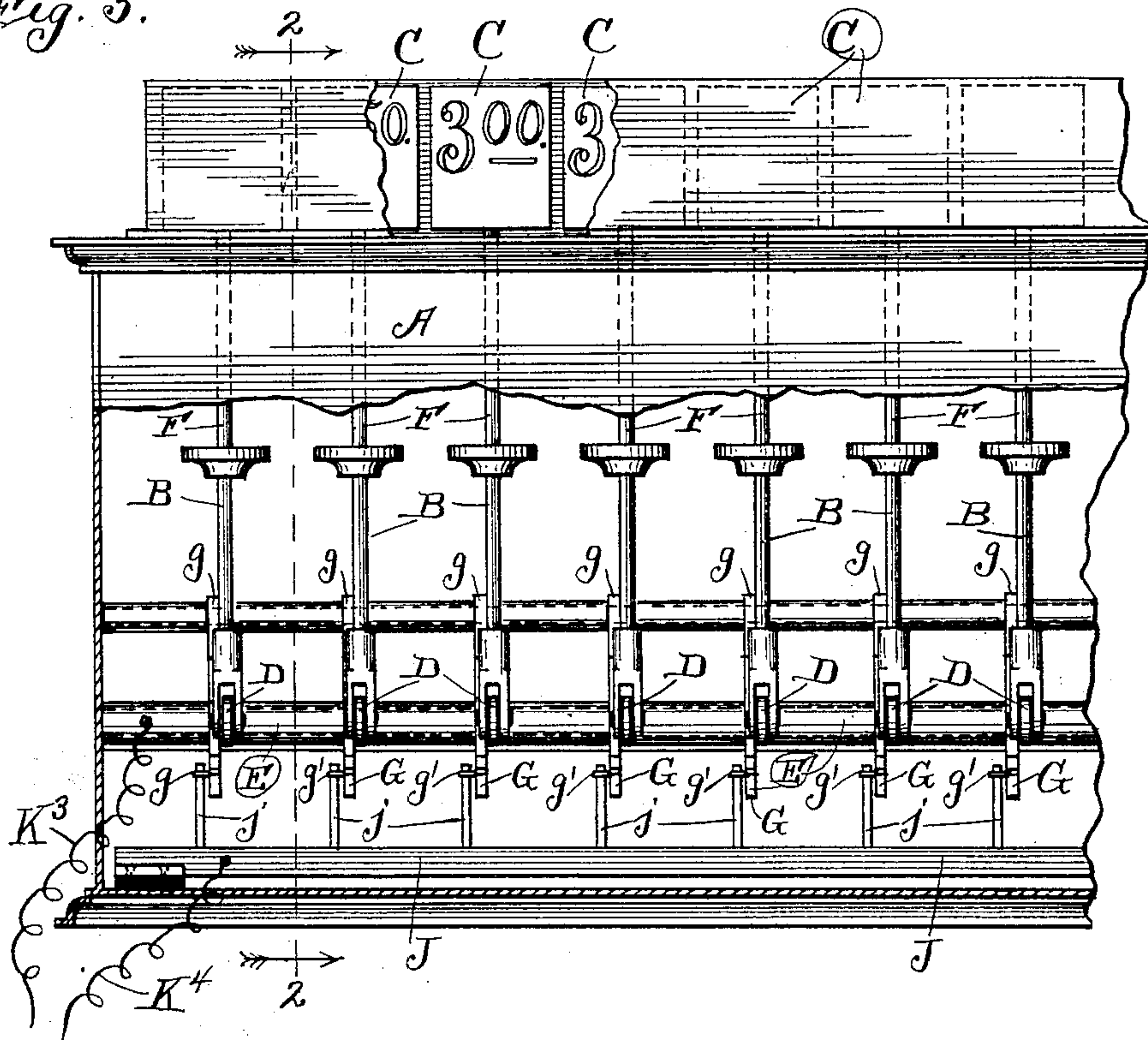
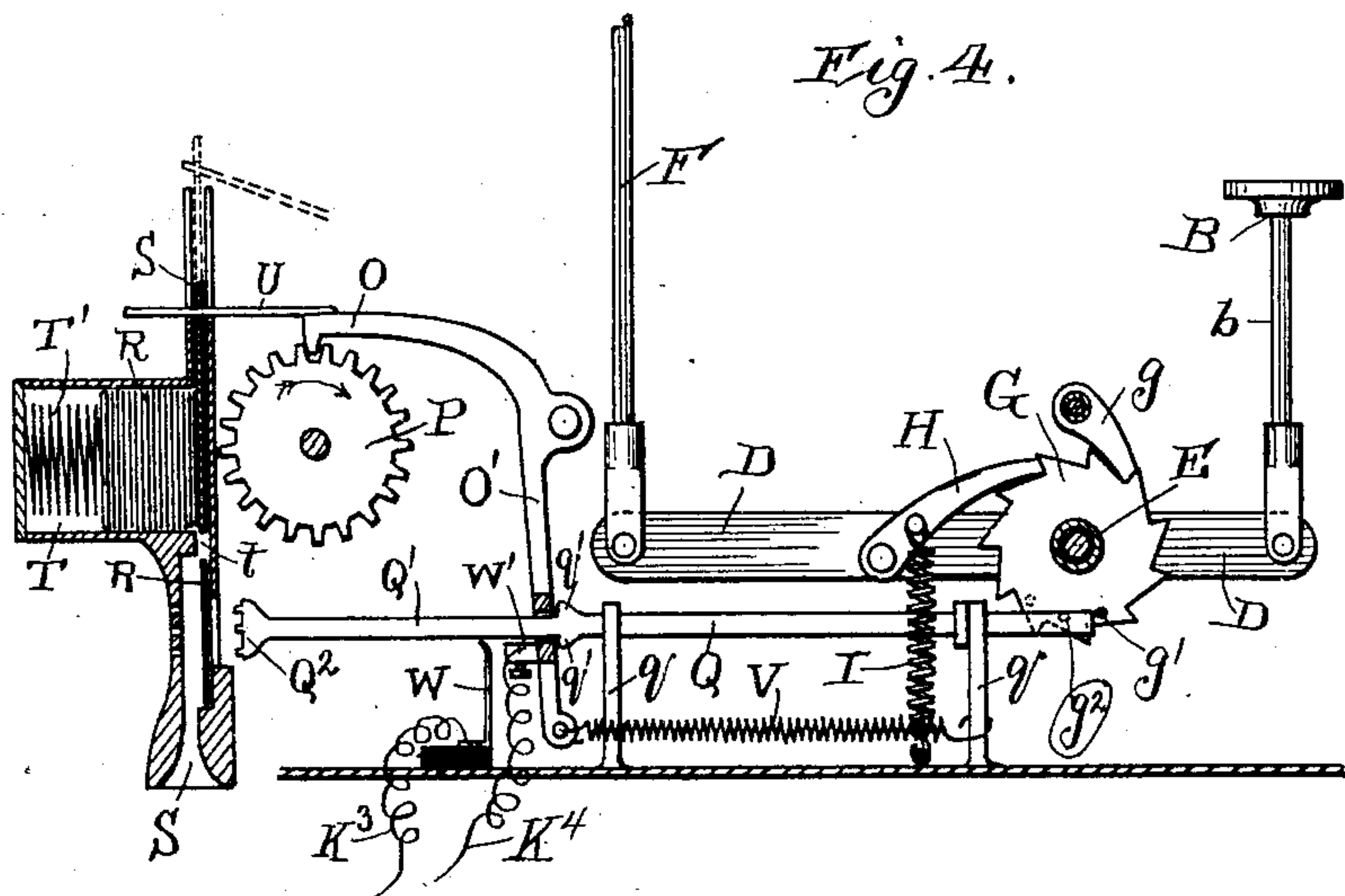


Fig. 4.



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UNITED STATES PATENT OFFICE.

CARROLL F. DAVIS, OF MISSOULA, MONTANA.

SALES-INDICATOR AND ALARM.

SPECIFICATION forming part of Letters Patent No. 560,195, dated May 19, 1896.

Application filed August 2, 1895. Serial No. 557,933. (No model.)

To all whom it may concern:

Be it known that I, CARROLL F. DAVIS, a resident of Missoula, county of Missoula, and State of Montana, have invented certain new and useful Improvements in a Sales-Indicator and Automatic Announcer, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

My invention relates to the class of machines wherein the depressing (or otherwise actuating) a key brings into view a plate or other objects displaying a mark corresponding with the mark indicated on the actuated key; and the object of my invention is to obtain a machine of the kind named whereby when the several keys have been actuated a determined number of times notice thereof will be automatically given either by the ringing of a bell, marking a card or piece of paper, or by some other equivalent means.

A further object of my invention is to obtain a machine of the character named whereby when the notice last above referred to is given at a place distant from the machine—as, say, at the door of the store or other place in which the machine is placed and operated.

In the drawings referred to as forming a part of this specification, Figure 1 is a perspective view of a machine embodying the several inventions herein set forth and described; Fig. 2, a vertical sectional view of the machine; Fig. 3, a front elevation of a part of the front of the machine, on an enlarged scale, with a portion of the front of the case removed to show the working parts thereof; and Fig. 4 is a side elevation of a modification of the working parts of the machine.

A reference-letter applied to a given part is used to designate such part wherever the same appears throughout the several figures of the drawings.

A is the case of the machine, and B B are the keys thereof.

b b are the shanks of keys B B.

C C are the indicators exposed to view when the keys B B are depressed.

In the herein-described machine embody-

ing my invention the indicators C C are exposed to view only so long as the keys corresponding therewith are maintained in a depressed position.

D D are levers fulcrumed on rod E. Shanks b b of the keys B B are secured at the lower ends thereof, respectively, to the corresponding one of the levers D.

F F are rods connecting the indicators C C, respectively, with the lever D of the corresponding keys B B.

G G are ratchet-wheels loosely mounted on rod E, so as to rotate freely thereon.

g is a detent pawl permitting forward motion in ratchet-wheel G, but not permitting backward motion in such ratchet-wheel.

II is a pawl secured at one end by pin h on lever D and engaging at the other end with the teeth of ratchet-wheel G.

I is a spring secured at one end to pawl II and at the other end immovably secured. Each of the levers D has associated therewith, as last above described, a ratchet-wheel G, a detent-pawl g, having lug g' thereon, pawl II, and spring I.

J is a metal comb, forming a suitable electrical conductor and having teeth j j j extending into the plane of the movement of lugs g' g' of ratchet-wheels G G.

K is a wire electrically connected at one end to comb J and extending therefrom to one of the poles of primary battery L, and K' is a wire connected to the other pole of battery L and extending to and electrically connected with one of the binding-posts m m of electric signal or alarm M.

K² is a wire electrically connected at one end to the other binding-post m of signal or alarm M and extending therefrom to and electrically connected with the rod E.

In the last above-described arrangement of wires K K' K², primary battery L, signal or alarm M, rod E, and ratchet-wheels G G, mounted on rod E, the lugs g' g' are arranged to come in electrical contact with the corresponding one of teeth j j of comb J, and once in the complete revolution of each ratchet-wheel G such contact is made. In the arrangement of this electrical circuit the wire K² may have branches, as k k, in electric contact with the ratchet-wheels G G, respectively, if preferred; but I consider it a

simpler construction to make rod E of electric conducting material and mount the several ratchet-wheels thereon in electric contact therewith.

5 Referring to the construction illustrated in Figs. 2 and 3 of the drawings, when any one of the keys B B is depressed the lever D, to which such key is connected, is moved on its fulcrum, the end thereof to which the shank
10 of such key is secured being depressed and the opposite end being elevated, and thereby connection F, secured to such elevated end of the lever, is moved upward longitudinally and the indicator corresponding with the de-
15 pressed key is raised into view. On releasing the key it, together with lever D, rod F, indicator C, and pawl H, is returned to its initial position by spring I, and when any one of the keys B B has been depressed a
20 sufficient number of times to rotate wheel G so that lug g' thereon is in electrical contact with a tooth j of comb J an alarm or a signal will be given. In this manner a signal or an
25 alarm will be given when a determined number of sales corresponding in amount are indicated by a given indicator. If such alarm consists in ringing a bell, (as bell m' of alarm M,) such ringing will continue until the lug
30 g' has been taken from electrical contact with the corresponding tooth of the comb J. Where it is desired to have the ringing of the bell continuous from the making of a deter-
35 mined number of sales to the making of the next sale of the same amount, ratchet-wheel G should have the number of teeth thereon correspond to the number of sales to be made
40 after the giving of one alarm before the giving of another alarm; but otherwise the wheel G may have one or more than such number of teeth, and then the key actuating it can
be depressed at any time, and thereby the wheel turned sufficiently to break the electric contact between lug g' and comb J.

In the modification illustrated in Fig. 4 the
45 alarm is given mechanically, and not by closing an electric circuit. In this modification the key B, with shank b , indicator C, lever D, rod E, connection F, ratchet-wheel G, pawl g , lug g' , pawl H, and spring I may all be re-
50 tained, not modified in any way. The signal or alarm may consist of a common spring-actuated alarm-bell, arranged to be released by removing stop O from engagement with the teeth of wheel P. Q is a longitudinally-
55 movable rod mounted in standards $q q$. $q' q'$ are shoulders on rod Q, engaging with arm O' of stop O. In arm O' there may be an opening through which the rod Q may extend and through which, where a permanent record is
60 to be made of the given signal or alarm, such rod does extend, as in the construction illustrated in Fig. 4. Q' is the part of rod Q extending through and beyond arm O'. Q² is a die or punch on the end of part Q' of rod Q.
65 R R are cards adapted to have punched therein the mark formed by the die Q², and such die (as well the mark thereby made) corresponds

with the key actuating it. S is a delivery-spout, from which the marked card is delivered. T is a storage-receptacle for cards, and
70 t is a slot through which a card can be forced into position back of the die Q² for marking. T' is a spring forcing the cards in storage-receptacle T forward, so that one thereof is over
75 slot t . S is a movable slide in receptacle T, arranged to force the cards R thereunder through slot t to in front of die Q² in its down-
80 stroke. U is an extension to stop O, connected with slide S, so that movement of such stop will actuate the slide. V is a spring se-
85 cured at one end to arm O' and immovably secured at the other end thereof, tending to maintain arm O' in position, so that stop O is in engagement with wheel P, and also tend-
90 ing to hold rod Q in its initial position through the contact of shoulders $q' q'$ on rods Q in contact with arm O'. The operation of the
modification illustrated in Fig. 4, so far as the exposing the indicator C to view, is the same
95 as in the construction illustrated in Figs. 2 and 3. The releasing of the signal or alarm is effected by the movement of rod Q. K³ K⁴
are wires forming part of an electric circuit extending outside of case A and to alarms or
100 signals M' M², Fig. 1, and to the poles of battery L. W is a comb against which lug W' on rod Q is brought in electrical contact in
the forward movement of rod Q. Wire K³ is secured to comb W and wire K⁴ to lug W'. Signals M' M² are located where desired—as,
105 say, one at the cashier's desk and one at one of the entrance-doors of the place where the machine is working. Where, as illustrated
in Fig. 4, the stencil and card-supplying devices are used, the raising of stop O raises ex-
110 tension U and slide S. As slide S is raised a card R is forced thereunder by spring T', so that when arm O' is returned to its initial position (by spring V) the slide S will be forced
115 down and a new card R forced through slot t to in front of die Q². The forward movement of the die Q² against card R in front thereof impresses or cuts therein the mark on such
120 stencil. In the construction illustrated in Figs. 2 and 3 the alarm or signal M is continuously operative after lug g' is brought in electrical contact with comb J until the key
125 B is again depressed and such lug moved from such electrical contact by rotating wheel G, and the same result is obtained in the modification illustrated in Fig. 4, as in both con-
structions the detent-pawl g holds wheel G from moving backward, except that if the lug
130 g' is so located on wheel G, as indicated by dotted pin g^2 , Fig. 4, that the movement of such wheel through the arc measured by one of the teeth thereof is sufficient to bring lug
 g' into engagement with comb J (or rod Q) and over the same to release therefrom. I prefer to place the lug g' as hereinbefore de-
scribed, so that the period of time during which the signal or alarm is given is con-
trollable.

The machine, constructed as described, is

designed and arranged to be used, primarily, for advertising purposes. For instance, if the machine is used by a boot and shoe dealer the keys of the apparatus should have thereon figures to correspond with the prices of the boots and shoes, slippers, &c., on sale. It will then occur that when a pair of slippers, a pair of boots, or a pair of shoes are sold the key of the machine having thereon figures corresponding with the price of the goods will be in each case depressed—that is, if the price of the slippers is seventy-five cents the key having “75 cents” thereon will be depressed; if the price of the boots is seven dollars and fifty cents the key having thereon “\$7.50” will be depressed, and if the price of the shoes is four dollars the key having thereon “\$4.00” will be depressed, and so for each sale the key having a figure thereon corresponding with the price of the goods sold will be depressed. Assuming the ratchet-wheels to be all duplicates and each one thereof to have eleven teeth thereon, each eleventh depression of any key will give an alarm. Assuming, further, that the dealer using the apparatus advertises that every tenth pair of seventy-five-cent slippers is to be given away, that every tenth pair of seven-dollar-and-fifty-cent boots is to be given away, that every tenth pair of four-dollar shoes is to be given away, and so on, on every tenth sale of a pair of seventy-five-cent slippers the apparatus must automatically give the alarm. Such alarm may continue until the next sale; but if the alarm is common to all the keys, and in every instance to avoid confusion, it is necessary to stop the alarm before the depressing of the key of the apparatus corresponding with the goods sold; otherwise the continued giving of the alarm will be taken as to be applied to the new sale, which must be avoided. So the eleventh depression of the key giving a signal is made and the giving of the signal stopped before the depression of the key corresponding with the new sale. Such new sale may be of another pair of seventy-five-cent slippers, in which case the signal will not be given, being the first sale of the ten necessary to give the signal, or it may be the tenth sale of a pair of boots at seven dollars and fifty cents, in which case the signal will be given. As an indicator corresponding with the key depressed should at all times be shown to advise the operator as well as the purchaser of the particular sale producing the alarm, and as the continued display of the amount of the purchase, together with the continued giving of the alarm, would advise persons taking note thereof and so tend to prevent a purchase of goods the tenth sale whereof has just been made rather than to induce such purchase, I find it advisable to stop the showing of the indicator within a reasonable time of the making of the sale, and hence I attach the indicator as described, so that when the key is released the indicator drops out of sight. The con-

tinued exhibition of the indicator is not necessarily hurtful to trade, and hence where one tooth more than the number of sales advertised to give a signal is provided on the ratchet-wheel G the ordinary construction, whereby the indicator corresponding to a key depressed is maintained in view until another key is depressed, may be adopted, if preferred. In such case the eleventh depression of a key will stop the giving of the signal, while the indicator will be exposed to view after the signal has stopped.

Having thus described my invention and the construction of a machine embodying the same, the operation thereof, and the manner of use of the same, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a series of indicating-cards, a series of keys, and a series of connecting-levers between the keys and corresponding cards, a series of ratchet-wheels rotatably mounted on a shaft, connections between the levers and the corresponding ratchet-wheels, whereby movement of a lever of the series actuates the corresponding ratchet-wheel in one direction, an alarm, an abutment on each ratchet-wheel, and a connection between all the abutments of the series and the alarm, whereby actuating a key of the series a determined number of times will give the alarm independently of the actuation of all or any of the other keys of the series; substantially as described.

2. In a sales-indicator and automatic announcer, having a series of keys, a series of indicating-cards and a connection between each key and the corresponding indicating-card, the combination of a series of ratchet-wheels, abutments on the ratchet-wheels, respectively, pawls, connecting the keys with the corresponding ratchet-wheels, an alarm, and a connection between each of the abutments and the alarm, whereby when a key of the series has been actuated a given number of times the alarm common to all the keys of the series will be given independently of the actuation of the other keys of the series, and at such giving of the common alarm the indicating-card corresponding with the key producing the alarm will be simultaneously shown; substantially as described.

3. The combination in a sales-indicator and automatic announcer having a series of indicating-cards, a series of keys and connections between the respective keys and the corresponding indicating-cards of a series of ratchet-wheels, a series of pawls, a connection between the respective pawls and the corresponding ratchet-wheels, and keys, an abutment on each ratchet-wheel of the series, and an electric circuit having an alarm interposed therein, the respective abutments on the ratchet-wheels forming, when the key of the series which corresponds thereto has been actuated a determined number of times, a part of the electric circuit and the circuit closer and breaker, independently of the ac-

tuation of the other keys of the series; substantially as described.

4. A bank of keys, a bank of indicators, connections between the keys and corresponding indicators, an alarm, and connections between all of the keys and such alarm, every one of the mechanisms connecting the respective keys and the common alarm requiring a uniform number of actuations of the key thereof, to give such common alarm, independently of the actuations of other keys of the series; substantially as described.

5. In an indicating and alarm mechanism, the combination of the indicator, means for actuating said indicator, with an alarm, and connections for operating said alarm upon the actuation of said indicator a fixed number of times; substantially as described.

6. In an indicating and alarm mechanism, the combination of the indicator, a key and connections for actuating said indicator, with an alarm, and connections for operating said

alarm upon the actuation of said indicator a definite number of times; substantially as described.

7. In an indicating and alarm mechanism, the combination of the indicator, means for actuating said indicator, with an audible alarm, and connections for sounding said alarm upon the actuation of said indicator a fixed number of times; substantially as described.

8. In an indicating and alarm mechanism, the combination of the series of indicators, means for actuating any desired one of said indicators, with an alarm and connections for operating said alarm whenever any one of said indicators has been operated a fixed number of times; substantially as described.

CARROLL F. DAVIS.

In presence of—

FLORA L. BROWN,
F. M. MCPHAIL.