(No Model.) 3 Sheets—Sheet 1.

D. S. MACORQUODALE.

FARE BOX.

No. 562,841. Patented June 30, 1896.

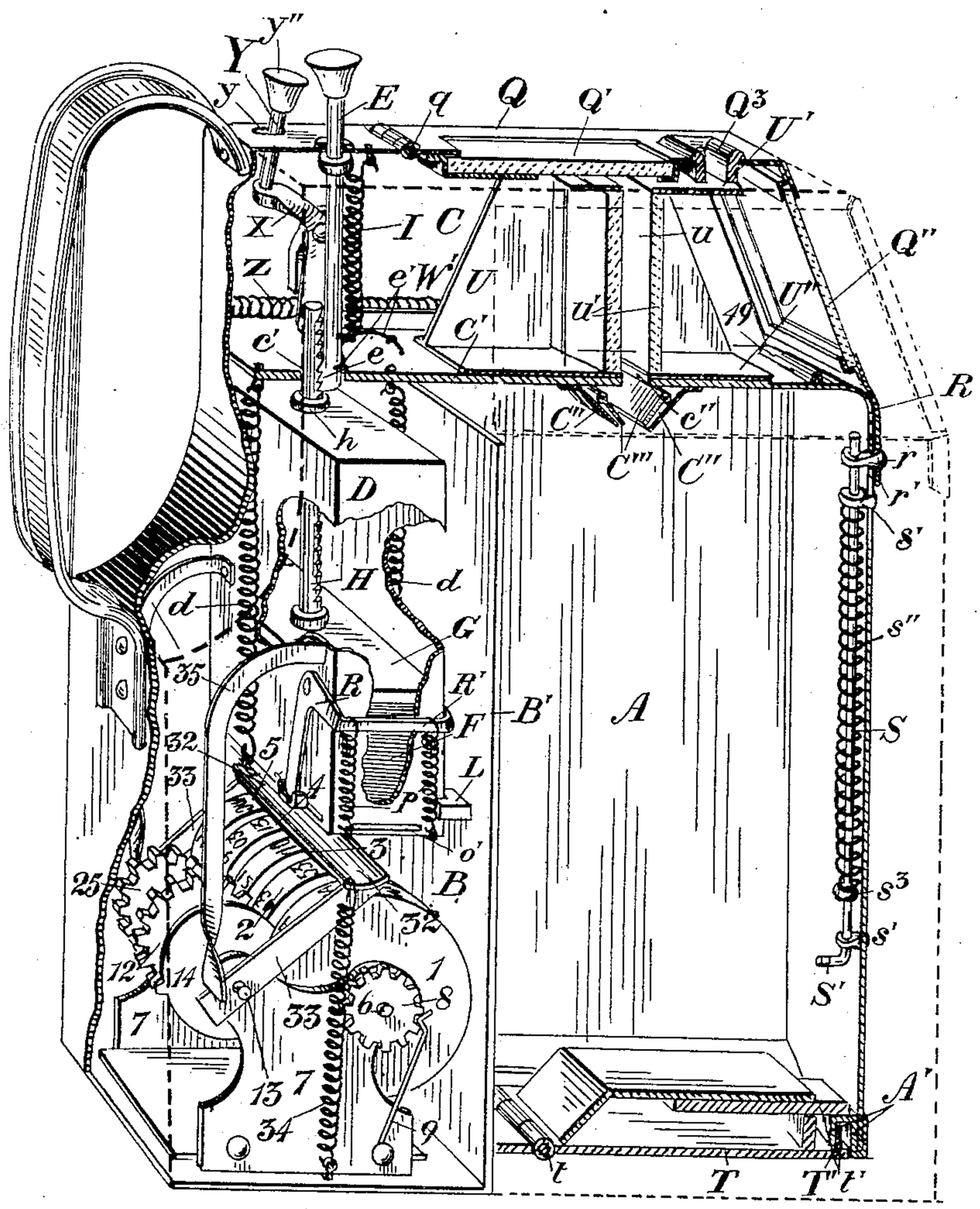

Fig. 1.

Fig. 4.

Witnesses.

W. J. Withrow

E. R. Case

Inventor.

D. S. Macorquodale

by Fetherstonhaugh & Co

attys

(No Model.) 3 Sheets—Sheet 2.

D. S. MACORQUODALE.

FARE BOX.

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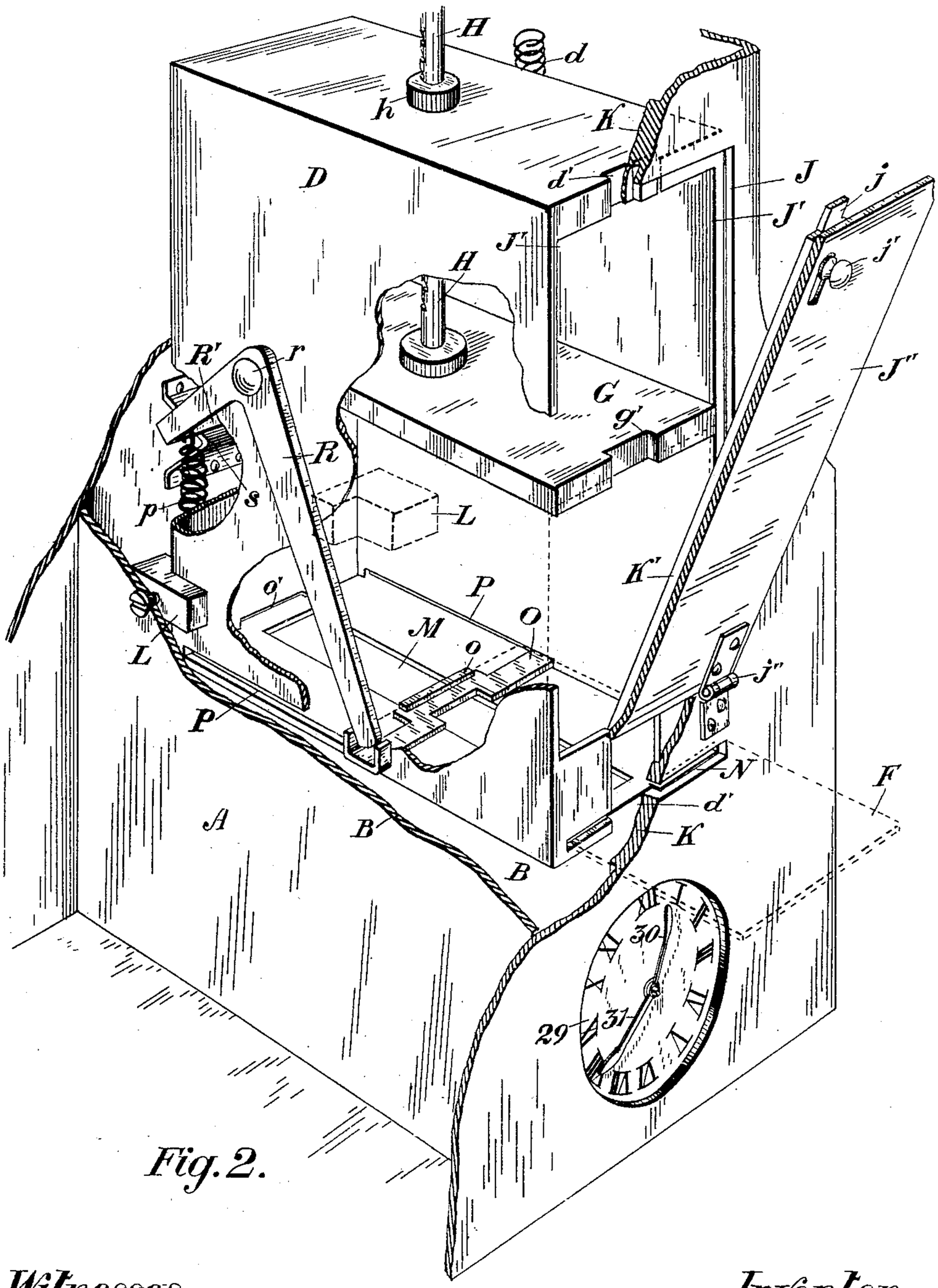

Fig. 2.

Witnesses.
W. J. Withrow.
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(No Model.) 3 Sheets—Sheet 3.

D. S. MACORQUODALE.

FARE BOX.

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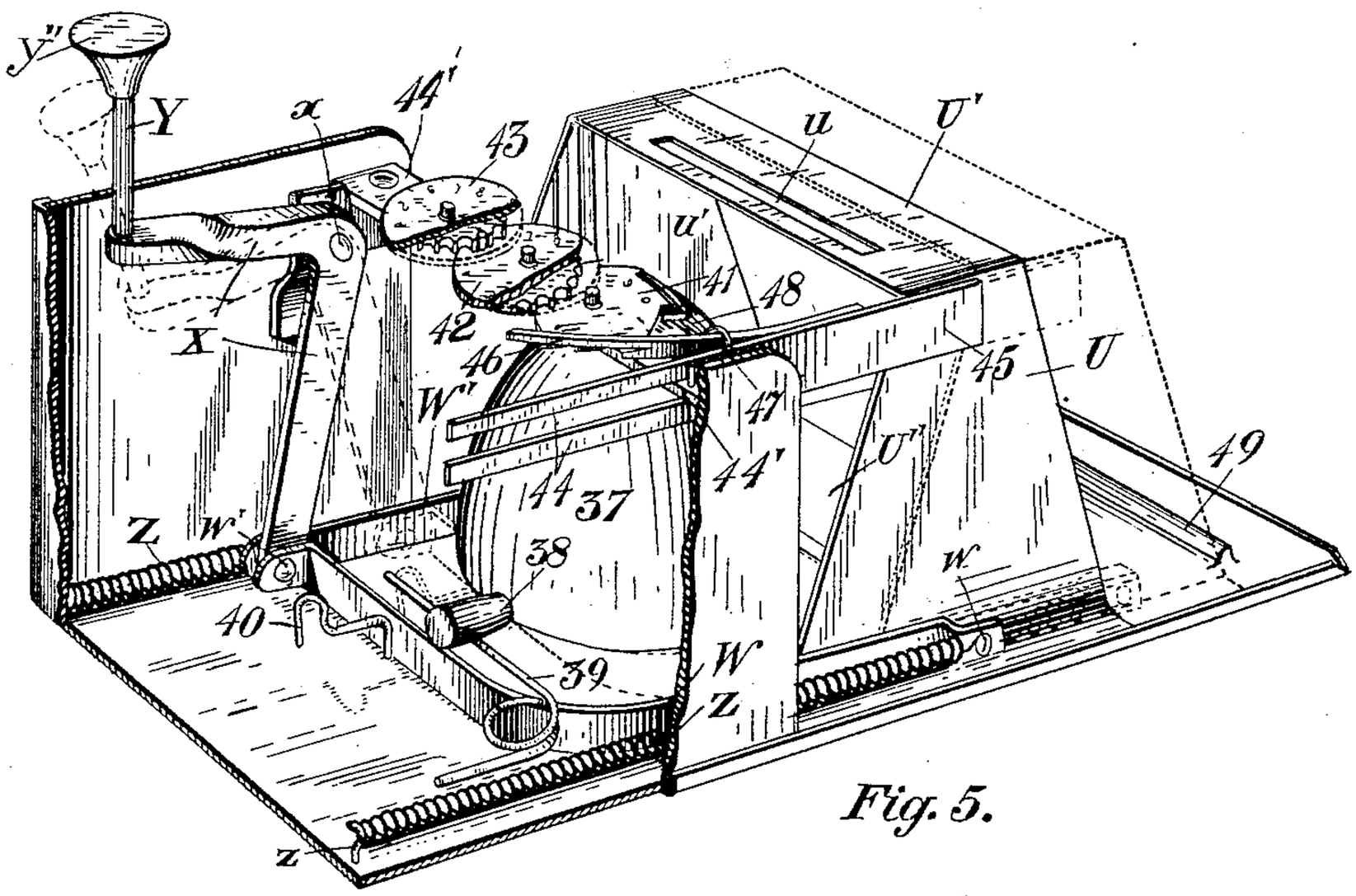

Fig. 5.

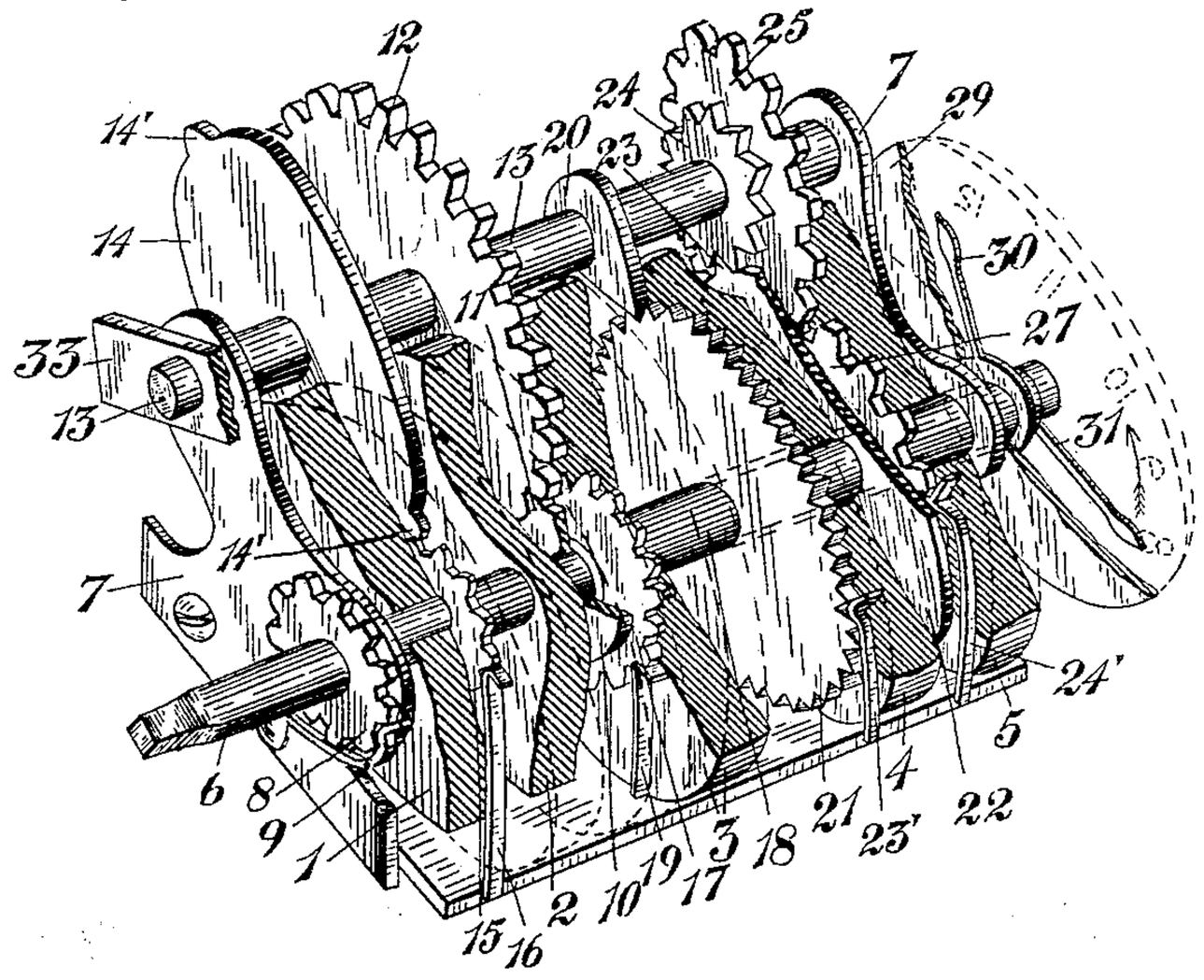

Fig. 3.

Witnesses.
W. J. Wilson
C. R. Case

Inventor.
D. S. Macorquodale
by Fetherston, Haugh & Co
Attys

UNITED STATES PATENT OFFICE.

DUNCAN SUTHERLAND MACORQUODALE, OF TORONTO, CANADA.

FARE-BOX.

SPECIFICATION forming part of Letters Patent No. 562,841, dated June 30, 1896.

Application filed September 22, 1893. Renewed May 18, 1896. Serial No. 592,071. (No model.)

To all whom it may concern:

Be it known that I, DUNCAN SUTHERLAND MACORQUODALE, agent, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Fare-Boxes, of which the following is a specification.

My invention relates to improvements in fare-boxes, and the object of the invention is to provide a means whereby the ticket or coin representing the fare or fares may be exhibited to the view of the conductor before it is allowed to drop into the main chamber of the fare-box and at the same time provided with accurate registration of every ticket or fare received, and against any possibility of tickets being withdrawn from the receiving-slot once they are put in; and it consists, essentially, of providing at the top of the fare-box a separate chamber having a sliding frame, in which is contained a receiving-slot with transparent sides, the frame being operated through a bell-crank and plunger secured in the top of the arm of the same, so as to bring the receiving-slot opposite the slot in the top of the box to receive the ticket and when the plunger is released and the slide brought back to the position shown in the drawings, so as to deposit the ticket in the main chamber of the box. Registering-disks are also provided, which are operated by spring-dogs at each forward movement of the sliding frame, and the whole of the box mechanism constructed as hereinafter more particularly explained.

Figure 1 is a perspective view, partially in section, of a fare-box provided with my improvements. Fig. 2 is an enlarged perspective view of the sliding frame and the operating and registering mechanism connected to it. Fig. 3 is a perspective detail of the printing-wheel gears. Fig. 4 is a detail of the printed ticket. Fig. 5 is an enlarged perspective of the sliding frame and connected registering mechanism.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the final deposit-chamber of the ticket, and C is the receiving-chamber. The chamber C is separated from the chamber A by the bottom plate C′.

Q is the top of the box, which is hinged at q, and is provided with a top transparent plate Q′ and oblique transparent sides Q″ and a receiving-slot Q^3.

R″ is a depending plate secured to the side of the top Q, and having an eye r', which when the box is closed is inserted through a slot r'' in the front side of the chamber A.

S is a plunger-rod provided with a collar s^3 and a handle S′. The plunger-rod is supported in the eyelets s'.

s'' is a spring which is secured to the collar s^3 at the bottom end and to the eyelet s' at the top.

The top of the plunger-rod S, when the box is closed normally, extends through the eye r', in which it is held by the tension of the spring S″.

T is the lower door or flap, which is hinged to the casing at t, and is provided with a suitable lock, the casing of which is shown in outline at t'. The key of this lock is intended to be kept at the office of the company, so that when once it is locked there can be no tampering with the tickets or fares in the chamber A, nor can the top Q of the box be unfastened, as it is secured by means of the plunger-rod S. Any unlocking, however, has to be done at the office, so that the conductor cannot get at the fares.

To further form a safeguard, so that the tickets cannot be removed after they have been once deposited in the box, I provide a frame U, having a slot u, made in the top plate, and transparent sides u', extending downwardly from the slot u to the slot c'', made in the plate c'. Beneath the slot c'' I form a hopper C″, and within the hopper C″, I provide the hinged flaps C‴. It will now be understood that no matter which way the box may be turned, no tickets, after they are once deposited in the chamber A, can be removed, as the flaps C‴ will come together upon turning the box upside down, nor can the flaps C‴ be got at, as the slot formed between the transparent sides u' is normally situated above the depositing-slot c'', nor can a ticket be deposited in the chamber C, as the plate U′, forming part of the frame U, is normally immediately beneath the receiving-slot Q^3.

W and W′ are bars which are pivotally con-

nected at *w*, at one end to the side of the frame U, and at the other end pivotally connected at *w'* to the bottom of the bell-crank X, which is pivoted at *x*.

Y is a plunger-rod secured in the upper arm of the bell-crank X. The plunger-rod Y extends through a slot *y*, made in the top of the fare-box, and is provided with a pressure-knob *y''*.

Z are spiral springs connected to the pivoted screws *w* at one end and at the other end to the hooks *z*.

It will be seen by the downward pressure of the plunger Y that the crank X will be tilted on its pivot, so as to throw the connecting-rods W, and consequently the frame U, forward, so that the slot *u* will be opposite the receiving-slot Q''', when the ticket may be deposited in the slot *u*. At this period the plate U'', forming part of the bottom U, is immediately over the depositing-slot *c''*. When the plunger-rod is released, the spring Z will bring the frame U back into the position shown in Fig. 1, when the ticket received will drop into the chamber A.

37 is a bell which is suitably supported above the plate C', and 38 is a hammer secured on the spring-arm 39, and 40 is the trip secured to the curved bar W. Upon the forward movement of the curved bar W, caused by the pressure of the plunger Y, it will be seen that the trip 40 will come in contact with the end of the spring-arm 39, and as the spring-arm inclines forward it will pass it. When the curved bar W is caused to move backwardly, the trip will carry the spring-arm a much greater distance before it releases it, thereby giving such a strong swing to it that it will move forward, causing the hammer 38 to strike the bell. This operation will be repeated at every backward movement of the frame U, so that the bell will sound upon every ticket being received.

41, 42, and 43 are registering-disks, connected together by gearing in the usual manner. The disk 41, however, is made in the shape of a ratchet-wheel.

44 are parallel bars forming part of the plate 45, which is secured to the side of the frame U. 46 is a spring-dog attached to the plate 45, and 47 is a staple passing over the spring-dog and plate 45. The parallel bars 44 extend above and beneath the cross-bar 44', on which the registering-disks 42 and 43 are journaled, thus serving to keep the spring-dog down to its place, so that it will be insured to engage with the teeth of the ratchet registering-disk 41. 48 is a spring-dog, also engaging one of the teeth of the registering-disk 41 and designed to hold the disk in position after it has been caused to move forward the space of one tooth. Upon every forward movement of the frame U it will be seen that as the spring-dog 46 is attached to the plate 45 the ratchet-wheel will be brought forward the space of one tooth, thus registering the ticket upon every forward movement of the frame. The staple 47 serves to remove the dog 46 from engaging with the teeth as soon as it is brought far enough, so that there will be no danger of the disk being drawn forward out of place for the next grasp of the spring-dog. The disks have numerals printed on their faces in a circle at equal distances apart, from "1" to "0". 49 is a stop designed to control the forward movement of the frame U.

As hereinbefore described, I provide a hinged flap or door T at the bottom of the chamber A. This door T has a rib T' formed around the three sides of it, which fits into a U-shaped ridge A', extending around the three sides of the opening into which the flap fits. As the outer surface of the flap is flush with the bottom of the U-shaped rib, it will be seen that by the form of the ribs T' and A', as shown, it will be impossible for any person to pry the door T far enough out so as to permit any of the fares in the chamber A' to drop out, as might readily be done if such ribs T' and A' were not provided.

What I claim as my invention is—

1. In a fare-box the combination with the hinged top, Q, provided with a depending plate, R'', having an eye, *r'*, which is inserted through a slot, *r''*, in the front side of the chamber, of a spring plunger-rod secured to the side of the fare-box and designed to be inserted in the eye, *r'*, as and for the purpose specified.

2. In a fare-box the combination with the chamber A, the hinged top, Q, having a receiving-slot, Q^3, and transparent top and side, Q', and Q'', and the intermediate plates, C', located between the top and the chamber, A, and having a slotted opening, *c''*, of the frame, U, having the slot, *u*, with transparent sides, *u'*, and means whereby the frame is caused to move from above the slot, *c''*, to beneath the slot, Q''', and back again as and for the purpose specified.

3. In a fare-box the combination with the chamber A the hinged top, Q, having a receiving-slot, Q^3, and transparent top and side, Q', and, Q'', and the intermediate plates, C', located between the top and the chamber, A, and having a slotted epening, *c''*, of the frame, U, having a slot, *u*, with transparent sides, *u'*, the frame, U, being connected by bars, W, W', to the pivoted bell-crank, X, and a plunger, Y, for operating such bell-crank as and for the purpose specified.

4. In a fare-box the combination with the chamber A, the hinged top, Q, having a receiving-slot, Q^3, and transparent top and side, Q', and, Q'' and the intermediate plates, C', located between the top and the chamber, A, and having slotted openings, *c''*, of the frame, U, having a slot, *u*, with transparent sides, *u'*, the pivoted bell-crank, X, connected by bars W W' to said frame U, the plunger, Y, and the springs, Z, for retracting said plunger as and for the purpose specified.

5. In a fare-box, the combination with the

hinged flap Q having a receiving-slot Q^3 and depositing-slot c'' of the frame U having a slot u, the bars W W′ pivotally connected to the frame at one end, the bell-crank X connected at the opposite end, the plunger Y operating said bell-crank, the bell 37, the spring-hammer 38 and the trip 40 connected to bar W, substantially as described.

6. In a fare-box the combination with the hinged flap, Q, having a receiving-slot, Q^3, and depositing-slot, c'', of the slot u, made in the frame, U, the parallel bars, 44, extending above and beneath the cross-bar, 44′, and spring-dog, 46, connected to or forming part of the parallel bar and engaging with the ratchet-toothed registering-disk, 41, and means whereby the frame, U, is moved backward and forward as and for the purpose specified.

7. In a fare-box the combination with the hinged flap, Q, having a receiving-slot, Q^3, and depositing-slot, c'', of the slot u, made in the frame, U, the parallel bars, 44, extending above and beneath the cross-bar, 44′, spring-dogs 46, and 48, and staple, 47, extending over the spring-dog, 46, and parallel bar, 45, and means whereby the frame, U, is moved backward and forward as and for the purpose specified.

DUNCAN SUTHERLAND MACORQUODALE.

Witnesses:
B. BOYD,
E. R. CASE.