

2 Sheets—Sheet 1.

REGISTER.

Fig. 1. Patented May 8, 1883.

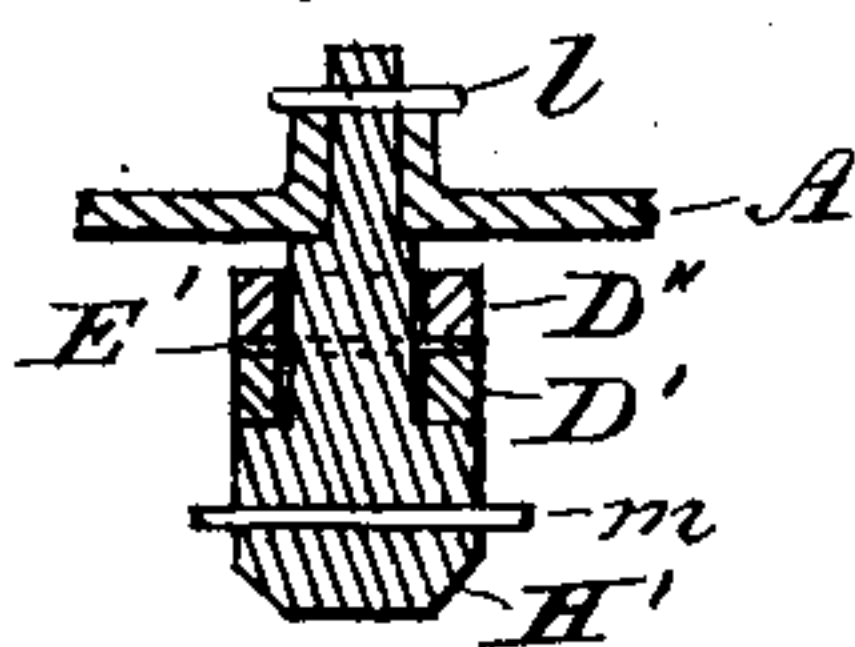


Fig. 2.



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REGISTER.

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Fig. 3.

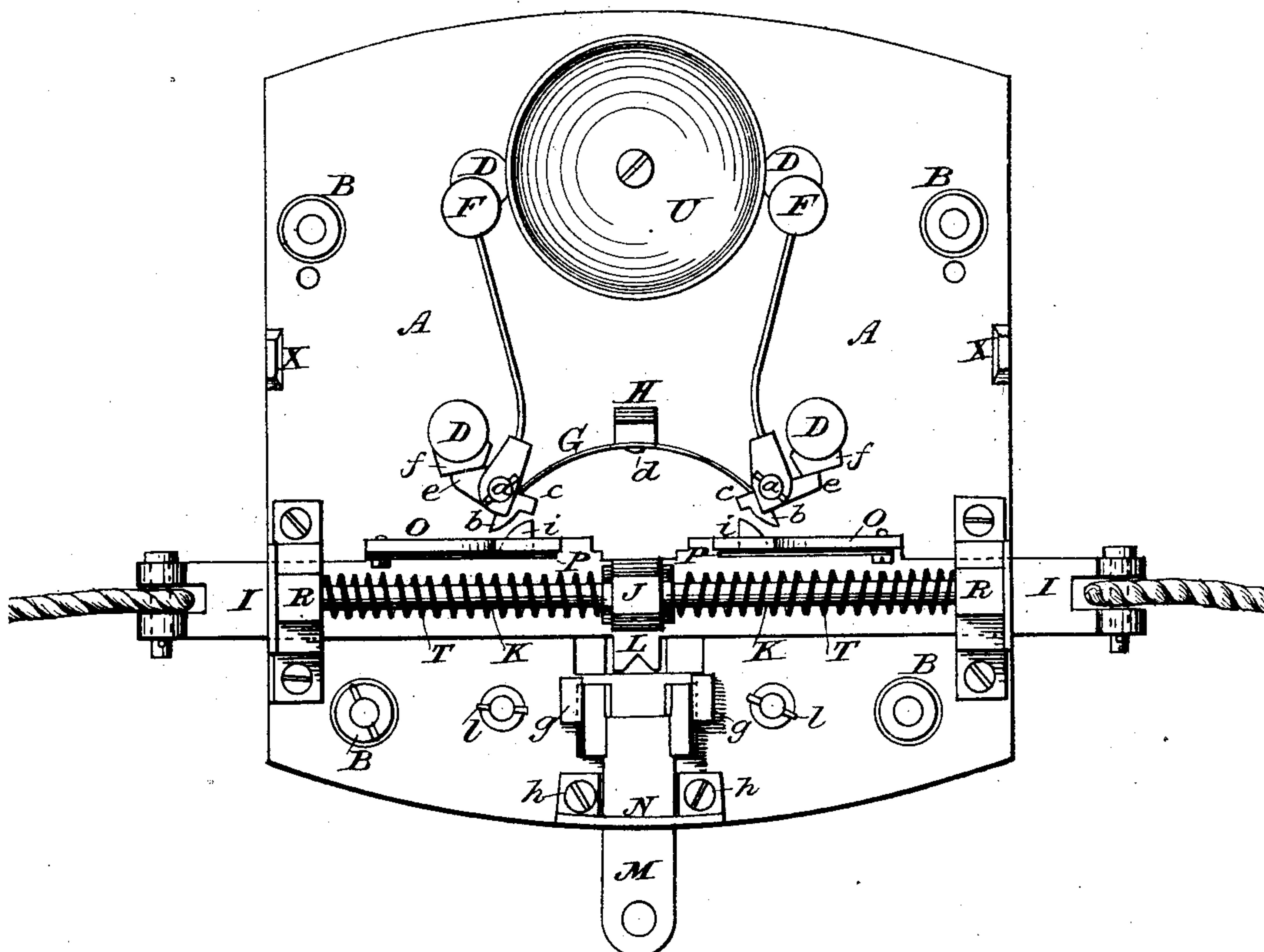


Fig. 4.

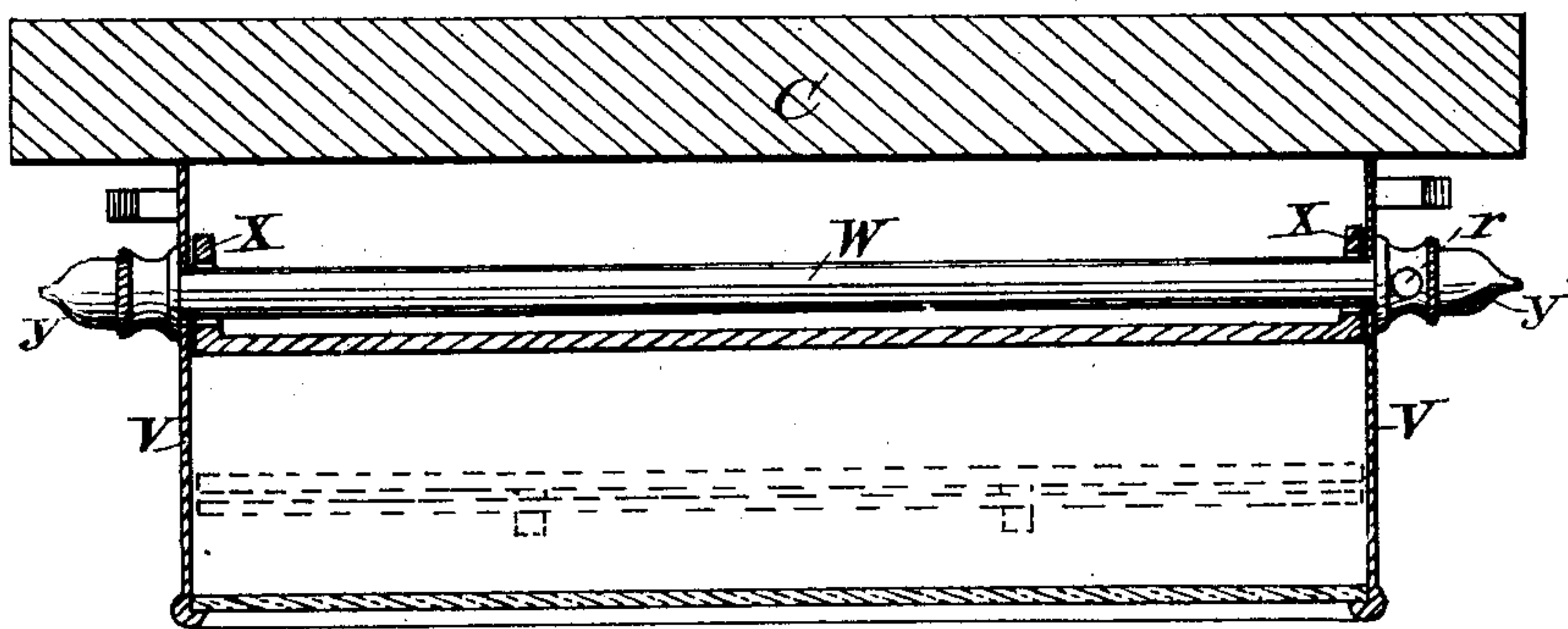
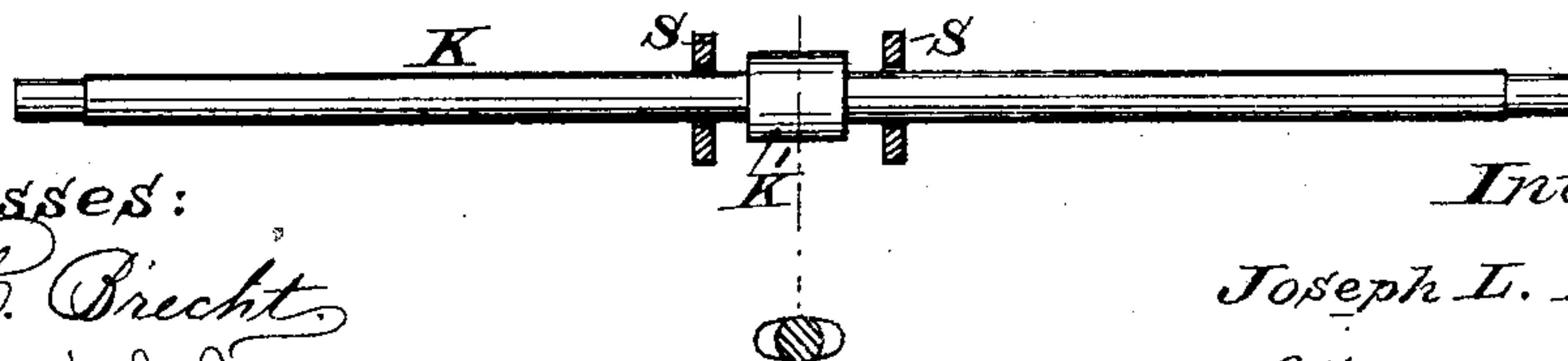


Fig. 5.



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UNITED STATES PATENT OFFICE.

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REGISTER.

SPECIFICATION forming part of Letters Patent No. 277,130, dated May 8, 1883.

Application filed January 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH L. HARLEY, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented new and useful Improvements in Registers, of which the following is a specification.

My invention relates to certain new and useful improvements in devices for registering fares received in street-railroad cars, &c. It has for its object economy in construction and simplicity in arrangement and operation.

It has also for its object to provide a means for registering in one instrument two different kinds of fare or the same kind of fare upon independent dials with a single alarm mechanism.

My invention consists in the peculiarities in the construction and arrangement of parts, as will be hereinafter fully set forth and specifically claimed.

In order that those skilled may know how to make and use my improved machine, I will proceed to describe its construction and operation, referring by letters to the accompanying drawings, in which—

Figure 1 is a front view of one of my improved registers with part of the face broken away and the inclosing-cover removed. Fig. 2 is a cross-section on the line *xx* of Fig. 1. Fig. 3 is a rear view of the apparatus with the back removed. Fig. 4 is a cross-section of the case, showing the manner of securing it in place by a seal. Fig. 5 is a detached view of the spring-bar upon which the pawl-operating slide-bar moves. Fig. 6 is a cross-section of the machine on the line *yy* of Fig. 1, and Fig. 7 is a cross-section on the line *zz* of Fig. 6.

Similar letters indicate like parts in the several figures of the drawings.

A represents the plate upon which the operating parts of the machine are assembled. On the rear side of this plate, and cast therewith, are four posts, B, adapted to receive screws for securing the back C in place.

D represents four seats or bearings cast with said plate for one end of each of the indicator-shafts, and E E two bearings to receive and hold in place the pawl-operating bar.

F F are two bell-hammers pivoted upon studs *a a*, at the points indicated in Fig. 3, to

the plate A. The pivoted ends of these hammers are formed, as shown, each with a beveled lip, *b*, and shoulder *c*, the lips coming in contact, as will presently be explained, with spring-latches, and the shoulders *b* serving to hold the ends of a single C-spring, G, the center of which is formed or provided with a short teat, *d*, the projecting end of which fits in a recess in a short vertical post, H, projecting from the plate A, so that said spring is held in place and serves to return both bell-hammers to their normal positions, where they are arrested by the shoulders *c*, coming in contact with the castings D or an interposed pillow, *f*.

I is a sliding pull-bar adapted to be operated from either end. This bar is provided centrally, on the side represented at Fig. 3, with a hollow casting, J, adapted to slide over or upon a guide-bar, K, for the purpose presently explained. On this slide-bar is centrally, at its lower edge and reverse side, a projection, L, (see Figs. 1, 2, and 3,) the vertical portion of which, as seen at Fig. 3, is designed to be straddled by a reciprocating bifurcated lock bar or plate, M, sliding in ways *g g*, and held against entire removal by a guard-plate, N, secured in place by screws *h h*. The projection L on the opposite or reverse side of the bar I is designed to operate the bars, which in turn actuate the register-operating pawls, as will be understood in the description of that portion of the machine as best represented at Fig. 1.

Recurring to Fig. 3 and the bar I, it will be seen that the upper edge of said bar is formed on each side of the center with right-angle shelves or plates O O, on the under side of each of which is arranged a spring-arm, P, having a beveled lip, *i*, adapted to come in contact with the lip *b* on the bell-hammer, and slide over the same when the bevel-face of each comes in contact, and to catch and operate the hammers when the reverse or return movement of the bar I occurs, so that, it will be observed, as will be hereinafter more fully explained, the bell will not sound until after a registration has occurred. As a means for returning the slide-bar to its normal and central position, I arrange a round bar, K, (previously referred to,) through the central projection, J, of the bar I and secure each end within cast-

ings R R, which are secured by screws to the plate A, and also serve as guides for the ends of bar I, as clearly shown in the drawings. The bar K is formed with a central enlargement, K', to provide two shoulders against which may rest two collars, S S, which are arranged on the rod K and slide freely thereon. Between each of these collars S and the castings R are arranged, around the rod K', strong spiral springs T, which serve to press the collars against opposite sides of the projection J of the rod I and force it to its normal central position, and the said collars at such time coming in contact with the shoulders of the central enlargement, K', of rod K are prevented by any inequality of the springs T from forcing the bar I too far in either of its return movements. Now, on the opposite side of the plate A to that which I have so far referred to are arranged the registering mechanism and its actuating devices.

Between the plate A and a second one, A', to which the former is secured by screws a', passing into suitable pillars or posts cast on plate A, are arranged four indicator-shafts, B', the upper pair indicating hundreds and the lower pair units. The lower shafts are provided with wheels C', each having one hundred notches, so that one revolution of each of said wheels will move the upper indicator-wheels one point only, the upper indicator-shafts being of course suitably provided with a gear-wheel engaging with a pin or tooth on the lower wheels C'. The notches on the peripheries of the two wheels or gears C', it will be observed by reference to Fig. 1, incline in opposite directions, so that each may be operated independently of the other through the instrumentalities presently explained.

The register-operating mechanism consists of a duplex bar made in two parts, D' and D'', adapted to lie one over the other, with an interposed thin plate, E, (seen in section at Fig. 6,) to prevent the two parts D' D'' from affecting each other by frictional contact. The outer ends of the parts D' D'' are cast with heads F', bored to receive a guide-rod, G', which is held parallel with the bars D' D'' by passing through two supports, H', the rear ends of which are rounded and pass through the plate A, and are secured by pins l l, Figs. 3 and 6. The bars D' D'' are slotted longitudinally at both ends, as seen at I', Fig. 6, a distance equal to the reciprocating movement of the same, and the supports H' of the guide bar or rod G' are reduced and squared to pass through the slots I' and serve as guides, the remaining or upper portion of supports H' being shouldered to extend over the metal each side of the slots I' in the upper bar, D', so as to hold the two bars D' D'' in proper relation. (See detail, Fig. 7.) The guide-rod G' is passed endwise through the ends F' of bars D' D'' and supports H, and is secured in place in the latter by pins m.

Around the bar I' and between the supports

H' and ends F' of bars D' D'' are arranged spiral springs J', the effect of which, obviously, is to return the bars D' D'' to their outward normal position. A thin metal plate, E, before referred to, is arranged between the bars D' D'', and is held in place by the supports H', passing through it. This plate prevents frictional contact between the bars D' D'', and hence each is unaffected by the movement of the other.

Recurring to the construction of the bars D' D'', the outer end of each is formed with an upward projection, K', in the upper end of which is pivoted a dog, L', which is held in contact with the periphery or notches of the wheel or gear C' by a bow-spring, M', secured to the ends of bars D' D''. Each of the bars D' D'', on opposite sides of the projection L of bar I, which passes through the plate A, is provided with a vertical shoulder, N', against each of which the projection L strikes alternately when the bar I is reciprocated in opposite directions, the effect of which is to pull bars D' D'' in the directions indicated by arrows at Figs. 1 and 2, according to direction bar I is pulled, and through the medium of the dogs L' one or the other of the registers is operated. In the reciprocation of the bars D' D'' the heads F' slide over the ends of guide-rod G'. From the construction shown it will be seen that the bar I is pulled to the left to operate the register on the right-hand side, and that the register on the left is operated by a reverse movement, and by comparing Fig. 1 with Fig. 3, which show, respectively, the front and rear of the machine, it will be seen that the bell-hammers are not operated to cause an alarm until the registration has taken place; hence it is impossible to produce an alarm without registration. A single bell, U, serves for both registers. One register may be used to indicate cash fares received, and the other for tickets; or one may be used to indicate all fares received in one direction of a trip and the other register for the return.

In order that the registering mechanism may be secured either for the protection of the conductor when temporarily absent from his car or during any time when the car is not in use, I attach to the plate A a short vertical tongue, O', having a hole, n, to register or coincide with a similar hole, p, in the lock-plate M, previously referred to, when said plate is raised to a point which will cause its upper bifurcated end to straddle the projection L of the bar I, and thus prevents its reciprocation, and when the holes n p are coincident a small lock or wire seal may be passed through the same, thus protecting the machine against undesired movement.

The case or cover V of the machine I make of sheet or cast metal, adapted to slip vertically over the mechanism, and this I secure in place by a single horizontal rod, W, which passes through the sides of the case and short tongues X on the plate A. One end of the

rod W is provided with an ornamental head, Y, and the opposite end with a screw-threaded nut, Y', the nut and rod having a hole, r, through them to receive any desired locking device. The case V is provided with a glass front. Any desired characters or advertisements may be indicated upon the dials.

What I claim as new, and desire to secure by Letters Patent, is—

10 1. In a fare-register, the combination, with a single pull-bar adapted to reciprocate in opposite directions from a given center line, two distinct registering mechanisms adapted to register at different times, according to the direction in which the pull-bar is moved, and intermediate register-operating devices connected with the pull-bar and the registers, substantially as and for the purposes set forth.

20 2. In a fare-register, the combination of two separate and independent registering devices, a single pull-bar, intermediate register-operating mechanism, two bell-hammers, a single bell, and mechanism, substantially as described, for operating the bell-hammers.

25 3. The pull-bar I, arranged to reciprocate on the back of the plate A, and provided with projection L, in combination with the double bars D' D'', arranged to reciprocate on the front of the plate, and provided with dogs L', adapted to operate two sets of registering devices, substantially as described.

30 4. The pull-bar I, arranged to reciprocate on the back of plate A, and provided with lug J, in combination with the rod K, having central enlargement, K', and provided with collars S and springs T, substantially as and for the purpose set forth.

40 5. The pull-bar I, provided with shelves or projections O, and having attached thereto springs P and lips i, in combination with bell-hammers F, pivoted as described, and provided with lips b, substantially as and for the purpose set forth.

6. The bell-hammers F, pivoted as described, and provided with shoulders c, in combination with the post H and single spring G, substantially as and for the purpose set forth. 45

7. In combination with the bar I, provided with the projection L, the sliding lock-plate M, and tongue O', constructed to lock the bar against movement, as hereinbefore set forth. 50

8. The double bars D' D'', provided each with upward projections N' and ends F', in combination with the rod G', supports H', and springs J, constructed and arranged to operate as and for the purpose set forth. 55

9. The double bars D' D'', provided with upward projections N' and ends F', in combination with the supports H' and an interposed plate, E', substantially as and for the purpose set forth. 60

10. The double bars D' D'', provided with end projections, K', pivoted dogs L', and bow-springs M', substantially as and for the purpose set forth. 65

11. The gear or notched wheels C', arranged with their notches inclined in opposite directions, in combination with the bars D' D'', provided with spring-pawls L' and projections N', the bar I, with projection L and spring-lips b, the two bell-hammers F, and a single bell, U, arranged as described, whereby the registration precedes the alarm, substantially as set forth. 70

12. In combination with the plate A, provided with tongues X, the case V, lock-rod W, and locking-nut Y', constructed and arranged to operate in the manner set forth. 75

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses. 80

JOS. L. HARLEY.

Witnesses:

F. L. BROWNE,
N. C. LAMMOND.