

W. F. NEDLER.

PASSENGER REGISTER AND INDICATOR.

No. 183,960.

Patented Oct. 31, 1876.

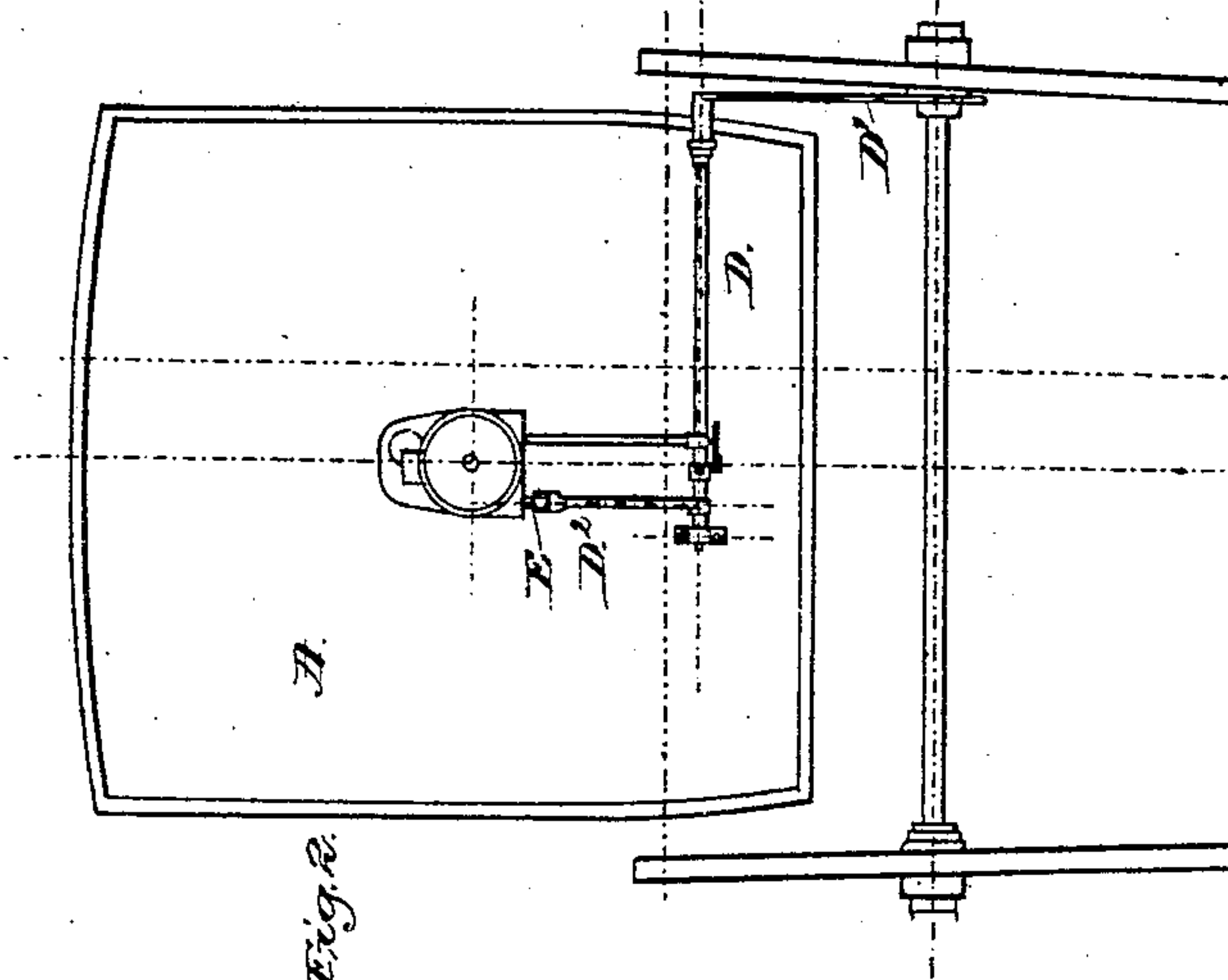


Fig. 2.

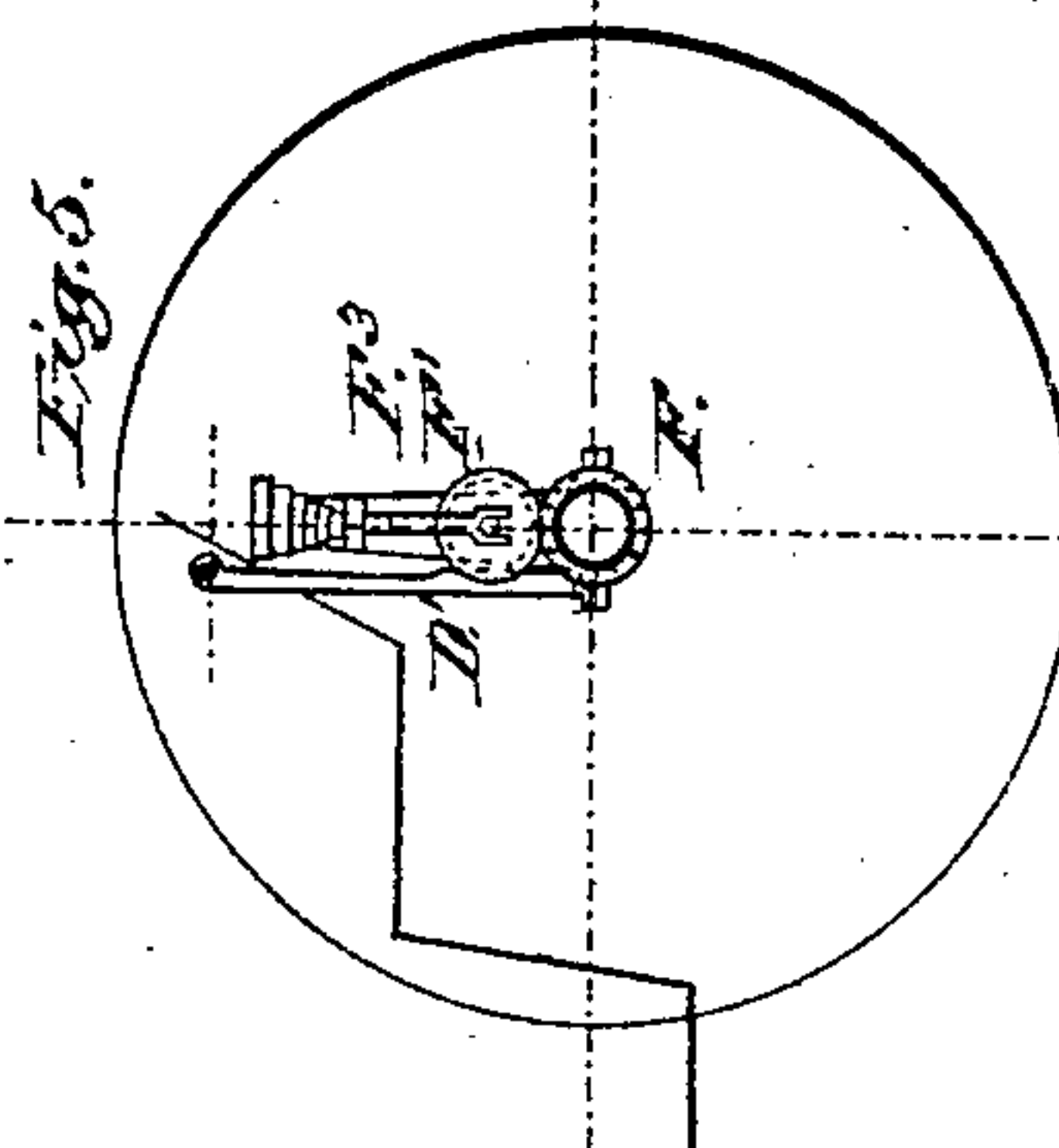


Fig. 5.

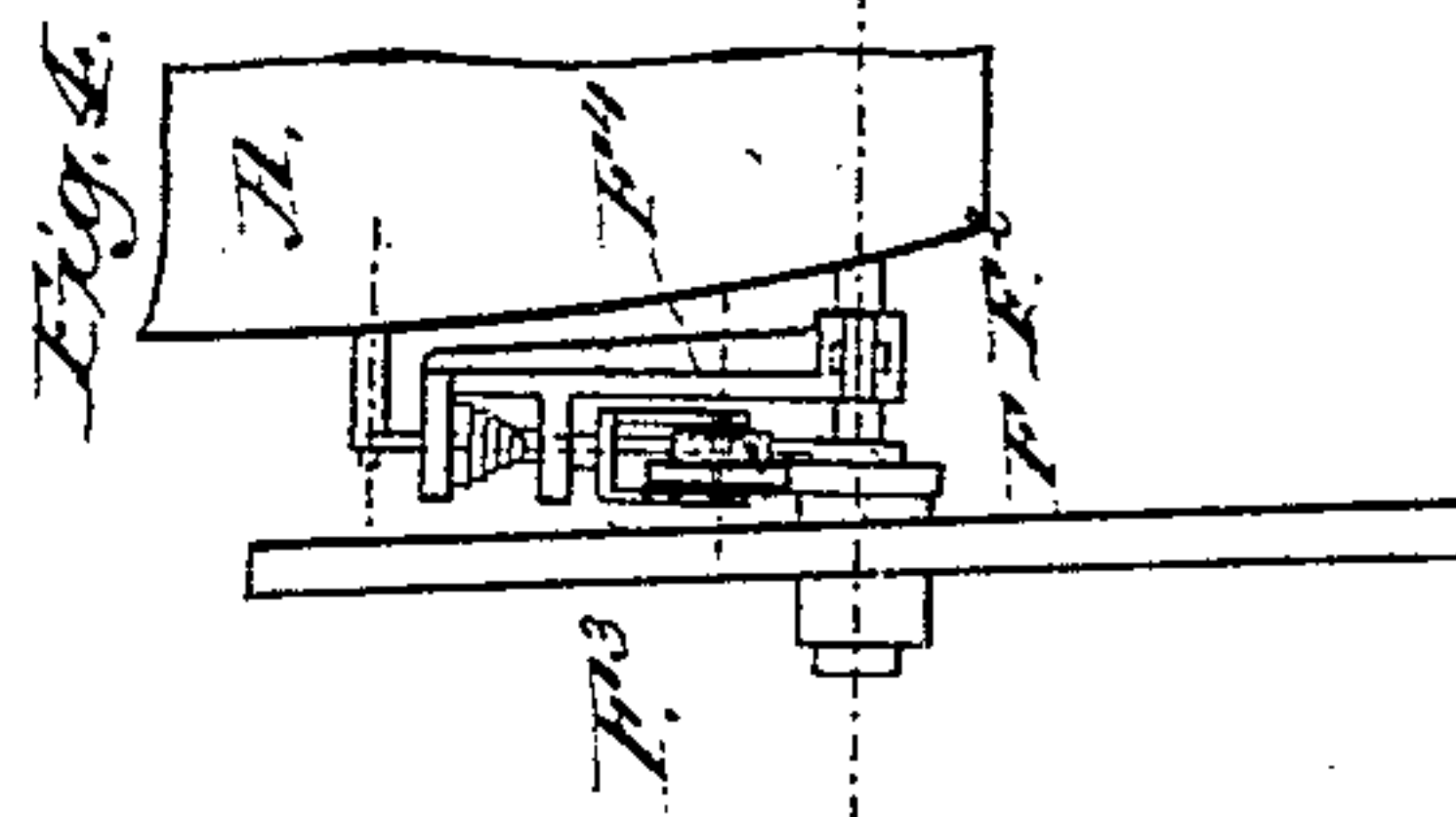


Fig. 4.

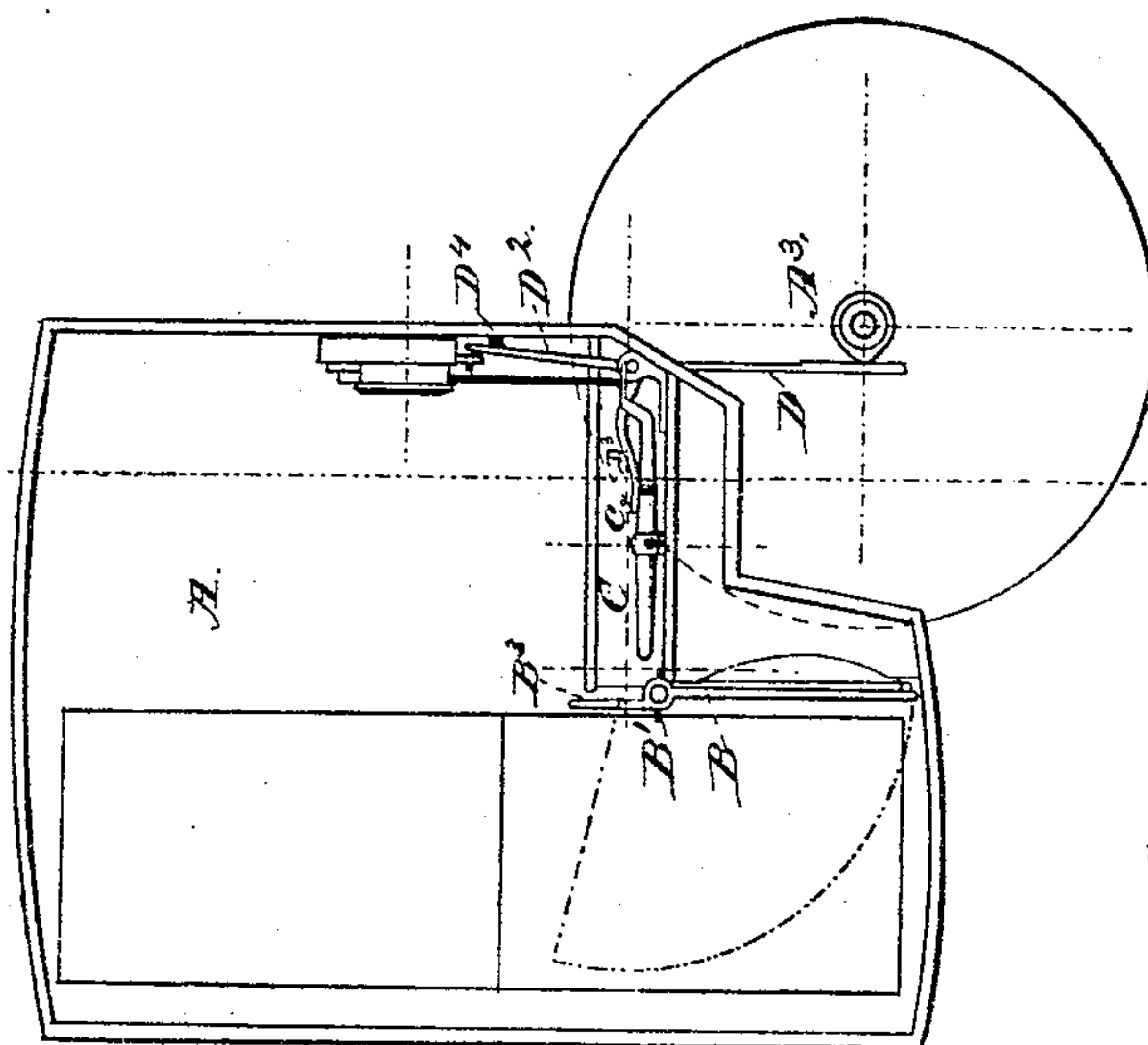
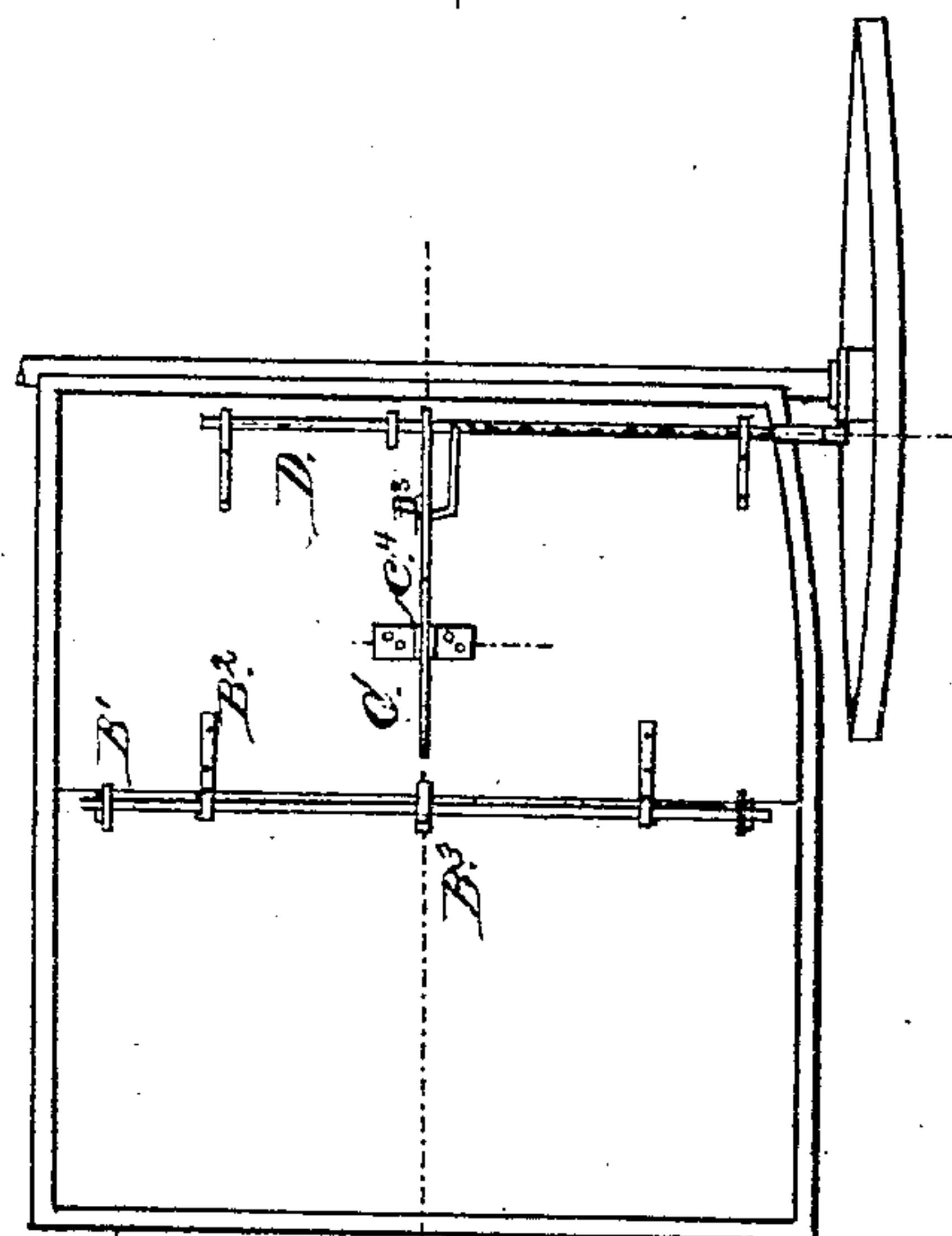


Fig. 1.



Exg. 3.

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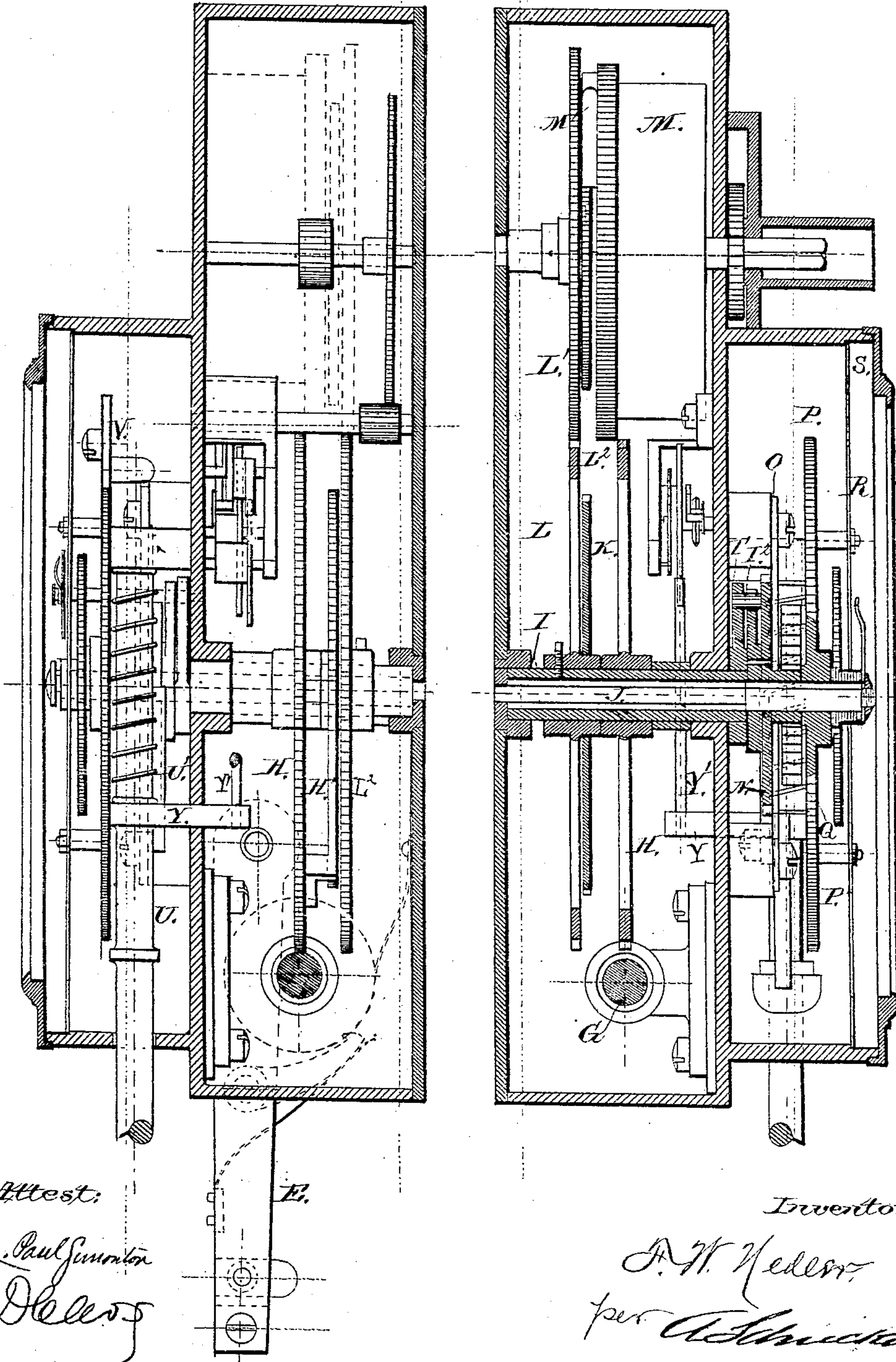
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Fig. 6.

Fig. 7.



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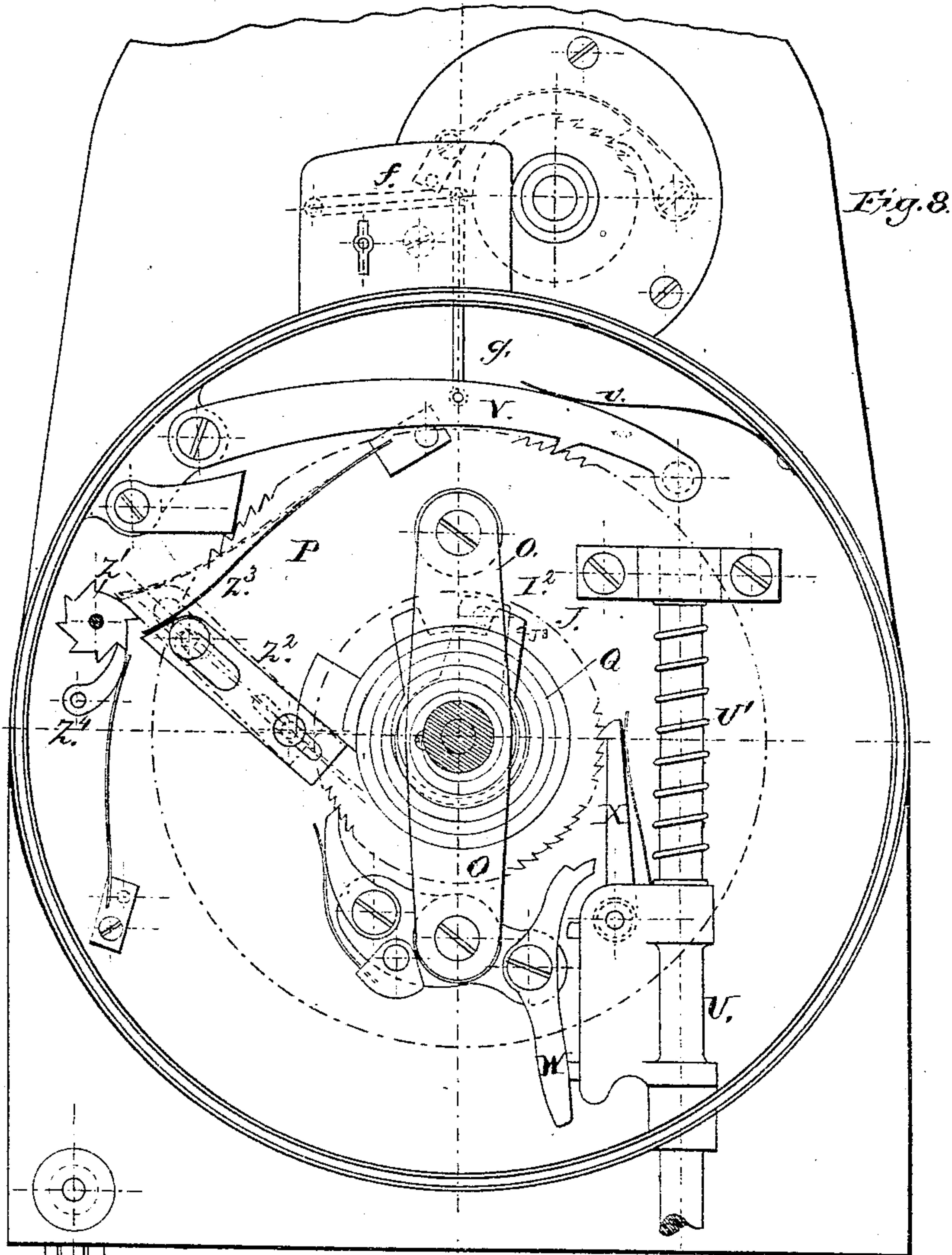


Fig. 8.

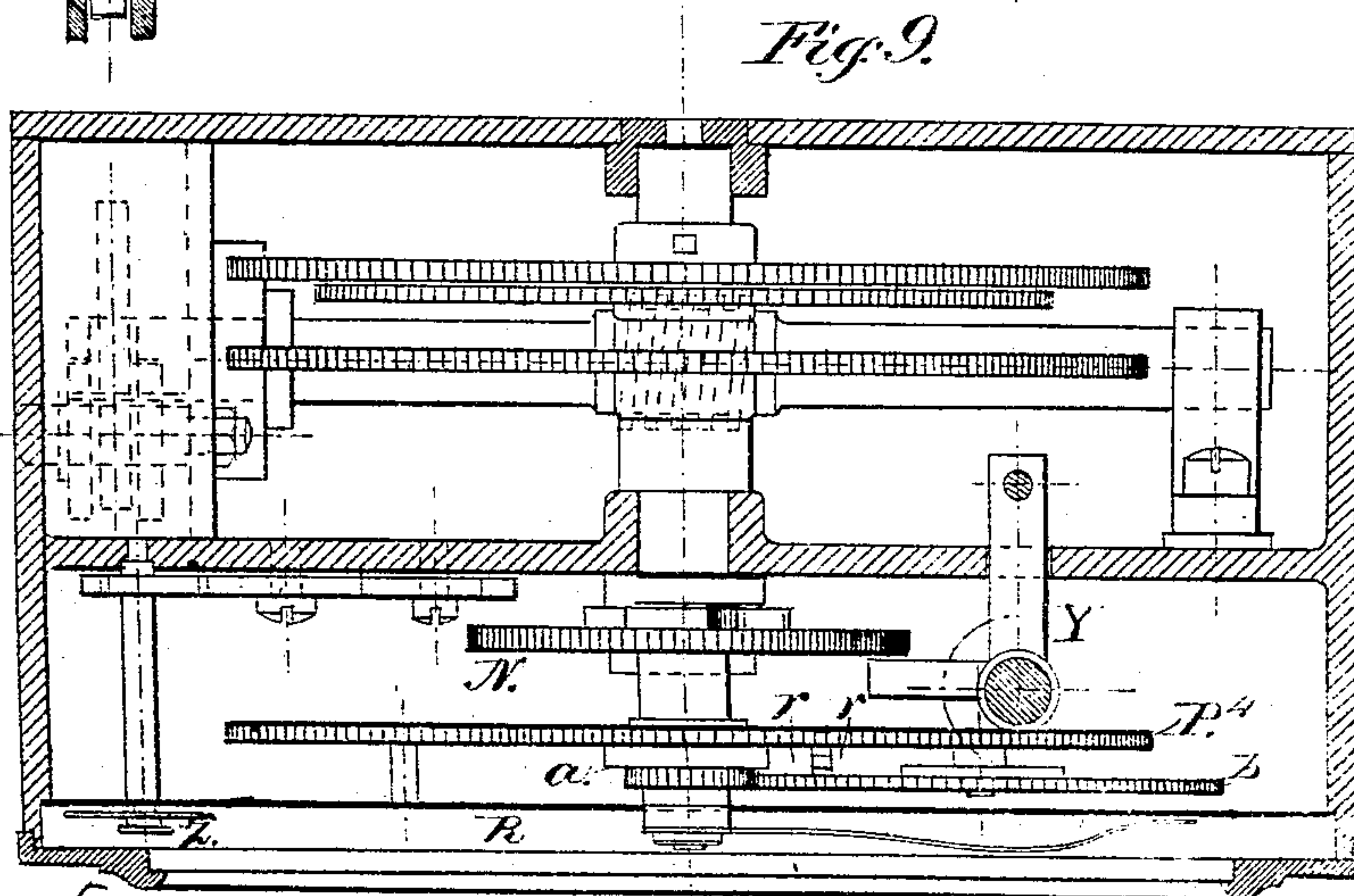


Fig. 9.

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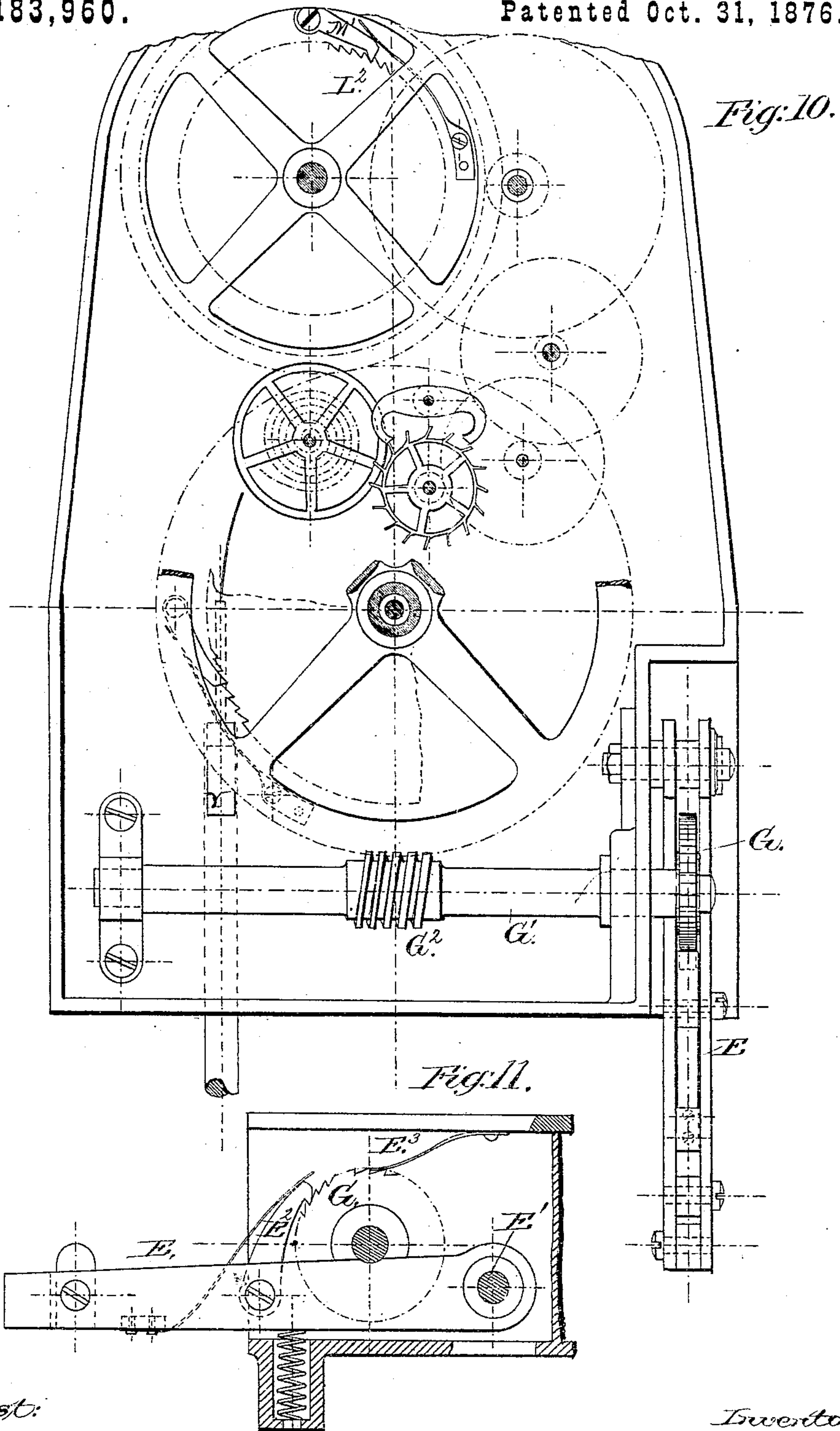
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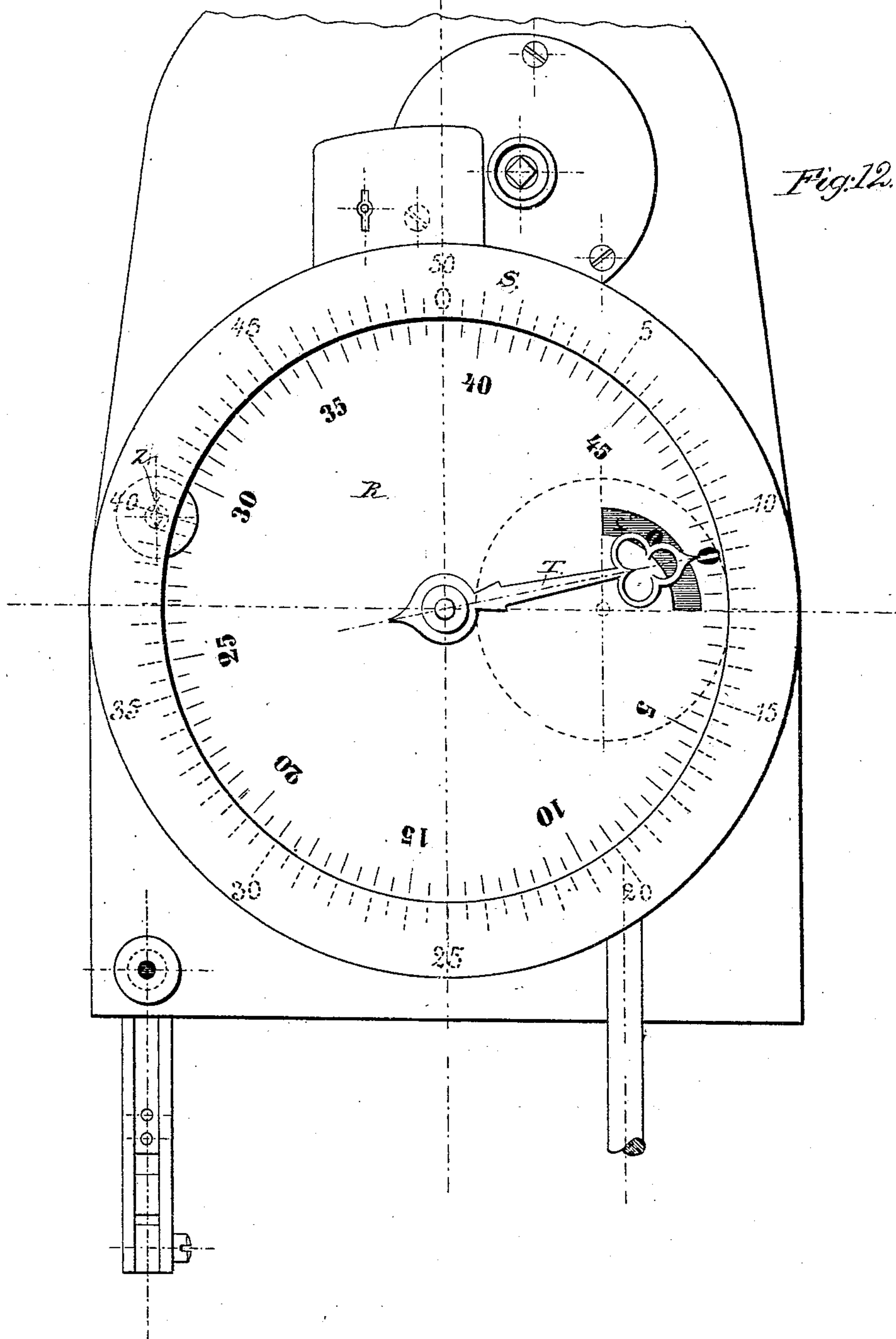
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UNITED STATES PATENT OFFICE.

WILHELM FRIEDRICH NEDLER, OF BERLIN, PRUSSIA.

IMPROVEMENT IN PASSENGER REGISTERS AND INDICATORS.

Specification forming part of Letters Patent No. **183,960**, dated October 31, 1876; application filed September 15, 1876.

To all whom it may concern:

Be it known that I, WILHELM FRIEDRICH NEDLER, of the city of Berlin, Kingdom of Prussia, German Empire, have invented a new and Improved Self-Acting Cab-Fare Indicator, of which the following is a specification:

The object of the present invention is to construct an apparatus by the use of which it is possible to indicate and register the length of time a cab or other vehicle is occupied by a passenger, and also to indicate the amount of fare without the intervention of the driver or the passenger.

The invention consists essentially in a mechanism arranged inside the cab for throwing the registering devices out of action when the cab or vehicle is not occupied, said mechanism being so constructed that it will be impossible to enter and occupy the cab without starting the registering device.

The registering apparatus consists of a watch or chronometer movement, which serves to actuate the registering devices so as to indicate the length of time the vehicle is occupied; and there is also employed an apparatus deriving its motion from the wheel or axle of the vehicle, so as to indicate the distance traveled by the vehicle. The amount of fare is determined automatically at the end of the trip, and the registering devices again set at zero.

In the accompanying drawings, Figure 1 is a vertical sectional view of a cab, showing the mechanism for throwing the registering devices in and out of operation. Fig. 2 is a transverse section of the same. Fig. 3 is a longitudinal horizontal section of the same. Figs. 4 and 5 represent a modification of the device for transmitting motion to the registering apparatus from the axle of the vehicle. Figs. 6 and 7 are sectional illustrations of the registering or time-and-fare-controlling apparatus. Fig. 8 is a view representing the devices located in rear of the dial-plates for actuating the same, and for resetting the same at the termination of a trip. Fig. 9 is a transverse section, taken through the registering apparatus. Fig. 10 is a view representing the chronometer mechanism and the devices receiving motion from the wheel

or axle of the cab. Fig. 11 is a detail view of the lever and pawl for transmitting motion to the registering devices. Fig. 12 is a face view representing the different dials and the pointers.

I will first proceed to describe the mechanism which serves to transmit motion to the registering or controlling devices from the axle or wheel of the cab or vehicle, and subsequently set forth its connection or co-operation with the registering devices.

The letter A may denote a cab or other vehicle, which contains a guard frame or gate, B, that must be let down into a vertical position before the vehicle can be entered and occupied, as is shown in Fig. 1 of drawing. Said frame or gate is rigidly attached to a transverse shaft, B¹, which is journaled in bearings or eyes B² under the seat proper of the cab. In a chamber or box formed under the seat there is arranged a lever, C, which is fulcrumed at the point c¹, bent toward one side, and then extended to the rear of the cab. At this point there is journaled a transverse shaft, D, having one end projecting through the side of the cab, and carrying a downwardly-extending arm, D¹, which is struck intermittently by a cam, A³, on the hub of the vehicle-wheel, so as to rock the shaft D and cause a vertical arm, D², carried by the same, to operate a rocking lever, E, of the registering devices when said arm D² is thrown in the proper direction by a spring, D⁴. This operation of the registering devices is designed to furnish means for indicating the distance traveled by the vehicle.

As the hubs of different wheels vary in size, I propose, in certain instances, to attach to the hub a friction-disk, F, upon which runs a disk, F¹, carrying a cam or finger, F², which serves to operate the arm D¹ and rock-shaft D. The disk F¹ is borne down upon the friction-disk on the hub by mounting it in a spring-pressed yoke, F³, fitted in a stationary bracket, F⁴, on the side of the vehicle body. When the vehicle is not occupied, the guard frame or gate B is turned into a horizontal position in front of the seat, and, in doing so, an arm, B³, of said frame will depress the front end of the lever C, causing its rear portion to exert an upward pressure upon a horizontal arm, D³, of

the rock shaft D, which will turn said shaft to such an extent as will remove the arm D¹ from contact with the actuating-cam of the wheel-hub, thus arresting the operation of the registering devices.

At the rear end of the cab or other vehicle there is attached a casing or box, which is divided into two compartments, one containing a chronometer or time mechanism, and the devices receiving motion from the wheel of the cab, and the other compartment containing the registering devices proper, and the means for resetting the same to zero at the termination of a trip. The arm D² of the rock-shaft, as already stated, engages with the lever E, which turns loosely on its fulcrum stud or shaft E¹, and carries a pawl, E², which is pressed into the teeth of a ratchet-wheel, G, firmly secured to the horizontal shaft G¹. The rocking movement imparted to the shaft D will serve to operate the pawl-lever so as to turn the shaft G¹, and, by means of a worm, G², on the same, rotate a large spur-wheel, H. The retrograde movement of the ratchet-wheel G is prevented by the spring E³. The spur-wheel H is fitted loosely on a hollow shaft or sleeve, I, which turns independently on a solid arbor or center shaft, J. The spur-wheel H carries a pawl, H', which engages with a ratchet-disk, K, fixed on the side of a spur-wheel, L, and both the ratchet-disk and the spur-wheel are firmly secured to the sleeve or hollow shaft I, so as to turn with the same, and the wheel L meshes into a corresponding wheel, L¹, fitted loosely on the arbor of a spring-barrel, M. Said spring-barrel carries a pawl, M', which operates the wheel L¹ through the medium of a ratchet-disk, L², fixed to the side of said wheel. It will be perceived that the chronometer mechanism, whose motion is regulated by an ordinary escapement and train of gearing is entirely distinct from the devices operated by the vehicle-wheel, and yet the hollow shaft, with its attached wheels, will be operated by both through the means already described. If the spur-wheel L rotates faster than the wheel L¹ on the arbor of the spring-barrel, then the latter is disengaged from said barrel, so that both wheels will rotate alike, without, however, affecting the movement of the spring-barrel.

The hollow shaft I carries a fixed arm or carrier, I¹, which engages, by means of a stud, I², with a segment-plate, J³, having two teeth, between which the stud I² fits. Said segment is secured to the rear face of a ratchet-wheel, N, and both the segment and ratchet-wheel are firmly attached to the solid shaft J, so as to rotate with the same. The hub of the ratchet-wheel, together with the shaft I, runs in a stationary bridge, O. On the shaft J, in front of the bridge O, there is loosely fitted a large ratchet-wheel, P, to which is attached the outer end of a coil-spring, Q, the inner end of which is secured to the hub of the ratchet-wheel N. The ratchet-wheel P carries the main dial-plate R, which is graduated and

numerated so as to correspond with a stationary ring, S, secured around the periphery of the casing. The shaft J carries at its outer end a pointer, T, which runs over the main dial-plate, and serves to point out thereon the length of time the vehicle is being occupied, and the distance traveled by the same. A pinion-wheel, a, on the pointer-shaft J engages with a spur-wheel, b, which is journaled in the space between the dial-plate R and ratchet-wheel P, the two being held at the proper distance apart for this purpose. The spur-wheel b bears a dial-plate, c, which is displayed through an opening in the main dial-plate, and serves to indicate to the passenger the number of rotations of the pointer and the corresponding fare-prices.

It will be perceived that the main dial-plate, by reason of its connection with the coil-spring Q and its loose location on the pointer-shaft, will be carried around by the recoil of the spring whenever a trip is complete, and it is desired to set the dial-plate again at zero. The automatic disengagement of the dial-plate and its ratchet-wheel is accomplished through the medium of a lifter, U, having an encircling spiral spring, U', and extending through the bottom of the register-casing.

When the passenger leaves the cab, and the guard-frame or gate is thrown into a horizontal position, the rear end of the laterally-bent portion of the lever C will bear upon the lower end of the lifter U, thus raising the same and causing its upper end to exert a lifting-pressure upon the free end of a retaining-lever, V, which is pressed into the teeth of the ratchet-wheel P by means of a spring, v. This lifting-pressure will release said lever, and the ratchet-wheel and dial-plate will be carried around by the recoil-spring, for the purpose already set forth. The lifter U, as it rises to effect the disengagement of the dial-plate, will bear upon a centrally-pivoted brake-arm, W, and force the same into the teeth of the ratchet-wheel N, thus preventing the pointer-shaft from being thrown around by the recoil of the dial-plate in consequence of its connection with the dial c by the spur-wheel a b. Stud r r on the ratchet or main dial wheel and the spur-wheel b of the smaller dial will serve to bring both dials to the zero or normal point. The lifter U carries a pivoted spring-pressed pawl, X, which will be raised with it, and then, when the encircling spiral spring carries the lifter back, the pawl will engage with the ratchet-wheel N, and turn the same, together with its attached shaft and pointer, to such an extent as will serve to indicate upon the dial-plate, by the position of the pointer, the exact amount of the fare to be paid by the passenger. This independent movement of the pointer is permitted because the stud of the carrier is removed from contact with the sector of the ratchet-wheel.

Simultaneously with the disengagement or resetting of the dial-plate by the lifter U, I also throw the chronometer mechanism out of

action by interrupting the movement of the escapement. This result is accomplished by means of a horizontal arm, Y, on the lifter, which arm carries a spring-tongue, Y', that is caused to engage with the escapement when the lifter is raised.

In order to provide means for indicating to the proprietor of the cab the exact number of fares received by the driver, I arrange on the fixed dial-plate a small dial-plate, over which moves a pointer, Z, which is operated by means of a toothed wheel, Z¹, at its lower end, and an obliquely-sliding plate, Z². Said plate is pushed forward by the carrier, which turns the ratchet-wheel at every revolution of the pointer, to turn the wheel Z¹ one tooth, and it is retracted by a spring, Z³. A pawl and spring, Z⁴, are employed to prevent a reverse movement of the pointer Z. At the upper end of the register-casing there is located a small chamber containing a lever, f, which is connected with the retaining-lever by a chain or rod, g. The chamber containing said lever f can be opened by the owner of the cab, so as to enable the retaining-lever to be raised and the dial-wheel to be set at zero when the cab leaves the stable or depot. All the operating parts are designed to be placed under lock and key, so that neither the passenger nor driver can have access to the same.

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

1. The combination of a guard frame or gate

with a cab or other vehicle, and registering and fare-controlling devices for the purpose of throwing the registering device into action when the vehicle is occupied, and out of action when the passenger leaves the same, substantially as herein shown and described.

2. The combination, in a fare-controlling apparatus for cabs, of the guard frame or gate B, lever C, rock-shaft D, having arms D¹ D², actuating-cam A³ on the wheel-hub, and registering devices adapted to be thrown in and out of action, substantially in the manner and for the purpose set forth.

3. The combination, in a registering apparatus, of the worm-shaft G¹, spur-wheels H L, ratchet-wheel K, pawl H', hollow shaft I, carrier I¹, segment J³, ratchet-wheels N P, coiled spring Q, main dial R, center shaft J, and pointer T, all constructed and relatively arranged as herein set forth.

4. The combination of the brake-pawl W with the lifter U, ratchet-wheel, and pointer-shaft, as and for the purpose set forth.

5. The combination of the pawl X with the lifter U, ratchet-wheel, and pointer-shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILHELM FRIEDRICH NEDLER.

Witnesses:

GERARD WEURESCHAU V. NAWROCKI, Esq.,
EDWARD P. MACLEAN.