ALPHONSE JEAN-BAPTISTE EDOUARD DARRAS.

TAXIMETER.

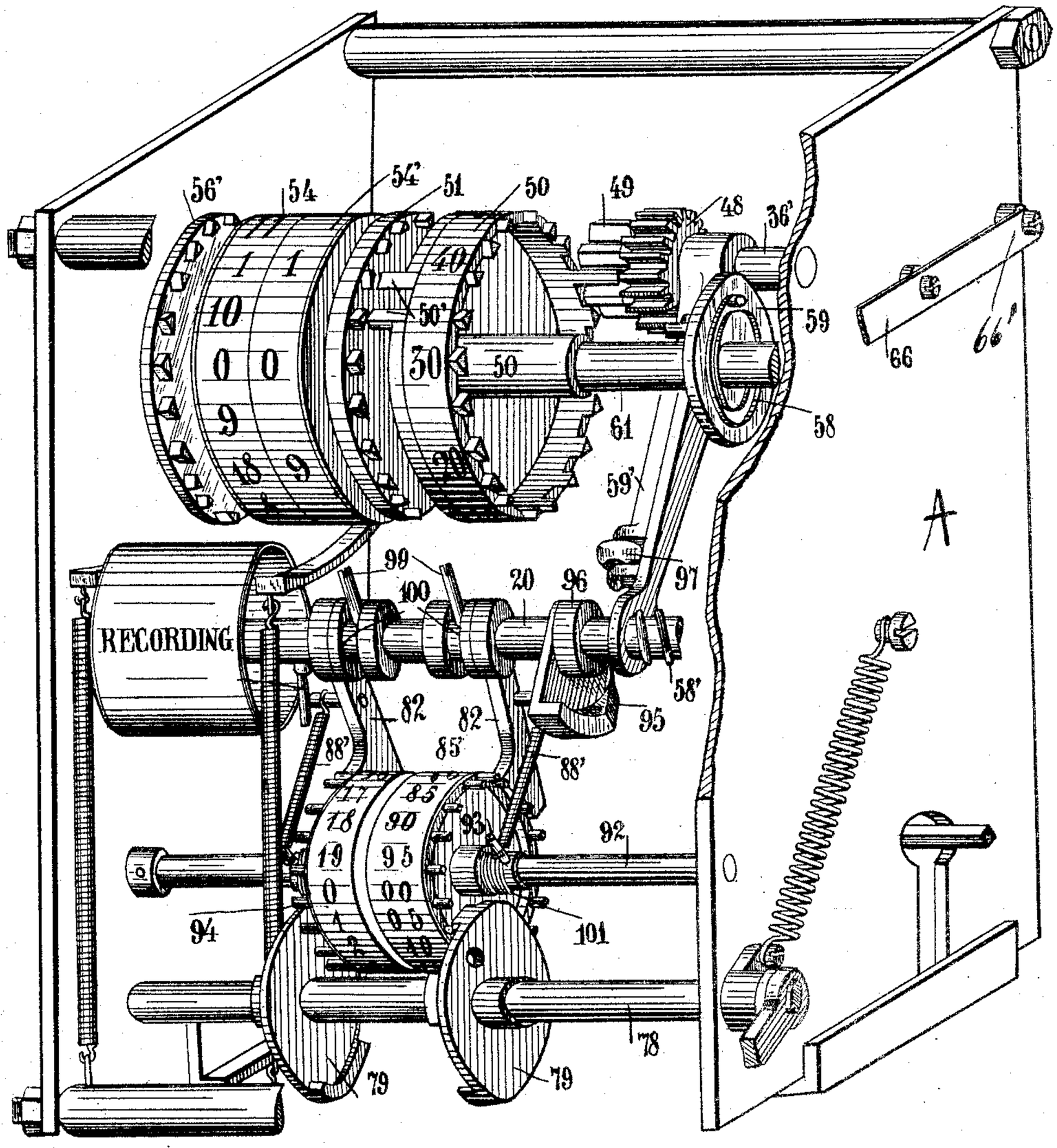
APPLICATION FILED FEB. 23, 1909.

948,371.

Patented Feb. 8, 1910.

5 SHEETS—SHEET 1.

Fig.1



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5 SHEETS—SHEET 2.

Fig.2.

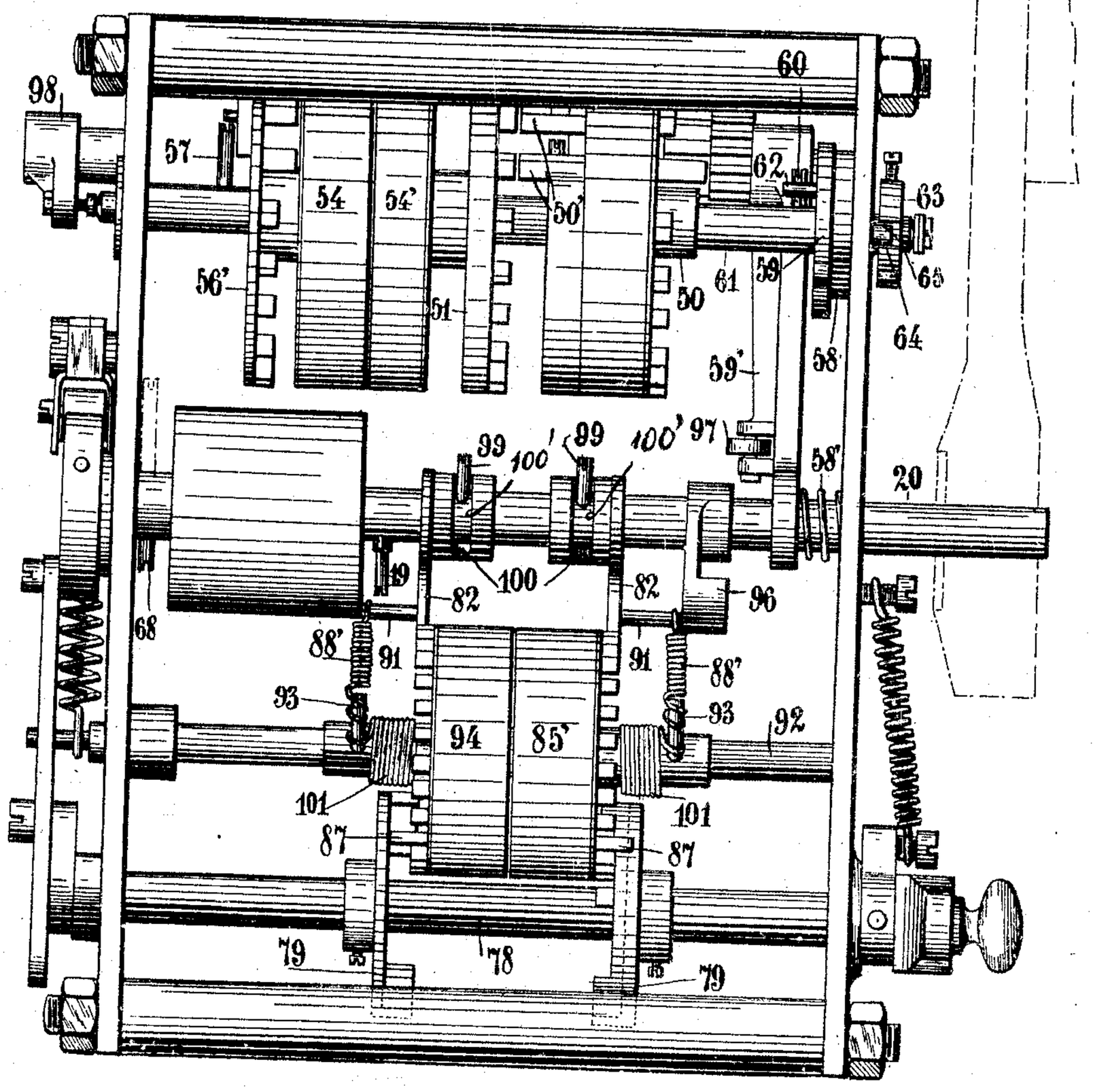

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Fig. 3.

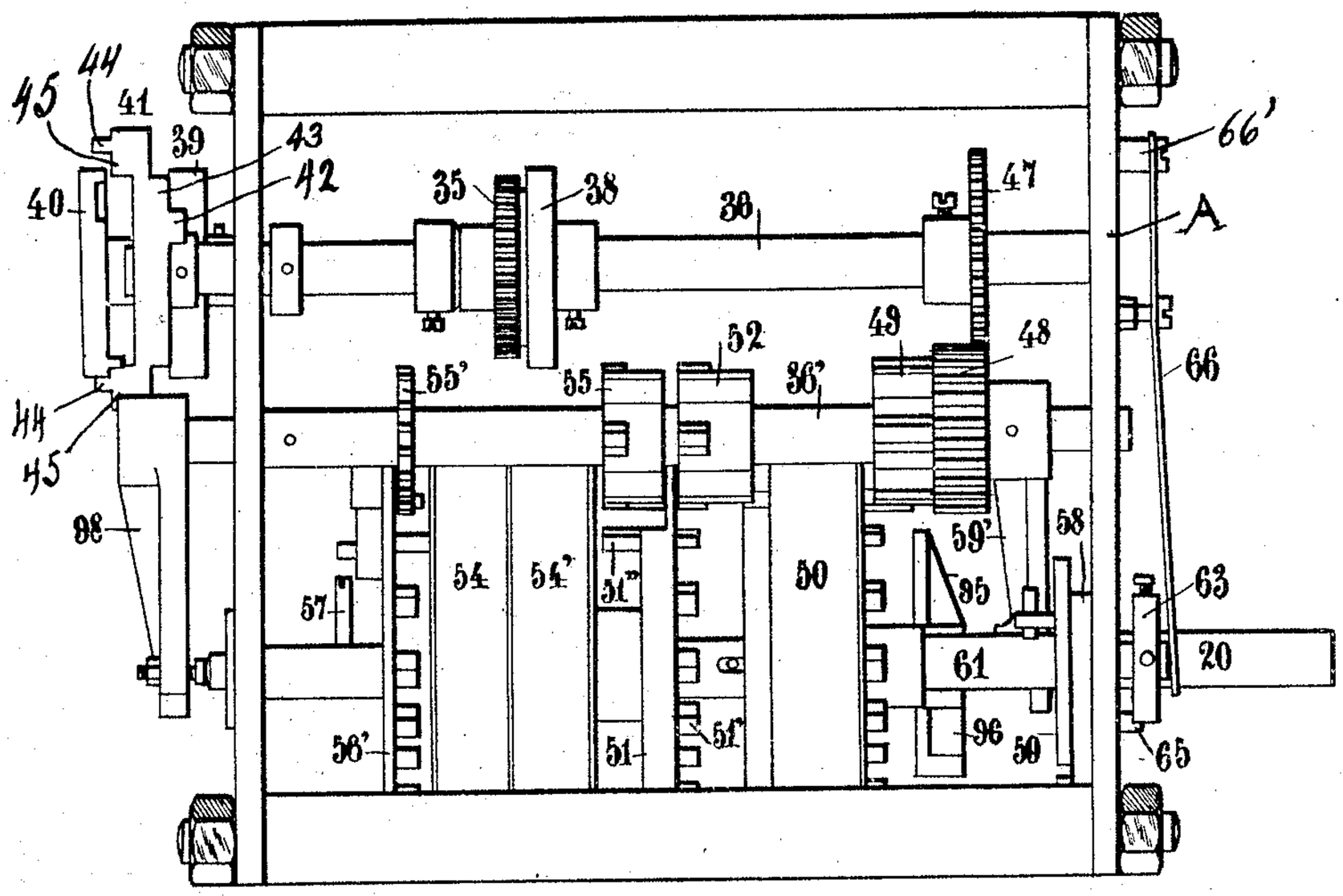
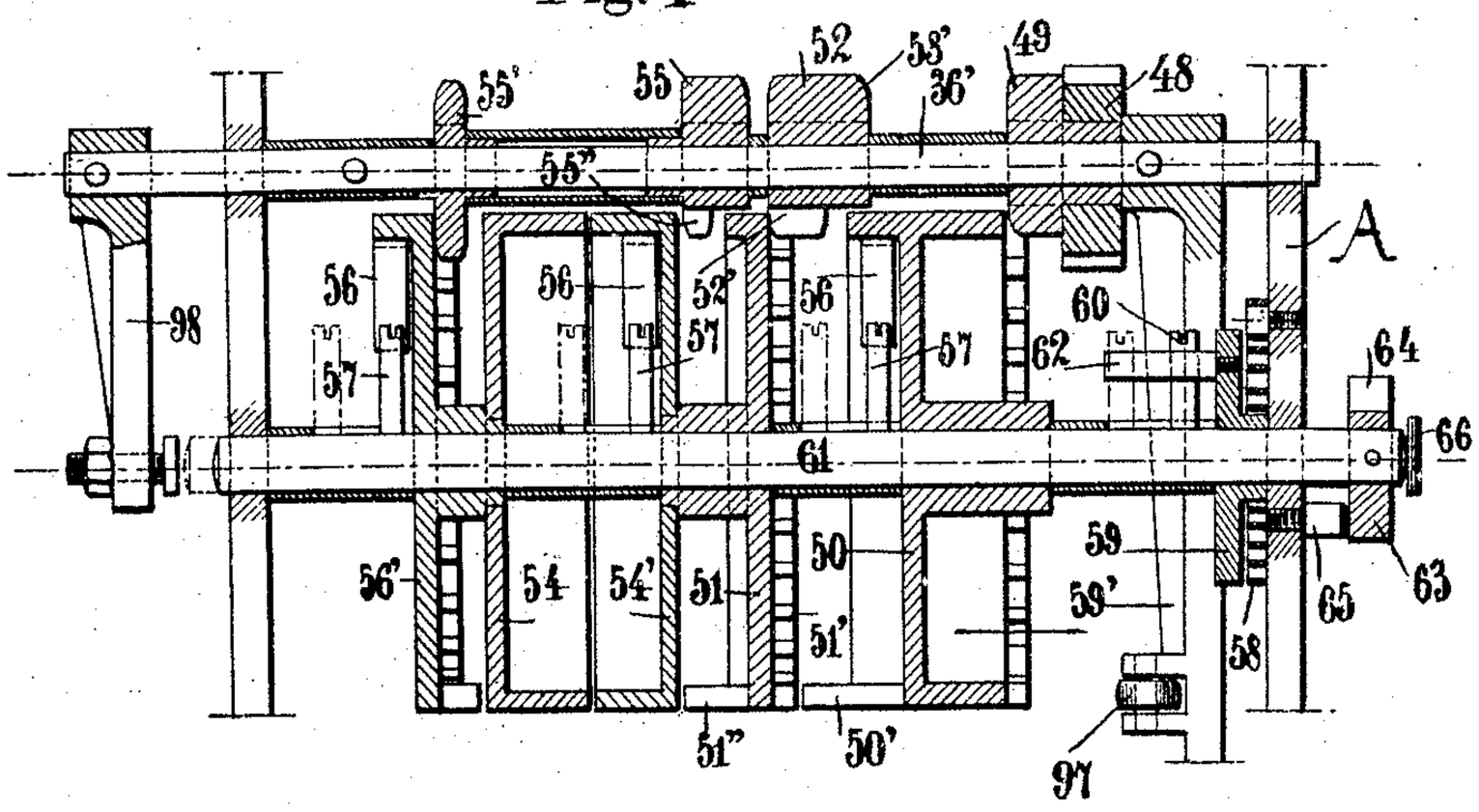


Fig. 4



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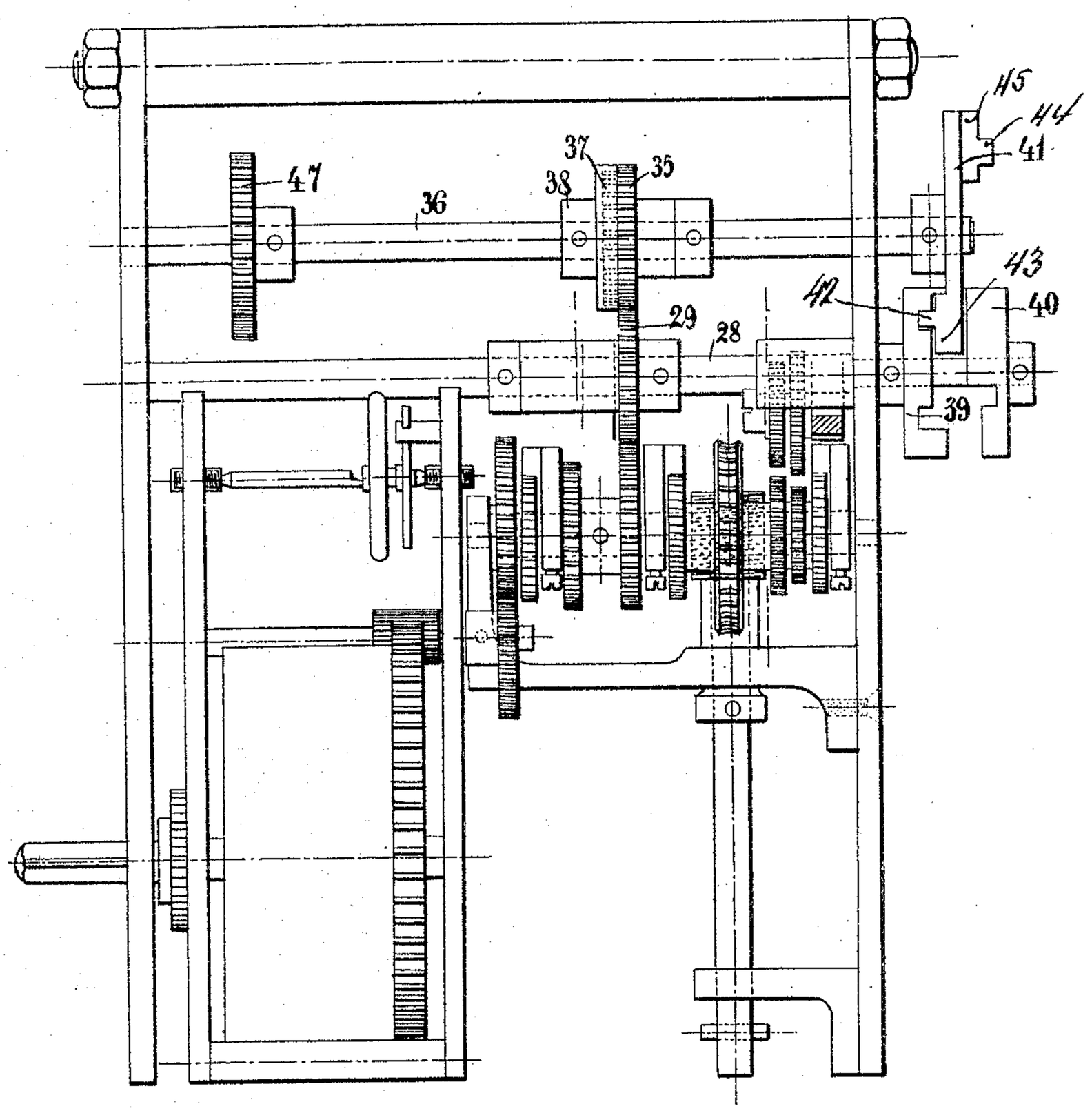
5 SHEETS—SHEET 4.

Fig. 5



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5 SHEETS—SHEET 5.

Fig: 6,

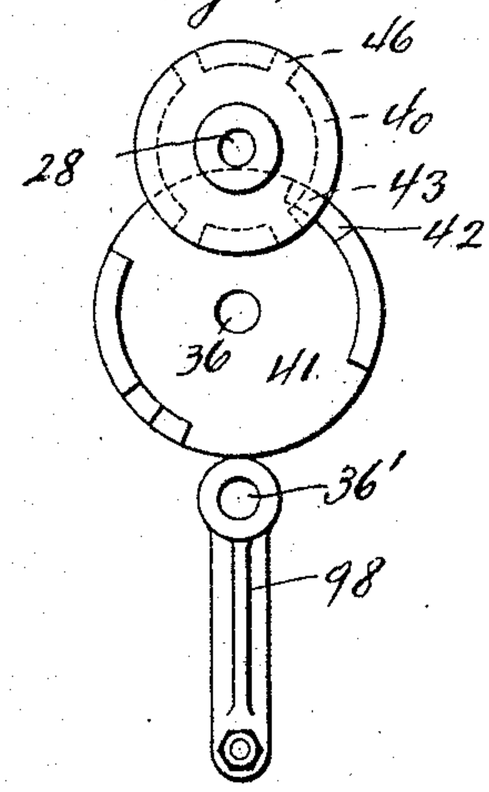


Fig: 7,

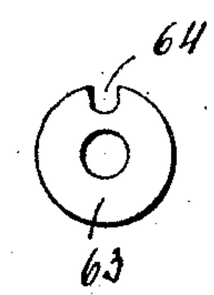


Fig: 8,

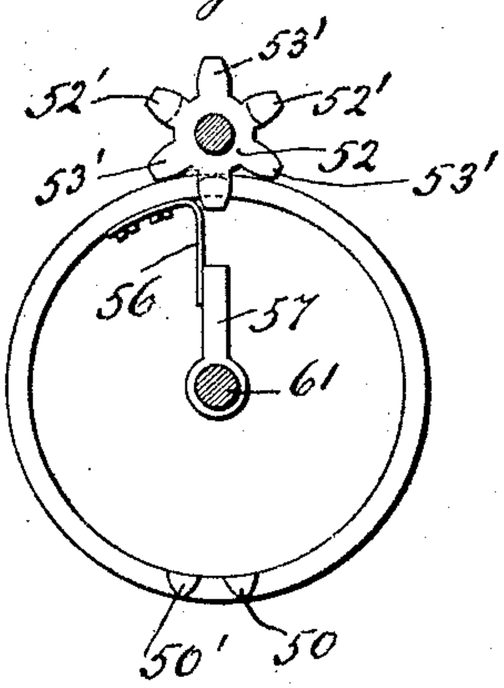


Fig: 9,

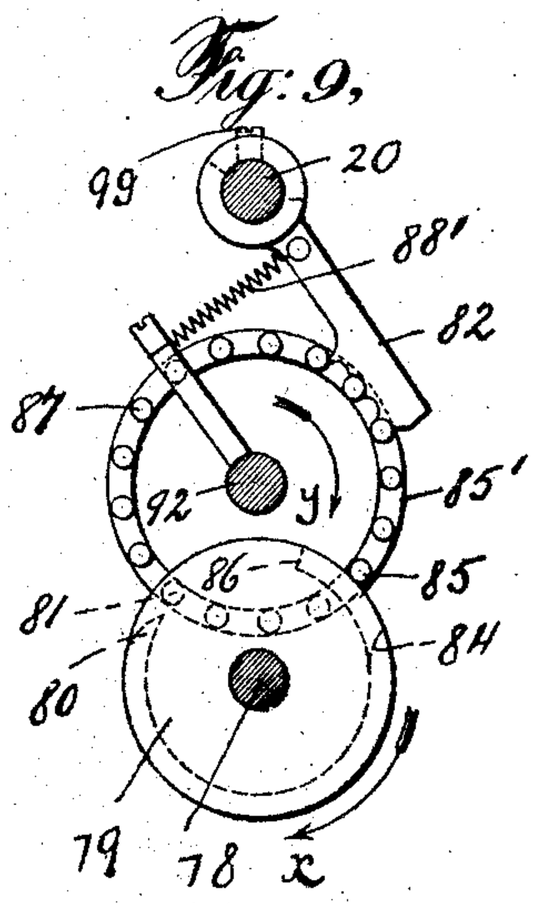


Fig: 10,

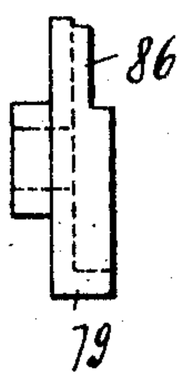


Fig: 11,

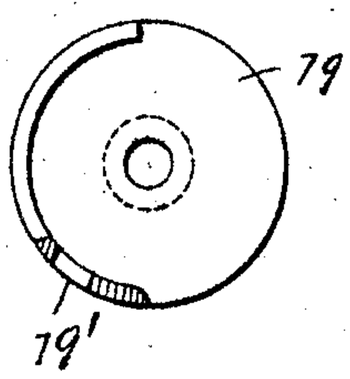
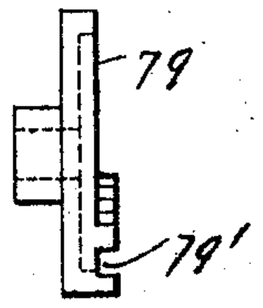


Fig: 12,



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UNITED STATES PATENT OFFICE.

ALPHONSE JEAN-BAPTISTE EDOUARD DARRAS, OF PARIS, FRANCE.

TAXIMETER.

948,371. Specification of Letters Patent. Patented Feb. 8, 1910.

Application filed February 23, 1909. Serial No. 479,492.

To all whom it may concern:

Be it known that I, ALPHONSE JEAN-BAPTISTE EDOUARD DARRAS, a citizen of the Republic of France, and resident of Paris, France, have invented new and useful Improvements in or Relating to Taximeters, which improvements are fully set forth in the following specification.

This invention relates to taximeters with multiple tariffs of the kind described in my application Ser. No. 369,118 of April 19, 1907, in which the figure drums are intermittently rotated and return to their original positions upon the raising of the flag and in which the main driving shaft is caused to register one or the other of the tariffs by the preponderating movement produced either by a clock or by the vehicle, the clock being stopped in the distance tariff at the desired moment by a suitable device.

The invention particularly relates to the following improvements: 1. A device imparting the intermittent rotary movement to the figure drums. 2. A device for returning the figure drums to a starting point. 3. A device for driving the figure drums for "supplements."

The improved apparatus is illustrated by way of example in the accompanying drawing in which similar reference characters denote corresponding parts and in which—

Figure 1 is a perspective view of the apparatus; Fig. 2 a front view thereof; Fig. 3 a plan view thereof; Fig. 4 a sectional plan view through the figure drums and the means for driving the latter; Fig. 5 a rear view of the apparatus and Figs. 6 to 12 are details.

In the drawing A denotes the casing of the taximeter, 28 a spindle borne therein and to which in the manner described in the above named prior application, the preponderating movement produced either by a clock or by the vehicle is transmitted. Rigidly mounted on the said shaft 28 is a pinion 29 which is in meshing connection with a wheel 35 that is loosely mounted on a spindle 36 (Fig. 5). The wheel 35 has attached to it one end of a spiral spring 37, the other end of which is fixed to a piece 38 that is rigidly mounted on spindle 36. Under the action of the spring 37, the spindle 36 has the tension to always revolve in a certain direction. On the outside of the spindle 28 disks 39 and 40 are rigidly secured (Figs. 3, 5 and 6) which are provided with suitable notches directed inward and displaced against one another. To the spindle 36 on the other hand a disk 41 is keyed which is provided with stepped projections 42, 43, 44 and 45 (Figs. 3 and 5) arranged alternately on its two faces. In the example shown the disk 41 is in such a position that the projection 42 thereof is engaged in one of the notches of the disk 39 (Fig. 5). In this position the disk 41 is locked until the notched disk 40 in its rotation with the spindle 28 presents one of its notches to the disk 41 which under the action of the spring 37 is caused to suddenly escape and to rapidly execute a fraction of a revolution together with the spindle 36. In this manner an intermittent rotary movement is imparted to the spindle 36.

Rigidly secured to the spindle 36 is a pinion 47 adapted to transmit the intermittent movement of the spindle 36 to the figure drums in the following manner: Upon a spindle 36′ slidably borne in the frame A and which loosely carries pinions 49, 52, 55 and 55′ and which we will call the "pinion spindle", a wheel 48 is mounted which is coupled with the pinion 49. The pinions are suitably secured on the spindle 36′ to prevent their relative displacement. Upon a spindle 61 parallel to the spindle 36′ the figure drums 50, 54′ and 54 are loosely mounted of which 50 is designed for cents, 54′ for dollars and 54 for tens of dollars and which as in the prior application are formed with teeth. The pinion 49 is adapted to mesh with the teeth of the pinion 50 (Figs. 1 and 4) and to thus transmit an intermittent rotary movement to the latter recording the cents.

For the recording of dollars on the drum 54′ the following arrangement is made: The drum 50 has also two longer teeth 50′ (Fig. 1). The pinion 52 is provided with alternately recessed teeth 52′. The longer teeth of the drum 50 are adapted to meet one of the teeth 52′ of the pinion 52 and to cause the latter to advance two teeth. Between the drum 50 for cents and the drum 54′ for dollars a toothed disk or wheel 51 coupled with the latter is provided, the teeth 51′ of which are adapted in a certain position of the pinion 52 to mesh with the teeth 53′ of the latter and to thereby give the drum 54′ the recording movement.

The recording of tens of dollars on the drum 54 is effected in the following manner: The pinion 55 is composed of two parts 55 and 55′ which are fixed on the same socket

(Fig. 4) and of which 55 has also alternately recessed teeth 55″. The disk 51 has two longer teeth 51″ which during the recording are adapted to mesh with the teeth 55″ of the pinion 55 and impart to the latter a fraction of rotation. At the side of the drum 54 another toothed disk or wheel 56′ is provided the teeth of which mesh with the part 55′ of the pinion 55, so that the rotation of the pinion 55 is transmitted to the drum 54 through the medium of the part 55′ and disk 56′.

The pinions 49, 52, 55 and 55′ are retained in contact with the respective drums by means of a lever 59′ that is fixed on their common spindle 36′. The other end of this lever slides on a spindle 20 (Figs. 1 and 2) which we will call the "flag spindle". Fixed upon the flag spindle is a cam 96 that is adapted upon the raising of the flag to act against a roller 97 carried by the lever 59′ and to thereby cause the displacement of the pinion spindle 36′, whereby the pinions are shifted out of meshing connection with the drums (Figs. 1 and 2).

A finger 60 rigidly secured to the slidable spindle 61 is arranged in the path of a cross pin 62 projecting from a disk 59 which is loosely mounted on the spindle 61. To this disk one end of the spiral spring 58 is secured, the other end of which is fixed to the frame A. On the outside of the spindle 61 a disk 63 is fixed which is provided with a notch 64 (Figs. 4 and 7) and which normally rests against pin 65 projecting from the frame A. A spring 66 which at 66′ is secured to the frame A (Figs. 1, 3 and 4) acts against the end of the spindle 61 and tends to displace the latter in the direction from right to left as indicated by dotted lines (Fig. 4). This displacement however, only becomes possible when the notch 64 of the disk 63 is brought in line with the projection 65 so that the latter can project into the notch.

Secured to the end of the slidable pinion spindle 36′ which is opposite to the spring actuated end of the drum spindle 61 is an arm 98 the lower end of which projects in line with the spindle 61 and which on the displacement of the pinion spindle 36′ acts against the spindle 61 and tends to shift the same from left to right. This displacement releases the disk 63 from the projection 65 permitting the disk 59 to turn under the influence of the spring 58 and to thereby impart rotation to the spindle 61. This rotation is transmitted to the drums by means of spring blades 56 projecting radially from their circumference and pins 57 arranged in their path and fixed to the spindle 61. Thus the drums upon the raising of the flag are caused to return into their initial position.

On a spindle 92 below the spindle 20 of the flag, two drums for supplements, 85′ for cents and 94 for dollars are loosely mounted. These drums are actuated by springs 101 and similar to the first named figure drums are provided with teeth. Loosely mounted on the flag spindle 20 are pawls 82 with sockets 100. These sockets have central recesses 100′ through which pins 99 fixed to the spindle 20 project outward. The pawls 82 which at their free ends are notched are caused by means of spring 88′ one end of which is secured thereto and the other end to the spindle 92 to engage with the teeth of the respective drums for the supplements and lock them in position. Upon raising of the flag, the pins 99 acting against the sockets 100 cause the pawls to swing upward releasing the drums 85′ and 94, which under the influence of their springs 101 will tend to rotate.

On a spindle 78 which by any suitable means may receive an intermittent movement, anchors 79 are secured (Figs. 1, 2, 9 and 10). Each of these anchors consists of a disk provided with stepped flanges 86, 80 and 84. The part 86 of the flange is in retreat relatively to that of the part 84 and 80 and in line with them. The drums 85′ and 94, each have one tooth 87, which is longer than that of the rest of their teeth and which is adapted on coming in contact with the part 86 of the flange to prevent the drum from making more than one revolution. One end of the flange 80, 84 has a slope from the outside inwardly to form a curve which when the anchor is revolved in the direction of the arrow x engages a tooth 81 of the corresponding drum and gives it a turn in the direction of the arrow y (Fig. 9) to the extent of one half a tooth. The opposite end of the flange 80, 84 is curved in the reverse direction, so that when the anchor by suitable means is caused to return into its initial position, this curved end engages another tooth 85 of the drum (Fig. 9) and causes it to turn in the same direction to the extent of another half a tooth. The anchors are so positioned on the spindle 78 relative to one another that during a quarter of a turn given to the spindle 93 in a certain direction one of them will operate one drum as for instance, the drum 85′ for cents and during a quarter of a turn in the reverse direction, the other anchor will operate the other drum as the drum for dollars. Each anchor may be rotated to 90° only, never to 180°, so that the drum for cents is not able to influence the drum for dollars or vice-versa. The part 79 has a notch 79′ (Figs. 11 and 12) for engagement with the teeth of the drum when released until the longest tooth 87 strikes the projection 86.

What I claim and desire to secure by Letters Patent is:

1. In a taximeter, the combination with a continuously driven spindle, of two notched

disks secured thereon, the notches being directed opposite and displaced to one another, a spring actuated spindle, means for transmitting movement from the first named spindle to the latter and a disk on said spring actuated spindle having stepped displaced projections on its two faces and adapted to coöperate with the two notched disks to periodically stop and release the spring actuated spindle and to thereby cause the latter to execute an intermittent movement.

2. In a taximeter, the combination with a continuously driven spindle, of two notched disks secured thereon, the notches being directed opposite and displaced to one another, a spring actuated spindle, means for transmitting movement from the first named spindle to the latter, a disk on said spring actuated spindle having stepped displaced projections on its two faces and adapted to cooperate with the two notched disks to impart to the spring actuated spindle an intermittent movement, a longitudinally slidable spindle, pinions on the latter, means for transmitting movement to said pinions from the above named spindle having an intermittent movement and a set of toothed figure drums adapted to be driven by said pinions.

3. In a taximeter, a longitudinally slidable spindle, pinions thereon which are capable of turning on and are secured against displacement relative to said spindle, a flag spindle a lever keyed to the pinion spindle, and a cam on the flag spindle, which cam at the swinging of the flag spindle is adapted to act against the said lever and cause the longitudinal displacement of the pinion spindle and of the pinions.

4. In a taximeter, a longitudinally slidable pinion spindle, a longitudinally slidable figure drum spindle, a lever secured to the pinion spindle, a flag spindle, a cam secured to the said flag spindle and adapted in a certain position to act against the said lever and to cause the displacement of the pinion spindle, a second lever on the pinion spindle, the free end of which projects in line with the drum spindle to cause the longitudinal displacement of the latter at the displacement of the pinion spindle.

5. In a taximeter, a longitudinally slidable figure drum spindle, a spring actuated disk loosely mounted thereon, means for imparting rotary movement from the said disk to the spindle and means for temporarily preventing the drum spindle from being longitudinally displaced.

6. In a taximeter, a longitudinally slidable figure drum spindle, a spring acting against one end of said spindle to cause its longitudinal displacement, a notched disk on said spindle and a stationary pin against which the said disk rests and which when engaging into said notched disk allows the longitudinal displacement.

7. In a taximeter, a longitudinally slidable spindle, figure drums loosely mounted thereon, a spring actuated disk on said spindle, means for imparting rotary movement from said disk to the said spindle, radial spring blades on said figure drums and fingers projecting from the said spindle and adapted to engage with said blades causing the drums to revolve with the spindle.

8. In a taximeter, spring actuated toothed figure drums for supplements, a flag spindle, pawls rotatively mounted on said flag spindle and adapted to normally engage with the figure drums and arrest the same, means for causing the said spring actuated pawls to release the figure drums at the swinging of the flag spindle and means for feeding the said drums.

9. In a taximeter, spring actuated toothed figure drums for supplements, a flag spindle, spring actuated pawls engaging said drums and arresting the same in position, means for causing the release of the pawls from the drums, an intermittently movable spindle, disks having stepped flanges on said spindle which are adapted to coöperate with the teeth of the figure drums to feed the latter, the said disks having their flanges displaced relative to one another to alternately operate the figure drums according to the direction of rotation of their spindle.

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

ALPHONSE JEAN-BAPTISTE EDOUARD DARRAS.

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