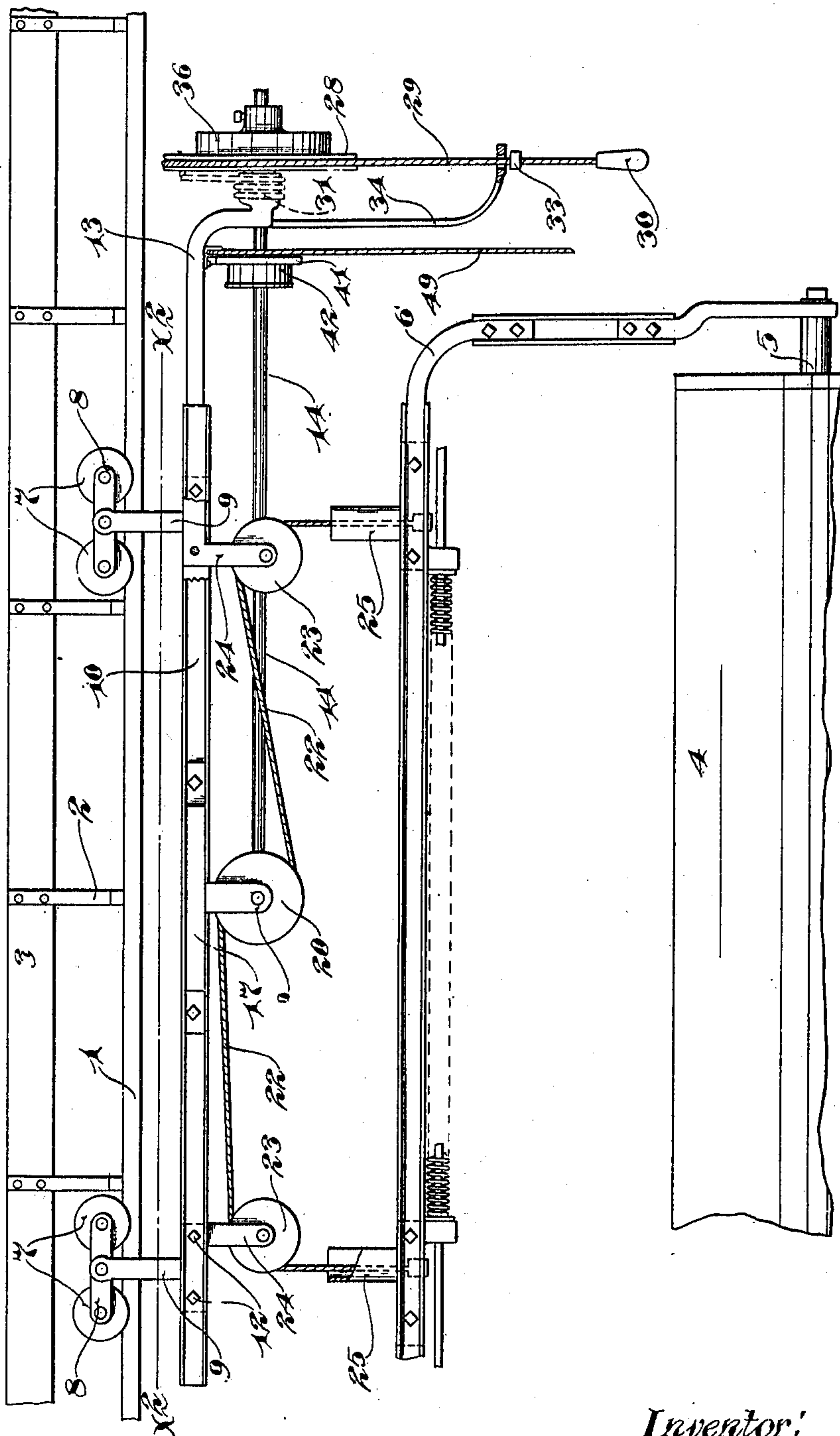


LITTER CARRIER.

978,332.

Patented Dec. 13, 1910.

3 SHEETS—SHEET 1.



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LITTER CARRIER.

APPLICATION FILED JULY 14, 1910.

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3 SHEETS-SHEET 2.

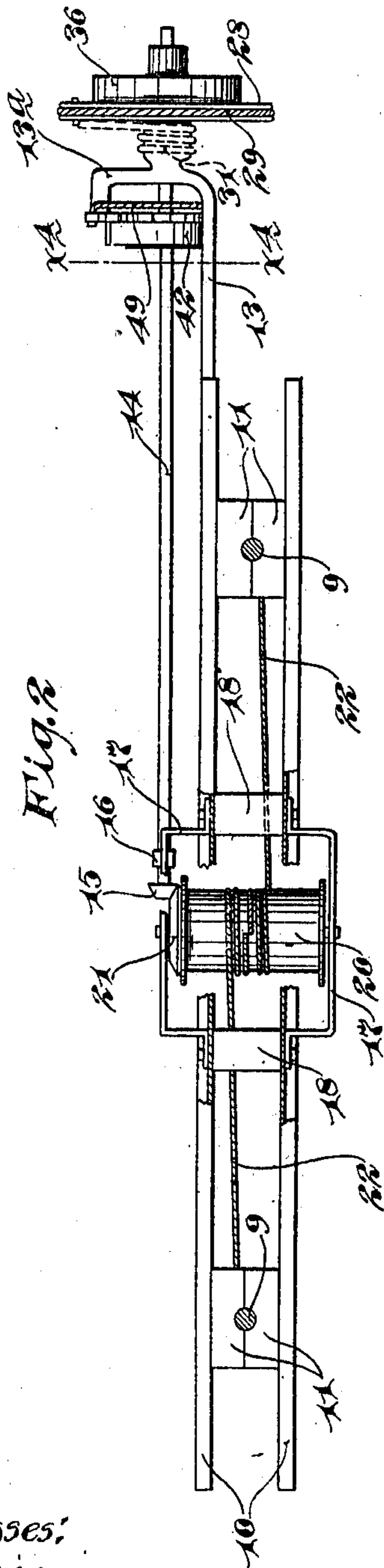


Fig. 2

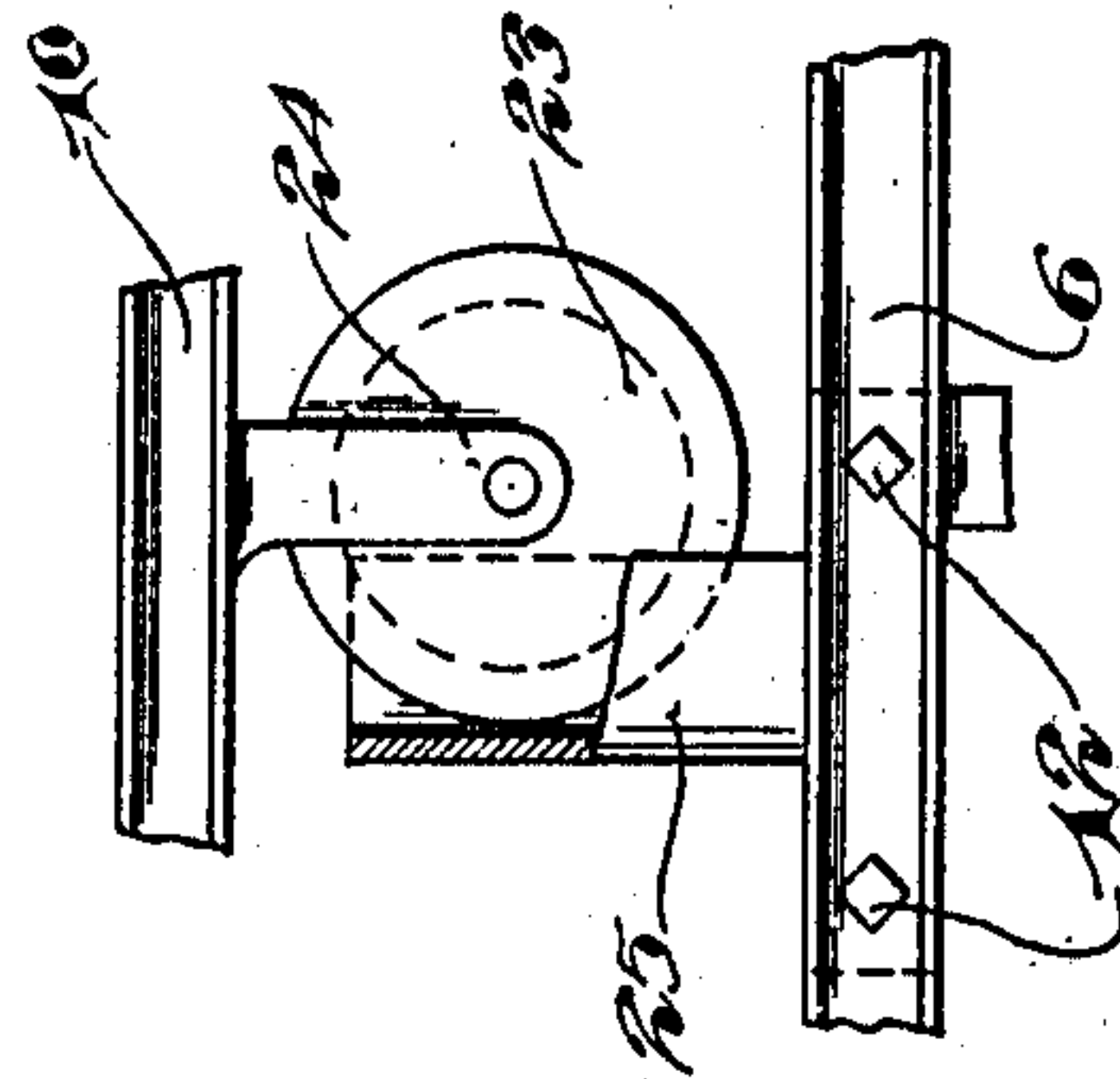


Fig. 3

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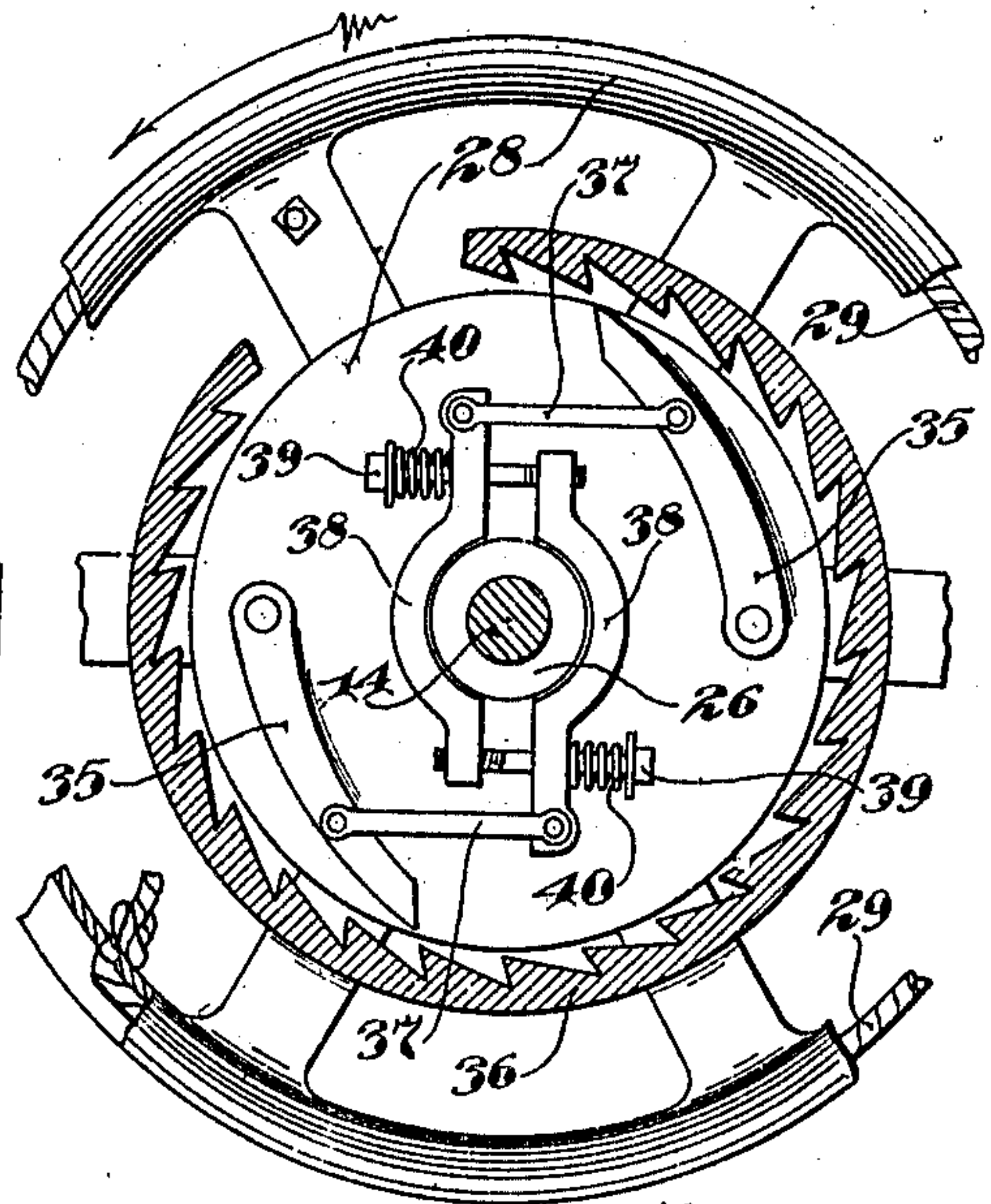
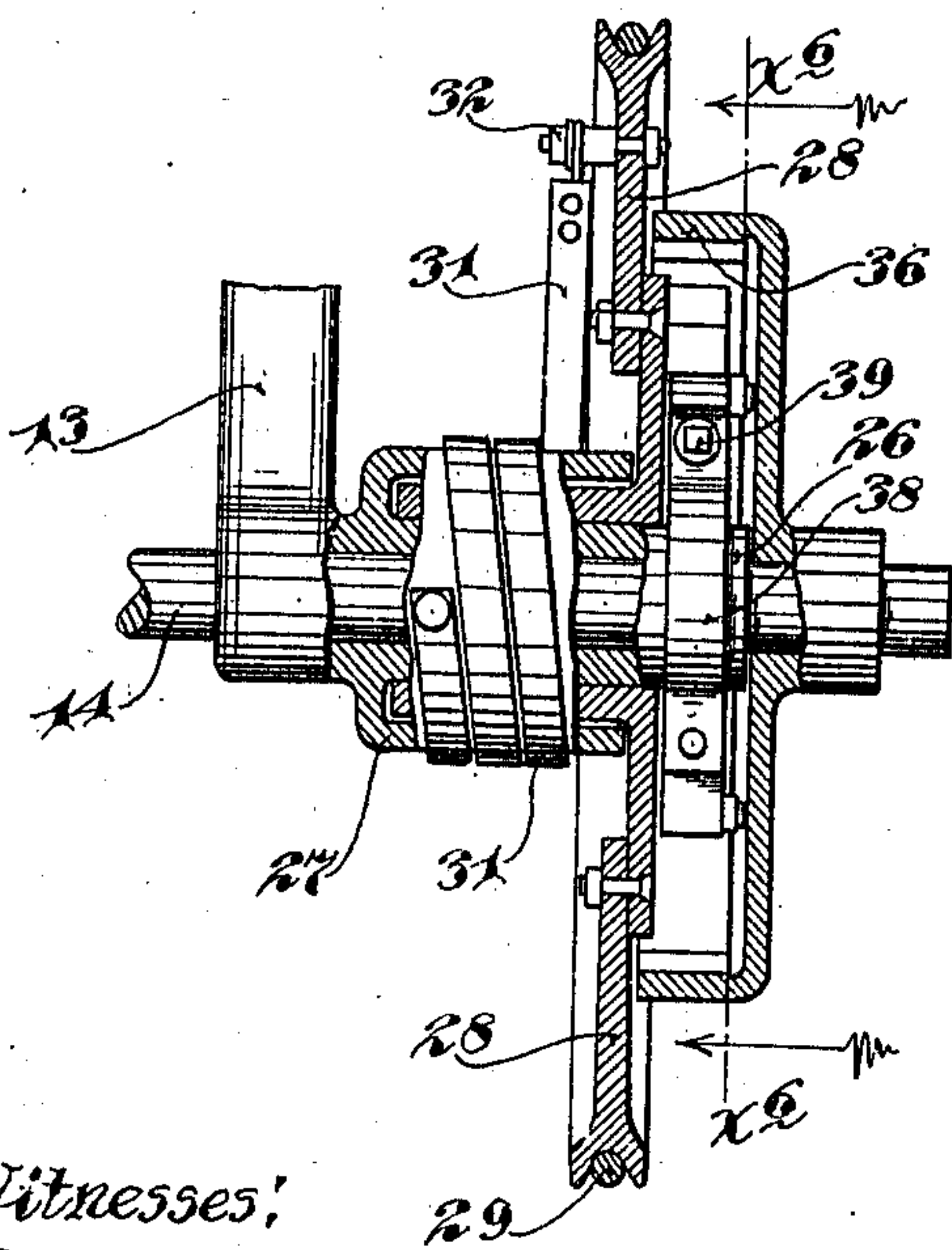
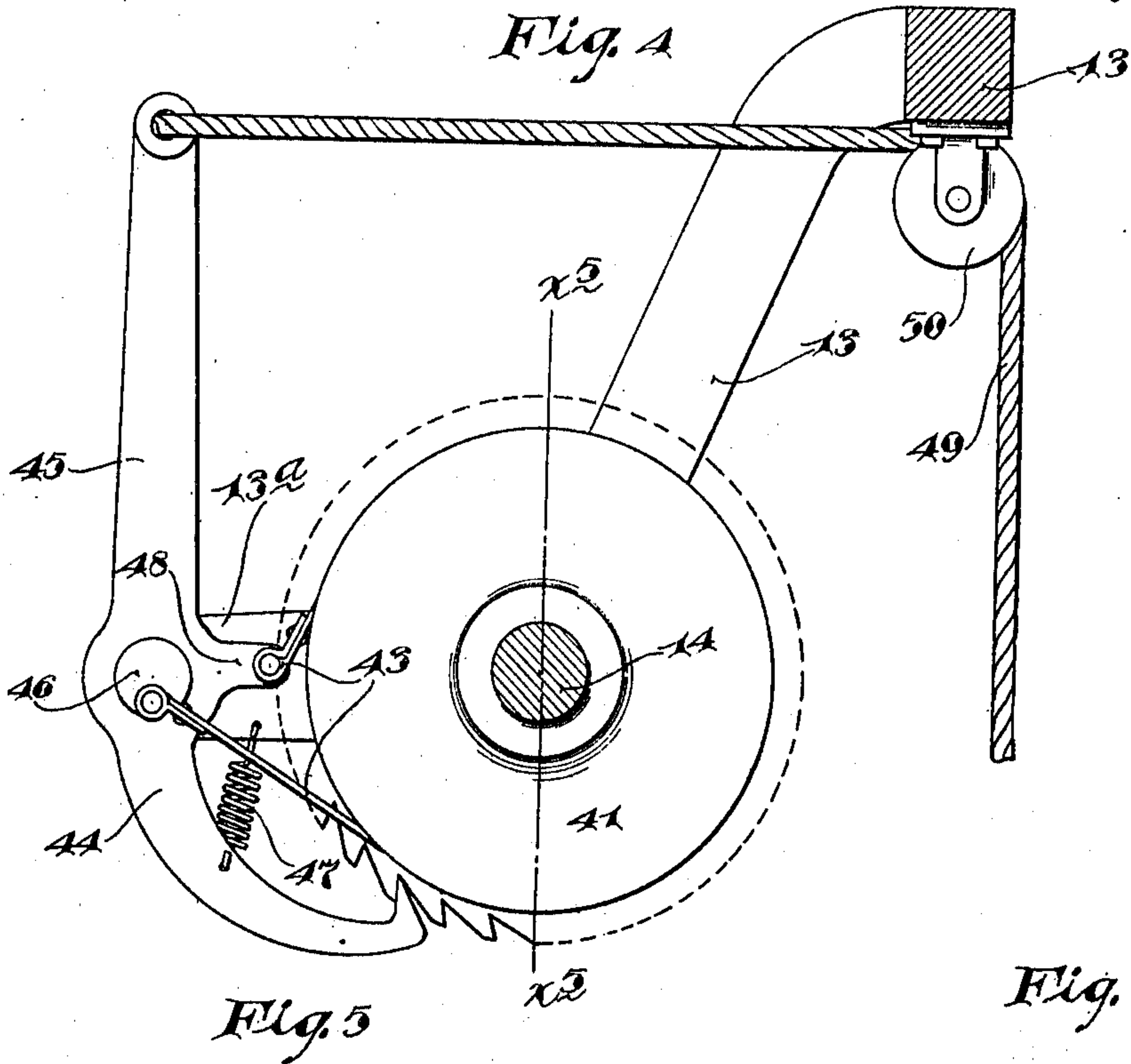
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LITTER CARRIER.
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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LITTER-CARRIER.

978,332.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed July 14, 1910. Serial No. 571,900.

To all whom it may concern:

Be it known that I, GUSTAV A. OLSON, a citizen of the United States, residing at Albert Lea, in the county of Freeborn and State of Minnesota, have invented certain new and useful Improvements in Litter-Carriers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to litter carriers and is especially directed to the improvement of that type of litter carrier wherein the bucket is mounted for vertical movements in respect to the traveling truck which supports the same.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a side elevation with parts broken away, showing the improved carrier; Fig. 2 is a horizontal section taken on the line $x^2 x^2$ of Fig. 1, some parts being broken away and some parts being removed; Fig. 3 is an enlarged detail in side elevation with some parts broken away, illustrating the manner in which the cable guiding sheaves interlock with cooperating channels on the vertical, movable bucket supporting yoke; Fig. 4 is an enlarged section taken on the line $x^4 x^4$ of Fig. 2; Fig. 5 is a vertical section taken approximately on the line $x^5 x^5$ of Fig. 4 some parts being shown in full; and, Fig. 6 is a vertical section taken on the line $x^6 x^6$ of Fig. 5, some parts being broken away.

The numeral 1 indicates a truck rail shown as supported by hangers 2, from a suitable supporting horizontal beam 3. This truck structure, however, may be of any suitable form.

The bucket 4 is provided at its ends with suitable trunnions 5 that are journaled in the depending ends of the inverted approximately U shaped bucket supporting frame or bail 6.

Grooved truck wheels 7, shown as arranged in pairs, run on the rail 1 and are journaled to small frames 8, to the intermediate portions of which the upper ends of hanger brackets 9 are attached. The lower

ends of these hanger brackets are attached to a long horizontally extended truck frame which, as shown, is made up of laterally spaced channel bars 10. Preferably, the lower ends of the said hanger brackets 9 are directly swiveled in divided spacing blocks 11 that are secured together and to the said frame bars 10 by short nutted bolts 12. A bearing arm 13 is rigidly secured to the bars 10 at one end and affords a bearing for one end of a horizontal shaft 14, the other end of which shaft is provided with beveled pinion 15, and is journaled in a small bearing 16, secured to one of a pair of bearing yokes 17, rigidly secured to the central portions of the bars 10, and the interposed spacing blocks 18. The bearing yokes 17 are provided with depending arms 19, in which the trunnions of a windlass drum 20 are journaled. The pinion 15 of the shaft 14 meshes with a bevel gear 21, secured to one end of the windlass drum 20. A pair of cables 22 are attached to the drum 20 and are reversely wound thereon. These cables 22 run over guide sheaves 23 journaled to depending arms 24 of divided spacing blocks 11. The depending ends of the two cables 22 are attached to the bucket supporting bail 6, and the latter is provided with rigidly secured upwardly extended alining channels 25 which, when the bucket is raised to its extreme position (shown in Fig. 3), embraces the sheaves 23 and locks the bail 6 to the truck frame, against both longitudinal and lateral movements. The said bail 6 may be moved slightly higher than shown in Fig. 3 and until the upper extremities of the alining channels 25 strike the bars 10 of the truck frame.

The lower end of the bearing arms 13 is formed with concentric bearing hubs 26 and 27, the inner hub 26 being made longer than the outer hub 27. The sleeve-like hub of the driving wheel 28, shown as in the form of a sheave, is journaled on the inner hub 26 and an operating cable 29 is attached to this driving wheel and depends therefrom, and, as shown, terminates in a hand piece 30. A coil spring 31 of the clock spring type is secured to and wound around the outer hub 27, and at its outer end is shown as attached to a stud 32 on the outer portion of the wheel 28 and tends to rotate said drive wheel in a direction reverse to that indicated by the arrow on Fig. 6. The movement of the wheel in this direction is limited by a stop

33, on the cable 29, and is adapted to engage the lower end by a stop arm 34, secured to and depending from the bearing arm 13 and having a perforation through which the said
5 cable 29 is passed.

A pair of driving dogs 35 are pivotally connected to the disk-like face of the drive wheel 28, and are adapted to engage with the internal ratchet teeth of a ratchet wheel
10 36, which is rigidly secured to the projecting end of a shaft 14. The driving dogs 35 are connected by short links 37 to the projecting ends of a pair of frictional clamps 38. These clamps 38 are held in light frictional
15 engagement with a non-rotary, or fixed hub 26, by means of small bolts 39, and light coiled springs 40. The ratchet connection just described produces, what is known as a silent ratchet and the operation thereof will
20 be briefly stated as follows:

When, by pulling on the cable 29, the wheel 28 is rotated in the direction of the arrow marked on Fig. 6, the dogs 35 will be forced outward into engagement with the
25 ratchet wheel 36, and when the wheel 28 is given a reverse rotation under the action of the spring 31, the initial reverse movement will throw the dogs 35 out of engagement with the said ratchet teeth and thereby prevent a clicking action.
30

Adjacent to the downturned end of the bearing arm 13, the shaft 14 is provided with a retaining ratchet wheel 41, the teeth of which are incompletely shown in Fig. 4,
35 but which are run entirely around the wheel. This ratchet wheel 41 carries a brake drum 42 that is subject to a brake band 43. The teeth of the ratchet wheel 41 are normally engaged by the hooked end of the retaining
40 pawl 44, provided with upwardly extended arms 45, and pivoted to the fixed trunnions 46 of an extension 13^a of the bearing arm 13. A light coiled spring 47, attached to the dog 44 and to the bearing 13^a, yieldingly
45 holds the pawl 44 engaged with the ratchet wheel 41. One end of the brake band 43 is shown as anchored to the fixed trunnion 46 while the other end thereof is attached to a short arm or projecting lug 48 of the arm
50 45. A cable 49 is passed over a guide sheave 50 on the bearing arm 13 and depends therefrom to a point where it may be easily reached and operated.

The mechanism for tripping the bucket constitutes no part of the present invention and may be of any suitable construction, such, for instance, as that disclosed and claimed in my pending application S. N. 558,409, filed April 29, 1910, entitled "Litter
60 carrier."

When the bucket is to be filled it is adapted to be lowered to the desired position, and this may be quickly and easily accomplished simply by pulling upon the tripping cable
65 49 and thereby release the retaining pawl

44 from the ratchet wheel 41 of the operating shaft 14. This being done, the bucket will lower by its own gravity and the speed of its descent may be controlled by setting the brake band 43 on the friction drum 42.
70 The construction and arrangement is such that the retaining pawl 44 may be given sufficient movement to release itself from the teeth of the ratchet wheel 41 without setting the brake band 43 upon the drum 42. A
75 slight excess of movement of the cable 49 and pawl arm 45, over that required to release the pawl 44 from the wheel 41 will, however, serve to set the brake band 43 on the drum 42. Obviously, the bucket may be
80 thus lowered either when empty or when filled.

When it is desired to raise the bucket, when either filled or empty, this may be accomplished by pulling upon the cable 29
85 and by the manipulation thereof imparting several oscillatory movements to the operating wheel 28, and thereby through the pawl and ratchet device 35—36 imparting similar oscillatory movements in a constant direc-
90 tion to the operating shaft 14 and, from thence, to the windlass drum 20. Thus by several relatively short intermittent movements, the bucket may be raised until the alining channels 25 of the bucket support-
95 ing bail 6 are engaged with the sheaves 24, as already more fully described.

What I claim is:

1. The combination of an elevated track and a truck arranged to travel thereon, of a
100 bucket supporting frame, a bucket pivotally connected to the latter, a windlass connecting the bucket supporting frame to the truck frame with freedom for vertical movements, and coöperating parts on the truck frame
105 and bucket supporting frame for locking the latter to the former against lateral and endwise movements only when the bucket supporting frame is raised.

2. The combination of an elevated track
110 and a truck arranged to travel thereon, of a bucket supporting frame, a bucket pivoted to the latter, a windlass drum and guide sheaves journaled on the truck frame, cables passed over said guide sheaves and connect-
115 ing the said drum to the said bucket supporting frame and alining channels on said bucket supporting frame engageable with said sheaves, to lock said bucket supporting frame against lateral and endwise move-
120 ments in respect to the truck frame, substantially as described.

3. The combination of an elevated track and a truck arranged to travel thereon, of a
125 bucket supporting frame and a bucket pivoted thereto, a windlass suspending said bucket supporting frame from the truck frame with freedom for vertical movements, and means for operating said windlass comprising a counter shaft connected thereto,
130

and an oscillatory spring retracted wheel loosely mounted on said counter shaft, pawl and ratchet connections between said wheel and shaft and a pawl and ratchet retaining device for said counter shaft normally resisting rotation of said counter shaft under the weight of the bucket, substantially as described.

4. The combination of an elevated track and a truck mounted to travel thereon, of a bucket supporting frame and a bucket pivoted thereto, a windlass suspending said bucket frame from the truck frame with freedom for vertical adjustments, and means for operating said windlass comprising a counter shaft, a spring retracted driving wheel loosely mounted on said counter shaft, a cooperating ratchet wheel fixed on said counter shaft, a driving dog carried by said

wheel and operative on said shaft wheel, an operating cable applied to said wheel, a brake drum and a retaining ratchet wheel secured to said counter shaft, a retaining pawl normally engaging said ratchet wheel and resisting rotation of said counter shaft under the weight of the bucket, which brake band coöperates with said brake drum, and a connection to said retaining pawl and to said brake band, operative first, to throw said pawl into inoperative position, and by further movements to set the said brake band on the drum, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAV A. OLSON.

Witnesses:

ETHEL S. JORGENSEN,
EDWARD S. HAMMOND.