

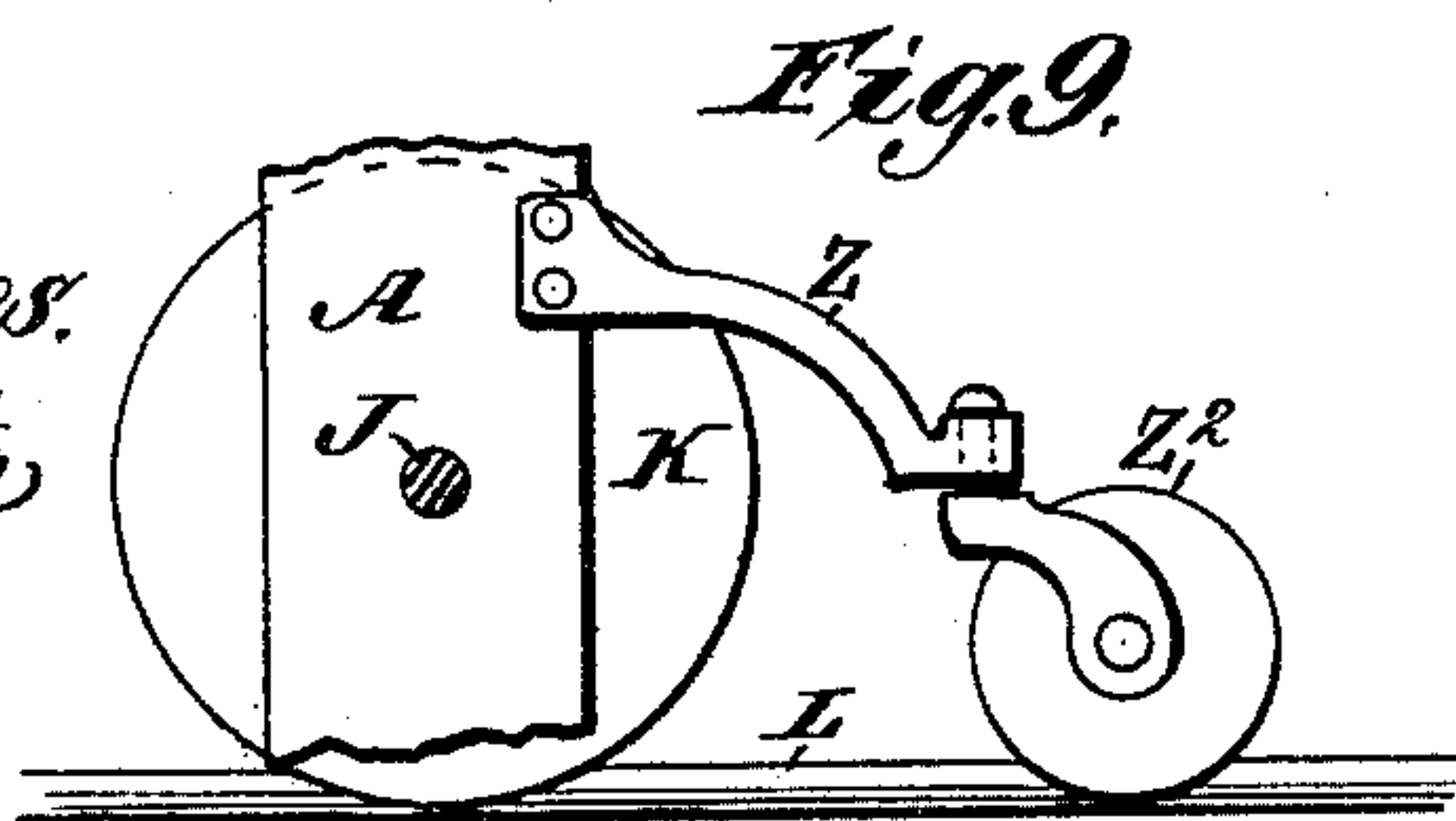
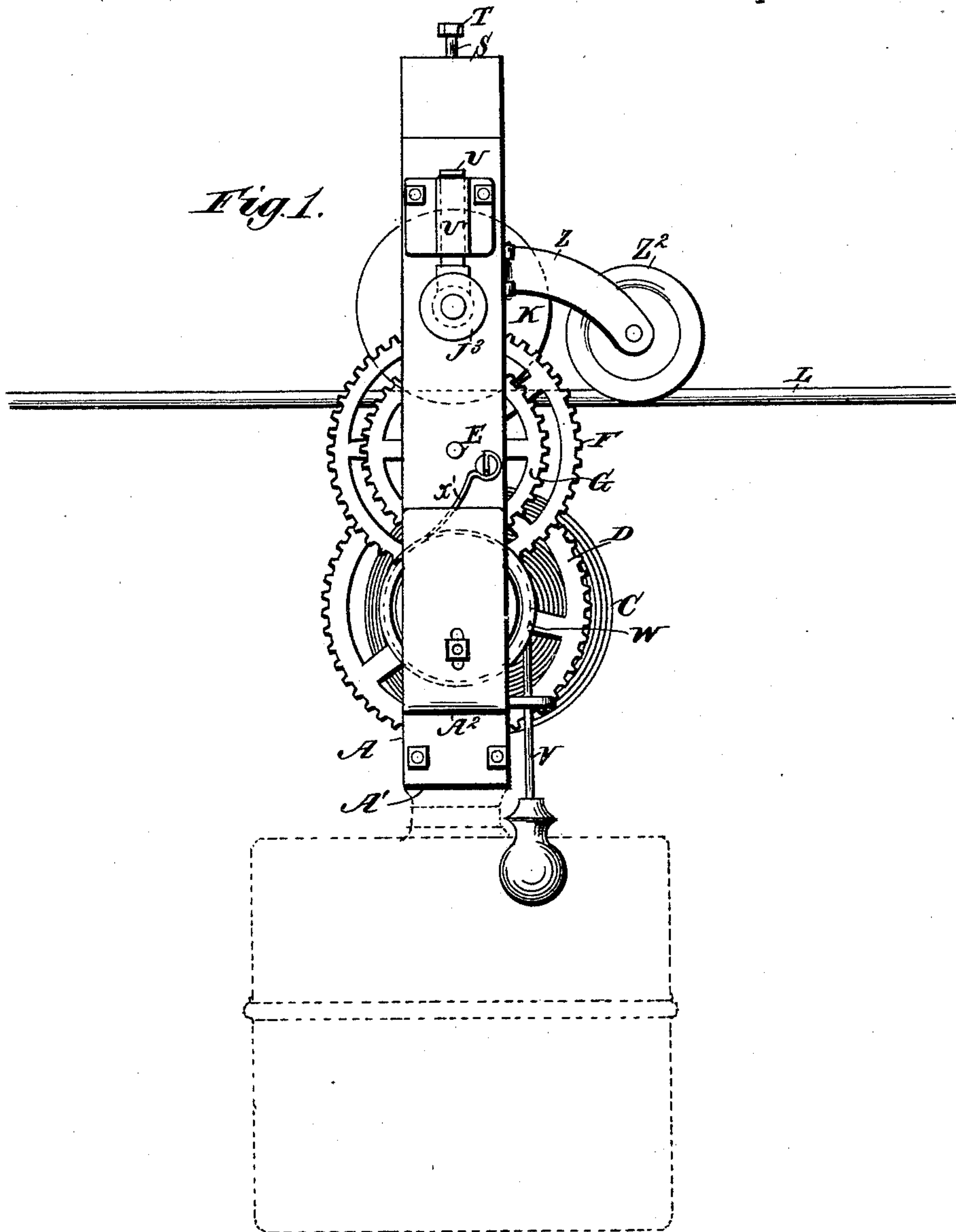
(No Model.)

2 Sheets—Sheet 1.

ANTHONY ISKE & ALBERT ISKE.
CASH CARRIER.

No. 424,789.

Patented Apr. 1, 1890.



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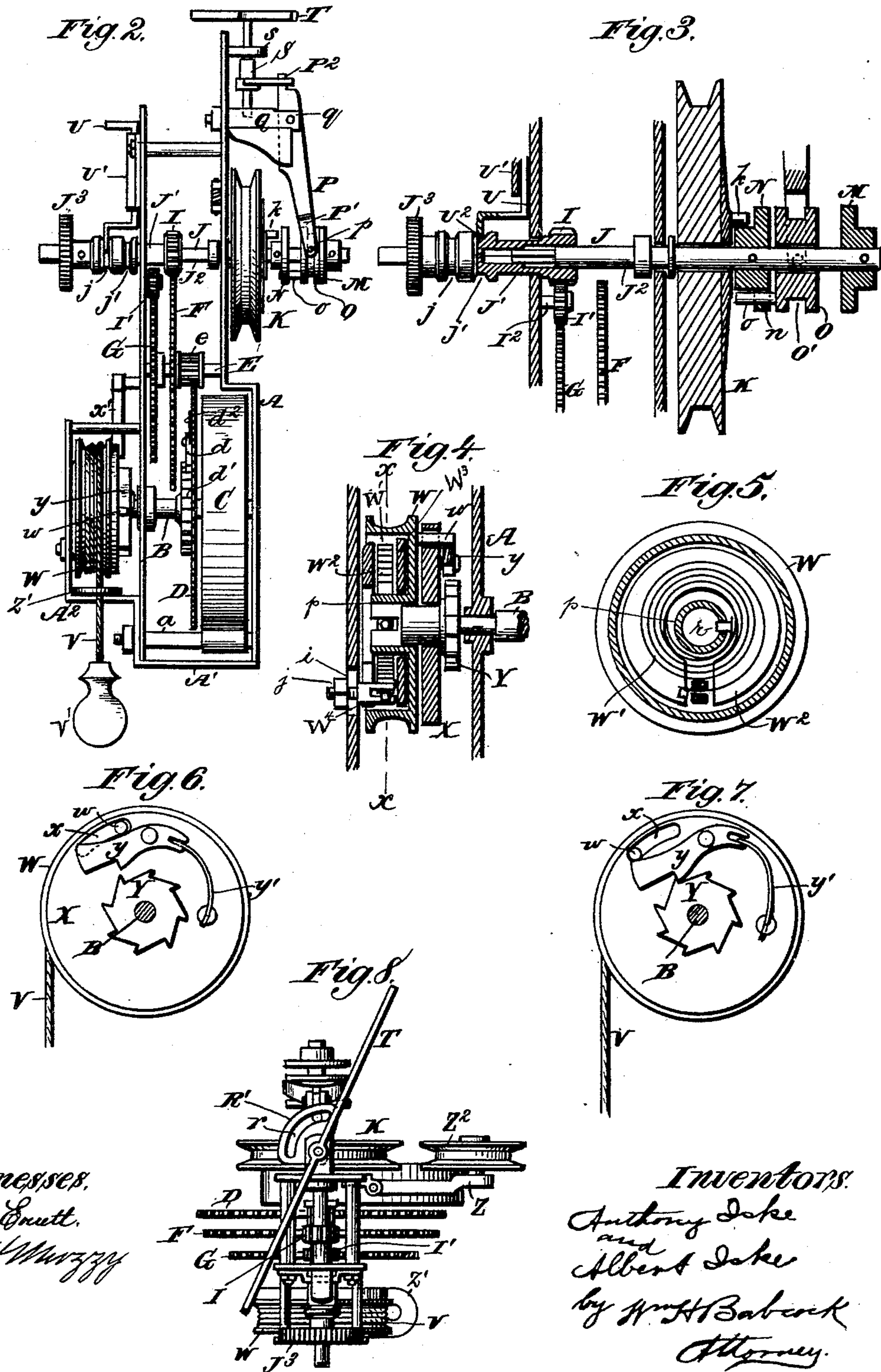
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UNITED STATES PATENT OFFICE.

ANTHONY ISKE AND ALBERT ISKE, OF LANCASTER, PENNSYLVANIA, ASSIGN-
ORS TO ISRAEL L. LANDIS, OF SAME PLACE.

CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 424,789, dated April 1, 1890.

Application filed December 19, 1889. Serial No. 334,253. (No model.)

To all whom it may concern:

Be it known that we, ANTHONY ISKE and ALBERT ISKE, citizens of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Cash-Carrier Mechanism for Store-Service; and we 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.

This invention relates to the propelling mechanism of cash-carriers for store-service, though applicable in part to mechanical movements generally.

The object of said invention is partly to provide improved means for automatically stopping the driving mechanism while leaving the track-wheel free to rotate, partly to provide convenient means of reversing motion, and partly to improve the winding mechanism. These ends we effect by the construction and combination of devices hereinafter particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a front elevation of the mechanism embodying our invention, the cash-box to which it is attached being indicated below in dotted lines. Fig. 2 represents a side elevation of the same. Fig. 3 represents a section from front to rear through the track-wheel shaft on the line of its axis. Fig. 4 represents a similar section through the main shaft and its winding-drum and spring. Fig. 5 represents a vertical section on the line $x x$ of Fig. 4. Figs. 6 and 7 are detail views of the disk X, ratchet, and pawl, with some proximate parts, the former showing the normal position, the latter the position when the cord is pulled. Fig. 8 is a plan view of the machine. Fig. 9 is a detail view of a modification of the guide-roller attachment.

A designates the frame of said mechanism, from the base A' of which the cash-box is suspended. On its front said frame is provided with an offset A^2 , having a vertical outer wall which affords one bearing for main shaft B. The inner end of the main spring C is attached to the shaft, the outer end of said spring being attached to a fixed cross-

rod a of said frame. A gear-wheel D on said shaft meshes with a lantern-pinion e on a short rotary shaft E, journaled in said frame. This shaft E carries a larger gear-wheel F and a smaller gear-wheel G. The former wheel meshes with a pinion I on the shaft J when said pinion is in the position shown in Figs. 1 and 2. Said pinion I and shaft J turn together and said shaft is mounted in the frame A. Outside of said frame a grooved track-wheel K is free to turn on said shaft. This track-wheel runs, as is usual, on a wire L or other suitable track or guide, which thereby supports the traveling cash-carrier. Two disks M and N are fast on this shaft, so as to turn therewith, leaving space between them for the movement inward or outward of a locking movable collar O, which is mounted freely on said shaft, except as hereinafter described. When this movable collar is moved into contact with the outer disk M and held there, the friction between it and the holding device suffices to stop the shaft J, though the track-wheel K will continue to turn and the cash-carrier will be free to run for a time by its momentum. When said locking movable collar O is shifted in the other direction, a lateral pin o on its inner face will pass through a perforation n in the inner disk N and protrude sufficiently for contact with a similar outwardly-extending pin k of supporting track-wheel K, so that this track-wheel and its shaft will turn together. The pin k is freed from such contact by the withdrawal of pin o as the locking movable collar O moves outward for contact with disk M, as aforesaid. The pin o is never wholly withdrawn from the perforation n , so its position with regard to said hole cannot be changed. The locking movable collar O is shifted outward or inward by a lever P, which has its fulcrum in the split end q of an arm Q, extending laterally from said frame. The lower end of this lever is bifurcated at P' and provided with inwardly-extending pins p , which enter the circumferential groove O' of said movable collar. The upper end of said lever is reduced to form a stud P^2 , which enters a curved slot r in a segment-plate R' , fixed horizontally on a vertical shaft S, with which it turns. The lower bearing of said shaft is in the arm Q.

Its upper bearing is in a fixed lug s of said frame. On the upper end of this shaft a cross-bar T is fixed at its middle. When one end of this bar strikes an obstruction, the shaft S and plate R' turn in one direction, and by reason of the shape of slot r draw on the upper end of lever P and cause the lower end of said lever to throw the locking-collar outward against the outer disk M , as described, and hold it there. In the arrangement shown this action is effected by the striking of the right end of cross-bar T against an obstruction, the cash-carrier moving from right to left. When the locking movable collar is thus in contact with the outer disk M , the pins p are also in contact with the outer wall of the peripheral groove of the locking movable collar. The outer wall of slot r in plate R' being in contact with stud P^2 prevents the said pins from yielding. The disk M will not allow the movable collar O to move farther away from said pins. The said locking movable collar and the pulley-shaft are held together by the engagement of pin o with the perforated disk N , and as no part can yield the track-wheel shaft and the mechanism for driving it are locked. When the cross-bar T and shaft S are turned in the opposite direction, the locking-collar is shifted, as before described, away from disk M , the shifting-lever P assumes a more nearly vertical position, the pins k are withdrawn from the outer wall of the groove in the locking movable collar, and the shaft J and said locking-collar are free to turn. This of course unlocks also the rest of the mechanism.

The shaft J consists of two sections J' J^2 , having telescopic end connection, so that the section J' , which carries the pinion I , may be free to move endwise, although the two sections turn together. When in its inner position the said pinion, as already stated, meshes with gear-wheel F ; but when in its outer position the said pinion meshes with a small wheel or pinion I' , mounted on a stud I^2 and meshing with gear-wheel G . As the said wheels F and G turn with the same shaft and always in the same direction, and as, furthermore, the former wheel acts immediately on pinion I , but the latter wheel acts through the intervention of a wheel or pinion I' , which reverses the direction of rotation, it follows that by shifting the section J' of the shaft J so as to bring the pinion I into the one engagement or the other the cash-carrier will be driven forward or backward, as desired. The said section J' is provided with two circumferential grooves j and j' outside of frame A and corresponding in arrangement to the two positions of pinion I . A vertically-movable catch U , sliding in guides U' and having a curvilinearly-recessed lower end U^2 , engages one or the other of these grooves to hold the pinion I in either position of engagement which may be chosen. When the pinion is to be shifted to the other engagement, this catch is drawn up, the section J' pushed in

or pulled out, and the catch U moved down into engagement with the other groove. A milled head J^3 is provided for this shaft-section to assist in such shifting. The gear-wheel D is not fixed on the main shaft B , but carries a pawl d , engaging a ratchet d' on said shaft. While the winding of the main spring is going on, the shaft B of course turns; but the pawl rides over the ratchet and the wheel D is not turned. Consequently the mechanism driven thereby will remain undisturbed. When the main spring C turns the main shaft B in the opposite direction, the pawl d engages the ratchet d' , and the wheels are driven to turn the supporting track-wheel K and propel the cash-carrier. A light spring d^2 holds said pawl in engagement with said ratchet.

The winding is effected by means of a cord V , which is wound on a pulley or drum W , the latter being mounted on shaft B and provided with a lateral pin w , which extends through a curved slot x in a disk X , having at times a pawl-and-ratchet connection with said shaft. This pin thus protruding through said slot strikes the operative end of the pawl y , which is mounted pivotally on the inner face of said drum, and said pawl (see Fig. 7) is thereby forced into engagement with the ratchet-wheel Y , which is fast on the main shaft B . A brake-spring x' , bearing against the periphery of disk X , holds it against being turned by the friction of the drum W until said pin in its circumferential motion reaches the lower end of slot x , when the said drum and disk will turn together. When the pull ceases on the cord V , the said drum will be turned back to its former position by a retracting-spring W' , arranged within said drum. The slot x allows the backward movement of said drum to be at first independent of the disk X , so that the pin w is removed from the pawl y before the disk X begins to turn. A spring y' is then free to lift the pawl y out of engagement with the ratchet-wheel Y and hold it so, (see Fig. 6,) as it always tends to do. The cord V passes down through a perforated guide-lip z' , attached to or formed on the base A^2 of frame A . The drum W , disk X , ratchet Y , and parts attached thereto are located between the main frame A and its offset A^2 , so as to be protected thereby. The outer end of spring W is attached to a clamp-block W^4 , which has a screw-threaded shank extending through a slot i in offset A^2 , said shank being provided with a nut j outside of the latter. The inner end of said spring is attached to the cylindrical hub p of the drum W by a stud r , which enters a slot therein. Annular plates W^2 W^3 are arranged as washers on each side of said spring. The lower end of cord V is provided with the usual handle or knob V' .

Z designates an arm rigidly attached to frame A near wheel K and provided with a grooved guide-wheel Z^2 running on the track.

The operation of the devices having been

already described in detail, there is little need for further explanation. When the carrier is to be started, the cord is pulled, winding the main spring, which at once drives the carrier 5 along under the supporting-wire until the cross-head T strikes a prearranged obstacle, when the track-wheel K is freed and the shaft J locked, as described. The carrier then runs for a time by its own momentum only. When 10 it comes to a halt, therefore, it does so without any sudden jar. In returning the carrier the shaft-section J' is shifted, as described, to reverse the direction of its rotation, the cord V is again pulled, and the cash-carrier travels 15 backward in the same way. Of course a receptacle for goods or anything else which may be suspended from frame A may be caused to travel in the same manner and the operation of the mechanism will be identical. 20 The devices for changing direction of motion, and, perhaps, some other features of my improvements, are applicable to mechanical movements generally. The function of wheel Z² is to steady the running of the cash-carrier. 25 The arm Z may be hinged to the frame A, as shown in Figs. 1 and 9, to allow for turning curves.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the driving mechanism, track-wheel shaft, and loose track-wheel, of a cash-carrier for store-service, a pair of fixed disks on the track-wheel shaft, a 35 grooved movable collar on said shaft between said disks, a lever engaging said movable collar to force it backward or forward, the cross-head T, and connections between said lever and the said cross-head, the said track-wheel 40 and movable collar being provided with pins k o, which engage substantially as set forth.

2. In combination with a shaft and two gear-wheels arranged thereon, a pinion on another shaft, arranged to be moved alternately into 45 engagement with one of said gear-wheels and into engagement with a wheel which meshes with the other one of said gear-wheels for the purpose of reversing motion, substantially as set forth.

3. In combination with a shaft-section having a pinion I and two grooves thereon and movable endwise, a catch engaging with one or the other of said grooves at will, a pinion or gear wheel I', and a shaft carrying two gear- 55 wheels F G, the gear-wheel F meshing directly with pinion I when the latter is in one

position, and the gear-wheel G meshing with pinion I', which pinion meshes with pinion I when the said pinion I is in the other position, substantially as set forth. 60

4. In combination with the main spring and wheels of cash-carrier mechanism, a driving or main shaft connected to said spring, a drum on said shaft, a disk having a pawl and ratchet for connection with said shaft, a brake hold- 65 ing said disk against turning by the friction of said drum, and a spring which normally holds said pawl out of engagement with said ratchet, but yields to permit such engagement under pressure of a pin extending from 70 said drum through a slot in said disk, substantially as set forth.

5. In combination with a cross-bar arranged to strike obstacles at predetermined distances, a shaft connected to said bar and turned 75 thereby, a slotted plate carried by said shaft, a lever engaging said slotted plate, a track-wheel running on a supporting track or wire, a cash-carrier supported thereby, a track-wheel shaft on which said track-wheel is 80 loosely mounted, and devices operated by said lever for simultaneously locking said shaft and freeing said wheel, substantially as set forth.

6. In combination with a lever and attachments for vibrating it automatically, a track-wheel shaft, and a loose supporting track-wheel forming part of cash-carrier-driving mechanism, a locking movable collar movable 85 endwise, backward, and forward on said shaft, a stop which limits its outward play, and projections which cause said track-wheel and movable collar to turn together when the said locking movable collar is in its inner position, the movable collar always turning with 95 said track-wheel shaft, substantially as set forth.

7. In combination with cash-carrier frame A and track-wheel K, the arm Z and guide-wheel Z², said guide-wheel being adapted to 100 run on the track behind the track-wheel and the arm Z, and the frame being provided with a joint for convenience in turning curves, substantially as set forth.

In testimony whereof we affix our signatures 105 in presence of two witnesses.

ANTHONY ISKE.
ALBERT ISKE.

Witnesses:

REUBEN HERSHEY,
G. V. WINOVER.