No. 698,933. Patented Apr. 29, 1902.

O. M. GOULD.

PACKAGE CARRIER.

(Application filed July 22, 1901.

(No Model.)

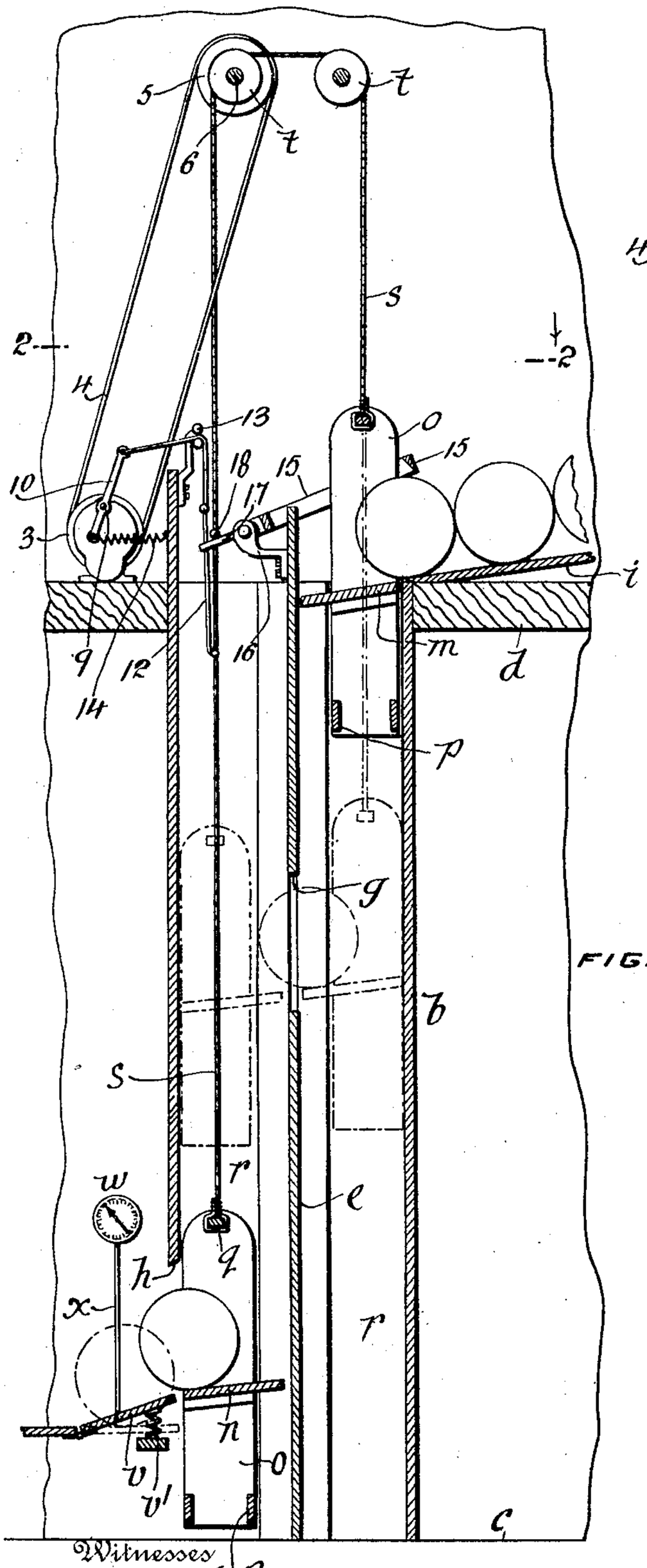

FIG. 1.

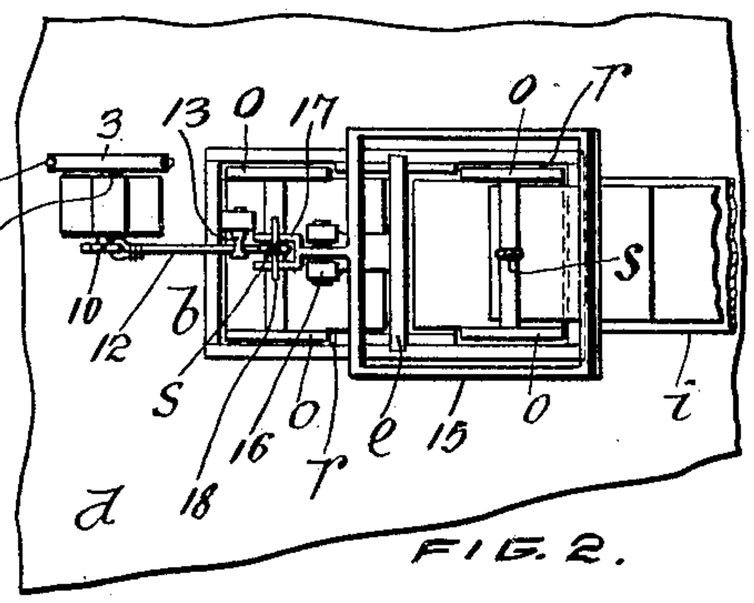

FIG. 2.

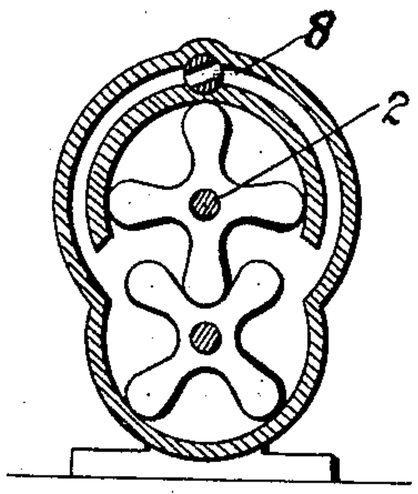

FIG. 3

Witnesses
R. A. C. Kimber
Arthur H. Evans

Inventor
Ovid Miner Gould
By Attorney
John N. Shaw

UNITED STATES PATENT OFFICE.

OVID MINER GOULD, OF MONTREAL, CANADA.

PACKAGE-CARRIER.

SPECIFICATION forming part of Letters Patent No. 698,933, dated April 29, 1902.

Application filed July 22, 1901. Serial No. 69,259. (No model.)

To all whom it may concern:

Be it known that I, OVID MINER GOULD, of the city of Montreal, district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Package-Carriers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to devices for facilitating the shipment or delivery of goods from storage; and it has for its object to provide a device which will automatically move the packages without jarring the contents, discharge them gently at the point from which they are to be shipped or delivered, and simultaneously automatically count and register the number of packages discharged.

The invention may be said briefly to consist in providing a pair of carriers traveling toward and from one another and adapted when at the end of their travel toward one another to have their carrying portions proper in coincident positions relatively to one another in order that a package carried by one can be moved to the other, while when at the end of their travel from one another the carrier portion proper of one will coincide with and automatically release and receive one of the packages previously retained in storage, and the carrier portion proper of the other package-carrier will simultaneously coincide with the shipping or delivering room or other place for receiving the packages. I combine with these carriers a counting means to tally the number of packages carried and connect brake mechanism to the carrier-operating mechanism to automatically control the speed of the carriers as they travel to cause them to come gradually to a stop without jar at the ends of their travel.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a vertical sectional view of the preferred embodiment of my invention. Fig. 2 is a horizontal sectional view taken on line 2 2, Fig. 1; and Fig. 3 is a detail view of the brake which I prefer to use.

The embodiment of my invention herein illustrated and described is specially designed for the purpose of lowering cylindrical and like packages—such, for instance, as boxes of cheese—from the upper floors of a building to the lower or shipping floor. The building is provided with a vertical shaft *b* of oblong horizontal cross-section extending, say, for instance, from the ground floor *c* to the first floor *d*. This shaft is divided longitudinally by a vertical partition *e*, extending from the ground floor *c* to a short distance above the first floor and having an opening *g* about midway of the height of the shaft, while an opening *h* is formed at the lower end of one of the walls of the shaft, and an inclined board *i*, constituting a runway, is located at and leads to the upper end of the shaft at the opposite side thereof to that in which the opening *h* is formed.

In this embodiment of my invention the carriers consist of a pair of platforms *m* and *n*, each supported between a pair of side boards *o*, braced rigidly together at their lower ends by a pair of bridge-pieces *p* and at their upper ends by a single bridge-piece *q*. The side boards *o* slide in and are guided by recesses *r*, formed in the two opposite side walls of the shaft at right angles to that with the opening *h* therein. These carriers are hung upon one another by a chain *s*, connected at its ends to the bridge-piece *q* and passing over and engaging a pair of sprocket-wheels *t*, the chain being of a length to connect the carriers together and be taut when they are at the extremity of their travel away from one another, as shown in full lines in Fig. 1, and also when they coincide with one another, as shown in dotted lines, Fig. 1.

A yielding platform *v*, preferably supported upon an expansile helical spring *v'*, is located at the opening *h* in a position to have the carrying-platform *n* coincide therewith when in its lowermost position, the function of this yielding platform being to receive the package without jar thereto and at the same time operate a counting device. This counting device (indicated at *w*) is and may be of any well-known type and is operatively connected to the yielding platform by a cord or rod *x* to register a unit upon each depression of the platform.

In order to automatically control the speed of the carriers as they lower the packages, I utilize my brake fully illustrated and described in Letters Patent of the United States granted to me on the 21st of July, 1896, under No. 564,246. This brake is clearly shown in Fig. 3 and is operatively connected to a shaft 2, upon which is rigidly mounted a pulley 3, connected by a belt 4 to a second pulley 5 upon the shaft 6, having one of the sprocket-wheels *t* rigidly thereon. The valve 8 for controlling the brake is mounted rigidly upon a counter-shaft 9, which has a lever 10 rigidly thereon, and a length 12 of cord is connected at one end to the portion of the chain *s* directly opposite the space between a pair of idlers 13, between which said cord 12 passes, and the opposite end thereof is connected to said lever 10. When the cord 12 is drawn upon, the valve 8 will be opened, and upon the cord being slackened a coiled spring 14 will return the lever to its normal position, thereby closing the valve and applying the brake.

I provide a stop to temporarily retain the cheese-packages upon the inclined runway until the rising carrier releases that which is nearest the shaft and allows it to roll upon said carrier, after which the stop will again automatically act upon and retain the packages following it. This stop preferably consists of a frame 15, straddling the portion of the shaft between the partition and the runway, and is fulcrumed upon a bracket 16, while an arm 17, integral with said frame, projects across and adjacent to the portion of the chain *s* connected to the carrier *n* and is tripped upon and depressed by a catch 18 upon such portion of the chain.

The operation of my improved package-carrier is as follows: The carrier *m* is first raised to its uppermost position, thereby disengaging one package and allowing it to roll upon said carrier *m*, which will immediately commence to sink with the cheese-package thereupon. The stop will then again drop into engaging position with the next package. Simultaneously the carrier *n* commences to rise and the cord 12 to slacken, thereby allowing the coiled spring 14 to gradually open the valve to its fullest extent, which will be effected when said carrier *m* has completed one-half of its downward travel. The carrier continuing to sink, the cord 12 will be drawn upon and the valve gradually closed, which will be effected when said carrier has completed its downward travel and has arrived opposite the opening *g* and in line with the carrier *n*, which will have been simultaneously raised to meet it, as shown in dotted lines in Fig. 1. The cheese-package will then roll from carrier *m* through the opening *g* to *n*, and the latter will, owing to the preponderance of weight given thereto by the cheese, immediately commence to sink until it is opposite the opening *h*, when the cheese-package will roll therefrom upon the yielding platform and into the shipping or delivery chamber. Simultaneously a tally will be taken of the package, and the carrier *m* will have automatically disengaged and received another package and will immediately repeat the operation just described. As the cheese is being lowered to the yielding platform carrier *n* will be under the control of the brake and its speed regulated as described in connection with carrier *m*.

It is obvious that, if desired, other packages than cheese can be moved and other means than the inclined runway and platforms *m* and *n* utilized to shift the packages to and from the carriers and other changes made in the precise construction of my improved package-carrier without departing from the spirit of my invention.

What I claim is as follows:

1. A package-carrier comprising a pair of carriers proper alternating toward and from one another, stationary means whereby a package is fed to one of said carriers proper when it is at its extreme position away from the other carrier proper, means stationary relatively to said first-mentioned carrier proper whereby said package is shifted from said first-mentioned carrier proper to said other carrier proper when they are adjacent to one another, and means stationary relatively to said other carrier proper whereby said package is discharged from said other carrier proper when it is at its extreme position away from said first-mentioned carrier proper, means for controlling the speed of the carriers proper in their movement, for the purpose set forth.

2. A package-carrier comprising a pair of carriers proper alternating toward and from one another, stationary means whereby a package is automatically fed to one of said carriers proper when it is at its extreme position away from the other carrier proper, means stationary relatively to said first-mentioned carrier proper whereby said package is automatically shifted from said first-mentioned carrier proper to said other carrier proper when they are adjacent to one another and means stationary relatively to said other carrier proper whereby said package is automatically discharged from said other carrier proper when it is at its extreme position away from said first-mentioned carrier proper, for the purpose set forth.

3. A package-carrier comprising a pair of carriers proper alternating toward and from one another, stationary means whereby a package is fed to one of said carriers proper when it is at its extreme position away from the other carrier proper, means stationary relatively to said first-mentioned carrier proper whereby said package is shifted from said first-mentioned carrier proper to said other carrier proper when they are adjacent to one another, means stationary relatively

to said other carrier proper whereby said package is discharged from said other carrier proper when it is at its extreme position away from said first-mentioned carrier proper, and means for automatically counting and registering the number of the packages so carried, for the purpose set forth.

4. A package-carrier comprising a pair of carriers proper alternating toward and from one another, stationary means whereby a package is automatically fed to one of said carriers proper when it is at its extreme position away from the other carrier proper, means stationary relatively to said first-mentioned carrier proper whereby said package is automatically fed from said first-mentioned carrier proper to said other carrier proper when they are adjacent to one another, means stationary relatively to said other carrier proper whereby said package is discharged from said other carrier proper when it is at its extreme position away from said first-mentioned carrier proper and means for automatically counting and registering the number of the packages so carried, for the purpose set forth.

5. A package-carrier consisting of a pair of carriers proper hung upon one another and movable vertically simultaneously respectively toward and from a common level; stationary means, whereby a package is fed to the uppermost of said carriers proper when they have moved away from their common level; means stationary relatively to said first-mentioned carrier proper whereby said package is shifted to the other carrier proper when said carriers are at their common level; and means stationary relatively to said other carrier proper for discharging said package from said last-mentioned carrier proper when at its lowest level, substantially as described and for the purpose set forth.

6. A package-carrier consisting of a pair of carriers proper hung upon one another and movable vertically simultaneously respectively toward and from a common level; stationary means whereby a package is fed to the uppermost of said carriers proper when they have moved away from their common level; means stationary relatively to said first-mentioned carrier proper whereby said package is shifted to the other carrier proper when said carriers are at their common level; means stationary relatively to said other carrier proper whereby said package is shifted from said last-mentioned carrier proper when at its lowest level; and means for counting and registering the number of packages discharged, substantially as described and for the purpose set forth.

7. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein and having an opening about midway of the height of said shaft; a pair of carriers proper hung upon one another and vertically slidable in the divided portions of said shaft; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; and means whereby the package thus moved is discharged from the carrier proper to which it is thus moved, substantially as described and for the purpose set forth.

8. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper hung upon one another and vertically slidable in the divided portions of said shaft; sprocket-wheels mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; and means whereby the package thus moved is discharged from the carrier proper to which it is thus moved, substantially as described and for the purpose set forth.

9. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper hung upon one another and vertically slidable in the divided portions of said shaft; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; and means whereby the package thus moved is discharged from the carrier proper to which it is thus moved, substantially as described and for the purpose set forth.

10. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of

said shaft; sprocket-wheels mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; and means whereby the package thus moved is discharged from the carrier proper to which it is thus moved, substantially as described and for the purpose set forth.

11. A package-carrier consisting of a vertical shaft having a discharge-opening in one of its lower ends; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of said shaft; sprocket-wheels mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; means whereby the package thus moved is discharged from the carrier proper to which it is thus moved; and means for counting and registering the number of the packages discharged, substantially as described and for the purpose set forth.

12. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of said shaft; and each having an inclined platform; a sprocket-wheel mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; substantially as described and for the purpose set forth.

13. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of said shaft; and each having an inclined platform; a sprocket-wheel mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carrier proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; and means for counting and registering the number of the packages discharged, substantially as described and for the purpose set forth.

14. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of said shaft; a sprocket-wheel mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stop; means whereby a package is automatically moved from one to the other of said carriers proper; and means whereby the package thus moved is discharged from the carrier proper to which it is thus moved; a yielding platform adjacent to said discharge-opening; a counting and registering device; and an operative connection between said yielding platform and said counting and registering device, substantially as described and for the purpose set forth.

15. A package-carrier consisting of a vertical shaft having a discharge-opening in one side of its lower end; a vertical partition dividing said shaft longitudinally and parallel to the side having said opening therein, and having an opening about midway of the height of said shaft; a pair of carriers proper vertically slidable in the divided portions of said shaft; and each having an inclined platform; a pair of sprocket-wheels mounted above the divided portions of said shaft one in vertical line with each carrier proper; a chain connected at its ends to said carriers proper and hung over said sprocket-wheels; a brake for controlling the movement of said

chain, a runway located at the top of the shaft and leading to the side thereof opposite to that in which the discharge-opening is cut; a movable stop extending across said runway; means for causing said carriers to at intervals move said stops; a yielding platform adjacent to said discharge-opening; a counting and registering device; and an operative connection between said yielding platform and said counting and registering device, substantially as described and for the purpose set forth.

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

OVID MINER GOULD.

Witnesses:
WILLIAM P. MCFEAT,
ARTHUR H. EVANS.