W. S. FARNSWORTH.

COIN COUNTING DEVICE.

APPLICATION FILED JULY 22, 1912.

1,096,419. Patented May 12, 1914.

Fig. 1.

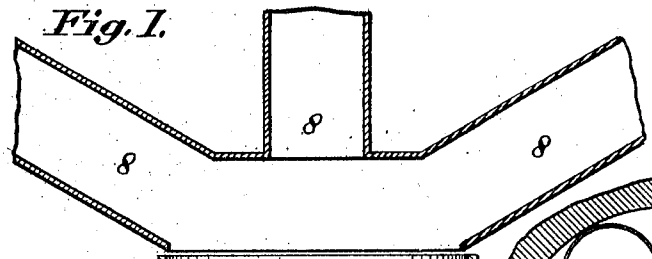


Fig. 3.

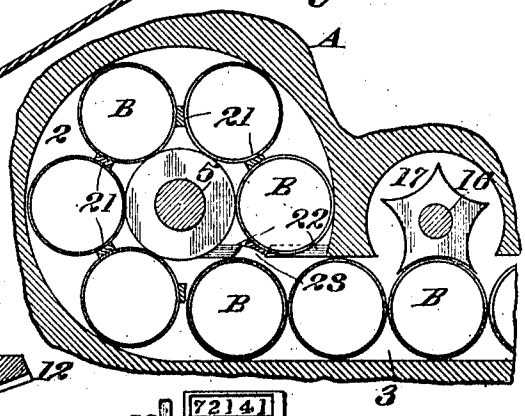
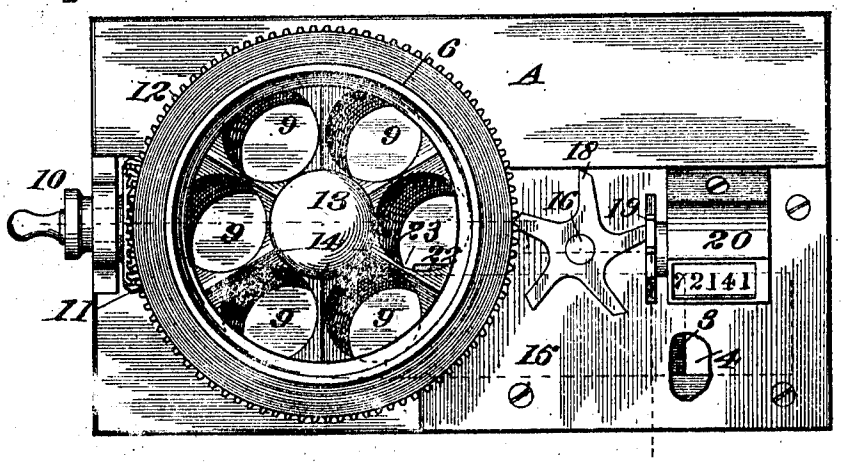


Fig. 2.



WITNESSES:

Charles Pickles

R. L. Barry

INVENTOR

Willis S. Farnsworth

BY G. H. Strong

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIS S. FARNSWORTH, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO COIN CONTROLLED LOCK COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

COIN-COUNTING DEVICE.

1,096,419. Specification of Letters Patent. Patented May 12, 1914.

Application filed July 22, 1913. Serial No. 710,840.

To all whom it may concern:

Be it known that I, WILLIS S. FARNSWORTH, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Coin-Counting Devices, of which the following is a specification.

This invention relates to a coin-counting mechanism.

It is the object of this invention to provide a mechanism for counting or registering coins, which mechanism is particularly adapted for use in connection with coin-receiving apparatus, such as "coin in the slot" machines, and coin receptacles on street cars, and the like.

A further object is to provide a coin-counting device which is adapted to receive coins of a certain denomination in various quantities and at irregular intervals, but which will accurately register or count the coins delivered and passed therethrough, on the operation thereof, irrespective of the number, thus adapting it for use in circumstances where it is desirable to allow a number of coins to accumulate in the receiver before registering their number.

Another object is to provide a coin-counting device which is simple in construction and efficient and reliable in operation.

The invention primarily resides in a rotary coin receiver and stacker, means for discharging the coins one by one from the stacker on the rotation thereof, and means operated by the coin for registering its discharge.

This invention further consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a view in vertical section of the invention partly in elevation. Fig. 2 is a plan view with parts broken away. Fig. 3 is a horizontal section on the line X—X of Fig. 1.

In the drawings A represents a base plate of any suitable construction, on the upper face of which is formed an annular groove or channel 2, communicating with a horizontal inclosed channel 3 leading to a discharge opening 4 in the plate A. Supported on the plate A, concentric to the annular channel 2, is an upwardly extending spindle 5, on which a vertically disposed cylinder 6 is revolubly mounted. The cylinder 6 is open at its upper end and is formed with a coin-receiving chamber 7, into which coins P are deposited through the open upper end of the cylinder by means of coin conveying chutes 8, or in any other suitable manner. Formed in the cylinder 6 is a series of vertically disposed cylindrical pockets 9, which are arranged in a circle, concentric to the axis of the cylinder 6. The upper ends of the pockets 9 open to the coin-receiving chamber 7, while their lower ends open to the annular channel 2, formed in the base plate A, and register therewith, thus forming a series of communications between the channel 2 and the coin-receiving chamber 7.

The cylinder 6 may be rotated in any desired manner; the means here shown as provided for that purpose consisting of a crank 10 connected to a pinion 11 which meshes with a gear 12 mounted on the periphery of the cylinder 6. The coin-receiving chamber 7 in the cylinder 6 is formed with tapered walls which converge toward the pockets 9, and formed within the cylinder is a conical shaped deflector 13, the apex of which coincides with the cylinder, while its base terminates in the walls of the pockets 9.

The upper edges of the partitions between adjacent pockets 9 are tapered or beveled as indicated at 14, so as to insure coins falling on the partitions being directed into pockets 9. The conical walls of the deflector 13 and the tapered walls of the chamber 7 act to direct coins deposited in the chamber 7 into the pockets 9, thereby preventing choking of the pockets 9 and the accumulation of coins in the chamber 7 until the pockets 9 are filled, and thereby insuring a rapid feed of the coins through the pockets into the annular chamber 2.

Mounted on the base plate A is a plate 15 which forms a cover for the channel 3, and revolubly mounted in the plate 15 is a vertical stud 16, on the lower end of which is carried a star-wheel 17, the teeth of which extend into the channel 3, as shown in Fig. 3. Mounted on the upper end of the stud 16 is a star-wheel 18, the teeth of which engage the teeth of a similar wheel 19, forming the actuating part of a register 20, which may be of any suitable description.

In the operation of this invention, the coins B to be counted are deposited in the

coin-receiving chamber 7 in any desired manner, and in any quantity, from whence they pass into the various pockets 9 and come to rest therein with the lowermost coin resting on the bottom of the annular channel 2. The cylinder 6 is then rotated by means of the crank 10, or in any other desired manner, so as to cause downwardly extending projections 21 formed on the lower end of the cylinder between the pockets 9, to engage the coins resting on the bottom of the annular channel 2, and advance them therearound and carry them against an obstruction 22. The obstruction 22 is in the form of a rib which extends upwardly from the bottom of the annular channel 2 adjacent the inner wall on the straight channel 3; the rib 22 being formed with a slot 23 through which the projections 21, on the lower end of the cylinder 6, pass when the latter is revolved. The coins B on being brought into contact with the ribs 22 are deflected into the channel 3, where they come in contact with and engage the star-wheel 17; the coins being successively crowded past the star-wheel 17 by the next succeeding coin fed into the channel 3, thereby rotating the star-wheel 17. The star-wheel 17 on revolving, rotates the stud 16 and the star-wheels 18 and 19, thereby operating the register 20 in the usual manner; the coin after operating the star-wheel 17 and the register 20, being discharged through the opening 4 into any suitable receptacle.

From the foregoing it will be seen that any number of coins may be deposited in the coin-receiving and stacking pockets 9, and that as the cylinder revolves, only the lowermost coin in each pocket will be discharged into the channel 3; the second coin in the pocket being carried over the rib 22 and there deposited on the bottom of the channel 2, to be picked up by the succeeding projection 21 on the cylinder 6 and carried forward thereby, so as to deflect it into the channel 3 on the succeeding revolution of the cylinder 6.

This invention is particularly adapted for use in connection with a series of coin-operated devices where it is desired to register the number of operations of the device as a whole; the coins from each device being delivered to the receiving chamber 7 through chutes 8 where they accumulate to be afterward discharged therefrom and registered as before described. This arrangement obviates the use of a separate register with each coin-operated device.

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

1. In a coin counter the combination of a rotary coin-receiver and stacker comprising a cylinder provided with a plurality of parallel vertically disposed pockets, means for discharging the coins one by one from each successive pocket by the rotation of said cylinder, and a single registering means operated by the discharged coin for registering its discharge.

2. In a coin counter the combination of a rotary coin-receiver and stacker, comprising a hollow, vertically disposed, cylinder formed with a series of vertical, cylindrical pockets, a single means for successively discharging the coins one by one from the bottom of the pockets by the rotation of the cylinder, and means operated by the discharged coin for registering its discharge.

3. In a coin counter the combination of a base plate formed with an annular channel and a straight channel tangent to and connecting with the annular channel, a vertically disposed cylinder revolubly mounted on said base plate with its lower end covering the annular channel, coin stacking pockets formed in the cylinder opening to the annular channel, means on the cylinder for advancing a coin in said channel, means on the base plate for directing an advanced coin into the straight channel, a register, and means whereby the passage of a coin through the straight channel will operate the register.

4. In a coin counting mechanism, a vertically disposed cylinder formed with a coin-receiving chamber at its upper end and having a series of vertical pockets leading from the receiving chamber and opening to the lower end of the cylinder in which the coins deposited in the chamber are stacked, said pockets arranged in a circle concentric with the axis of the cylinder, a base plate on which the cylinder is mounted provided with an annular groove concentric with the cylinder and forming a bottom for the pockets, coöperating means on the cylinder and base plate for advancing the coins around the annular groove and discharging them therefrom, and means operated by the coins for registering their discharge.

5. A coin counting device consisting of a vertically disposed revoluble coin-receiving cylinder having a number of pockets formed therein and opening to the lower end of the cylinder, a base plate carrying the cylinder having an annular coin-receiving channel formed therein concentric with the axis of the cylinder and a straight channel connecting with the annular channel, coöperating means on the cylinder and base plate for advancing a coin around the annular channel and discharging it through the straight channel, and means for registering the discharge of the coin operated by the passage of a coin through the straight channel.

6. A coin counting mechanism comprising a revoluble coin receptacle formed with a

series of coin-receiving pockets open at their lower ends, a base plate carrying the coin-receptacle, formed with an annular channel arranged to receive the coins discharged from the coin-receiving pockets, means on the coin receptacle for engaging the coins in the channel to advance them therein, an obstruction in said channel coöperating with said coin advancing means to discharge the coins therefrom, and means operated by the discharged coin for registering same.

7. In a coin register, the combination of a plate formed with an annular channel having a width substantially the same as a predetermined coin and a discharge channel leading therefrom and at a tangent thereto, means for delivering a coin to the annular channel, means for advancing the coin therearound and discharging it into the discharge channel, and a single registering means operated by the discharged coin for registering its discharge.

8. In a coin register, the combination of a plate formed with an annular channel having a width substantially the same as a predetermined coin and a discharge channel leading therefrom, means for delivering a coin to the annular channel, comprising a hollow, vertically disposed, revoluble cylinder formed with a series of vertical cylindrical pockets opening to the annular channel, means for advancing the coin therearound and discharging it into the discharge channel, and a single registering means operated by the coin for registering its discharge.

9. In a coin register, the combination of a plate formed with an annular channel and a discharge channel leading therefrom, means for delivering a coin to the annular channel, comprising a hollow, vertically disposed, revoluble cylinder formed with a series of vertical cylindrical pockets opening to the annular channel, means for advancing the coin therearound and discharging it into the discharge channel, including projections on the cylinder and an obstruction in the annular channel, and means operated by the coin for registering its discharge.

10. In a coin counter, a cylinder provided with a plurality of vertically disposed cylindrical pockets having a diameter slightly larger than a predetermined coin and capable of receiving a plurality of coins to form a vertical stack, a beveled top wall between each of said pockets, a conically shaped deflector centrally located with reference to said pockets and projecting above the same, means for introducing coins to said pockets at the upper end thereof, means for successively removing coins from the bottom of said pockets, and a counting mechanism for counting the coins removed.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIS S. FARNSWORTH.

Witnesses:
WALTER REIMERS,
GENEVIEVE S. DONELIN.