(No Model.)

A. BARNES.

BONUS DETERMINING DEVICE.

No. 589,154. Patented Aug. 31, 1897.

Fig. 1.

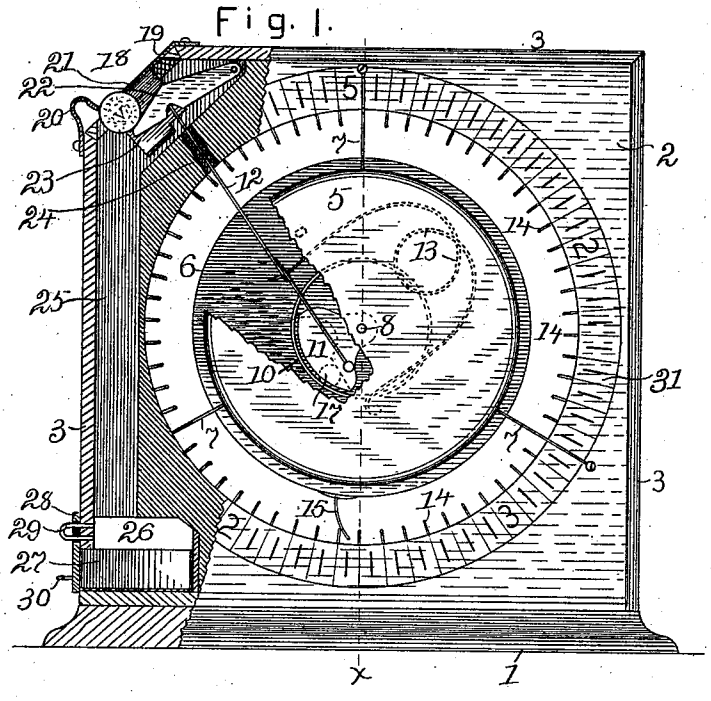


Fig. 2.

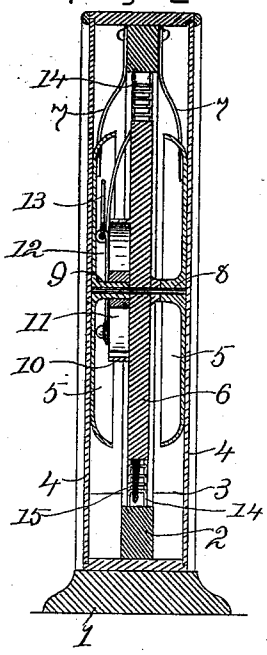


Fig. 3.

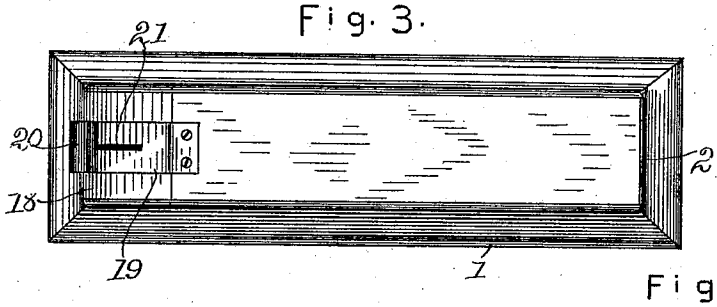


Fig. 6.

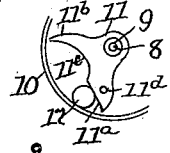


Fig. 4.

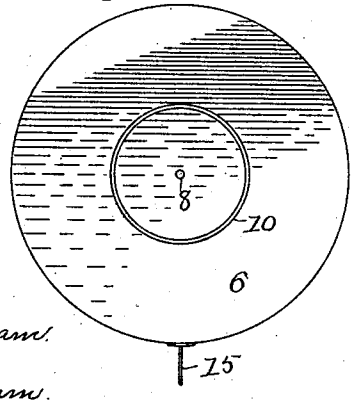
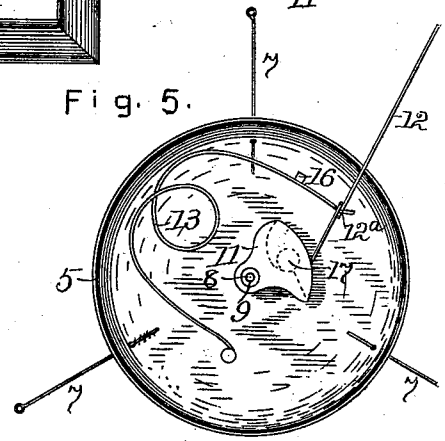


Fig. 5.



Attest.

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Nora Graham.

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his attorney

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UNITED STATES PATENT OFFICE.

ALDEN BARNES, OF BARNES, ILLINOIS.

BONUS-DETERMINING DEVICE.

SPECIFICATION forming part of Letters Patent No. 589,154, dated August 31, 1897.

Application filed April 7, 1897. Serial No. 631,116. (No model.)

To all whom it may concern:

Be it known that I, ALDEN BARNES, of Barnes, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Bonus-Determining Devices, of which the following is a specification.

This invention relates to coin-actuated appliances for determining what bonus, if any, an investor of a coin shall receive in addition to the value of the coin in merchandise; it is intended for the use of merchants, principally cigar-sellers; its object is to stimulate trade by making it possible for customers to occasionally receive more than the value of the money invested; it is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is an elevation of one of the faces of a coin-actuated device embodying my invention, parts being broken away and other parts being shown in section in order to expose working parts and peculiarities. Fig. 2 is a central vertical section through the device on line X in Fig. 1. Fig. 3 is a plan of the device. Fig. 4 is an elevation of the wheel. Fig. 5 is an elevation of the inner surface of a wheel-sustaining disk, showing details of mechanism connected therewith. Fig. 6 is a detail of the clutch mechanism employed to rotate the wheel.

The frame of the device consists of a base, as 1, which may be constructed in any desired shape; a plate, as 2, mounted vertically on the base and having its central portion cut away circularly; strips, as 3, wider than the plate and secured to the top and sides thereof in a manner to project beyond both faces, and glass plates 8, filling the spaces between the edges of strips 3 and the base 1 and forming with such base and strips an inclosure for the working parts of the device.

The general contour of plate 2 and its casing is largely a matter of taste, but in this particular instance it is approximately square, except that one of the corners 18 is cut away on an angle of about forty-five degrees. On the angular surface so formed is fastened a metal strip 19, which is curved upward at its lower end 20 and slotted at 21. A metal loop 23, having an internal width or extent of separation as wide or slightly wider than the slot 21, extends from strip 19 into a groove in the plate 2 and forms lateral guides for the coin by which the device is actuated, the arm 22, on which the coin operates, and an end of the rod 12, which receives motion from arm 22 and imparts it to the wheel of the device. The arm 22 is pivoted at one end in the groove of plate 2. Its opposite swinging end is shaped to conform to the inner surface of strip 19 and to bear against surface under a portion of slot 21, and it has a notch in its under surface to receive the upper end of rod 12.

A hole 24 extends obliquely from the inner circular surface of the plate to the groove thereof in proper position to permit the end of rod 12 to engage the notch in arm 22, and a vertical coin-chute 25 extends through the plate from the groove in strip 19 to a coin-receptacle at the bottom of the device.

The receptacle in which passage 25 terminates may be formed in various ways. For illustration, the plate may be cut away, as shown at 26, to form a cavity. A money-drawer 27 shallower than the cavity may be inserted therein through an opening in the side strip, and the faces of the cavity may be closed with glass plates.

In whatever way the money-receptacle is formed or in whatever position it is located it needs to be accessible to the owner of the device and inaccessible to the general public, and of the many ways in which this may be accomplished one is illustrated in the drawings as follows:

The end 28 of the drawer extends upward and is slotted to receive a padlock-staple 29, and when a padlock is locked in the staple the drawer is secured in the cavity. A projection, as 30, may be used to aid in pulling out the drawer.

At regular intervals around the internal circular surface of the plate 2 are fastened internally-extending projections 14, preferably of staple form. The faces of the plate adjacent to the staples are divided into spaces corresponding with the spaces between the staples, as shown at 31 in Fig. 1, and such spaces are numbered or otherwise characterized. In this instance a large majority of

the spaces are designated by the numeral 1, others by the numerals 2 and 3, and one by the numeral 5, but this may be varied, as desired, without affecting the principle of the invention.

A wheel 6 is journaled in the center of the circular opening of the plate and is adapted to be rotated by force developed by the insertion of a coin into slot 21, and it has a flexible or yielding pointer 15, that extends, when at rest, into a space between two staples and rides over the staples when the wheel is in motion. The wheel is located between and journaled in two disks 5, each of which is sustained, spider-like, by means of radial rods 7, which cross the space between the disks and the plate and connect with both the plate and the disks.

The disks are preferably made of sheet metal, in which case the rods will be connected therewith somewhat as shown in Fig. 5 and soldered thereto, while the extended ends of the rods will have eyes, through which screws or pins may pass to secure the rods to the plate, but this is a matter of mechanical construction merely.

The shaft 8 of the wheel journals in hubs in the disks, and the hub 9 of one of the disks is shaped to form a pivot-bearing for a clutch-arm 11, through which rotary impulse is imparted to the wheel. The wheel has an annular flange 10 projecting from one of its sides, and the clutch-arm is mounted to swing inside the flange.

The clutch-arm has a housing for a roller or ball 17, and the outer contour of the housing conforms closely to an arc of the circle described by the flange. In other words, the outer end of the arm extends to and runs parallel with the internal surface of the flange, enough space being left to avoid contact of the arm with the flange, and a groove is formed in the end of the arm to receive the roller. The shape of the internal surface of the groove of the clutch-arm is best illustrated in Fig. 6, where the sides of the roller-housing are omitted. In this figure 11^a designates a clutch-surface which is inclined with reference to lines radiating from the pivot and with reference to a tangent of the opposing part of the circle of the flange. Between the clutch-surface of the arm and the internal surface of the flange the roller descends by force of gravity when the arm is lowered, and when the arm is raised the incline develops sufficient pressure on the roller to compel it to carry the flange of the wheel with it and so give the wheel a rotary impulse in the direction of the rising motion of the arm. When the arm reaches the termination of its upward throw and comes to a stop, the movement of the flange tends to force the roller into recess 11^c of the arm, as suggested in Fig. 5, where it rests out of contact with the flange. The extension 11^b prevents the roller from being carried upward out of the groove of the arm, and such extension combines with surface 11^a, the sides of the arm, and the flange of the wheel to hold the roller in operative position in the arm. The stud or pin 11^d in Fig. 6 provides for connecting rod 12 with the clutch-arm.

The rod 12 has between its ends a loop 12^a, through which an end of spring 13 extends. The spring is fastened at one end to disk 5, and its tendency is to oppose downward motion of arm 22, the rod 12, and the clutch-arm. A stop 16 on the disk limits the upward throw of the spring.

Ordinarily the spring 13 presses the arm 22 upward against strip 19 with its end closing or partly closing the slot 21. In inserting a coin the arm 22 is depressed, as shown in Fig. 1, the clutch-arm is swung downward, and the roller is forced by gravity into the acute angle formed between clutch-surface 11^a and the flange of the wheel. When the coin has passed entirely through the slot, the pressure on arm 22 is relieved and the spring raises the clutch-arm with a sudden impulse, which is imparted to the wheel through the roller and the flange in the manner hereinbefore specified. As the wheel turns, the yielding pointer 15 rides over the staples and finally comes to rest between two, as shown in Fig. 1. The number or other distinguishing character of the space in which the pointer stops determines whether or not the investor of the coin that has given the impulse to the wheel shall receive more than the value of his money, and, if so, to what amount. According to the particular plan of the spacing shown in this instance the investor would have one chance in twelve of receiving a bonus, and the amount of the bonus might be equal to, double, or four times the value of his coin, depending on whether the pointer stopped opposite a "2," a "3," or a "5;" but, as before stated, this is a matter that may be varied at will.

The disks and the wheel are smaller in diameter than the circular opening through plate 2 and are sustained concentric therewith, and the position of the pointer may be observed as well from one side as from the other. The spaces are designated the same on both faces of the plate, and so the proprietor behind the counter and the customer in front may both get the reading of the machine without difficulty or inconvenience.

The spring 13 is fastened to one of the disks, the clutch-arm is journaled on the hub of the same disk, and the rod 12 is connected with the clutch-arm, so that when one disk and the wheel are in position the clutch-bearing disk may be put into place by inserting rod 12 through hole 24, setting the hub 9 over an end of shaft 8, and fastening rods 7 to plate 2.

The hub 9 provides a bearing for the clutch-arm independent of shaft 8, thus giving such shaft free action in its bearings, and the bearings of the shaft may be made in any manner desired to give necessary freedom of rotation.

The upturned bend 20 of strip 19 is of utility in aiding the insertion of coins, as it forms a guide below which the coins cannot go and is in effect the lower termination of the slot. A person desiring to put a coin into the device places the coin against the upturned bend and moves it back and forth, if necessary, until the slot is found, when the bend will aid in resisting the tendency of the arm 22 to force the coin downward or away from the pivot of the arm.

A modification of one of the features of the invention would consist in transposing the staples 14 and the characterizing space-markings 31 from the plate to the wheel and moving the pointer from the wheel to the plate, which modification would give substantially the same result in a reversed order.

A rubber roller of cylindrical form is preferably employed for the reason that the rubber develops friction in a satisfactory manner, and the cylindrical form brings the greatest possible amount of surface in contact with the flange and the clutch incline; but a sphere of other substance than rubber—metal, for instance—may be used to effect the required result.

While the peculiar clutch herein shown and described is particularly applicable to bonus-determining wheels, as it engages at any point of contact and does not impede the motion that it imparts, it is not improbable that it may be serviceable in other relations, and I do not restrict the claims for the clutch to the particular environments herein indicated.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a bonus-determining device, the combination of a frame having an opening therethrough, radial projections on the wall of the opening, a wheel journaled in the opening, and a yielding pointer on the wheel adapted to engage the projections, whereby the relation of the pointer to the projections may be seen from both sides of the wheel.

2. In a bonus-determining device, the combination of a frame having an opening therethrough, radial projections on the wall of the opening, disks, smaller in diameter than the opening and sustained concentric therewith, a wheel journaled between the disks, and a yielding pointer on the wheel adapted to engage the projections, substantially as set forth.

3. In a bonus-determining device, the combination of a frame having an opening therethrough, radial projections on the wall of the opening, disks, smaller in diameter than the opening and sustained concentric therewith, a wheel journaled between the disks, a yielding pointer on the wheel, spring-actuated clutch mechanism connected with a disk and adapted to engage the wheel, a coin-passage in the frame, an arm obstructing the passage, and a connection between such arm and the clutch mechanism, whereby the spring of the clutch is put under operative tension by the insertion of a coin into the passage.

4. In a bonus-determining device, the combination of a frame having an opening therethrough, disks, smaller in diameter than the opening and sustained concentric therewith, a wheel journaled between the disks, clutch mechanism on a disk adapted to engage the wheel, a coin-passage in the frame, an arm obstructing the passage and having a notch in its inner side, and a rod connecting with the clutch mechanism and adapted to extend into the notch of the passage-obstructing arm, substantially as set forth.

5. In a bonus-determining device, the combination of a frame, a wheel journaled therein, spring-actuated clutch mechanism for rotating the wheel, a coin-passage in the frame, and an arm obstructing the passage and connecting with the clutch mechanism, substantially as set forth.

6. In a bonus-determining device, the combination of a frame, a wheel journaled therein and having a flange thereon, an arm pivoted concentric with the flange and having a surface opposed to the flange at an acute angle therewith, a roller adapted to engage the flange and the inclined surface of the arm when the arm is lowered, a coin-passage obstructed by an arm, and a connection between the passage-obstructing arm and the clutch-arm, substantially as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

ALDEN BARNES.

Attest:

L. A. BURR,

L. B. PROBASCO.