

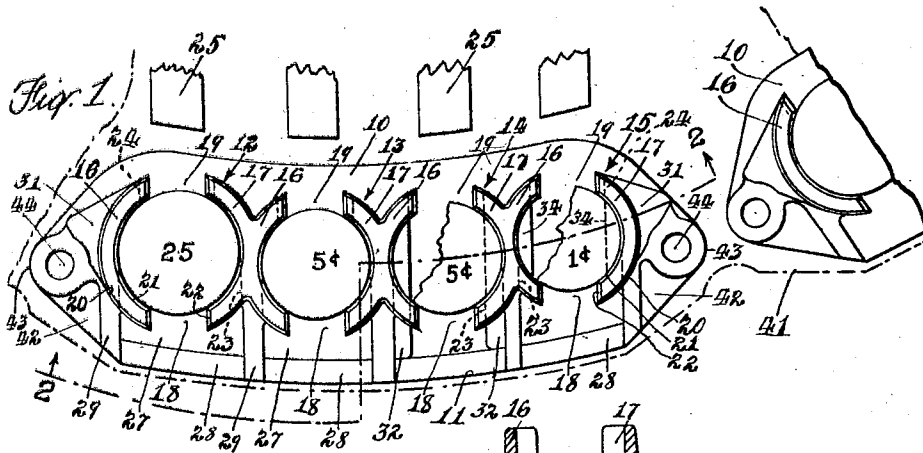
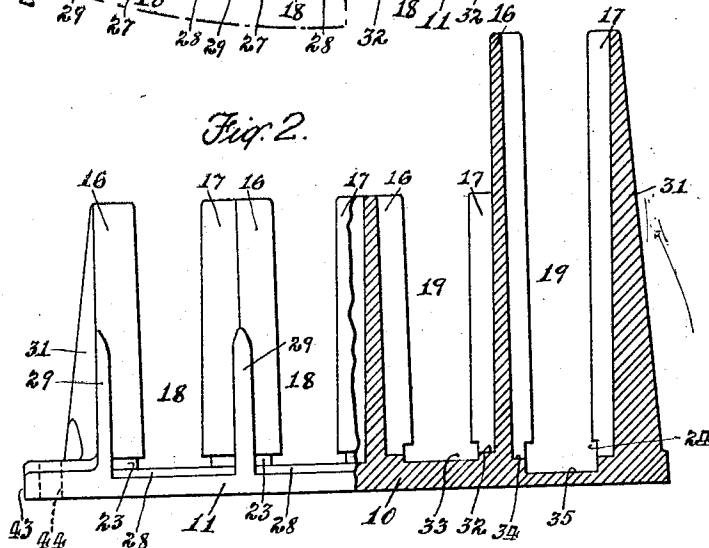
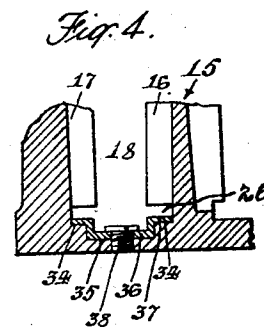
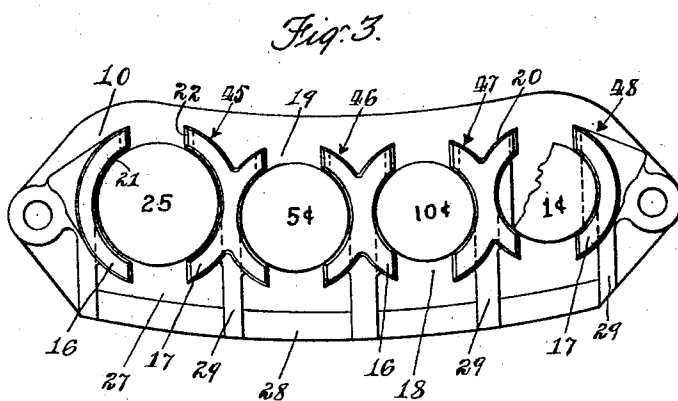
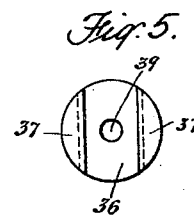
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L. H. LARSEN ET AL

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CHANGE HOLDING UNIT

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INVENTORS
LOUIS H. LARSEN
CLIFTON W. NIXON
BY *Emery & York*
ATTORNEY

UNITED STATES PATENT OFFICE

LOUIS H. LARSEN, OF UNION CITY, NEW JERSEY, AND CLIFTON W. NIXON, OF NEW YORK, N. Y.

CHANGE-HOLDING UNIT

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This invention relates to change-holding units particularly applicable for use in connection with coin-controlled machines, for instance vending machines, change-making machines, combined vending and change-making machines and similar apparatus, wherefrom goods, change, or both goods and change, are delivered to customers in exchange for deposited coins of prescribed denominations, and wherein it is necessary or desirable to provide quick detachable unitary structures capable of holding a supply of different denominations of coins to be dispensed to customers in accordance with the change making plan or principle of the particular machine.

An important object of the invention is the provision of a simplified, economically produced structure of the type referred to and in a manner as hereinafter set forth, comprising a plurality of skeleton wells, open from the bottom to the top so that the coins therein may be readily visualized and calculated, and so arranged that the coins within each well may, as a column, be readily removed by the fingers.

Further objects of the invention are to provide a change-holding unit of the type referred to which is capable of being inexpensively manufactured as a one-piece structure by the art of die-casting, which can be readily attached to and as readily detached from a suitable supporting plate, and which will be strong and durable in use, as well as providing a unitary structure capable of being produced with wells differing in capacity and capable also of being produced so as to receive means whereby to vary the number of coins to be ejected at one operation.

Other objects will appear hereinafter.

The invention consists in the details of construction and in the arrangement and combination of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which:—

Fig. 1 represents a top plan view of a complete change-holding unit made in ac-

cordance with one form of the invention this view also illustrating the adaption with the unit of suitable ejectors, fractionally shown;

Fig. 2 represents in part a front elevation and in part a vertical section of the unit illustrated in Fig. 1, this view being taken on the line 2—2 of Fig. 1;

Fig. 3 represents a top plan view of a slightly modified form, in which the two central wells are produced to hold coins of different denominations;

Fig. 4 is a fragmentary sectional elevation showing the employment of an insert in connection with a penny well; and

Fig. 5 is a detailed plan view of the insert.

The preferred form of construction as illustrated by way of example in the accompanying drawings comprises an elongated base 10 and a row of wells adapted to maintain columns of coins upon the base, the wells extending upwardly from the base at a distance back from the front edge 11 thereof. In the present exemplification, there is a well 12 for maintaining a column of twenty-five cent coins, two wells 13 and 14 adapted each to maintain columns of five-cent coins and a well 15 for maintaining a column of penny coins. These wells are arranged in adjoining relation and are characterized by the fact that they are two part wells, each being composed of two upright complementary well sections 16 and 17 which are separated throughout their length by a front gap or channel 18 and a rear gap or channel 19 alined therewith. These gaps or channels permit observation of the interiors of the wells so that an observer may readily note whether the wells contain any coins and so that where they contain coins, he may readily calculate the number thereof by a mere glance, by counting, or through the application of an appropriate gage or instrument. The provision of the alined gaps or channels 18 and 19 permits a coin or a column of coins to be readily withdrawn from a well. To accomplish this a person may insert his thumb and forefinger through the opposing gaps, seize the coin or the lowermost coin in the column, as the case may be, and then slide his thumb and

forefinger upwardly through the open gaps until withdrawal is effected through the open top of the well.

As illustrated in the accompanying drawings, all of the complementary well sections 16 and 17 are of concavo-convex formation and each well section 17 is joined convex curve to convex curve with a well section 16 except as to section 17 for the penny well at one end of the structure and to the section 16 for the twenty-five cent well at the opposite end of the structure. Another feature of construction to be noted in the drawings is that all of the well sections slightly and continuously increase in thickness from their open top ends to the base 10 such increase accruing on all surfaces as at 20 on the convex surface, at 21 on the concave surfaces and at the edges 22 which define the gaps or channels. Because of the slight accretion on the concave surfaces of the section, the interior diameters of the wells where the lowermost coins rest upon the base 10 are slightly less than the interior diameters at the top ends of the wells. With this construction, the change-holding unit is adapted to be produced by the art of die-casting.

The complementary sections 16 and 17, where they join the base 10, are cut away into the material of their bodies from the front gap 18 so as to provide an opening 23 through which the lowermost coin may be ejected from the well. Similarly, at the rear gap 19, the complementary sections are cut away to provide an opening 24 suitable for receiving an ejector device 25 by which the lowermost coin is discharged through the delivery opening 23. The delivery openings 23 may, where desired, be of a height sufficient to permit two or more coins to be ejected at one operation by an ejector 25, in which case the ejector receiving opening 24 must have sufficient dimension to accommodate an ejector capable of effecting the discharge of the required number of coins. In Fig. 4, the penny well 15 is shown as provided, by way of example, with a delivery opening 26 of a height adapted to allow two coins to be discharged therethrough at one time.

We have hereinbefore intimated that the row of wells extends upwardly from the base a distance back from the front edge 11 thereof. This has for its object the provision on the base, in front of each delivery opening, of a flat coin slideway 27 followed by a downwardly inclined coin slideway 28 bordering on the front edge 11. The top surface of the flat slideway 27 represents a horizontally even continuation of the top surface of the bottoms of the wells so that the coins during ejection cannot tip downwardly too soon and interfere with the proper operation of the ejectors, or bind against the next lowermost coins or against the top defining edges of the open-

ings 23. The downwardly inclined slideway directs the ejected coin from the base. At the front of the unit structure, suitable strengthening webs 29 connect the well sections with the base, these webs extending downwardly from the convex curves of the sections and slanting forwardly therefrom so as to extend to the front edge 11 of the base. These webs also serve as partitions for dividing the slideways 27 and 28 into individual sections for the wells, so that the coins issuing from each well will have a delivery pathway segregated from the pathways from the other wells. The well sections 17 and 16, which come at the opposite ends of the unit structure, being parts of the penny well and twenty-five cent well, respectively, are further connected with the base by suitably inclined strengthening webs 31.

The five cent well designated as 14 is shown as provided at the bottom thereof with opposing slideway ledges 32 which extend out through the delivery opening 23 and to the downwardly inclined slideway 28. These slideway ledges may be produced by providing the base with a recess 33 adapted to accommodate the working of a coin ejector which has greater thickness than the thickness of the coin to be ejected thereby. By this arrangement, the coin rests within the well upon the ledges 32 and is discharged by an ejector working in the recess 33 and having a thickness sufficient to engage the rim of the coin to be ejected thereby. The ledges 32 are shown in connection with the well 14 by way of example and they may be employed if desired in connection with any of the wells. The penny well 15 may, if desired and as herein shown, have a height considerably greater than the height of the other of the wells, since it may be necessary to provide for change making purposes a supply of pennies considerably in excess of the supply of other denominations of coins. In connection with this penny well 15, we have shown by way of example a delivery opening 26 (see Fig. 4) of a height adapted to permit the ejection of two pennies at one time; and in order to make provision for permitting the ejection of either two pennies or one penny, accordingly as desired, we have shown by way of example within the penny well 15 two ledges 34 produced by providing within the base a suitable recess 35. Where it is desired to eject only one penny at a time, there is disposed within the recess 35 (see Fig. 4) an insert 36 having upwardly offset flanges 37 adapted to rest upon the ledges 34 and having a thickness equal to the thickness of one penny. When this insert is applied, the delivery opening 26 is reduced by one half in respect of its height and the column of coins rests upon the flanges 37 of the insert so that only one coin can be discharged through the upper unobstructed half of the delivery open-

ing 26. When, however, the insert 36 is removed the column of coins rests upon the ledges 34, and since in this case the lower half of the opening 26 is not obstructed, two pennies can be discharged at one time. The insert may be made secure by means of a suitable screw 38 passed through a central opening 39 in the insert and threaded into an opening 40 provided in the base.

In the present exemplification, the base 10 is shown as curved longitudinally in agreement with the curve of a supporting ring structure 41 fractionally shown in broken outline in Fig. 1, said ring structure in practice being arranged for rotation about the ejectors 25 and carrying thereon a circular series of coin-changing units to be individually brought, as change is to be ejected therefrom, into delivery position before said ejectors 25. Also, in the present exemplification, the row of well sections extending upwardly from the base is shown as curved in accordance with the supporting ring. In the ends 42 of the base, which preferably narrow to rounded points 43, are provided openings 44 for receiving screws (not shown) or other suitable fastening elements whereby to secure the base firmly with the supporting ring structure 41.

In Fig. 3, we illustrate a slightly modified form of construction, in which a twenty-five cent well is indicated at 45, a five cent well at 46, a ten cent well at 47, and a penny well at 48. Various other modifications relative to the diameter and capacity of the wells, or to the order in which coins of different denominations are to be sustained upon the base, or to the number of coins to be ejected at one time, will readily suggest themselves and may be resorted to without altering the principle of the invention. The change-holding unit of our present invention can be very economically produced by the art of die-casting, the base, well sections and webs all being, by preference, integral structure.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth but desire to avail ourselves of such variation and modifications as come within the scope of the appended claims.

Having thus described our invention, what we claim is:—

1. A coin-holding accessory for a vending or change-making machine having a shelf support, said accessory comprising a base plate adapted to be placed upon and secured to said support, a plurality of sections upstanding from the base plate and joined thereto at their lower ends, said sections being arranged in complementary pairs for re-

taining columns of coins upon the base plate, the members of each pair being spaced from each other to provide front and rear gaps and consisting of relatively thin bodies of arcuate transverse form between the gaps, and said members at the base plate and in the front being cut away laterally in opposite directions to provide a common coin discharge opening in communication with the front gap and which is in a plane adjoining the top surface of the base plate.

2. A coin-holding accessory for a vending or change-making machine having a shelf support, said accessory comprising a base plate adapted to be placed upon said support and holed for receiving means whereby to be secured to said support, a plurality of sections upstanding from the base plate and joined thereto at their lower ends, said sections being arranged in complementary pairs for retaining columns of coins between them upon the surface of the base plate and consisting of relatively thin bodies of arcuate transverse form, the bodies of each pair at the base plate being cut away laterally in opposite directions to provide a common coin discharge opening in a plane adjoining the top surface of the base plate, an extension to the base plate adjacent and in front of the openings of the bodies, the top surface of the extension for a distance being on a plane even with the surface of the base plate between the sections, and guide means on the extension forming individual coin paths leading from the openings.

3. A coin-holding accessory for a vending or change-making machine having a shelf support, said accessory comprising a base plate adapted to be placed upon and secured to said support, a pair of complementary sections upstanding from the base plate and joined thereto at their lower ends for retaining a column of coins between them upon the surface of the base plate, said sections consisting of relatively thin bodies of arcuate transverse form, said bodies at the base plate being cut away laterally in opposite directions to provide a common coin discharge opening in a plane adjoining the top surface of the base plate, and an extension to the base plate adjacent said opening, the top surface of the extension for a distance in front of the sections being on a plane even with the surface of the base plate between said sections.

4. A coin-holding accessory for a vending or change-making machine having a shelf support, said accessory comprising a base plate adapted to be placed upon and secured to said support, a pair of complementary sections upstanding from the base plate and joined thereto at their lower ends for retaining a column of coins and consisting of relatively thin bodies of arcuate transverse form, said bodies at the base plate being cut away laterally in opposite directions to provide a

common coin discharge opening, the base plate having a recess therein, and a gauge device in the recess having a portion shaped to form a rest for the lowermost coin of the column retained by the bodies and limiting the path of the passage through the discharge opening.

In testimony whereof, we have signed our names to this specification.

LOUIS H. LARSEN.
CLIFTON W. NIXON.

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