No. 861,157. PATENTED JULY 23, 1907.

B. F. BREWSTER.

COIN ASSORTER AND STACKER.

APPLICATION FILED JULY 9, 1906.

2 SHEETS—SHEET 1.

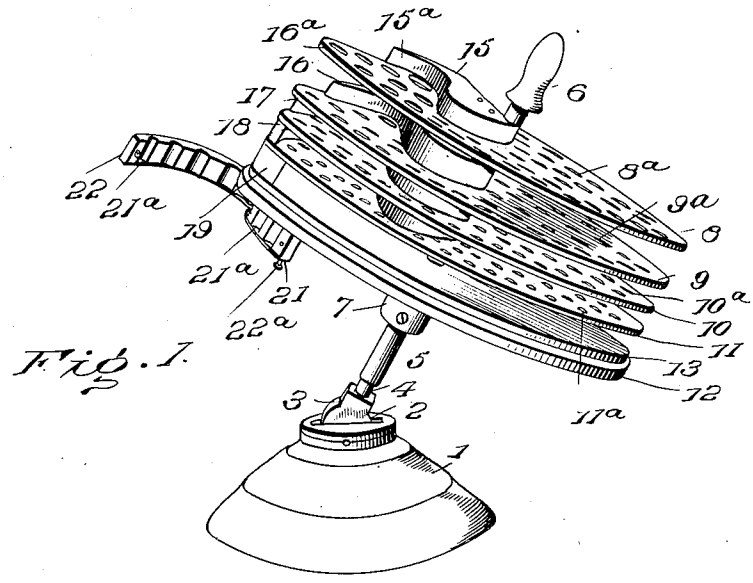


Fig. 1.

Fig. 2.

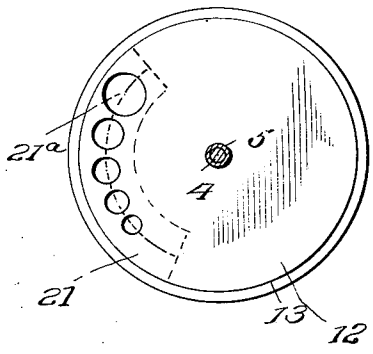
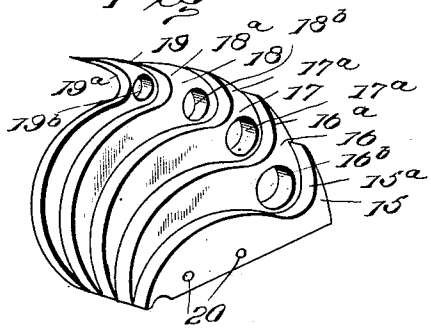


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4

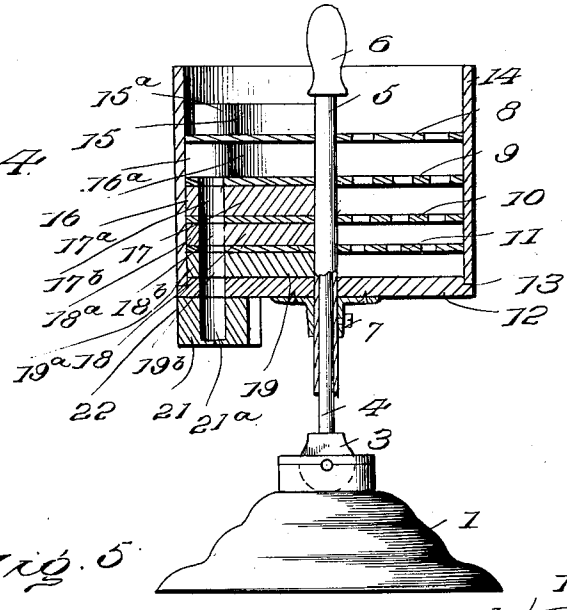


Fig. 5

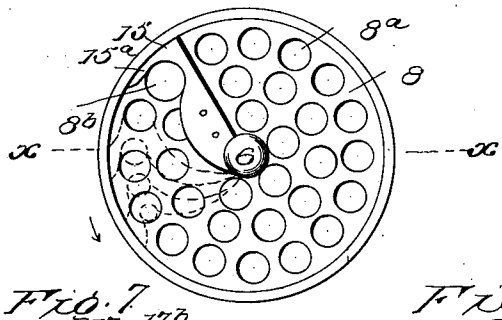


Fig. 6.

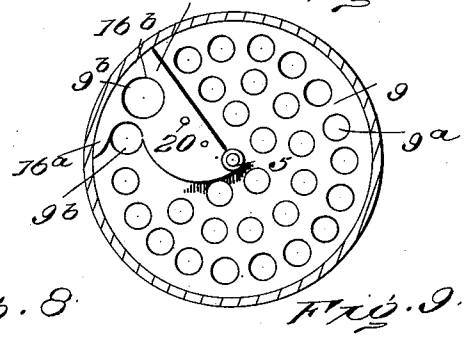


Fig. 7

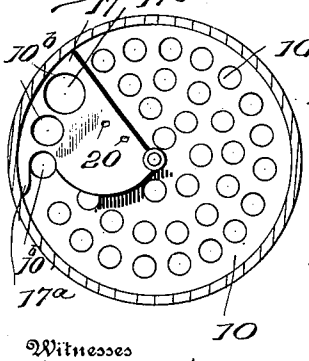


Fig. 8

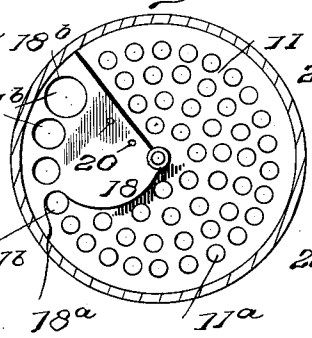
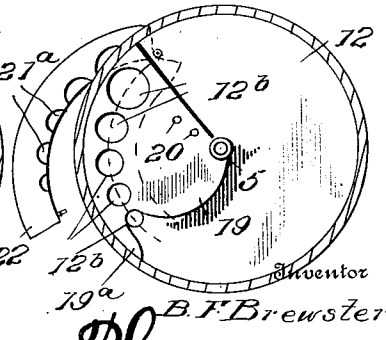


Fig. 9.



Witnesses

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COIN ASSORTER AND STACKER.

No. 861,157. Specification of Letters Patent. Patented July 23, 1907.

Application filed July 9, 1906. Serial No. 325,370.

To all whom it may concern:

Be it known that I, BERTRAM F. BREWSTER, a citizen of the United States, residing at Burrton, in the county of Harvey and State of Kansas, have invented certain new and useful Improvements in Coin Assorters and Stackers, of which the following is a specification.

The object of my invention is to provide an improved money assorter and stacker, parts of which will be so constructed and arranged that a comparatively large number of coins of different denominations may be indiscriminately fed into the device, and, which, by its actuation, will automatically assort and stack the coins in an expeditious manner, the coins of one denomination being automatically assorted and stacked apart from those of other denominations.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists in certain construction, arrangements and combinations of the parts as hereinafter fully described and particularly pointed out in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of my improved sorter and stacker, the case of the device being removed and not shown in this view, and the hinged leaf of the stacking box being shown swung open; Fig. 2 is a bottom plan view of the device, the supporting base and a portion of the standard being broken away; Fig. 3 is a detail perspective view of the stacking arms shown in their relative positions to each other; Fig. 4 is a vertical sectional view with parts in side elevation, the section being taken approximately on the line x—x of Fig. 5; Fig. 5 is a top plan view of the device, looking down upon the uppermost sorting plate or disk; Fig. 6 is a similar view in the nature of a horizontal section of the entire device, looking down upon the second sorting plate from the top; Figs. 7 and 8 are similar views looking down upon the third and fourth sorting plates from the top, respectively; and, Fig. 9 is a similar view looking down upon the lowermost plate.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the supporting base of the device, which may be of any desired construction and design, which is provided with a socket 2 designed to receive the foot 3 of the standard 4. The said foot is pivotally mounted in the socket of the base so that the standard 4 may vibrate or oscillate in a vertical plane. The standard 4 in the present instance is constituted by a rod, as shown. 5 designates a tubular shaft which, at its lower end, is fitted over the standard 4 and is supported thereby, said shaft being capable of a rotatable movement on the standard. The shaft 5 is preferably provided at its upper end with a handle 6. A set collar 7 is secured on the shaft and is also secured to the lowermost sorting plate hereinafter described.

On the shaft 5 a series of superposed sorting plates are mounted, designated 8, 9, 10, 11 and 12, respectively. The lowermost plate 12 is provided with the annular shoulder 13 by which it is adapted to support a case 14, which, in the present instance, is constituted by a cylinder, preferably of glass.

The uppermost sorting plate 8 is provided with a plurality of coin apertures 8^a of a diameter sufficient to allow those coins to pass therethrough that are of a denomination the size next to the largest coins for which the device is intended. The next plate below (9) is also provided with a plurality of apertures, designated 9^a and smaller than the apertures 8^a, and the plates 10 and 11 are similarly provided with apertures, designated 10^a and 11^a on the respective plates.

From the foregoing it is to be understood that the apertures 8^a, 9^a, 10^a and 11^a gradually decrease in diameter, for a purpose to be described hereinafter. In addition to the series of apertures above named, the plate 8 is provided with a somewhat larger aperture 8^b, the plate 9 is provided with two apertures 9^b, each of which is slightly larger than the apertures 9^a and one of which (9^b) is smaller than the other aperture 9^b, the plate 10 is also formed with three apertures 10^b, the smallest one of which is slightly larger than its apertures 10^a, while the plate 11 is formed with four apertures 11^b gradually decreasing in size and the smallest of which is somewhat larger than its apertures 11^a. The plate 12 which is lowermost of the series is provided with five apertures 12^b gradually decreasing in size, the smallest one being designed to pass the smallest coins for which the aperture is intended, but otherwise the plate 12 is solid. These plates, when arranged in superposed position have their series of apertures 8^b, 9^b, 10^b, 11^b and 12^b in registry.

Upon each of the sorting plates rests a stacking arm, said arms being designated 15, 16, 17, 18 and 19. These arms are substantially segmental in shape having one flat edge and the flat edges being arranged in coincidence and their other edges are formed into a compound curve as shown, so as to produce at their outer ends curved or hooked stacking fingers 15^a, 16^a, 17^a, 18^a and 19^a, respectively. As illustrated in the drawings, particularly Fig. 3, these arms increase in width from the uppermost arm to the lowermost, and all, except the uppermost arm, are provided with apertures extending therethrough and in coincidence with the series of apertures 9^b, 10^b, 11^b, and 12^b. The upper arm 15 is positioned on the uppermost plate so that the finger 15^a will extend partially around the opening

8^b of the uppermost plate, while the other arms have their apertures designated 16^b, 17^b, 18^b and 19^b, respectively, arranged as clearly illustrated in Figs. 3 and 5 of the drawings. Each finger of the stacking arm partially encircles the smallest aperture 9^b (or 10^b, or 11^b, or 12^b, as indicated) of the plate upon which it rests. The sorting plate and stacking arms are preferably secured together by means of dowel pins 20.

21 designates a stacking box which is secured to the lower side of the lowermost plate 12 and which is provided with a series of openings 21^a corresponding in diameter and coinciding with the apertures 12^b in said lowermost plate. The box is preferably provided with a hinged leaf 22 which intersects the openings 21^a so that the coins may be withdrawn, in a manner evident from the inspection of Fig. 1, when said leaf is swung outwardly in the position shown in said figure. Preferably the hinged leaf 22 is provided at its hinge with a spring tending to throw the leaf outwardly and it is held closed by means of a spring actuated locking catch 22^a.

In describing the operation of my improved sorter and stacker, it will be assumed that the device is intended to sort silver dollars, half dollars, twenty-five cent pieces, nickels, and dimes. In the practical operation, coins of these denominations are fed indiscriminately in the upper end of the opening of the case 14 and rest in a pile upon the uppermost sorting plate 8. By vibrating the device back and forth in a vertical plane, the coins will be caused to slide back and forth over the upper surface of the uppermost plate 8, the apertures 8^a of which are of a diameter that will permit all of the coins to pass therethrough, except the dollars. Similarly, the apertures 9^a of the plate 9 will allow the twenty-five cent pieces, dimes and nickels, to pass therethrough, but will retain upon its upper surface the half dollars; the plate 10 will allow the dimes and nickels to pass therethrough, but will retain upon its upper surface all the quarters, while the plate 11 will permit the dimes to pass therethrough, but will retain upon its upper surface all the nickels. The dimes will fall through the apertures 11^a of the plate 11 upon the upper surface of the lowermost plate 12. In this manner, it will be seen, the coins of one denomination will all be sorted from coins of other denominations. After this sorting process has been completed by vibrating the device back and forth, as above stated, the stacking process still remains to be performed. This is accomplished by turning the device around on the standard 4 as pivot, the direction of movement being preferably as indicated by the dart in Fig. 5 and the device being preferably held during this turning movement in an inclination as shown in Fig. 1. This turning movement will result in all the coins sliding toward their respective arms. It is manifest, therefore, that the dollars held upon the uppermost plate 8 will be guided toward the stacking finger 15^a and fall through the opening 8^b, the opening 16^b of the arm 16 and through all the other openings of the plates and arms that are in coincidence, until it reaches the largest compartment or opening 21^a of the stacking box 21. In a similar and evident manner, the other coins will fall through their respective openings 9^b and the smallest of the openings 10^b, 11^b and 12^b, respectively, so that by this turning movement of the device all of the coins on the plates will be fed into their respective compartments in the stacker and will be readily removed therefrom by throwing the hinged leaf of the stacker outwardly.

From the foregoing description in connection with the accompanying drawings, it will be seen that I have provided a convenient means for sorting and stacking coins of different denominations, it being only necessary to feed the coins in an indiscriminate mass into the upper end of the device by the two movements as above set forth to effect the separation thereof.

It will be noted, particularly with reference to Fig. 4 as well as the other views of the drawings, that the openings 8^b, 9^b, 10^b, 11^b and 12^b, constitute, with their coacting openings in the stacking arms, a series of vertical passages leading downwardly from the respective sorting plates so as to carry off from such plates those coins that are of a size too large to go through the other apertures in the plates, but small enough to feed through the opening of such plate that is partially encircled by the curved stacking finger on such plate.

It is to be understood that the sorting operation is performed by grasping the handle 6 and holding it at the inclination illustrated in Fig. 1, and partially rotating the device back and forth about the handle as an axis, care being taken that at all times, the flat edges of the stacking arms shall face downwardly so that the stacking arms shall protect the larger openings of the respective plates. It will be understood also that the sorting operation may be assisted or facilitated by vibrating the device or shaking it back and forth on the base 1, care being taken that the plates are held at all times in the tilted position illustrated in the view above referred to. It is manifest then that the coins cannot fall into any of the passages leading to the stacking box, until the operator desires that the stacking operation shall begin. The sorting process is always completed before the stacking operation is begun.

Having thus described the invention, what is claimed as new is:

1. A coin assorter and stacker, comprising a series of superposed sorting plates held together in spaced relation and adapted to be vibrated and turned, a case surrounding said plates, the respective plates being provided with apertures of different sizes, that is, the apertures of one plate being of a different size from the apertures in the other plates, for the purpose specified, and a stacking arm on each of said plates, there being provided a series of vertical passages leading downwardly from the respective sorting plates and through the stacking arms, these passages being of a diameter larger than the apertures in said plates from which said passages lead.

2. A device of the character described, comprising a support, a series of superposed sorting plates arranged to vibrate and also to turn on said support, the respective plates being provided with apertures of different sizes, that is, the apertures of one plate being of a different size from the apertures in the other plate, for the purpose specified, and a stacking arm on each of said plates, there being provided a series of vertical passages leading downwardly from the respective sorting plates, said passages being of a diameter larger than the apertures in the plate from which such passage leads, as and for the purpose set forth.

3. A device of the character described, comprising a support, a series of superposed plates mounted to turn on said support, each plate being provided with apertures, and the apertures of each plate decreasing in size from the apertures in the plate above it, and each plate being further provided with apertures larger than its first named

apertures, the last named apertures being in registry with one another, with respect to different plates, and stacking arms also provided with apertures coincident with the last named apertures and constituting passages leading downwardly from the respective plates, as and for the purpose specified.

4. In a device of the character described, the combination of a series of superposed sorting plates, means for sorting coins of different dimensions through said plates, whereby the coins of the respective dimensions will rest upon the surface of the respective plates, there being provided passages leading downwardly from the respective sorting plates, said passages being of a diameter larger than the coins designed to rest upon the surface of the plate from which each passage extends, a series of stacking arms mounted on the respective plates and provided with curved fingers, each of said fingers extending partially around the upper end of one of the passages, and a stacking box secured to the lowermost plate.

5. In a device of the character described, a series of superposed sorting plates each provided with a series of apertures designed to pass coins of a certain size, the respective plates being adapted to retain coins of a larger size than their apertures on their upper surface, there being provided passages of different diameters leading from the respective plates downwardly, each passage being of a diameter sufficiently large to pass the coins of that size which is too large to pass through the other apertures in said plate, and a series of stacking arms mounted on the respective plates, each arm being provided with a curved finger extending partially around the upper end of one of said passages.

6. In a device of the character described, the combination with a base, of a standard mounted to vibrate in a vertical plane on said base, a series of superposed sorting plates mounted to turn on said standard, a series of stacking arms, one of which is carried by each of said plates, means for sorting coins of different denominations so that they will be separated from each other and rest upon respective plates, there being provided passages extending downwardly from the respective plates and through the said stacking arms, said passages being of different sizes and adapted to pass coins from the respective plates, and a stacking box secured underneath the lowermost plate.

7. A device of the character described, comprising a base, a series of superposed plates mounted to vibrate and also to turn on said base, there being coin passages extending downwardly from the respective plates whereby to convey coins of a certain denomination therefrom, and a series of segmental stacking arms of varying widths, one edge of each arm being in the form of a compound curve, the outer portion of which constitutes the stacking finger and which partially surrounds the upper end of the passage leading from the plate upon which it rests.

8. A device of the character described, comprising a base, a series of superposed plates mounted to vibrate and also to turn in said plates, a case inclosing said plates, the plates being provided with apertures of different sizes, that is, the apertures of one plate being of a different size from the apertures of the other plates, and there being provided a series of vertical passages leading downwardly from the respective sorting plates and distinct from the apertures of the plates, said passages being of a diameter larger than the apertures in the plate from which said passages lead, and each of said passages being close to the margins of the plates and close to the case, whereby the coins may be caused to roll around the case and into the said passages.

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

BERTRAM F. BREWSTER. [L. S.]

Witnesses:
L. A. DANTON,
M. M. MICHAEL.