

Nov. 25, 1958

A. ZILKE

2,861,720

DISPENSING APPARATUS

Filed Dec. 13, 1955

2 Sheets-Sheet 1

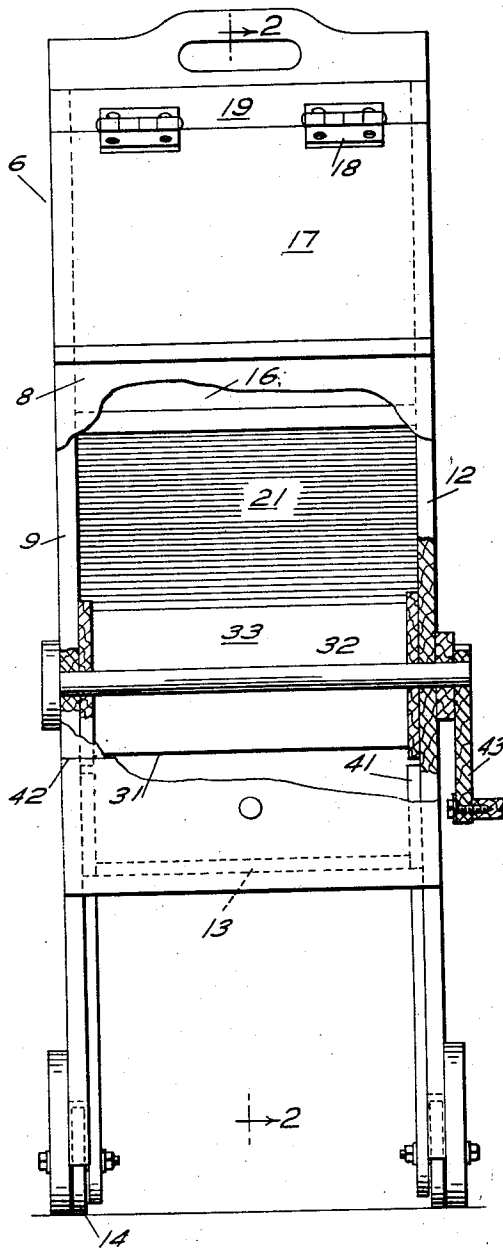


Fig. 1.

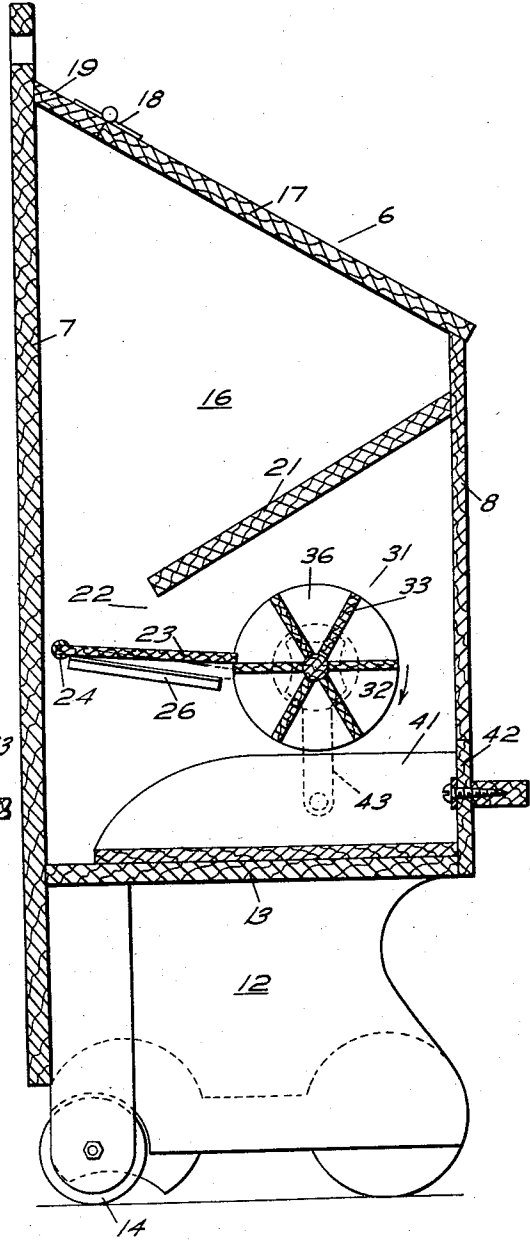


Fig. 2.

INVENTOR
ARTHUR ZILKE

BY
Gardner & Zimmerman
ATTORNEYS

Nov. 25, 1958

A. ZILKE

2,861,720

DISPENSING APPARATUS

Filed Dec. 13, 1955

2 Sheets-Sheet 2

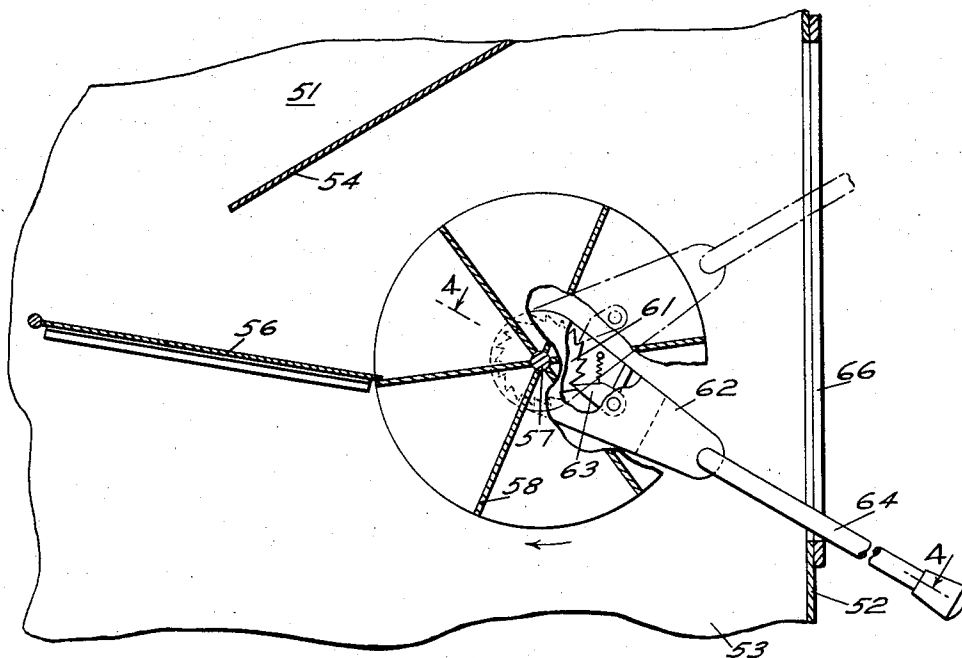


Fig. 3.

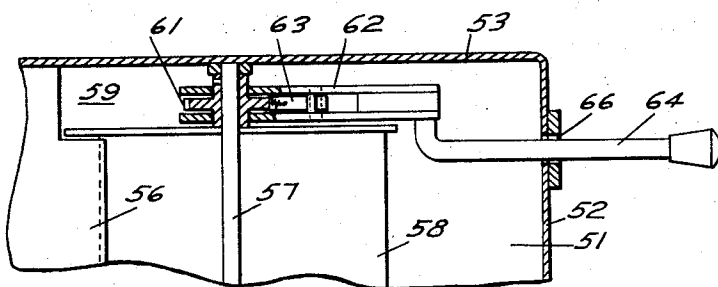


Fig. 4.

INVENTOR
ARTHUR ZILKE
BY *Gardner & Zimmerman*
ATTORNEYS

1

2,861,720

DISPENSING APPARATUS

Arthur Zilke, Walnut Creek, Calif.

Application December 13, 1955, Serial No. 552,819

6 Claims. (Cl. 222—231)

This invention relates to dispensers for small irregular objects, and is more specifically directed towards a unit which is adapted to contain a supply of such articles and distribute a substantially predetermined number of such articles when desired by the operator.

The primary object of the present invention is to provide dispensing apparatus which is portable, inexpensive, and which will deliver a predetermined number of articles, such as charcoal briquets or the like, at the election of the operator.

Another object of the invention is to provide apparatus of the character described in which a portable unit is provided for containing a supply of charcoal briquets or the like and which will insure delivery of a number of such briquets upon actuation of the apparatus.

A further object of the invention is to provide apparatus of the type referred to which is substantially enclosed so that movement of the charcoal within the apparatus will not create dust in the vicinity of the apparatus or to the person using the same.

A still further object of the invention is to provide apparatus of the character described in which means are provided for shaking the articles upon delivery of another group of articles so as to prevent jamming of the articles within the apparatus.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Figure 1 is a front elevational view, partly in section, of the apparatus of the present invention.

Figure 2 is a vertical cross-sectional view taken substantially in the plane indicated by line 2—2 of Figure 1.

Figure 3 is a portional view, similar to Figure 2, and illustrating a modified form of actuating mechanism.

Figure 4 is a cross-sectional view taken substantially in the plane indicated by line 4—4 of Figure 3.

In broad terms, the present apparatus is a portable unit adapted to receive a quantity of articles, such as the previously discussed charcoal briquets, and then deliver a predetermined number of such briquets either directly to the user, or preferably to a source, such as a drawer, within the apparatus and readily accessible to the user. With particular reference to Figures 1 and 2 of the drawings, the apparatus will be seen to include a housing generally denoted by the numeral 6, which includes a rear wall 7, a front wall 8, side walls 9 and 12, and a bottom wall 13. It will be seen that the side and rear walls extend below the bottom 13 and suitable wheels 14 may be journaled thereon for readily moving the apparatus from place to place. It will also be noted that the upper edge of the front wall 8 is lower than the upper edge of rear wall 7, and in order to enclose the chamber 16 defined by the walls and bottom of the apparatus, a cover 17 is provided, such cover in its closed position sloping downwardly at an angle of about 30 degrees from the horizontal, and may be pivotally at-

2

tached by a hinge 18 or the like to a short extension 19 formed as a part of the rear and side walls. In this manner it will be observed that the chamber 16 is substantially completely enclosed by the the walls and cover member when the latter is in its closed position but by merely raising the cover ready access may be had to the interior of the chamber such as for replenishing the supply of articles contained therein.

Provided in chamber 16 is a baffle or chute 21 which extends between the side walls from the front wall 8 downwardly at an angle of about 30 degrees towards the rear wall 7 but is terminated short thereof to define a passage 22 between the distal end of the member 21 and the inner surface of the wall 7. Thus, any product within the chamber 16 may gravitally flow towards and through the passage 22.

Articles sliding down the baffle 21 or otherwise gravitally falling through the passage 22 are deposited on a deflector 23 which extends between the side walls and which is positioned in a generally horizontal position subjacent the distal end of chute 21 and passage 22. It will be noted that the rearmost end of the deflector is pivotally mounted on the side walls, as indicated at 24, and the deflector will normally gravitally assume the dot-dash position shown in Figure 2 of the drawing by resting upon stop elements 26, here shown as angle bars secured to the inner surfaces of the side walls. In this position the deflector is inclined downwardly at a small angle, such as 5 degrees and is in its position of rest. The reason for the pivotal mounting of the deflector will be presently explained.

In the chamber portion subjacent the baffle 21 and forwardly of the deflector 23 we provide a delivery mechanism generally indicated by the numeral 31. This delivery mechanism includes a shaft 32, traversing chamber 16, and suitably journaled in the side walls 9 and 12 of the apparatus, and secured to such shaft is a plurality of vanes or blades 33 which extend for substantially the entire chamber width. Any suitable number of blades may be utilized and the spacing between adjacent blades is such as to only receive the average size article being dispensed. With reference to Figure 2 it will be noted that the peripheral edges of the respective blades are sufficiently long to engage the distal end of the deflector 23 so that upon rotation of the delivery mechanism, the blades will engage the under surface of deflector 23 and raise the same a slight amount until the blade has reached a position in travel permitting the free return of the deflector to its normal rest position on the stops 26. In this manner, the articles which are supported on the deflector 23 will be continuously vibrated by the up and down movement of the deflector and there will be no tendency for the articles to jam or otherwise stick in the passage 22 or on the deflector itself, and a steady supply of the articles will therefore be insured to the generally V-shaped receiving slots or pockets 36 between the adjacent blades. With the apparatus rotating in the direction of the arrow of Figure 2, articles deposited in the slots 36 will be carried in a clockwise direction as viewed in the drawing until the lowermost blade reaches a downwardly inclined position, permitting the articles to gravitally fall or slide from the slot.

While the delivery of articles could be made directly to the exterior of the apparatus it is preferable to provide subjacent the delivery mechanism a drawer 41 which is slidable through an opening 42 in the front wall of the apparatus. In this manner, the articles carried around by the rotor will be deposited in the drawer. The drawer may then be opened and the articles removed therefrom without having the dust which would otherwise normally accompany the dropping and movement of a large number of charcoal pieces or similar articles.

A handle 43 may be utilized to rotate the dispenser, and if six slots 36 are utilized, as shown, it will be appreciated that one-sixth of a revolution of the handle will bring one load of articles into the drawer. If more articles are desired obviously the handle rotation may be continued.

It should thus be clear that as the baffle 21, deflector 23, and rotor 31 extend for substantially the entire width of the apparatus, the articles deposited in chamber 16 will of necessity be uniformly distributed across said width and by controlling the slot size, a predetermined number of articles will be passed from the deflector 23 into the respective slots upon rotation of the rotor. Furthermore, the entire apparatus may be very economically constructed of wood as is shown in the drawing, although obviously metal bearings and the like could be used if so desired. It will also be recalled that by virtue of the oscillating movement imparted to the deflector 23 there will be little or no danger of articles being jammed and prevented from entering the slots upon rotor rotation nor will such bouncing or other movement of the articles bring any dust in the vicinity of the person using the apparatus, but such dust will be retained within the confines of the chamber.

In Figures 3 and 4, a modified form of delivery mechanism is disclosed which permits the user to obtain a desired number of articles without measuring the amount of rotation of shaft 32 as is required where the handle 43 is utilized. Also, for purpose of illustration, the parts are shown as made of sheet metal rather than wood, although obviously, the selection of construction materials is one of personal choice.

As here shown, a chamber 51 is provided, defined in part by a front wall 52 and side walls 53, a baffle or chute 54, and a deflector 56 being positioned within the chamber as previously explained. Also, a shaft 57 carrying blades 58 extends across the chamber, but as shown in Figure 4, the blades terminate in spaced relation to wall 53 to provide a space 59 therebetween, the deflector 56 being notched in this area so as to overlie the blade ends.

Rotation is imparted to the shaft through a ratchet mechanism disposed in space 59 and which includes a toothed ratchet wheel 61 secured to the shaft. A yoked member 62 is journaled on the shaft on both sides of wheel 61, and is provided with a spring-loaded pawl 63 engageable with the wheel teeth. An extension or handle 64 is secured to member 62 and protrudes through an opening 66 in front wall 52 for manual engagement by a user. It is believed clear that the handle may be raised upwardly without effecting shaft rotation by having the sloping side of pawl 63 ride along the teeth of wheel 61. However, downward movement of the handle brings the flat side of the pawl against the teeth and rotates the wheel in the direction indicated. By limiting the length of the slot or opening 66, the limit of handle travel may be established so as to only permit rotation of the shaft for one-sixth of a revolution, where six blades are used, or some other amount where a different number of blades are provided.

In any event, it will be appreciated that a mere raising and lowering of handle 64 will cause the group of articles contained between one set of adjacent blades to be dispensed and another group loaded between another set.

What is claimed is:

1. Article dispensing apparatus comprising a substantially enclosed chamber adapted to contain articles to be dispensed, a rotor extending across said chamber and having a plurality of circumferentially spaced article receiving pockets of a size to receive a charge of articles, a generally horizontally disposed deflector plate within said chamber and inclined downwardly towards said rotor to deliver articles in said chamber to said rotor and into the pockets thereof, means pivotally mounting said deflector plate adjacent one end thereof below the

upper portion of said rotor and the other end thereof normally positioned in vertical overlapping relationship to the peripheral edges of the respective rotor pockets upon rotation thereof, and means limiting downward movement of said deflector plate.

2. Apparatus as set forth in claim 1 including an inclined baffle within said chamber completely overlying said rotor and having a distal end overlying a medial portion of said deflector plate whereby articles in said chamber will slide from said baffle to said plate for delivery to said rotor.

3. Delivery mechanism for charcoal pieces and the like comprising a housing having front, rear and side walls and a bottom, a cover removably closing the open top of said housing, said walls defining a chamber, a horizontally extending rotor journaled on opposed side walls adjacent the front wall, said rotor having a plurality of radially extending means defining circumferentially spaced article receiving pockets, a deflector plate pivotally mounted adjacent one end thereof adjacent said housing rear wall and having a distal end in engagement with the ends of said rotor pockets when the latter are in a horizontal position and horizontally spaced from said rotor pockets when the latter are rotated to another position, means limiting downward movement of said deflector, and a baffle overlying said rotor and extending between said side walls and inclined downwardly from said front wall towards a medial portion of said deflector.

4. Apparatus of the character described including a housing having side and bottom walls, a baffle extending from adjacent the upper edge of one of said walls towards the opposite wall in a downwardly inclined direction, an article intercepting plate positioned adjacent the distal end of said chute, means pivotally attaching said plate to opposite side walls for rocking movement, means limiting downward pivotal movement of said plate to a position substantially 5 degrees below a horizontal plane, a rotor journaled on said opposed side walls and extending for substantially the complete width of said housing, said rotor having a plurality of radially extending members thereon defining article-receiving cavities therebetween, the distal ends of said blades engaging the distal end of said interceptor plate in one position of blade rotation and spaced therefrom in another position of blade rotation whereby said plate will be imparted an oscillating movement upon rotor rotation, and means for manually rotating said rotor.

5. Apparatus as set forth in claim 4 in which said last named means includes a handle operatively secured to said rotor and positioned exteriorly of said housing.

6. Apparatus of the character described comprising a housing defining a chamber for receiving articles to be dispensed, a plate-like member positioned in said chamber, means pivotally mounting said member for rotation about a horizontal axis, a rotor horizontally positioned in said chamber and including a plurality of radial blades defining article receiving pockets therebetween, the distal edges of said blades being engageable with an edge of said member for oscillating the latter about said axis upon rotation of said rotor, means for rotating said rotor, and means within said chamber overlying said rotor and defining with said housing a vertical article passageway in alignment with said member whereby articles to be dispensed are first deposited on said member prior to delivery to said rotor pockets, said means completely covering said rotor and inclined downwardly towards said member.

References Cited in the file of this patent

UNITED STATES PATENTS

686,648	Bryan	Nov. 12, 1901
1,015,638	Rogers	Jan. 23, 1912
1,696,587	Yarwood	Dec. 25, 1928
2,687,239	Keenan	Aug. 24, 1954