# United States Patent [19]

**Westburg et al.**

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[45] **July 24, 1973**


[54] **GAME APPARATUS UTILIZING INDEPENDENTLY MOVABLE PIECES**


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[21] Appl. No.: **166,857**

[52] **U.S. Cl.** ..... **133/1,** 53/254, 133/5, 221/310

[51] **Int. Cl.** ..... **A63f 9/00**

[58] **Field of Search** ..... 133/1, 5, 6, 8; 53/254; 221/175, 307-310 X



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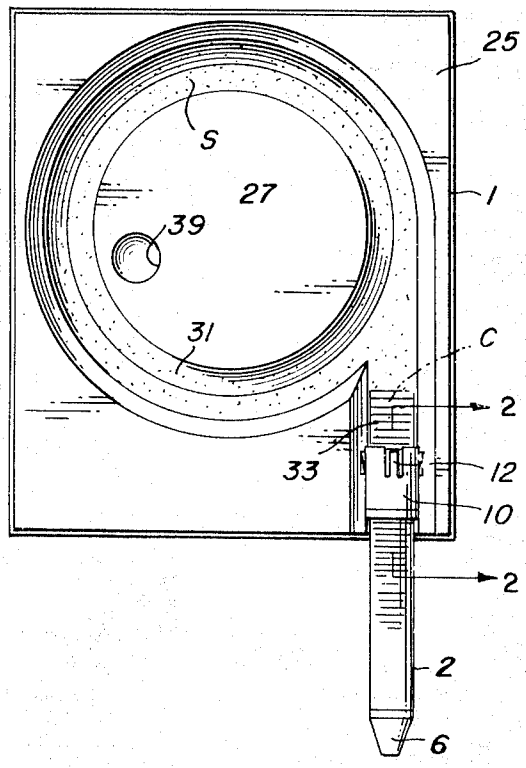
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[57] **ABSTRACT**

This invention relates to means for storing and manipulating counters such as are used in playing games in which individual counters are deposited successively on a game board or other surface, the apparatus including means for aligning in serried array a plurality of the counters after they have been randomly deposited therein and for facilitating their introduction to a dispenser from which they may be deposited individually on a game board or the like as has been mentioned, the invention contemplating not only the combination of the apparatus with the counters but also the counter manipulating components of the apparatus as mutually independent inventions.

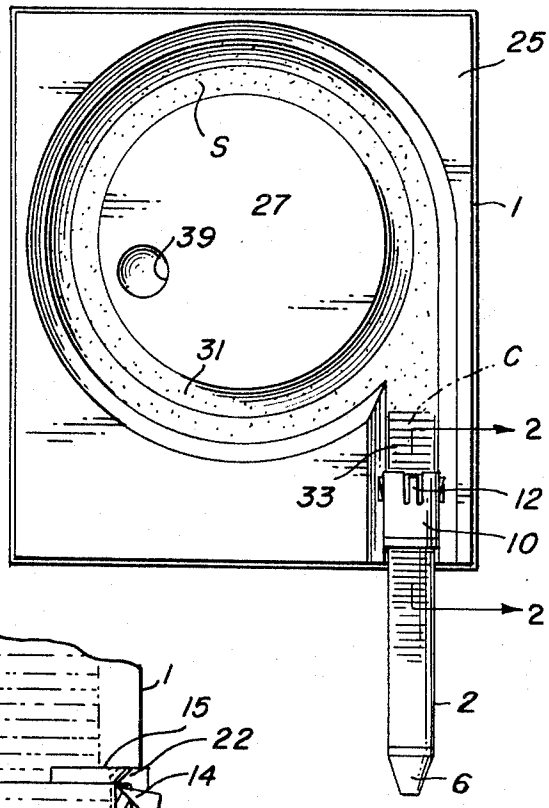

**7 Claims, 7 Drawing Figures**



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FIG. 1.



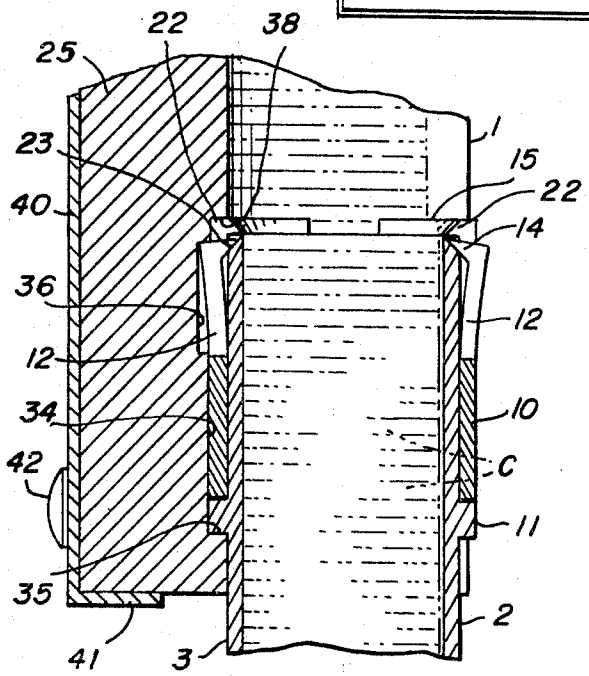
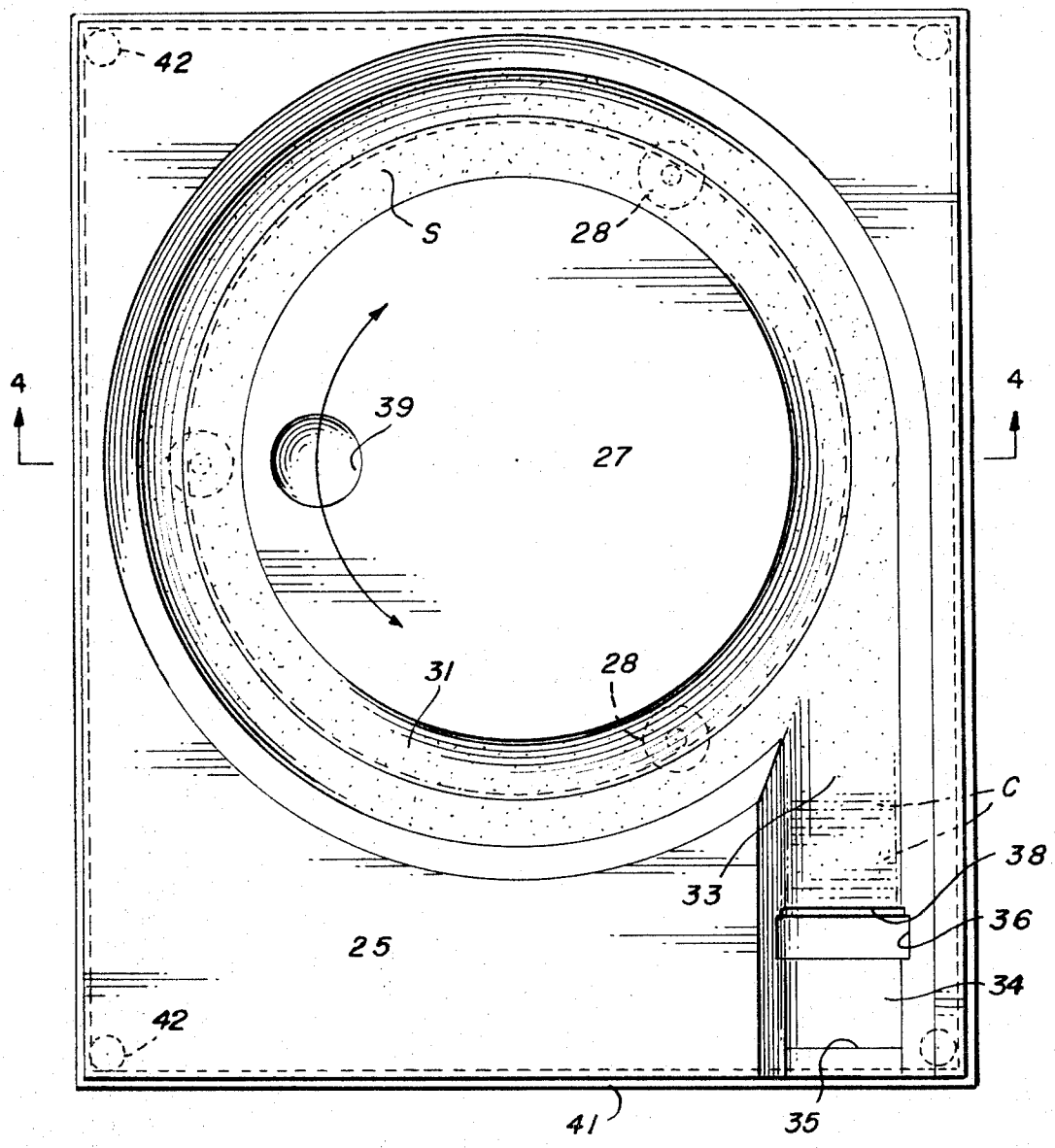




FIG. 2.

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FIG. 3.



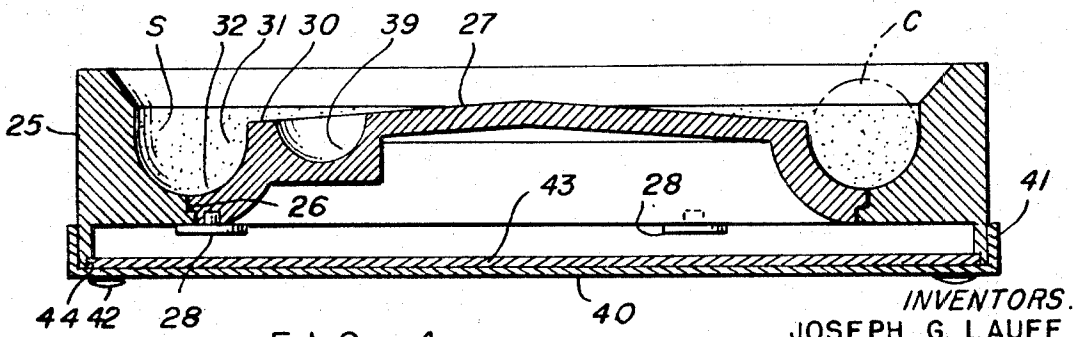
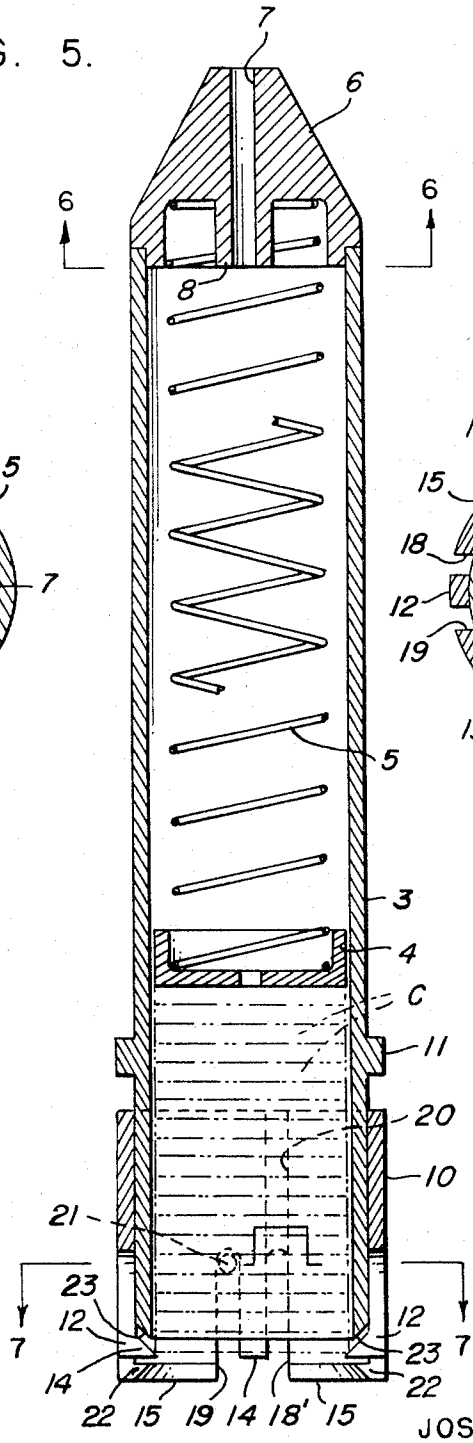




FIG. 4.

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FIG. 5.



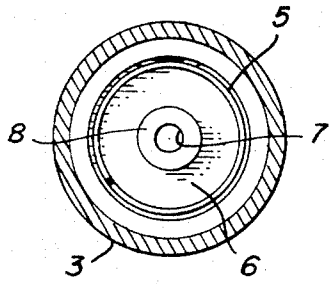




FIG. 6.

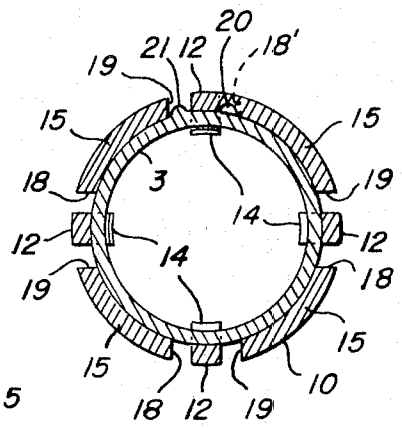



FIG. 7.

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# GAME APPARATUS UTILIZING INDEPENDENTLY MOVABLE PIECES

## BACKGROUND OF THE INVENTION

1. Field of Invention

The invention resides in the field of amusement apparatus including independently movable game pieces and is particularly directed to apparatus for manipulating generally flat circular pieces by participants in games involving the use of game boards and the like on which such pieces are individually deposited.

2. Prior Art

While there have heretofore been suggested, as in U.S. Letters Patent Nos. 2,431,121 and 2,520,321, dispensers for facilitating the deposit on a game board of individually movable pieces exemplified by the counters used in such games as BINGO, LOTTO and the like, so far as we are aware there has not been known means for facilitating the charging into or loading of a dispenser with such counters, and the dispensers which have been available have not become widely used, due in part at least, it is thought, to the unavailability of means for readily introducing counters into them.

## SUMMARY OF THE INVENTION

In accordance with the invention arranging and loading apparatus in which the counters may be randomly deposited affords means for readily arranging the counters in serried array and hence substantially in axial alignment in an open trough from which they may be fed directly into a dispenser of novel construction when operatively combined and associated therewith, the dispenser after loading being readily detachable from the arranging and loading apparatus for use in depositing its contained counters individually on a game board or the like, thereby eliminating the necessity present in the use of dispensers heretofore known for the counters to be aligned manually before being entered into the dispenser or, in the alternative, of being fed by hand individually thereinto.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings FIG. **1** is a top plan view of the combined counter arranging and loading apparatus and the counter dispenser associated together in operative relation for aligning counters deposited in the former preparatory to their being discharged into the latter, the counters C being indicated in this and other figures in broken lines.

FIG. **2** is an enlarged fragmentary section on the line **2—2** in FIG. **1** showing the operative interrelation of the components during loading of the dispenser.

FIG. **3** is an enlarged top plan view of the counter arranging and loading apparatus separated from the dispenser.

FIG. **4** is a section on line **4—4** in FIG. **3.**

FIG. **5** is an enlarged axial section of the counter dispenser component of the apparatus, separated from the loading element.

FIG. **6** is a section on the line **6—6** in FIG. **5** and

FIG. **7** is a section on the line **7—7** in FIG. **5.**

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the drawings, and initially with particular reference to FIGS. **1** and **2** the apparatus embodying the invention and therein illustrated includes an assembling and loading unit **1** hereinafter more fully described, and a dispenser unit **2** best illustrated in FIGS. **5** and **7** and preferably, except perhaps for the coil spring it contains, made of relatively rigid plastic material. It comprises a tubular body **3** adapted to receive a plurality of disk-like counters C when introduced thereinto through one end, a follower **4** biased by a coil spring **5** supplying mild pressure against the end counter of a serried array of them to maintain them in axial alignment in the body at whatever posture it assumes. The spring **5** bears against an end closure **6** secured by a press fit in the end of the body and provided with an axial bore **7** for free passage of air from and into the dispenser, an axial boss **8** through which the bore **7** extends retaining the end of the spring **5** in coaxial relation with the body **3.**

At its other end the body carries a collar **10** slidable longitudinally therealong to a limited extent, a projecting rib **11** which may be integral with the body **3** limiting travel of the collar in one direction. The collar **10,** generally in the form of a hollow cylindrical sleeve adjacent its free end has formed therein a plurality of circumferentially spaced yieldable fingers **12** the extremities of which carry radially inwardly directed chisel, or wedge-shaped, points **14** of the fingers **12** being defined from intervening lands **15** by slots **18** and **19.** One of the slots **18'** has as a continuation within the collar a longitudinal groove **20** cooperative with a projecting boss **21** on the dispenser body **3** to enable the collar to be locked thereon, the boss enering first the groove **20** and then the adjacent slot **18',** following which by a slight relative rotation of the collar on the body the boss becomes aligned with the adjacent slot **19** which, devoid of a communicating groove, inhibits escape of the collar from the end of the body.

The lands **15** between adjacent fingers **12** project axially from the collar somewhat beyond the ends of fingers **12** a distance corresponding substantially to the thickness of an individual counter C and may have inwardly directed chamfered abutments **22** at their extremities, the inward bevel of these abutments facilitating entry of the counters into the dispenser as will hereafter appear.

The extremity of the body **3** adjacent to the collar is outwardly beveled at **23** for engagement with the complementarily inwardly beveled points **14** on fingers **12** whereby when the collar **10** is slid along the body **3** toward engagement with the rib **11** the beveled end of body **3** engages points **14** and thus forces fingers **12** radially outwardly, preferably at least until their edges have been moved to or beyond axial alignment with the adjacent internal surface of body **3.** When the fingers are in this position (FIG. **2**) counters C may be readily entered into the dispenser and once having been introduced thereinto, and a serried array of them maintained therein by follower **4,** they may be individually dispensed therefrom when the dispenser is placed, open end down, on a resistant surface and body **3** moved toward that surface sufficiently to cause the fingers **12** to be flexed outwardly from their normal position by engagement of the end of body **3** with their points. The resultant divergence of the finger ends from alignment with the body bore permits the lowermost counter in the dispenser to drop by gravity to the said surface and occupy the space between the finger ends and said surface unrestrained by any part of the dispenser.

The fingers return to normal position as the dispenser is lifted from the surface leaving the release counter thereon, while superjacent counters are held in body **3** by the finger points **14** converging beneath them. A succession of counters may thus readily be discharged from the dispenser as desired by the contestant until the supply has been exhausted, those remaining at any time during this process being readily observable through the wall of body **3** when, as is usually desirable, this is made of transparent plastic material. For replenishing the supply of counters in the dispenser the invention contemplates employment of assembling and loading unit **1** now to be more fully described with reference especially to FIGS. **3** and **4**. Essentially the unit **1** as shown comprises a generally rectangular base **25** providing a circular rabbet **26** within which a rotatable assembling disk **27** is entered and confined by circumferentially spaced lugs **28** secured to the underside of the disk in the cored out interior of the base and overlying the circular inner edge of the rabbet. On its upper surface **30** the disk provides a gentle slope outwardly toward its rim where it is curved both axially as well as circumferentially to form with the adjacent complementary surface of the base a substantially semi-toroidal trough **31** having vertical sides and a bottom surface **32** substantially semi-circular in cross section and preferably slightly roughened as by sand-blasting S or the like to afford a perceptible degree of friction with counters C when they are disposed therein. The trough **30** communicates directly with a tangential branch **33** generally similar to trough **30** in cross section but formed wholly in the base and extending rectilinearly to an adjacent edge thereof. Near such edge the branch **33** has a depressed area **34** defining at one end a shoulder **35** at its bottom and at the other end a groove **36** and an abutment **38** the vertical sides and arcuate bottom of which are disposed to engage the end of colar **10** on dispenser **2** when the rib **11** is disposed to engage shoulder **35**. The said shoulder and abutment **38** are spaced longitudinally of branch **33** to receive rib **11** and collar **10** respectively when the collar is holding fingers **12** divergently outward so as to enter groove **36**, leaving unobstructed by the fingers access through collar **10** of a serried array of counters C from branch trough **33**.

The assembling disk **27** has a circular depression **39** adjacent its upper edge whereby on insertion of a finger or other suitable implement into the depression the disk may be rotated relatively to the base **25**. Usually, when a quantity of circular counters of appropriate size have been deposited at random in the loading unit, whether on the sloping center portion of the disk or in trough **31** or both, partial rotation or oscillation of the disk through about 90° for approximately half dozen to a dozen cycles causes the counters to become substantially aligned axially in trough **31** and in branch **33** into which they pass in serried array during clockwise rotation of the disk when the branch is tangential to trough **31** in clockwise direction, or when the branch is otherwise placed, during counter clockwise-rotation of the disk.

With the dispenser associated with the arranging and loading unit as above described, and as illustrated in FIG. **1** it is then but a relatively simple matter to move a supply of counters along branch trough **33** and into the dispenser, until the latter is full and the follower spring **5** fully compressed. As the loaded dispenser is released from the assembling and loading unit the collar **10** resumes its normal relation to body **3** with fingers **12** retaining the counters in the body bore until intentionally discharged therefrom as above described.

For insuring stability of the assembling and loading unit when placed on a smooth-surfaced table or the like and the assembling disk **27** is oscillated, a substantially complementary rectangular cover **40** is provided to receive the body **25** within its peripheral lip **41** while resilient or frictional pads **42** at the corners of the cover tend to adhere to the supporting surface.

This cover, when the apparatus is not in use may be inverted over the upper face of the assembling and loading unit, and with the dispenser **2** reversed and seated in tangential branch **33** may serve as a closure for the entire apparatus, retaining those of counters C in the assembling unit not entered in the dispenser.

For enclosing the underside of the assembling unit a flat rectangular plate **43** may be seated in a rabbet **44** in the underside of body **25** affording a neat and acceptable contour for the apparatus as a whole, complementing cover **40** when it is being used as a closure for the upper part of the assembling and loading unit, the latter, like the dispenser being preferably made from relatively rigid plastic material.

We claim:

**1.** In combination with a plurality of generally similar substantially circular relatively flat counters, assembling means compising a body, a disk supported thereby and rotatable relatively thereto, the rim of the disk and the body together defining a substantially semi-toroidal channel having an arcuate bottom surface conforming to a radius at least as great as the radius of curvature of the perimeter of the counters, the body defining a channel substantially tangential to said first channel and communicating therewith, having abutments for engagement with dispensing apparatus and tubular dispensing apparatus engageable with said abutments when aligned with said tangential channel comprising means for receiving a plurality of counters on passage thereinto in serried array from said tangential channel.

**2.** The combination defined in claim **1** in which the bottom surface of said substantially semi-toroidal channel frictionally engages said counters for arranging them in serried array during oscillation of the disk relatively to said body, and the disk radially inwardly from said rim is substantially conical to provide a surface inclined toward said rim for feeding into said channel counters deposited on said disk.

**3.** The combination defined in claim **1** in which the dispenser comprises resilient fingers adapted to be held in divergent relation when said dispenser is in engagement with said abutments and when the dispenser is disengaged therefrom to releaseably restrain counters in the dispenser against discharge therefrom.

**4.** The combination defined in claim **1** in which said dispenser includes a tubular body and a tubular collar slidable thereon and defining circumferentially spaced resilient fingers having tapered surfaces engageable by the body at its extremity to bend the fingers outwardly when said collar is in engagement with one of the said abutments and an annular rib carried by the body is in engagement with another said abutment.

**5.** The method of arranging a plurality of generally similar substantially circular flat counters in serried array which comprises depositing the counters at ran-

dom in a substantially semi-toroidal channel defined by complementary relatively rotatable components, then oscillating said components relatively to each other while the surfaces defining said channel are in frictional enagagement with the counters.

6. Apparatus for arranging a plurality of generally substantially circular relatively flat counters in serried array which comprises a body presenting a circular rabbet, a disk complementary to said rabbet engageable therewith and rotatable therein relatively to said body, the body and the periphery of the disk complementarily defining a semi-toroidal channel, the body defining also a substantially semi-cylindrical channel extending tangentially outwardly from said semi-toroidal channel and providing means for receiving a tubular dispenser for discharge thereinto from said tangential channel of counters arranged in serried array in said semi-toroidal channel by oscillation of said disk in said body and discharged from said semi-toroidal channel to said tangential channel.

7. Apparatus as defined in claim 6 in which said semi-toroidal channel presents frictional surfaces for engagement by said counters and the disk radially inward from said channel presents a smooth substantially conical convex surface for discharge into said semi-toroidal channel by gravity of counters deposited at random thereon, relative oscillation of the elements defining said semi-toroidal channel arranging said counters in serried array therein.

* * * * *