Nov. 12, 1940. R. F. BENNETT 2,221,072

COIN RACK

Filed Nov. 30, 1939 2 Sheets-Sheet 1

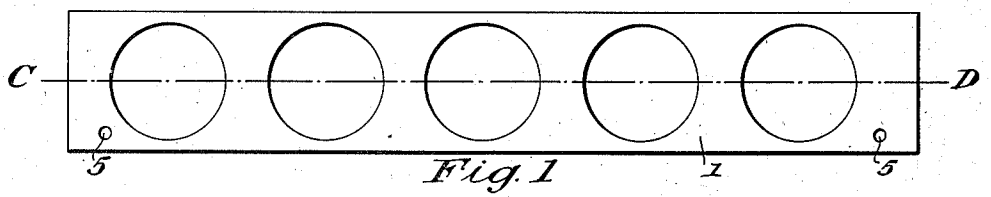


Fig. 1

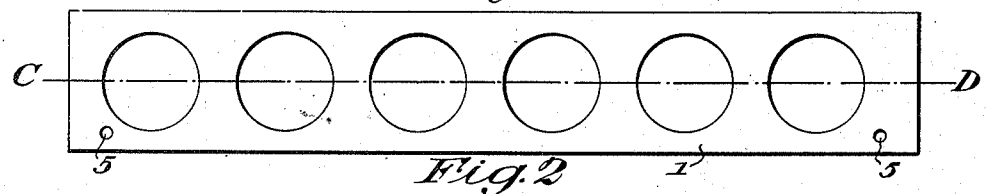


Fig. 2

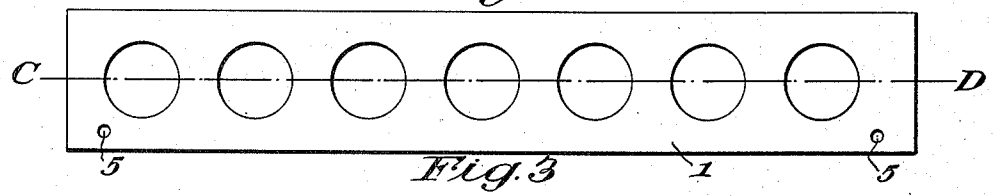


Fig. 3

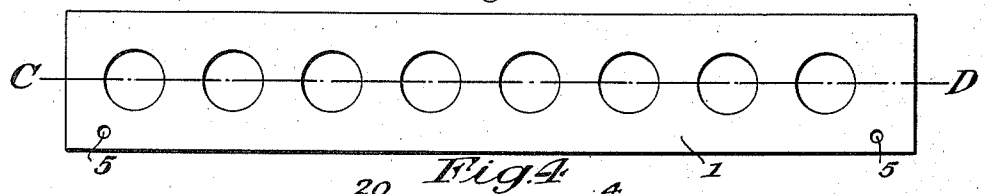


Fig. 4

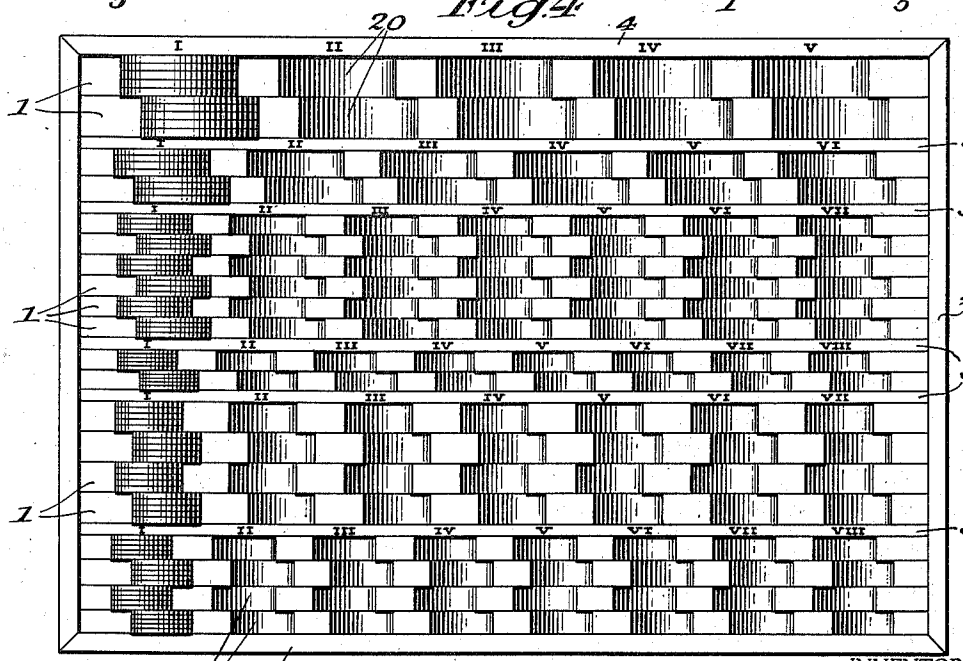


Fig. 5

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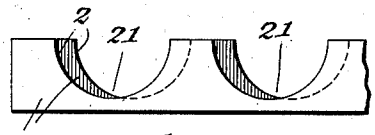


Fig. 6

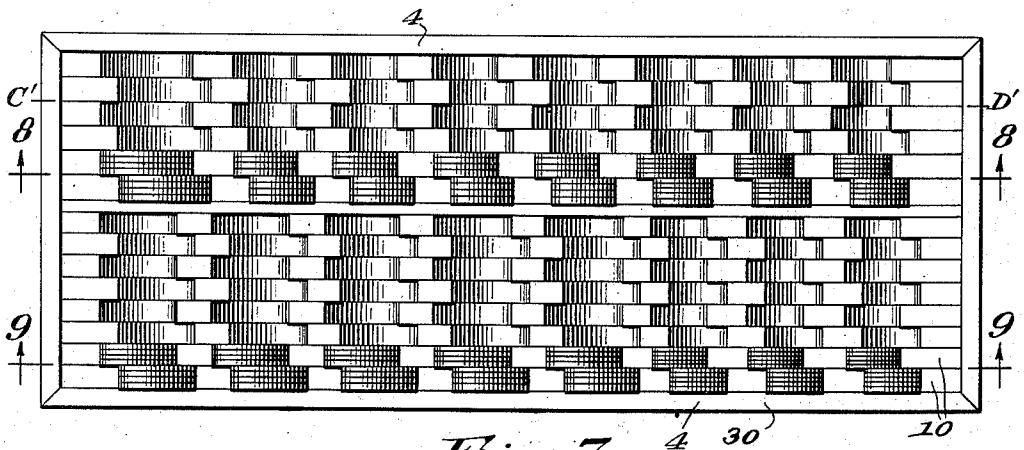


Fig. 7

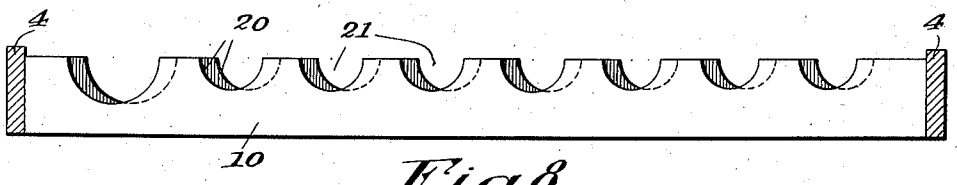


Fig. 8

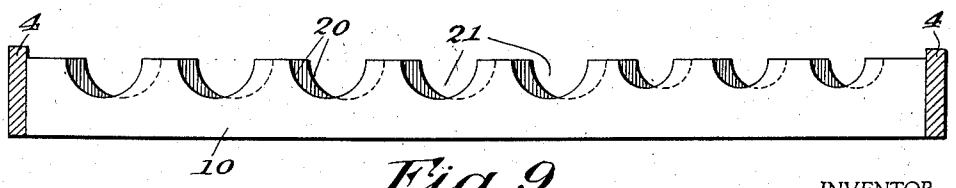


Fig. 9

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UNITED STATES PATENT OFFICE

2,221,072

COIN RACK

Raymond F. Bennett, Portland, Maine

Application November 30, 1939, Serial No. 306,867

4 Claims. (Cl. 133—11)

In the handling of coin, as small change, in many businesses it has become increasingly important that balances be accurately checked without loss of time and that the assorted specie be capable of final audit on transfer to each succeeding custodian who, in taking over the work of his predecessor in office, can readily check the accuracy of the predecessor's count which he usually is required to acknowledge by some form of receipt.

As coins of various denominations vary considerably by reason of wear, those of any denomination, while being passable, may be increasingly thinned in the course of their use. This wear produces degrees of variants in group measurement which makes the mechanics of their handling a difficult problem.

Ordinary sorting or storage are usually cared for by the laws of average in thickness, so that generally open stack methods are acceptable as a basis of computation of totals of fractional specie.

However, where varied specie must be sorted and counted under hurrying conditions, the need of inexpensive coin racks or like exact handling convenience has become one approximating practical necessity. For example, the necessary changes in custodian responsibility in business centers, like those of subways, represents an auditing problem that is almost continuous and yet while relatively small in intermittent local amount, runs into large totals at central offices of financial responsibility.

In the engineering of the mechanical factors of such systems simplicity is highly important. Such systems must be ultimately highly organized, but are most efficient on unit basis.

My concept is that of low cost coin rack units by which physical assortment is made easy and yet mathematical computation so facilitated that totals are attainable at a glance or at least by attentive inspection. This makes possible accurate financial totals, fair to the users as mutually capable of quick check and shift of responsibility.

As illustrative of my invention I have shown in the accompanying drawings a rack basis of assortment and computation by which one custodian may prepare for rapidly transferring to another an accumulation of specie of value which may be widely variant at times.

The drawings are illustrative as to form of device and its method of fabrication according to my invention. These may be and naturally will be modified to meet the variant needs of business use and the commercial production of available units.

Throughout the specification and drawings like reference characters are employed to indicate corresponding parts, and in the drawings:

Figs. 1 to 4 show side views of strips for laminae for the pocketing of coins of different denomination.

Fig. 5 indicates a plan view of a rack for coin according to my invention.

Fig. 6 is an indicated detail of pocket registry.

Fig. 7 is a plan view of another form of rack according to my invention.

Fig. 8 is an interlaminal section longitudinally of such a rack, and

Fig. 9 is a characteristic cross section at right angles to the plane of Fig. 8 through a row of pockets and illustrating their staggered relation.

As indicated in the drawings, racks according to my invention may advantageously be made of laminae of wood or like inexpensive material, such as the strips 1.

The strips are formed of a laminal thickness equal to that of a predetermined number of coins of like denomination. For this basis of measurement I preferably stack and caliper new or unworn coins to minimize the possibility of careless insertion of thin or worn coins as extras which would destroy the accuracy of count which is based on the grouping of a predetermined number of such coins in relatively small groups. The grouping is conveniently provided for by pockets formed by scallops 2 of semi-circular form and of the diameter of the coin to be accommodated. The pockets are preferably half-round and of neat diameter so as to support coins at and below their centers.

In practice the laminae may be formed by boring the strips 1 from template spacings with bits such as the so-called Forstner bits, centered and spaced symmetrically on a common line at the median plane of the strip.

As indicated in Figs. 1 to 4, the strips which are to yield the laminae may be of double width so that when sawed with a very thin saw on their median plane as C—D, there are formed two strips or laminae scalloped on their edges as above described and indicated at 2.

According to my invention the spacing of the bit centers according to a template may be unequally distanced from one end so that when such strips are reversed in assembly as alternate laminae their semi-circular scallops are slightly staggered. This permits each non-coincident scallop or pocket to be partly blocked by the

laminae next adjacent to the extent of the intersecting arcs of their half round pockets due to the staggering of their centers as above described. Thus, while each pocket is partially blocked at its open side, coins will be supported and retained in their assemblies and their staggering provides a partial opening sufficient for finger clearance as indicated diagrammatically in Fig. 6, whether it be desired to pick off a lone coin or clear a pocket as a unit.

The number of coins held by any pocket or group of pockets according to my invention should be small enough to be comprehended at a glance. The basis of predetermination of their number may be conveniently such as to induce mental additions of such fractional currency as units so that totals may be read off with great rapidity and accuracy on the simple group basis made possible by consistent racking according to denomination. This is physically checked upon by pocket diameters and by axial width, limiting number capacities to readily observable computative group.

As indicated in Fig. 5, the plain edge separator strips **3** of the reversed laminal pocket pair may be provided with a scale or number series as an assistance in checking the pocket count as by the Roman numerals suggestively indicated.

As the double laminal strip, which is indicated as intended for dimes or silver ten cent pieces, represents a minimum two laminae unit, such may be taken as the minimum width characteristic unit pair where a pair is needed. Coins of larger denomination or greater thickness are simply provided for by strips **1** of the thickness of the predetermined number fixed upon for the basis of calculation for that denomination as a part of the more comprehensive collection handled by the rack as a whole.

For example, on the present fractional currency basis the dollar pair, where a pair is used, is provided on a five coin pocket basis which makes the pair capacity for each longitudinal unit (I—II—III—IV—V) equal ten dollars ($10.00). Thus the total for the pair unit when full would be fifty dollars ($50.00). By counting the number of full pockets, or, conversely, subtracting the total of empties, the total dollar value of the cache or collection may be seen at a glance.

On the basis of the half dollar pair of laminae, each pocket preferably holds four, or eight half dollars to the lineal progression along the strips. Such an arrangement would show a total, when the pockets are all full, of twenty-four dollars ($24.00).

As indicated in Fig. 5, the penny collection may be conveniently cared for by a five penny pocket basis which gives for each lineal unit when full, a value of twenty cents (20¢) or a total for the pair series when filled, of one dollar and sixty cents ($1.60). In some instances I leave off one laminae from the top half of Fig. 7 so that the columns of nickels total one dollar each and the columns of pennies total twenty-five cents (25¢) each.

As seen in the plan view of Fig. 5, the unequal spacing of the boring of the holes relative to the strip ends gives to the severed laminae an effective difference in length. This affords the simple and easy basis of staggering, preferably at less than a pocket scallop width, so that the pocket sides are partly, but not wholly blocked, as diagrammatically indicated in Fig. 6. Such an arrangement provides for the lateral support of coins in the pocket without making it a complete block or shut-off to digital penetration.

When the double strips **1** are bored or drilled as before described, and are severed on their median lines C—D, the laminae so secured are assembled, preferably in pairs alternately reversed and arranged on their smooth edges with their scalloped edges up. So assembled they may be glued, bradded or pinned together or otherwise joined to form a laminated block. This block is preferably framed as by a band **4** for neatness and strength and the protection of the ends of its staggered laminae against displacement.

In assembling the laminae of racks according to my invention I preferably form the strips **1** with pin holes **5**. These are spaced symmetrically about the strip center as indicated in Figs. 1–4. By threading these holes **5** on assembly pins to hold them temporarily apart the glue may be brushed on between them. These assembly pins may be left in. By using enough assembly pins or tight dowels, the glue may be omitted.

As before explained, these laminae may be of wood. By using dry hard wood great strength is attained by the natural crossings of the grain. Also, by selection of woods of different colors, such as birch and cherry, the laminae are further set off or marked which assists in carrying the eye past empty or partly filled pockets so that alinement is assisted and the observation and count facilitated and confirmed.

By arranging the unit pairs of pocket sections in related order, the rack may be made to assume columns disposed for ready addition or for carrying totals with the coin groups making a basis of addition of sub or minor units of denomination or more comprehensive totals.

In another form of rack according to my invention, I dispose the coin pockets of the same denomination transversely of the laminae as in Figs. 7 and 8 instead of ranging them longitudinally as in Figs. 1 to 6.

Referring to the plan view of Fig. 6 it will be seen that the transverse grooves **20** are preferably formed as a series of pockets **21**. As shown they are cylindrical so that they may be considered as having their axes relatively staggered.

The individual pockets **21** are really only semicircular grooves formed in main general trough cavity **20**. This means that the general or main trough cavity is slightly interrupted by the stagger of the edges of these pockets **21** which intersect as overlapping or intersecting arcuate edges or shoulders when considered in their relation to each other as viewed laterally in Fig. 8. The pockets **21** will therefore be seen to generally correspond to my scallops **2** previously discussed in connection with Figs. 1 to 6, but being assembled transversely of the laminae they line up to form grooves. As herein used therefore the word scallops is to be understood to include either the edges of the strips of Figs. 1–6 or the edges of the strips Figs. 7–9.

Such a rack, as viewed in the plan of Fig. 7 may be variously fabricated, but my concept makes possible economies in production by which my racks are made available at low cost and on a high standard of accuracy and uniformity which is important where articles like coins vary in thickness due to wear and average clearances must be observed.

In practice, a convenient method according to my concept, may be understood by considering the plan view of Fig. 7 without at first heeding the staggering of the transverse groove showing. In

practice, I assemble the strips 10 on edge and in interfacial contact at their sides.

In factory production the strips may be fed as longer stock or in predetermined length and clamped as a laminated block and bored or drilled with clean cut auger holes. These may all be bored at once according to my method, for I space my holes in such relation to the ends of the strip that upon reversal of the alternate laminae I obtain just the desired offset of axis. The bored laminated block, preferably while still in clamped assembly is severed by a thin saw kerf through the plane of centers C'—D', common to the drillings (Fig. 8). For example, on the basis of Fig. 8, the strips bored may be severed alternately turned end for end so that the end grooves formed by the bores on the line of axes C'—D' are alternately slightly shifted. The laminae may then be glued, bradded and permanently clamped or framed as at 30 as in my rack first described.

While racks according to my concept are intended primarily for rapid computation as in inventories, they are otherwise useful in handling and storage of specie. Constructions and uses will vary with local problems and be coordinated by accountant engineering to meet the ultimate result desired.

What I therefore claim and desire to secure by Letters Patent is:

1. In a coin rack of the class described, a laminated block having a series of pockets in its surface, and comprising a plurality of relatively narrow strips disposed in lateral interfacial contact as laminae of said block, some of said strips being of thickness equal to that of a predetermined number of coins of full individual thickness including strips having on one edge semi-circular scallops of the diameter of the coins to be held therein, said strips being disposed as said laminae in relatively staggered relation with their scalloped edges up and forming said surface pockets for the coins being racked.

2. In a coin rack of the class described, a plurality of relatively narrow strips of thickness equal to that of a predetermined number of coins of full thickness and having on their edges semi-circular scallops of the diameter of the coins to be held therein, said strips being disposed in lateral interfacial contact, the scallops of one strip being slightly staggered with relation to those of the strip next adjacent and forming therewith pairs of rows of pockets extending in a series along the strip edges.

3. A coin rack according to claim 2 in which the staggering of the scallops at the edges of adjacent strips is less than their width whereby the pocket ends are only partly closed by the overlap of the curvature of the scallop walls.

4. In a coin rack of the class described, a plurality of relatively narrow strips of thickness equal to that of a predetermined number of coins of full thickness and having on their edges semi-circular scallops of the diameter of the coins to be held therein, said strips being disposed in lateral interfacial contact, the scallops of one strip being slightly staggered with relation to those of the strip next adjacent and forming therewith pairs of rows of pockets extending in a series along the strip edges, the strips having the scallops for one denomination being separated from adjacent strips having pockets of different denominations by strips having plain edges disposed as barriers across the side openings of the adjacent pockets.

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