July 9, 1935. J. J. NEITZ ET AL 2,007,831

COMBINED TOY AND SAVINGS BANK

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Fig. 1.

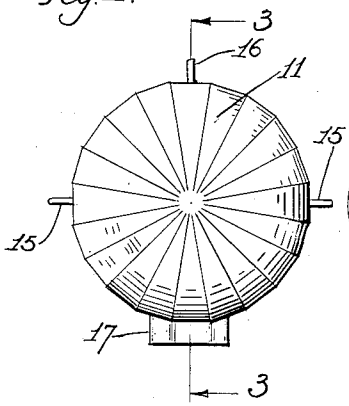


Fig. 2.

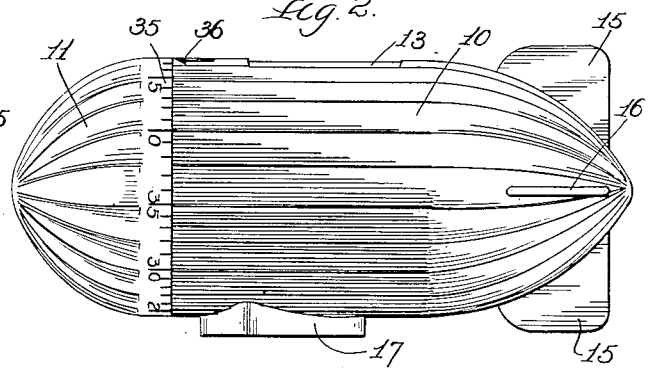


Fig 3.

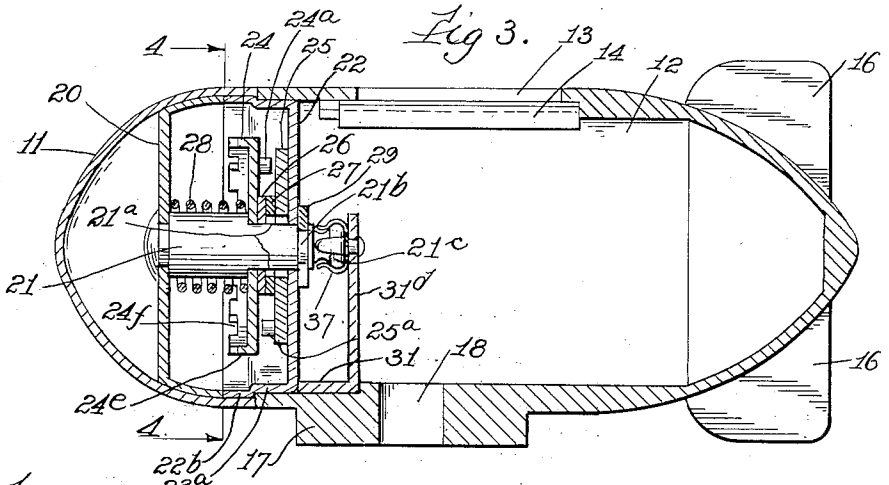


Fig 4.

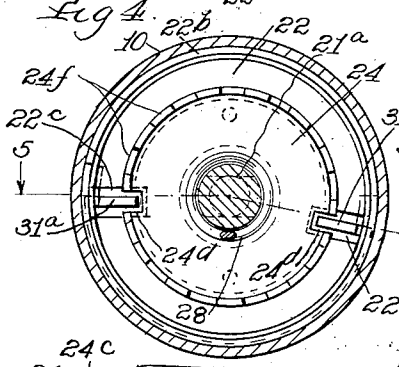


Fig. 5.

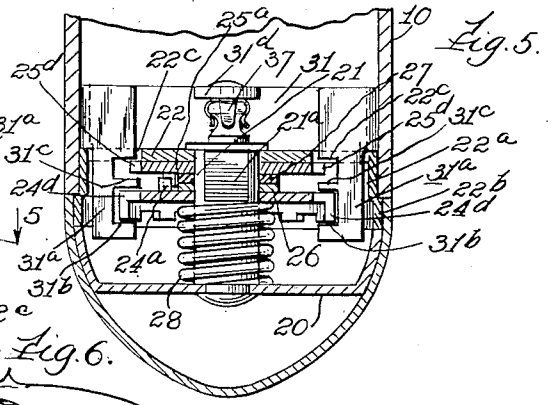
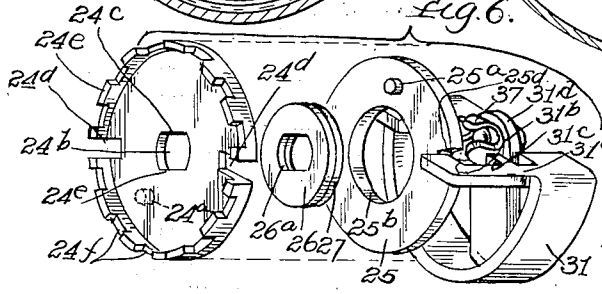


Fig. 6.



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Fig. 7

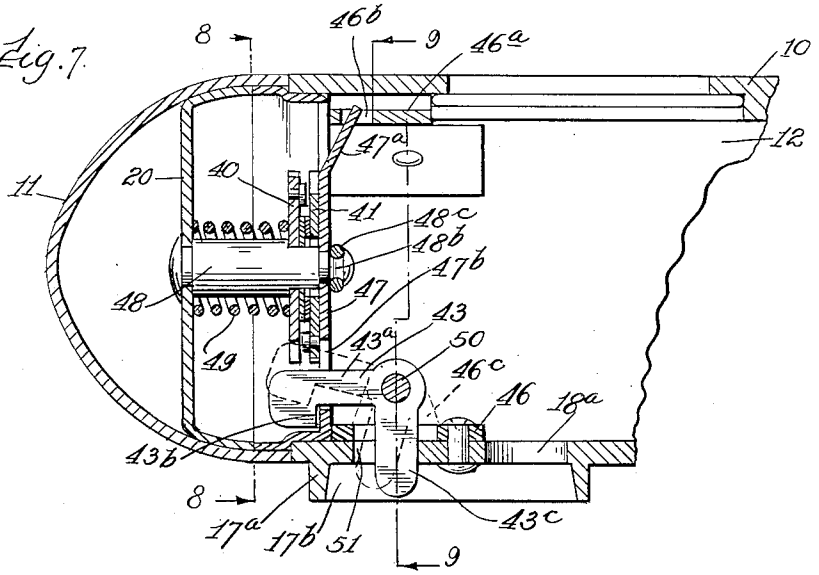


Fig. 8

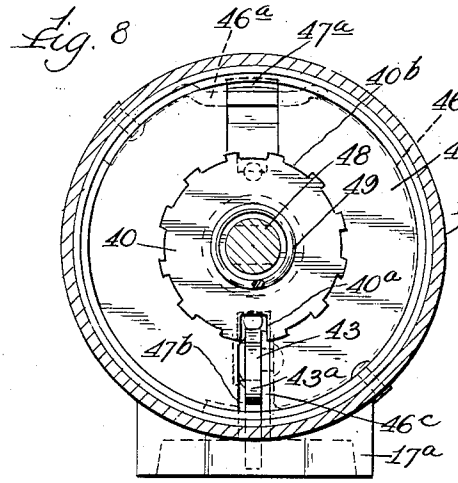


Fig. 9

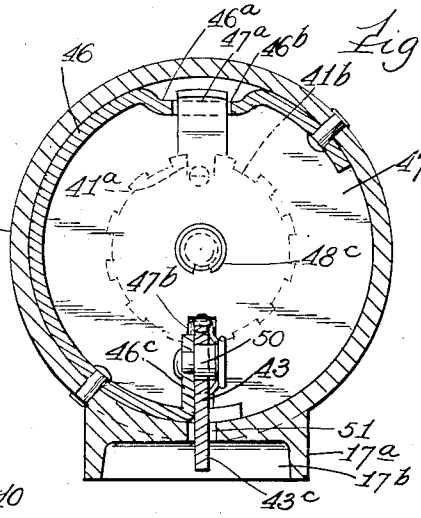
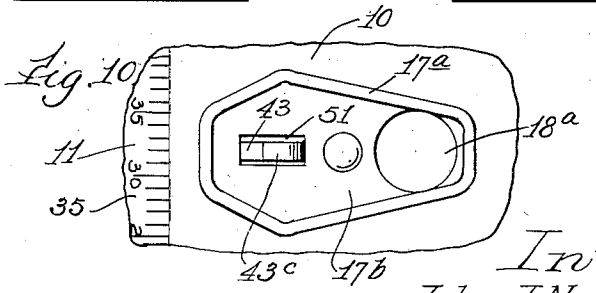


Fig. 10



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UNITED STATES PATENT OFFICE

2,007,831

COMBINED TOY AND SAVINGS BANK

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Application February 13, 1933, Serial No. 656,442

13 Claims. (Cl. 232—4)

This invention relates to a combination toy and savings bank, and has for its main object to devise an improved form of bank which will tend to stimulate and cultivate the savings habit, particularly in children. Another object of the invention is to provide a device of this character in the form of a miniature lighter-than-air craft in which the hollow body portion serves as the savings compartment. A further object is to provide an improved savings bank of this form in which the body is composed of two parts, rotatably connected together, and held against separation by permutation mechanism. It consists in certain features and elements of construction, herein shown and described, and as indicated by the claims.

In the drawings:

Figures 1 and 2 are end and side elevations respectively of the combined toy and savings bank, embodying the present invention.

Figure 3 is a longitudinal vertical section through the device taken substantially as indicated at line, 3—3, on Figure 1.

Figure 4 is a transverse section taken substantially at line, 4—4, on Figure 3.

Figure 5 is a substantially horizontal section taken at line, 5—5, on Figure 4.

Figure 6 is a perspective view in dis-assembled relation of parts of the permutation mechanism.

Figure 7 is a partial longitudinal vertical section showing a modified form of permutation mechanism.

Figures 8 and 9 are transverse vertical sections taken at lines, 8—8 and 9—9, respectively on Figure 7.

Figure 10 is a fragmentary view of the under side of the device.

In the present invention we have produced a savings bank in the form of a miniature lighter-than-air craft of the type generally termed a "blimp." A bank of such form may be used as a toy or plaything by the child and because of such use will tend to keep the child interested, and the bank itself will thus assist in cultivating the saving habit.

Referring now in detail to the drawings,—the "blimp" form of savings bank includes a main body portion, 10, and an end portion or nose, 11, detachably and rotatably engaged with said main body portion. The main body portion, 10, is of hollow formation, providing a chamber indicated at 12, which serves as the savings compartment. Said main body portion is provided with a coin slot indicated at 13, which communicates with the savings compartment, 12; said slot is controlled by any suitable construction, such as that indicated at 14, for preventing discharge of the coins from the savings compartment. The rear end of the main body portion, 10, is formed with horizontal rudders and tail pieces, 15 and 16, respectively, so as to give the device an appearance simulating that of an actual "blimp." For the sake of appearance and economy in manufacture, both the main body portion, 10, and the nose, 11, are formed as castings, and the main body portion is provided at its bottom or under side with an embossment, 17, which simulates a cabin and which serves as a base to support the device. This base is provided with an aperture, 18, which communicates with the savings compartment, 12, and through which paper currency may be inserted.

The two body portions, 10 and 11, are detachably connected together by permutation mechanism which for convenience is mounted in and carried by the end portion or nose, 11. This mechanism includes a cup-shaped support or mounting member, 20, rigidly secured in said nose, as by soldering, and rigidly secured to this support in substantially axial relation with respect to the body is a spindle, 21, whose opposite end is journaled in another reversely disposed, cup-shaped support, 22; the extreme end portion of the spindle projects into the savings compartment, 12, when the body portions are in assembled relation. Mounted on the spindle, 21, intermediate the supports, 20 and 22, are the tumbler disks, 24 and 25, which are provided with driving lugs, 24^a and 25^a, respectively, by means of which motion is transmitted from one to the other so as to set the tumbler disks in a predetermined arrangement. As may be seen in the drawings, these tumbler disks are spaced apart by washers, 26 and 27, and are maintained in driving relation to each other by a coil spring, 28, surrounding the spindle, 21, and reacting between the support, 20, and the tumbler disk, 24. The tumbler disk, 25, is provided with a central aperture, 25^b, for loose journaling on the spindle, 21, and abuts at one side against the inner surface of the support, 22. The tumbler disk, 24, is provided with a central aperture, 24^b, having flat surfaces, 24^c, which cooperate with correspondingly formed flat portions, 21^a, on the end of the spindle, 21, thus serving to key said disk, 24, to the spindle. By rotating the end portion or nose, 11, with respect to the main body portion, 10, the tumbler disk, 24, may be rotated therewith and through the driving lugs, 24^a and 25^a the tumbler disk, 25, may be rotated to a desired position of adjustment. To insure against frictional rotation of the

tumbler disk, 25, when the tumbler, 24, is rotated with the nose, the spacer washer, 26, is formed with an opening, 26a, fitting the reduced end of the spindle, 21a, so as to rotate with the tumbler disk, 24, while the other spacer washer, 27, is journaled for free rotation on the spindle. The portion of the spindle extending beyond the support, 22, is formed with an annular groove, 21b, in which is crimped a split washer, 29, abutting against the outer surface of the support, 22, to maintain the permutation mechanism with the support, 22, in assembled relation, said support serving to enclose the permutation mechanism in the nose or end portion, 11. This support, 22, is formed with a marginal flange, a portion of which, as indicated at 22a, has telescopic engagement in the end of the main body section, 10, as seen in Figure 3, of the drawings; the outer portion of the flange indicated at 22b, which is offset radially with respect to the flange portion, 22a, engages the inner surface of the nose or end section, 11, and serves to provide guidance and support for the nose when it is rotated with respect to the main body, 10.

Rigidly secured to the inner wall near the open end of the main body, 10, is a support, 31, which is formed with forwardy projecting portions, 31a. Each of said portions is notched to provide a pair of rigid blocking shoulders, 31b and 31c, normally disposed to overlie portions of the periphery of the respective tumbler disks, 24 and 25, to prevent axial separation of the two body sections, 10 and 11. For purposes of illustration the support, 31, is shown provided with the projections, 31a, located substantially opposite each other, but it will be understood that any desired number of these shouldered units may be employed. Said projections, 31a, extend into the nose or end portion, 11, through apertures, 22c, formed in the transverse wall of the support, 22, when the two body portions are assembled; in which position said wall also serves as the end wall of the savings compartment, 12. The tumbler disks, 24 and 25 are each provided with a pair of peripheral notches, shown at 24d and 25d, respectively, which are located so that when the disks are adjusted in a predetermined arrangement the notches register with the blocking shoulders, 31b and 31c, respectively of the projections, 31a, so as to permit separation of the body portions.

Adjacent the rotatable connection of the two body parts, one of said body parts,—and as herein shown, the nose,—is provided with graduations indicated at 35, which are adapted to be aligned or registered with an index mark indicated at 36, on the main body portion. Thus by rotating the nose, 11, with respect to the main body portion and registering certain of the graduations with the index mark, 36, the tumbler disks may be adjusted in a predetermined arrangement with their notches, 24d and 25d, aligned with the shoulders, 31b and 31c, so as to permit separation of the body portions, and thus afford access to the savings compartment, 12. As may be noted from the drawings, the support, 22, remains substantially stationary or fixed with respect to the main body portion, 10, when the body portions are connected together, due to the extension of the portions, 31a, of the support, 31, into the openings, 22c, formed in the transverse wall thereof, and when the nose is rotated it will journal on the flanged portion, 22b, of said support, 22.

To assist in baffling ascertainment of the combination of the permutation mechanism, the disk, 24, is formed with a transverse peripheral flange, 24e, having a plurality of false notches, 24f, of substantially the same width as the notches, 24d, so that if one attempts to separate the two body portions without having first set the tumbler disks in a predetermined arrangement, the false notches will engage the blocking shoulders, 31b, and prevent further rotation of the nose and the tumbler disks until the nose is pushed back against the end of the main body portion, 11, shifting the false notches of the disk, 24, out of engagement with said shoulder, 31b. To insure that under ordinary conditions the nose of the body will be freely rotatable with respect to the main body portion, 10, said nose with the permutation mechanism is yieldingly held in place by means of a spring, 37, which is in the form of a rosette having its tangs shaped to snap around a head, 21c, formed on the extreme end of the spindle, 21. This spring, 37, is rigidly secured to an upstanding leg, 31d, of the support, 31, which is anchored adjacent the open end of the main body portion, 10.

Although we have shown one of the body portions provided with graduations, it will be understood that it is not essential to employ a graduated surface in order to set up permutation mechanism. All that the body portion, 11, need be provided with is an index for registration with the index, 36, to indicate, an initial or starting point preparatory to setting up the combination of the lock, together with a suitable click device associated with the lock mechanism so that by the sense of touch or sound, it will be an easy matter to rotate the nose by the proper amounts to adjust the tumbler disks in the predetermined arrangement which permits separation of the body portions.

Figures 7 to 10 of the drawings show a slightly modified form of permutation mechanism for controlling separation of the body portions, 10 and 11, respectively. In this construction the tumbler disks indicated at 40 and 41, are arranged for driving engagement in substantially the same manner as in the construction above described, and are adapted to normally confine a locking pawl, indicated at 43, in the position shown in Figure 7 of the drawings, in which position the body portions, 10 and 11, are locked against separation. Secured to the inner wall of the main body portion, 10, adjacent the open end is a support, 46, the upper portion of which is depressed at 46a, as seen in Figure 9, and provided with an aperture, 46b, in which is received the tang, 47a, of the support, 47. Said support, 47, corresponds to the member, 22, in the construction above described, and also serves to enclose the permutation mechanism. The tumbler disks, 40 and 41, are mounted on a spindle, 48, rigidly connected to the support, 20, for rotation with the nose, 11, as above described, and said disks are maintained in driving relation by the spring, 49, interposed between the support, 20, and the disk, 40. The other end of the spindle projects through the support, 47, and is formed with a groove, 48b, in which is placed a crimped ring, 48c, for securing the permutation disks and supports in assembled relation.

The pawl, 43, includes a leg portion, 43a, formed with a hook, 43b, adapted to extend through an aperture, 47b, in the bottom portion of the transverse wall of the support, 47, and engage against the inner surface of said wall, 47, (as seen in Figure 7), thus locking the body parts against separation. Said pawl, 43, is pivoted on a pin, 50,

carried by an upstanding lug portion, 46c, struck out of the support, 46, and includes a leg portion, 43c, which extends outwardly through an aperture, 51, opening into the chambered portion, 17b, of the hollow supporting base, 17a, of the main body section, 10. Said base is also provided with an aperture, 18a, through which paper currency may be inserted into the savings compartment, 12. The leg portion, 43c, is adapted to be manually engaged for swinging the pawl about its pivot, 50, after the tumbler disks have been adjusted with their notches, 40a and 41a, in alignment with the hook portion, 43b. When the pawl, 43, has thus been swung to the position indicated in dotted lines in Figure 7, the nose or end portion, 11, may be separated from the main body portion, 10, by slightly tilting it upwardly so as to rock the tang, 47a, out of engagement with the front shoulder forming a part of the aperture, 46b, of the support, 46. The peripheries of the tumbler disks, 40 and 41, are provided with false notches, 40b and 41b, so that any attempt to "feel out" the lock's combination by rotation of the nose when pressure is exerted on the leg, 43c, of the pawl, for urging the hook portion, 43b, into engagement with the periphery of the tumbler, is prevented; the leg, 43a, of the pawl will simply engage in the false notches, and thus prevent further rotation of the nose or of the tumbler disk, 40, which is provided with a rigid driving connection with the nose, as described.

Although we have shown and described herein certain specific structures embodying our invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and the scope of the invention, and that the same is not limited to the particular forms herein shown and described, except in so far as indicated by the appended claims.

We claim:

1. A savings bank, comprising a body including a main hollow body portion serving as the savings compartment and an end portion detachably and rotatably connected to the main body portion, permutation mechanism disposed in said end portion of the body, including axially spaced apart supports in the end portion, one of said supports being rigidly secured to said end portion, a spindle rigidly connected to the rigid support and projecting through the other support into said main body portion, the other support including an annular extension adapted to telescopically engage in the adjacent end of the other body portion, a plurality of notched tumbler disks mounted on the spindle intermediate the supports, said disks having inter-engaging features for adjusting one by the other and one of the disks having driving engagement with the spindle, a blocking shoulder on the inner wall of the main body portion cooperating with the tumbler disks for normally preventing separation of the body portions, and adapted when the notches of the tumbler disks are registered therewith for permitting separation of the body portions, one of the body portions having its exterior surface adjacent the connection, provided with a series of graduations, the other body portion having an index with which the graduations are registered by relative rotation of the body portions for adjusting the disks to such predetermined arrangement, and spring means supported in the main body portion and engageable with said extension of the spindle for yieldingly maintaining the body portions against separation.

2. A savings bank, comprising a body including a main hollow body portion serving as the savings compartment and an end portion detachably and rotatably connected to the main body portion, permutation mechanism for locking the body portions together, including a plurality of tumbler disks having peripheral notches, supporting means for the disks, said end portion having a rigid shoulder adjacent the periphery of said disks, and a pawl pivotally mounted in the main body portion and having a hooked portion normally held by said tumbler disks in operative engagement with the shoulder for preventing separation of the body portions, said pawl having a leg extending outwardly through an opening in said main body portion for manual manipulation, and adapted when the tumblers are adjusted with the notches registered with the hook portion of the pawl to permit said pawl to be swung about its pivot into said notches, thereby disengaging it with said shoulder, and permitting separation of the body portions.

3. In the construction defined in claim 2, supporting means secured in the main body portion adjacent the connection, to which said pawl is pivoted, the supporting means in one of the body portions having a tongue engageable behind a shoulder on the supporting means of the other body portion for assisting in securing said body portions together.

4. In the construction defined in claim 2, said main body portion having a hollow supporting base in which is accommodated the manually engageable leg member of said pawl.

5. A savings bank, comprising a hollow body serving as the savings compartment, said body being composed of two parts detachably and rotatably connected together in end-to-end relation, and permutation mechanism disposed in one of the body parts for normally locking said body parts against separation, said mechanism being constructed and arranged so that rotation of said body part at all times directly transmits motion to the tumbler disks of said mechanism, said body parts being substantially circular in cross section at the place of connection so as to provide a continuous uninterrupted exterior surface, said body portions being provided with features adjacent the rotatable connection for adjusting said parts in an initial or starting position, preparatory to adjusting the permutation mechanism in a predetermined arrangement.

6. A savings bank comprising a hollow body serving as the savings compartment, said body being composed of two parts detachably and rotatably connected together, and permutation mechanism disposed in one of the body parts for normally locking said body parts against separation, said mechanism being constructed and arranged so that rotation of said body part at all times directly transmits motion to the tumbler disks of said mechanism, the body parts being provided with features adjacent the rotatable connection for adjusting the parts in an initial or starting position preparatory to adjusting the permutation mechanism in a predetermined arrangement to permit separation of the body parts and affording access to the savings compartment.

7. A savings bank comprising a body including a main hollow body portion serving as the savings compartment, and an end portion detachably and rotatably connected to said main body portion, and permutation mechanism carried in one

of the body portions and arranged for normally locking said body portions against separation, said mechanism being constructed and arranged so that rotation of said body part at all times directly transmits motion to the tumbler disks of said mechanism, the body parts being provided with features adjacent the rotatable connection for adjusting the parts in an initial or starting position preparatory to adjusting the permutation mechanism in a predetermined arrangement to permit separation of the body portions and affording access to the savings compartment.

8. A savings bank comprising a body including a main hollow body portion serving as a savings compartment, and an end portion detachably and rotatably connected to said main body portion, and permutation mechanism disposed in said end portion having cooperating means on the main body portion for normally locking said body portions against separation, said mechanism being constructed and arranged so that rotation of said body part at all times directly transmits motion to the tumbler disks of said mechanism, the body parts being provided with features adjacent the rotatable connection for adjusting the parts in an initial or starting position preparatory to adjusting the permutation mechanism in a predetermined arrangement to permit separation of the body portions and affording access to the savings compartment.

9. In the construction defined in claim 8, together with a cylindrical extension carried by said end portion adjacent the rotatable connection and arranged for telescopically engaging the main body portion, said cylindrical extension including a transverse wall for enclosing the permutation mechanism in said end portion, and also serving as the end wall of the savings compartment for the main body portion when said body portions are connected together.

10. A savings bank comprising a body including a main hollow body portion serving as the savings compartment, and an end portion detachably and rotatably connected to the main body portion, permutation mechanism mounted in said end portion including a plurality of tumbler disks having peripheral notches, means mounted on the inner wall of the main body portion and cooperating with said disks for normally preventing separation of the body portions except when the notches of the tumbler disks are registered therewith, and a support for said permutation mechanism mounted in the end body portion including a transverse wall substantially enclosing the tumbler disks in said end portion, said wall also serving as the end wall of the savings compartment when the body portions are connected, the wall being provided with an opening through which said means on the main body portion projects for cooperative engagement with the tumbler disks, the body portions being provided with features adjacent the rotatable connection for adjusting the parts in an initial or starting position preparatory to adjusting the permutation mechanism in a predetermined arrangement.

11. A savings bank comprising a body including a main hollow body portion serving as a savings compartment, and an end portion detachably and rotatably connected to the main body portion, permutation mechanism mounted in said end portion including a fixed spindle and a plurality of tumbler disks mounted thereon and having peripheral notches, means mounted on the inner wall of the main body portion and cooperating with said disks for normally preventing separation of the body portions except when the notches of the tumblers are registered therewith, and a support loosely mounted on the end of the spindle adjacent the connection having an annular flange adapted for telescopically engaging in the adjacent end of the main body portion.

12. A savings bank comprising a body including a main hollow body portion serving as a savings compartment, and an end portion detachably and rotatably connected to the main body portion in end-to-end relation, said body portions being substantially circular in cross-section at the plane of connection so as to provide a substantially continuous uninterrupted exterior surface, permutation mechanism disposed in one of the body portions for normally locking said body portions against separation, said mechanism being constructed and arranged so that rotation of one of said body portions at all times directly transmits motion to the tumbler disks of said mechanism by virtue of which said disks may be adjusted in a predetermined arrangement for permitting separation of the body portions, and means including cooperating parts in the respective body portions for yieldingly maintaining said body portions against separation.

13. In a bank structure, two tubular members adapted to be connected together in axial relation, and permutation control means carried by one of said members and adjustable by the relative rotation of one member with respect to the other, together with cooperable means for said permutation means carried on the other member for detachably securing said members together; said cooperating means including a transversely extending abutment shoulder, and said permutation means including a tumbler disk having its periphery disposed in overlapping relation to said shoulder with a peripheral notch adapted to be aligned therewith to permit separation of the members, said periphery of the disk being formed with a transverse flange extending toward said shoulder and provided with a series of false notches.

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