July 14, 1925.

1,545,903

O. JUNGHANS

PLAYING CLOCK

Filed Nov. 14, 1924

Fig.2.

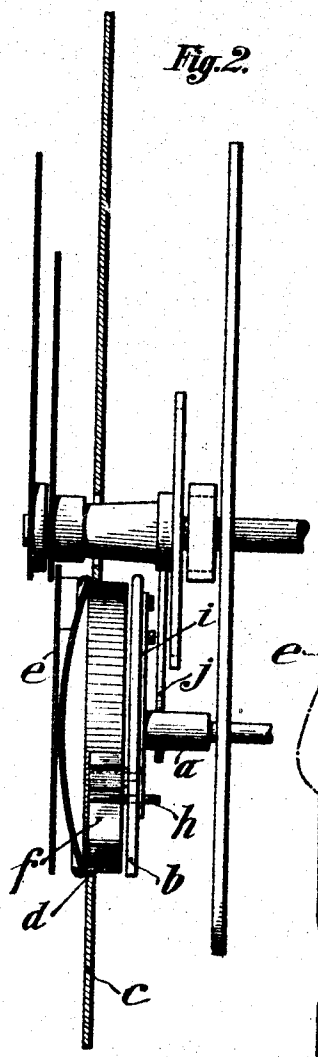


Fig.1.

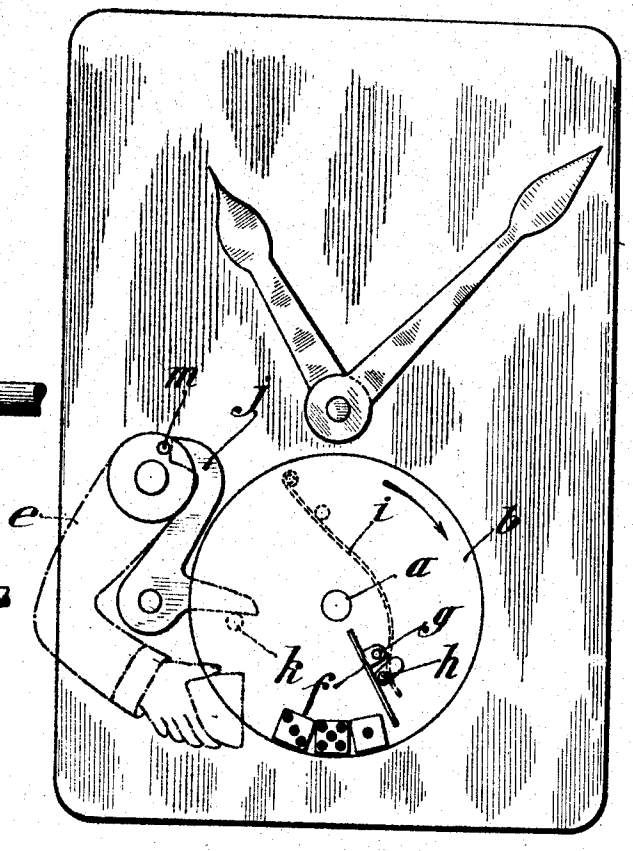
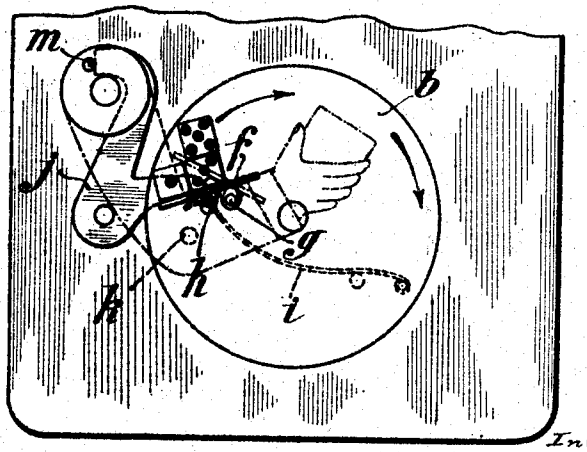


Fig.3.



Inventor

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By Louis Quinal & Co Attorneys

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UNITED STATES PATENT OFFICE.

OSKAR JUNGHANS, OF SCHRAMBERG, GERMANY.

PLAYING CLOCK.

Application filed November 14, 1924. Serial No. 749,972.

To all whom it may concern:

Be it known that I, OSKAR JUNGHANS, a citizen of the German Republic, residing at Schramberg, Germany, have invented certain new and useful Improvements in Playing Clocks, of which the following is a specification.

My invention relates to an improved clock which is intended to be used for puffing or advertising purposes in show-windows or as a toy for children or the like, and with this aim in view the clock is combined with a game of dice and constructed and arranged in a manner that the dice are periodically or intermittently thrown down mechanically, that is to say, through the agency of the clock-work, and the number of points thrown will vary just as if the game is played manually in the usual way.

Among the principal objects which my invention has in view are: to provide a container for the dice which towards the side where the dial is located, has a show opening for the thrown dice to be looked at so that the number of points thrown each time will be readily visible to the spectators, to provide, in order to increase the effect or the attractiveness of the playing clock, a member in the shape of a human arm of reduced size which has a dice-box in its hand, said member or arm being mechanically connected with the clockwork to exercise a throwing movement each time the dice are thrown and appear in front of the show opening, so that the illusion of the trick will be complete and the spectators will get the impression of a really playing clock; to provide, in order to firmly establish such illusion, the said movable arm, as a part of the picture of a person suitably applied on an appropriate part of the clock preferably on the dial thereof.

One embodiment of my invention is disclosed in the structure diagrammatically illustrated in the accompanying drawings in which like characters of reference denote corresponding parts in the several views and in which

Figure 1 is a front view of the clock with the dial and other parts omitted in order to afford a clear view of the mechanism therebehind,

Figure 2 is a vertical section and

Figure 3 is a view similar to Figure 1 with the upper part broken off and with the movable members of the mechanism shown in a different position.

In the embodiment shown the second arbor or shaft *a* which completes one revolution every minute, supports a disk *b* forming the back or rear wall of a container or box *d* inserted in a circular opening of the dial *c* and closed at the front by a spherical shallow glass *l*. In the room afforded by this container the three dice made of a suitable light material, are free to move or, properly speaking, be moved therein. The glass or window *l* is not transparent throughout but the upper part thereof and more than half of the total face of the glass is covered with any suitable coating impervious to light so that only a small area will be transparent at the lower end or bottom of the container for the exhibition of the dice. Preferably the coating which renders the larger upper portion of the glass impervious to light, may be in continuity and conformity with the usual or required painting to be given to the outer face of the dial for ornamental or other purposes.

Pivotally connected to the front vertical plate of the clock-work is an oscillating bent lever *e* in the shape of a human arm which normally depends in the position shown in Figure 1. The lower end of the arm is shaped to form a hand holding a dice-box as will be clearly seen in Figure 1. Of course, the dice-box is a flat member only for an illusory purpose and adapted to lie in front of the dice while the latter are moved in clockwise direction by a mechanism to be described hereinafter.

Pivoted to the inner face of the disk *b*, at *g*, is a shovel or board *f* and a pin *h* of the shovel or board *f* projects through a slot in the disk *b* to and beyond the rear face thereof as will be clearly seen in Figure 2. A flat spring *i* provided on the rear face of the disk *b* engaging, with its free end, the pin *h*, in order to maintain the shovel or board *f* in the position illustrated in Figure 1.

The movable lever or arm *e* is maintained in its depending position shown in Figure 1 by a bell-crank lever *j*, the one arm of said lever engaging with a stationary stud or stop *k* firmly connected with the vertical plate of the clock-work or time mechanism while the other arm thereof abuts against a stud or pin *m* provided on the

bent lever *e* in the vicinity of the pivot thereof.

The operation of the described device is as follows:

Figure 1 illustrates the dice and the other parts of the device in the position subsequent to a throw. The disk *b* forming the rear wall of the container *d* rotates continuously in clockwise direction as indicated by an arrow thus causing the shovel or board *f* to move or shift the dice in clockwise direction over the narrow cylindrical wall of the container. The movement of the dice can be viewed by the spectators owing to the transparent area at the bottom of the glass or window *l*, but as soon as the dice reach a point coinciding with the rim of the dice-box at the lower end of the bent lever *e*, they will in reality disappear behind the coated part of the glass or window *l*, while to the spectators the illusion is created as if the dice have been thrown and returned into the dice-box at the lower end of the lever *e*, as will be readily understood on inspection of Figure 1.

On the continued revolution of the second arbor or shaft *a* with the disk *b* the dice are lifted by the shovel or board *f*, but this cannot be viewed by the spectators on account of the upper part of the glass or window *l* being impervious to light; at the same time the pin *h* of the shovel or board *f* comes into engagement with the extremity of the lower arm of the bell-crank lever *j*, while the upper arm of the lever *j* is in permanent engagement with the pin *m* of the lever or arm *e*, so that on the further continued revolution of the disk *b* and the shovel or board *f* the lever *j* will be turned or oscillated about its pivot *n*, whereby the lever or arm *e* is moved from the position shown in Figure 1 to the position illustrated in Figure 3. As soon, however, as the upper arm of the lever *j* engages the pivot *o* of the lever or arm *e* and is arrested thereby which already occurs before the parts have adopted the position shown in Figure 3, the spring *i* yields and the shovel or board *f* turns about the pin *g* moving with the disk *b* incessantly in clockwise direction until the parts are in the position illustrated in Figure 3 whereupon the pin *h* at a predetermined angular position of the shovel or board *f*, releases the lower arm of the bell-crank lever *j*. Immediately upon such release the tension of the spring *i* acts to project the shovel or board *f* back into its previous relative position shown in dotted lines in Figure 3, so that the pin *h* again engages in the bore-end of the slot of the disk *b*.

As a result of the described action of the spring *i* the dice are thrown forwards in the direction of the arrows and drop to the bottom of the container *d*. But owing to their impacts on the wall of the container and the spherical glass *l* of the disk change their positions so that also the number of points thrown will be different from the number previously exhibited, just as in a regular dice game.

As soon as the pin *h* releases the lever *j*, as described, both the lever *j* and the lever or arm *e* will be free to return into their normal position of rest shown in Figure 1, owing to their weight or the action of gravity, and the lever *j* then will again engage and rest upon the stud or stop *k*. The uninterrupted revolution of the disk *b* together with the shovel or board *f* causes the play to continue again and again as long as the clock is wound up.

I have not attempted to explain all of the minute details of the construction of the clock, for it will be understood by those to whom this specification is addressed that the parts will necessarily be of conventional size and relationship and will be properly mounted and supported in accordance with the tenets of mechanical construction; nor have I attempted to illustrate the parts in their exact sizes and dimensions as some parts are conventionally shown. I find that the embodiment described and shown is preferable and most efficient but realizing that certain conditions will necessarily vary in concurrence with the adoption of my device, I desire to emphasize the fact that various minor changes in the details of construction and in the proportion of parts may be resorted to when required or desired, without sacrificing any of the advantages of my invention as defined in the appended claims.

What I claim is:

1. A dice throwing device comprising a rotatably mounted disk; a container for a plurality of dice associated with said disk whereby said disk forms the rear wall thereof; a spring pressed lifting board pivoted on said disk adapted to lift said dice preparatory to throwing them upon the rotation of said disk; and means for placing the spring of said board under tension upon rotation of said disk so that said dice on the board shall be thrown upon the release of said board.

2. A dice throwing device comprising a rotatably mounted disk; a container for a plurality of dice associated with said disk whereby said disk forms the rear wall thereof; a spring pressed lifting board pivoted on said disk adapted to lift said dice preparatory to throwing them upon the rotation of said disk; and a lever associated with said disk for placing the spring of said board under tension upon rotation of said disk so that said dice on the board shall be thrown upon the release of said board.

3. A clock in combination with a dice game, a container for the die or dice, a disk firmly connected with the second arbor of the clock and forming the rear wall of said container, a lifting board pivotally connected with the said disk, a spring connected with the said disk to permanently hold the said board in yielding position in relation to the disk, and adapted to be released at a certain point of its circular path in order to throw the die or dice off the said board, substantially as and for the purpose set forth.

4. A clock in combination with a dice game, a container for the die or dice, a disk firmly connected with the second arbor of the clock and forming the rear wall of said container, a lifting board pivotally connected with the said disk, a spring connected with the said disk to permanently hold the said board in yielding position in relation to the disk and adapted to be released at a certain point of its circular path, a bent lever of the shape of a human arm pivotally mounted in front of said container means operated by the rotating disk to cause the said bent lever once at each revolution of the said arbor, to rise and drop in synchronism with the die or dice lifted and dropped by the said board, and a picture on the front face or dial of the clock in supplement of said human arm shaped lever, substantially as and for the purpose set forth.

5. A clock in combination with a dice game, a container for the die or dice, a disk firmly connected with the second arbor of the clock and forming the rear wall of said container, a lifting board pivotally connected with the said disk, a spring connected with the latter to permanently hold the said board in yielding position in relation to the disk and adapted to be released at a predetermined point of its circular path, a pin connected with the said board for the free end of the said spring to engage with, a bent lever of the shape of a human arm pivotally mounted in front of said container, and a bell-crank lever pivotally mounted to control said bent lever, the arrangement being such that at a predetermined position of the said board the pin thereof causes the said bell-crank lever to oscillate and to thereby raise the said bent lever, substantially as and for the purpose set forth.

6. A clock in combination with a dice game, a container for the die or dice, a disk firmly connected with the second arbor of the clock and forming the rear wall of said container, a lifting board pivotally connected with the said disk, a spring connected with the latter to permanently hold the said board in yielding position in relation to the disk and adapted to be released at a predetermined point of its circular path, a pin connected with the said board for the free end and of the said spring to engage with, a bent lever of the shape of a human arm pivotally mounted in front of said container, a bell-crank lever pivotally mounted to control said bent lever, a stud on the bent arm and a stationary stud being provided for the two arms of the said bell-crank lever to engage with, substantially as and for the purpose set forth.

7. A dice throwing device comprising a rotatably mounted disk; a spring pressed lifting board pivoted on said disk adapted to lift the dice preparatory to throwing them upon the rotation of said disk; and means for placing the spring of said board under tension upon rotation of said disk so that said dice on the board shall be thrown upon the release of said board.

8. A dice throwing device comprising a rotatably mounted disk; a spring pressed lifting board pivoted on said disk adapted to lift the dice preparatory to throwing them; and means for rotating said disk whereby the spring of said board will be placed under tension so that said dice on the board shall be thrown upon the release of said board.

9. A dice throwing device comprising a rotatably mounted disk; a spring pressed board pivoted on said disk adapted to lift the dice preparatory to throwing them upon rotation of said disk; and a lever for placing the spring of said board under tension upon rotation of said disk so that said dice on the board shall be thrown upon the release of said board.

10. A dice throwing device comprising a container for a plurality of dice; a movable lever in the form of an arm adapted to move back and forth over the front of said container; a spring pressed lifting board pivotally mounted in said container adapted upon actuation to lift said dice preparatory to throwing them; and means for placing the spring under tension upon actuation and for moving said arm across said container whereby upon release of said board and arm the dice will be thrown and the arm will move back over the front of said container thus giving the dice the appearance of having been thrown from said arm.

11. A dice throwing device comprising a container for a plurality of dice; a movable lever in the form of an arm adapted to move back and forth over the front of said container; a spring pressed lifting board pivotally mounted in said container adapted upon actuation to lift said dice preparatory to throwing them; and a bell-crank lever for placing the spring under tension upon actuation and for moving said arm across said container whereby upon release of said board and arm the dice will be thrown and the arm will move back over the front of said con-

tainer thus giving the dice the appearance of having been thrown from said arm.

12. A dice throwing device comprising a rotatably mounted disk; a movable lever in the form of an arm adapted to move back and forth over the front of said disk; a spring pressed lifting board pivotally mounted on said disk adapted upon rotation of said disk to lift a plurality of dice preparatory to throwing them; and means for placing the spring under tension upon rotation of said disk and for moving said arm across said disk whereby upon release of said board and arm the dice will be thrown from the board and the arm will move back over the front of said disk thus giving the dice the appearance of having been thrown from said arm.

13. A dice throwing device comprising a rotatably mounted disk; a movable lever in the form of an arm adapted to move back and forth over the front of said disk; a spring pressed lifting board pivotally mounted on said disk adapted upon rotation of said disk to lift a plurality of dice preparatory to throwing them; and a bell-crank lever for placing the spring under tension upon rotation of said disk and for moving said arm across said disk whereby upon release of said board and arm the dice will be thrown from the board and the arm will move back over the front of said disk thus giving the dice the appearance of having been thrown from said arm.

In testimony whereof I affixed my signature.

OSKAR JUNGHANS.