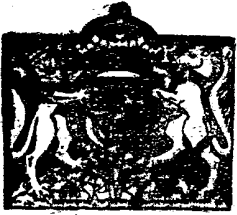


PATENT SPECIFICATION



Application Date: Aug. 10, 1928. No. 23,049/28.

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PROVISIONAL SPECIFICATION.

No. 23,049, A.D. 1928.

Improvements in and relating to Coin-freed Apparatus for Amusements.

I, GORDON SMITH, of 34, Clieveden Road, Thorpe Bay, Essex, a British subject, do hereby declare the nature of this invention to be as follows:—

5 The invention relates to an apparatus for playing a game of skill or chance whereby no prizes are given for the coin inserted in the machine. The improvements comprise of a drum, mounted on a
10 spindle that carries a disc, which has various markings or names on it. This drum is provided with one or more appropriately situated holes or slots of such size as to be entered by a pin or projection extending from a lever, or each of two or
15 more levers when they are moved towards the said drums. Each of these levers, which may be normally urged towards the aforesaid drum by springs, engages or
20 otherwise operates a slide provided with a hole that is under the delivery opening of a container, when the said slide is in its inward position and is over a shoot that leads to the outside of the machine
25 when the said slide is in its outward position.

The containers may hold discs or tokens that indicate the value of the goods to be bought by the player or the coins inserted by the player to free the apparatus
30 may be delivered into the aforesaid container and may themselves constitute the goods to be bought.

Two or more of the aforesaid delivery slides may be adapted to slide one beneath the other so that if the pins on two or more levers enter a hole or holes
35 in the drum together, the goods or coins contained by the holes in the slide or slides will be delivered to the player.

The bottom goods delivering slide may be acted on by a spring of required tension pulled by the action of a cam mounted on a shaft projecting through the front
40 of the machine and turned by the player after the insertion of a coin. Should the pin or projection on the lever not be in line with the hole on the drum the ten-

[Price 1/-]

sion is put on the spring, but the pin is held back by the face of the drum thus holding the bottom slide from coming into the outward position over the shoots. Should two or more slides be used, these would be coupled to the bottom slide by
50 springs of a lighter tension than the one used between the cam and the bottom slide so that if the bottom slide is pulled outward the tension is on the other slide or slides and will pull them outward if
55 their pin or pins are in line with corresponding holes on the drum. Each slide used will have its lever with pin or projection suitably fixed. After the slides have been pulled over the shoot they are returned to their inward position by a
60 completion of a revolution of the shaft with the cam attached pushing against the bottom slide which carries a pin to force all the slides above it into the inward position and are held there by the cam until released by the insertion of another coin. Mounted on the cam shaft is a ratchet
65 and a pawl which prevents the cam shaft being turned backwards.

On the side of the ratchet wheel is a
70 pin which butts up against a pivoted lever which is held in the path of the pin by gravity or a spring thus, preventing the cam shaft being rotated. The further end of the aforesaid lever extends through
75 a coin shoot and on a coin being inserted it weighs the lever down lifting the other end out of the path of the pin and allowing the cam-shaft to be turned. In the
80 course of rotating, the cam engages the lower end of the coin shoot, which is pivoted at its uppermost end, pushing it, and carrying the coin with it, off of the pivoted arm; thus allowing the coin to
85 fall into a suitable receptacle and allowing the other end of the pivoted arm to return into the path of the pin on the ratchet wheel on the completion of the
90 revolution.

The aforesaid drum is caused to rotate
95 by a ratchet and pawl. The pawl is

mounted on a suitable rod the lower end of which is lifted by the cam turned by the player from the front of the machine after the insertion of a coin. The pawl rides over the ratchets when the rod is lifted. The cam is shaped so that when it has reached its highest point the rod slips off a cut-away portion and is pulled down by a spring the pawl engages the ratchet thus rotating the drum and the disc. The drum has on its edge, teeth, corresponding in number to the markings or divisions on the disc. A tooth is mounted on a pivoted rod to engage in the teeth of the drum. As the upper end of the rod carrying the pawl is raised it engages the underside of the pivoted rod, disengages the teeth, lifts it past the pawl which holds it clear of the teeth of the drum for a given time which is determined by a pump. This pump is raised to its up position by a pin fixed to the rod which carries the pawl that rotates the drum. On the lifting rod falling off the cam the pump piston is free to return to its normal position. The pump piston, which is attached to the pawl retaining the toothed rod, is released allowing the tooth to re-engage the teeth of the drum. The further end of the toothed rod enters the coin shoot and prevents a second coin being inserted whilst the drum is revolving. To cause the drum to stop revolving before the piston stops it, a push knob is introduced to enable the player to push the piston retaining pawl out of action allowing the toothed wheel to re-engage at once.

Dated the 9th day of August, 1928.
GORDON SMITH.

PROVISIONAL SPECIFICATION.

No. 2148, A.D. 1929.

Improvements in and relating to Coin-freed Apparatus for Amusements.

I, GORDON SMITH, of "Cecildene", 34, Clevedon Road, Thorpe Bay, Essex, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to coin-freed apparatus for playing a game of skill of the kind which includes a disc bearing at its periphery the names of different articles of merchandise or of different investments or the like, a list of which with the corresponding prices of each (which for the purpose of playing the game correspond with the prize to be awarded to the player) is displayed on the outside of the apparatus, which is also provided with means of rotating and afterwards stopping the said disc and with a window through which one of the articles or investments on the disc can be seen when it stops so as to determine the prize or score to be awarded to the player.

The said apparatus also comprises automatic prize awarding mechanism by which discs or coins to a number corresponding with the value of the prize won according to the aforesaid list on the outside apparatus, are delivered to the player and the present invention has for its object the improvements in the mechanism hereinafter set forth whereby the various operations are efficiently carried out.

In carrying out the present invention a disc is made fast to a shaft journaled in a frame situated inside a suitable casing provided with a window through which the names of different investments appearing on the adjacent face of the disc can be seen.

On this shaft is also mounted a drum hereinafter referred to, and a ratchet-wheel by which a rotative impulse may be imparted to the said shaft.

Beneath the aforesaid disc-shaft a cam-shaft is journaled. This shaft extends through the casing and is provided on the outside with a hand-wheel and on the inside with a ratchet-wheel that is engaged by a pawl to prevent its rotation in one direction, a stop that is normally engaged by a part that is moved out of its path when a coin is inserted into the apparatus. This shaft is also provided with two cams one of which operates a depending lever that is connected by a spring to the depending arm of a bell-crank lever situated on the other side of the cam-shaft and whose movement under the influence of the said spring is controlled by a pin extending from the face of the same cam. The other cam operates one of two arms that are secured to a shaft by which they are constrained to move together. To one of these arms the lower end of an upwardly extending rod is connected. The upper end of this rod passes through a guide and is provided with a pawl that engages the ratchet-wheel on the disc-shaft to which it imparts a rotative impulse when its cam allows the aforesaid

rod to descend under the influence of gravity which may be augmented by a spring.

The upper end of the aforesaid rod also engages a pivoted frame provided with a roller that normally engages one or other of a series of V-shaped spaces formed between a series of V-shaped teeth arranged around the periphery of the hereinbefore mentioned drum mounted on the disc - shaft. This pivoted frame is at first maintained in its raised position by a detent until the latter is withdrawn by the plunger of a dash-pot or other retarding device or by other controlling means hereinafter described. This rocking frame is also provided with an arm to which a wire or rod that slides through the coin-shoot is pivoted. Normally this rod is withdrawn into a position in which it will not obstruct the passage of a coin, but when the apparatus is in use the rocking frame is raised and the rod is inserted into a position to prevent a coin from passing it.

The detent that maintains the rocking frame in its raised position may consist of a bell-crank or other lever provided with a tooth adapted to be engaged by said frame and connected to the retarding device by a rod that passes freely in one direction through a hole in a part of said device. This rod is provided with an abutment that is engaged by the said retarding device after a predetermined interval unless the detent has been previously disengaged from said rocking frame.

Coins inserted into a slot in the casing of the apparatus, firstly pass down a fixed shoot through which the stop-rod hereinbefore described passes, into the wider mouth of a swinging shoot that is pivoted to the frame near its upper end and is connected at a point between its pivot and its lower end to the depending lever operated by the cam first hereinbefore referred to.

The lower end of the swinging shoot has a vertical slot into which the opposite end of the lever that co-operates with the stop on the cam-shaft extends until the lower end of the said shoot is swung away from the end of the said lever by the operation of the said cam on the depending arm. In this position a coin that has been inserted into the machine and has passed through the fixed and swinging shoots until it was stopped by the end of the stop lever, is allowed to fall into a prize magazine unless it is diverted by a switch plate interposed between them in the manner hereinafter described.

The prize magazine may consist of a

vertically disposed container of a cross-section adapted to accommodate the prize disc or coin and is situated above a housing in which one or more prize delivery slides are guided.

Each of the prize slides has a hole of the shape, size and thickness of one or more of the prize-discs which, in the normal position of the slide is immediately beneath the prize magazine so as to form the lower part of it. These slides therefore contain the prizes at the bottom of the stack which are withdrawn when one or more of the slides are withdrawn until the hole in each with their contents are above a prize delivery shoot.

Each of these slides is normally maintained in its innermost position by a locking-pin that passes through a hole in the slide housing and in each of them and is provided with an upstanding portion at its front end by means of which it can be withdrawn after the aforesaid pin is raised.

This pin is carried by a lever that is pivoted to a bracket above the slide-housing and is raised so as to release one, two or more slides according to the value of the prize won, by a depending slide-withdrawing lever which is lowered to a corresponding degree by the prize selector hereinafter described, and so engages the opposite end of the pin-carrying lever.

In this way the lowermost slide is first released and withdrawn when the smallest prize is to be delivered from the magazine. The same slide and the one above it is released and withdrawn when the prize of the next value is to be delivered and so on. In order to withdraw the lowest slide first its upstanding portion extends above the others so as to be engaged by the slide-withdrawing lever when it is lowered the minimum distance which movement also raises the locking pin sufficiently to release this slide only.

The upstanding portion of the second slide extends above the upstanding portions of the slides above it but not so high as that portion of the lowest slide. It is therefore necessary for the slide-withdrawing lever to be lowered sufficiently to engage it and at the same time raise the locking pin sufficiently to release the second slide and so on with the third and any subsequent slides.

The drum hereinbefore referred to is provided at different parts of its periphery with notches of varying width beneath which one end of a selector-lever is situated. This lever has a series of upstanding screws or other projections of differing length arranged side by side in such relationship to the drum that the longest will enter the narrowest notch

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until the longest of the remaining projections engages the periphery of the said drum. And when the shortest of the remaining slots is in line with the said projections the two longest will enter it until the longest of the remaining projections engages the periphery of the said drum and so on. In this way the selector-lever when free to move is turned on its pivot through an angle that is controlled by the length of the notch on the aforesaid drum.

From the other end of the aforesaid selector-lever the slide-withdrawing lever depends and is lowered to a greater or less extent according to the length of the notch in the periphery of the drum. Normally the selector-lever is maintained in a position with the slide-withdrawing lever raised clear of the prize-delivering slides and with its projections clear of the drum by a pin carried by an arm connected by a link to the bell-crank lever hereinbefore referred to that is actuated by a pin on the cam that reciprocates the depending lever that deflects the movable portion of the coin-shoot.

The depending lever last referred to is connected by a link to the prize-slide withdrawing-lever and the lower end of the bell-crank lever actuated by the pin extending from the face of the same cam is bent forward towards the lowest prize-slide which it returns to its normal position after it has delivered its contents into the return shoot.

The upstanding portion of this slide engages the slides above it and returns any that may have been withdrawn at the same time.

A second selector-lever may be fulcrumed adjacently to the one hereinbefore described. One end of this second selector is connected by a link to a pivoted switch plate which when operated diverts the coin released when the shoot is swung clear of the catch lever, direct into a return shoot instead of allowing it to fall into the prize holder.

The opposite end of the second selector is provided with a projection adapted to pass completely through any of the notches in the aforesaid drum when they are in a different angular position from that in which any of the projections on the selector first mentioned enter the said notches.

A bar adapted to push any coins delivered on to the top of the prize magazine (after it is full) into a shoot that directs them into a cash box within the casing is connected to and reciprocated by the depending lever actuated by one of the cams on the cam-shaft.

In order to operate the improved apparatus, a coin is inserted into the afore-

said slot and passes from thence through the stationary shoot to the lower end of the pivoted shoot where its further descent is temporarily arrested by the end of the stop lever which it disengages from the stop on the cam-shaft. The cam-shaft is now turned by means of the hand-wheel with the result that the pin that normally prevents the selectors from passing through the notches in the drum is removed and the prize-slide withdrawing-lever is lowered or the coin-switch operated if there is a notch opposite either of the selectors. The slide-withdrawing lever is next swung outwardly so as to withdraw the selected slide or slides which deliver the prize into a return shoot. The pivoted coin-shoot is next swung sufficiently away from the stop lever to allow the coin that operated it to fall. The pawl carrying rod is next raised against the resistance of its spring until the roller on the rocking frame is disengaged from the V-shaped teeth on the drum and the aforesaid pawl engages the ratchet-wheel on the drum-shaft. At this moment the cam that raised the pawl rod passes the pin on the lever to which the said rod is connected with the result that it is immediately retracted by its spring and in its descent the pawl pivoted to it imparts a rotational impulse to the disc-shaft through the ratchet-wheel mounted thereon which with the drum, are caused to rotate.

During the upward movement of the pawl-rod the plunger of the hereinbefore mentioned dash-pot was also raised by the same lever against the resistance of a spring which is caused to descend at the same moment as the pawl-rod and after a predetermined interval to engage an abutment on a rod that withdraws the detent that keeps the aforesaid rocking frame in its raised position and its roller out of engagement with the teeth on the drum, thereby allowing it to fall and arrest the rotation of the drum.

During the upward movement of the pawl-rod, the bell-crank lever operated by the pin on one of the cams operated the pin carrying lever that withdraws the selectors from the notches in the drum and returns any prize-delivering slides that were withdrawn at the commencement of the operation to their normal positions.

In order to stop the drum in a prize winning position, the detent that maintains the roller on the rocking frame out of engagement with the said roller is adapted to be operated independently of the dash-pot by means of a sliding rod or cam adapted to be manipulated by the player from outside the casing of the apparatus.

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According to a modification the prize delivering slides may be actuated by depending pivoted rods provided with pins or projections that enter notches in the periphery of the drum when the latter stops with a notch opposite any of the said pins.

The lowermost of these slides is normally urged outwardly by a strong spring and is connected with the other slides by weaker springs that are only put in tension after the lowest slide is withdrawn.

Each of the lower slides is provided

with an upstanding portion that engages the slide above it and any that have been withdrawn are returned by a depending lever (actuated by one of the cams) that engages the lowermost slide at the end of each cycle of operations.

Dated this 21st day of January, 1929.

EDGAR A. GODDIN,
Chartered Patent Agent,
61 and 62, Chancery Lane, London,
W.C. 2,
Agent for the Applicant.

COMPLETE SPECIFICATION.

Improvements in and relating to Coin-freed Apparatus for Amusements.

I, GORDON SMITH, of "Cecildene," 34, Clieveden Road, Thorpe Bay, Essex, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to coin-freed apparatus for playing a game of skill of the kind in which one or more discs, bearing pictures or the names of familiar objects, are adapted to be spun around by a coin-released spring-controlled lever provided with a hook adapted to engage the teeth on ratchet discs when the said lever is raised by a rocking frame actuated by a pawl pivoted to a hand-operated lever, preparatory to imparting a rotative impulse to said ratchet discs. The aforesaid discs were each mounted on an independent tubular or other shaft disposed one within the other and journalled in a closed casing having a window through which the said pictures or names could be seen, said ratchet discs being mounted on the said shafts at one end adjacently to each other and in a position to be engaged by the hooked portion of the aforesaid coin-released spring-controlled lever.

Apparatus of the kind referred to have been provided with a magazine into which some of the coins inserted to release the operating mechanism are delivered and afterwards fed into openings formed in each of a plurality of slides situated beneath the said magazine, one above the other. Each of these slides was normally urged by a spring in a direction that would cause its hole to move over a prize-delivery shoot into which the coins it contained fell but such movement was prevented by a series of selectors each of which controlled a slide that was only permitted to move when one or more of the

aforesaid ratchet discs stopped in a position in which one or other of a series of holes in each was opposite a co-operating part of its selector.

According to the present invention a single disc is mounted on a spindle on which a drum provided with a series of holes or openings in its surface and a ratchet wheel are mounted. A lever having projections or equivalent parts adapted to enter one of the openings in the drum when it stops in certain predetermined positions is connected to each or actuates one or more of a series of prize-delivery slides and controls the prize to be delivered when the apparatus is next operated, so that the element of chance is completely eliminated.

The aforesaid disc is rotated by a pawl pivoted to a spring-controlled sliding rod that is moved into its operative position by a cam that can be turned by the player after a lever that normally lies in the path of a projection on the cam shaft is deflected by an inserted coin that is guided on to it by a swinging shoot by which the said coin is afterwards transferred to the magazine thereby allowing the said lever to return to its normal locking position. Adjustable means controlled by a dash pot are also provided for stopping the disc spindle after it has received a rotative impulse.

In carrying out the present invention a disc is made fast to a shaft journalled in a frame situated inside a suitable casing provided with a window through which the names of different investments appearing on the adjacent face of the disc can be seen.

On this shaft is also mounted a drum hereinafter referred to, and a ratchet-wheel by which a rotative impulse may be imparted to the said shaft.

Beneath the aforesaid disc-shaft a cam-shaft is journaled. This shaft extends through the casing and is provided on the outside with a hand-wheel and on the inside with a ratchet-wheel that is engaged by a pawl to prevent its rotation in one direction and a stop that is normally engaged by a part that is moved out of its path when a coin is inserted into the apparatus to prevent rotation in the reverse direction. This shaft is also provided with two cams one of which operates a depending lever that is connected by a spring to the depending arm of a bell-crank lever situated on the other side of the cam-shaft and whose movement under the influence of the said spring is controlled by a pin extending from the face of the same cam. The other cam operates one of two arms that are secured to a shaft by which they are constrained to move together. To one of these arms the lower end of an upwardly extending rod is connected. The upper end of this rod passes through a guide and is provided with a pawl that engages the ratchet-wheel on the disc-shaft to which it imparts a rotative impulse when its cam allows the aforesaid rod to descend under the influence of gravity which may be augmented by a spring.

The upper end of the aforesaid rod also engages a pivoted frame provided with a roller that normally engages one or other of a series of V-shaped spaces formed between a series of V-shaped teeth arranged around the periphery of the hereinbefore mentioned drum mounted on the disc-shaft. This pivoted frame is at first maintained in its raised position by a detent until the latter is withdrawn by the plunger of a dash-pot or other retarding device or by other controlling means hereinafter described.

This rocking frame is also provided with an arm to which a wire or rod that slides through the upper end of the coin-shoot, is pivoted. Normally this rod is withdrawn into a position in which it will not obstruct the passage of a coin, but when the apparatus is in use the rocking-frame is raised and the rod is inserted into a position to prevent a coin from passing it.

The detent that maintains the rocking-frame in its raised position may consist of a bell-crank or other lever provided with a tooth adapted to be engaged by said frame and connected to the retarding device by a rod that passes freely in one direction through a hole in a part of said device. This rod is provided with an abutment that is engaged by the said retarding device after a pretermined interval unless the detent has been pre-

viously disengaged from said rocking frame.

Coins inserted into a slot in the casing of the apparatus, firstly pass down a fixed shoot through which the stop-rod hereinbefore described passes, into the wider mouth of a swinging shoot that is pivoted near its upper end to the frame. This swinging shoot is connected at a point between its pivot and its lower end to the depending lever operated by the cam first hereinbefore referred to.

The lower end of the swinging shoot has a vertical slot into which the opposite end of the lever that co-operates with the stop on the cam-shaft extends until the lower end of the said shoot is swung away from the end of the said lever by the operation of the said cam on the depending arm. In this position a coin that has been inserted into the machine and has passed through the fixed and swinging shoots until it was stopped by the end of the stop lever is allowed to fall into a prize magazine unless it is diverted by a switch plate interposed between them in the manner hereinafter described. The coins that are not diverted fall into the prize magazine until it is full whereafter they are pushed off the top by a part connected to the depending lever that actuates a prize-slide withdrawing lever hereinafter referred to which causes that part to sweep the excess coins into a cash box.

The prize magazine may consist of a vertically disposed container of a cross-section adapted to accommodate the prize disc or coin and is situated above a housing in which one or more prize delivery slides are guided.

Each of the prize slides has a hole of the shape, size and thickness of one or more of the prize-discs which, in the normal position of the slide is immediately beneath the prize magazine so as to form the lower part of it. These slides therefore contain the prizes at the bottom of the stack which are withdrawn when one or more of the slides are withdrawn until the hole in each with their contents are above a prize delivery shoot.

Each of these slides is normally maintained in its innermost position by a locking-pin that passes through a hole in the slide housing and in each of them, and is provided with an upstanding portion at its front end by means of which it can be withdrawn after the aforesaid pin is raised.

This pin is carried by a lever that is pivoted to a bracket above the slide-housing and is raised so as to release one, two or more slides according to the value of the prize won, by a depending slide-

withdrawing lever which is lowered to a corresponding degree by the prize selector hereinafter described, and so engages the opposite end of the pin-carrying lever.

5 In this way the lowermost slide is first released and withdrawn when the smallest prize is to be delivered from the magazine. The same slide and the one above it is released and withdrawn when the prize of 10 the next value is to be delivered and so on. In order to withdraw the lowest slide first its upstanding portion extends above the others so as to be engaged by the slide-withdrawing lever when it is 15 lowered the minimum distance which movement also raises the locking pin sufficiently to release this slide only.

The upstanding portion of the second slide extends above the upstanding portions of the slides above it but not so high as that portion of the lowest slide. It is therefore necessary for the slide-withdrawing lever to be lowered sufficiently to engage it and at the same time raise the 20 locking pin sufficiently to release the second slide when the corresponding prize is to be delivered and so on with the third and any subsequent slides.

The drum hereinafter referred to is 30 provided at different parts of its periphery with notches of varying width beneath which one end of a selector lever is situated. This lever has a series of upstanding screws or other projections of differ- 35 ing length arranged side by side in such relationship to the drum that the longest will enter the narrowest notch until the longest of the remaining projections engages the periphery of the said drum. 40 And when the shortest of the remaining slots is in line with the said projections the two longest will enter it until the longest of the remaining projections engages the periphery of the 45 said drum and so on. In this way the selector-lever when free to move is turned on its pivot through an angle that is controlled by the length of the notch on the aforesaid drum.

50 From the other end of the aforesaid selector-lever the slide-withdrawing lever depends and is lowered to a greater or less extent according to the length of the notch in the periphery of the drum. Normally 55 the selector-lever is maintained in a position with the slide-withdrawing lever raised clear of the prize delivering slides and with its projections clear of the drum by a pin carried by an arm connected by 60 a link to the bell-crank lever hereinafter referred to that is actuated by a pin on the cam that reciprocates the depending lever that deflects the movable portion of the coin-shoot.

65 The depending lever last referred to is

connected by a link to the prize-slide withdrawing-lever which when operated thereby withdraws any selected slides in its path and the lower end of the bell-crank lever actuated by the pin extending 70 from the face of the same cam is bent forward towards the lowest prize-slide which it returns to its normal position after it has delivered its contents into the return shoot. 75

The upstanding portion of this slide engages the slides above it and returns any that may have been withdrawn at the same time.

A second selector-lever may be ful- 80 crumed adjacently to the one hereinafter described. One end of this second selector is connected by a link to a pivoted switch-plate which when operated diverts the coin released when the shoot is swung clear of 85 the catch lever, direct into a return shoot instead of allowing it to fall into the prize magazine.

The opposite end of the said second selector is provided with a projection 90 adapted to pass completely through any of the notches in the aforesaid drum when they are in a different angular position from that in which any of the projections on the selector first mentioned enter the 95 said notches.

In order to operate the improved apparatus, a coin is inserted into the aforesaid slot and passes from thence through the stationary shoot to the lower end of 100 the pivoted shoot where its further descent is temporarily arrested by the end of the stop lever which it disengages from the stop on the cam-shaft. The cam-shaft is now turned by means of the hand-wheel 105 with the result that the pin that normally prevents the selectors from passing through the notches in the drum is removed and the prize-slide withdrawing lever is lowered or the coin-switch oper- 110 ated if there is a notch opposite either of the selectors. The slide-withdrawing lever is next swung outwardly so as to withdraw the selected slide or slides which deliver the prize into a return shoot. The 115 pivoted coin-shoot is next swung sufficiently away from the stop lever to allow the coin that operated it to fall. The pawl carrying rod is next raised against the resistance of its spring until the roller on 120 the rocking frame is disengaged from the V-shaped teeth on the drum and the aforesaid pawl engages the ratchet-wheel on the drum-shaft. At this moment the cam that raised the pawl rod passes the 125 pin on the lever to which the said rod is connected with the result that it is immediately retracted by its spring and in its descent the pawl pivoted to it imparts a rotational impulse to the disc-shaft 130

through the ratchet-wheel mounted thereon which with the drum, are caused to rotate.

During the upward movement of the pawl-rod the plunger of the hereinbefore mentioned dash-pot was also raised by the same lever against the resistance of a spring which is caused to descend at the same moment as the pawl-rod and after a predetermined interval to engage an abutment on a rod that withdraws the detent that keeps the aforesaid rocking frame in its raised position and its roller out of engagement with the teeth on the drum, thereby allowing it to fall and arrest the rotation of the drum.

During the upward movement of the pawl-rod, the bell-crank lever operated by the pin on one of the cams, operated the pin carrying lever that withdraws the selectors from the notches in the drum and returned any prize-delivering slides that were withdrawn at the commencement of the operation, to their normal positions.

In order to stop the drum in a prize-winning position, the detent that maintains the roller on the rocking frame out of engagement with the said roller is adapted to be operated independently of the dash-pot by means of a sliding rod or cam adapted to be manipulated by the player from outside the casing of the apparatus.

According to an alternative construction a depending arm actuated by one of the cams is employed in the place of the bell-crank lever and the pin-carrying lever (for maintaining the selectors out of contact with the drum) connected to said bell-crank lever. According to this construction the said depending arm withdraws the lowermost prize-carrying slide when it is selected and puts in tension springs that connect it to the other prize-carrying slides one or more of which is or are withdrawn thereby when selected and all that are withdrawn are afterwards returned when the lowermost slide is returned by the aforesaid depending lever.

In order to select the prize-carrying slides each is engaged by the forked end of a depending arm pivoted above the drum described in connection with the construction first mentioned, adjacently to which the said depending forked arms hang. Each of these arms is provided with a pin at a point opposite the aforesaid drum which it will engage when the said pin is moved towards it unless a notch is situated at the corresponding point on the drum, in which case the said arm will be permitted to move nearer and in so doing will withdraw the prize-carrying slide to which it is connected.

In order that the present invention may be clearly understood it will now be more

particularly described with reference to the accompanying drawings, in which:—

Fig. 1 is a front view of the improved apparatus.

Fig. 2 is a rear elevation of the mechanism which is mounted upon the rear side of the door in front of the apparatus. 70

Fig. 3 is a side elevation of the mechanism as seen from the right-hand side of Fig. 2. 75

Fig. 4 is a detail showing the prize-magazine, prize-delivery slides and the lever for withdrawing them in side elevation.

Fig. 5 is a detail showing a portion of the cam-shaft in side elevation. 80

Fig. 6 is a similar view to that shown in Fig. 2 illustrating a modified construction.

Fig. 7 is a horizontal section in the plane indicated by the broken line 7—7 in Fig. 6 and 85

Fig. 8 is a detail showing in sectional elevation the prize-magazine, prize-delivery slides and part of the respective selecting and operating levers employed in the construction illustrated by Fig. 6. 90

According to the construction illustrated by Figs. 1 to 5 of the drawings, a disc *a* is mounted on a spindle *b* journaled in bearings *c* supported in a frame *d* and hanger *e* mounted on the inside of the door *f* of the casing *g* which is provided with windows or openings *h i* through which the names of various commodities or investments and the corresponding value of each, printed or otherwise applied to the adjacent face of the said disc *a* are exposed when the said disc comes to rest. 100

In order to spin the disc *a* a rod *k*, provided with a spring controlled pivoted pawl *l*, and adapted to slide in guides *m n* is raised by a cam *o* mounted on a shaft 9 against the resistance of a spring *p* until the said rod *k* is released, when it is rapidly retracted and imparts a rotative impulse to the spindle *b* by reason of the engagement of the pawl *l* with a ratchet-wheel *q* made fast to the said spindle. 105 110 115

The rod *k* is pivoted to the arm *r* of a rocking frame *s* mounted on the pin *t* extending from the frame *d*. This frame has a second arm *r'* provided with a pin *r²* that engages a pin *5^x* extending from the rod of a plunger 5 of a dash-pot 6 so as to withdraw it against the resistance of a spring 8. 120

A drum *u* having a series of notches or openings *v* of varying size and a series of V-shaped teeth *w* on its periphery is made fast to the spindle *b* and a rocking frame *x* provided with a roller *y* adapted to engage one or other of the spaces *z* be- 125 130

tween two of the said teeth w is pivoted above the said drum u toward which it is normally urged by a spring 1 extending between the arm 2 of the said frame x and an anchor post 3.

When the rod k is raised its upper end engages the rocking frame x and lifts its roller y away from the drum u in which position it is retained by the detent 4 until after the drum has been spun by the descent of the rod k and the detent has been operated and so caused to release the rocking frame x when its roller y enters one of the V-shaped spaces z between the teeth w on the drum and stops it in a position in which the name of one of the commodities on the disc a and its value are exposed through the windows h in the casing.

In order to provide a suitable interval between the moment when the rotation of the disc begins and when it is stopped by the roller y the detent 4 may be connected to the plunger 5 of a dash-pot 6 by a link 7 which is freed when the said plunger is raised but is caused after a suitable interval to disengage the detent 4 when the plunger 5 is caused by the spring 8 to return to its normal position in the dash-pot.

The shaft 9 is journaled in the frame d and hanger e and extends through the door f where it is provided with a hand-wheel or knob 10 by which the said shaft may be turned after a coin has been inserted in the slot 11.

The shaft 9 is also provided with a stop 12 that normally prevents its rotation in the forward direction and a ratchet-wheel 13 that co-operates with a pawl 14 pivoted to the frame d to prevent the rotation of the said shaft in the reverse direction. On this shaft the cam o hereinbefore referred to and a second cam 15 are made fast.

After a coin has been inserted in the slot 11 it passes down the stationary shoot 16 into the mouth of the swinging shoot 17 pivoted on the pin 18 secured to the frame d by which it is delivered on to a pin 19 at one end of a stop-lever 20 pivoted in the bracket 21 so as to turn it and disengage it from the stop 12 on the shaft 9 which is now free to turn.

The cam 15 engages a lever 22 fulcrumed on a pin 23 above it. This lever is connected by a spring 24 to the depending leg 25 of a bell-crank lever fulcrumed on a pin 26 on the other side of the cam-shaft 9 towards which both are urged by the spring 24 when they are free to move.

The cam 15 has a pin 27 extending from one face into the path of the leg 25 of the bell-crank lever whose lower end

is curved towards the prize magazine 28 and makes contact with the upstanding portion 29 of the lowermost slide 30. The horizontal arm 31 of the said bell-crank lever is connected by a link 32 to a short arm 33 from which a pin 34 projects beneath the selector levers 35, 36.

The upper end of the lever 22 is connected by the link 37 to the swinging shoot 17 which it moves away from the pin 19 on the end of the stop lever 20 at the proper time to allow the coin supported by it to fall into the prize magazine 28, the cash-box or a return coin-shoot hereinafter described.

Beneath the prize magazine 28 three prize-slides 30, 38, 39 are housed between the horizontal member 40 of the bracket 41 secured to the frame d and the plate 42 at the base of the magazine. These are connected together by the posts 43 that are secured to the horizontal member 40 and pass through holes in the plate 42 which is urged towards the horizontal member 40 by springs 44 to an extent limited by the set screws 45.

The prize slides 30, 38, 39 slide one above the other between the posts 43 that keep them in alignment and each is provided with a hole 100 (shown in Fig. 8) that is beneath the magazine when its slide is in its innermost position and above a return-coin shoot when the slide is withdrawn.

Normally the slides are all maintained in their innermost positions by a pin 46 carried by a lever 47 fulcrumed on a pin 48 shown in Fig. 4 and in dotted lines in Fig. 2.

The selector levers 35, 36 are fulcrumed on the pin 49 and are normally supported in the position shown in Fig. 2 out of contact with the drum u by the pin 34 carried by the short arm 33 hereinbefore referred to.

A pushing rod 50 is pivoted to the lever 22 by which it is caused to push any excess coins delivered on to the top of the magazine after it is full into the shoot 51 by which they are delivered into a cash box inside the apparatus.

The selector lever 35 is provided with three upwardly extending pins 52, 53, 54 of different lengths arranged side by side (Fig. 3).

When the drum u stops with a short notch v in line with these pins the longest 52 will pass through until the next pin 53 engages the surface of the said drum and when a notch long enough to allow the next pin 53 to pass through as well, stops in line with the said pins the selector-lever will turn through a greater angle, and when the longest notch is in line with the pins they will all pass

through and the selector-lever will turn through a still greater angle.

A slide operating lever 55 depends from the opposite end of the selector-lever 35 towards the prize delivery slides each of which has an upstanding part of different height behind one or more of which the operating-lever 55 is lowered according to the angle through which the selector-lever 35 is turned.

The lowermost slide has the highest upstanding part 29 which is engaged by the operating-lever 55 when the selector-lever 35 is turned through its smallest angle and when this slide is withdrawn the coins at the bottom of the magazine that have descended into its hole are caused to slide over the horizontal member 40 until they are over another hole through which they fall into a return coin-shoot by which they are delivered outside the apparatus to the successful player.

The upstanding part 56 of the slide next above the lowest is not quite so high and therefore is not engaged by the operating-lever 55 unless the selector-lever 35 is turned through a corresponding angle. And the upstanding part 57 of the uppermost slide is not so high as the corresponding part of the slide beneath it.

The lower end 58 of the operating-lever 55 extends laterally behind the upstanding parts 29, 56, 57 of all the slides and above the adjacent end of the lever 47 which is lowered sufficiently to cause it to withdraw its pin 46 from the slide or slides behind whose upstanding part the said operating lever is lowered. In this way the slide that is not engaged by the operating-lever 55 is locked in its innermost position.

The lower end of the slide-operating lever 55 is connected by a link 59 to the lever 22 which is actuated by the cam 15.

The selector-lever 36 has a blade 60 at one end that co-operates with the drum *u* when its notches *v* are in a different position from that in which they are entered by the pins 52, 53 and 54 on the other selector-lever 35. When the drum *u* stops in a position with any one of the notches *v* in line with the blade 60 it passes through it and causes the deflector plate 61 to be turned on its pivot 62 into a position to divert the coin that falls from the swinging shoot 17 when it is moved away from the pin 19 at the end of the stop lever 20, into the return-coin shoot direct instead of into the prize magazine 28.

For this purpose the opposite end of the selector-lever 36 is connected by the link 63 to the end of the arm 64 secured to the pivot 62 of the deflector plate 61.

The extremity of a wire rod 65 connected at its other end to the arm 2 secured

to or formed on the rocking-frame *x* extends through a hole in the coin-shoot 16 so as to prevent the passage of coins inserted in the slot 11 after the cam shaft 9 has been turned sufficiently to raise the said rocking frame, until after a rotative impulse has been imparted to the disc *u* and the latter has again come to rest by reason of the engagement of the roller *y* with one of the V-shaped spaces *z* between the teeth *w* of the drum *u*.

In order to control the position in which the disc *u* stops, the arm 66 of the detent 4 may be connected to a rod, cord or equivalent part (not shown) that extends through the door *f* or walls of the casing *g* so as to enable the player to release the rocking frame *x* at the moment that will enable its roller *y* to stop the rotation of the disc *u* when the desired commodity or investment is displayed through the window *h*.

On inserting a coin in the slot 11 it passes through the stationary shoot 16 and the swinging-shoot 17 until it reaches the pin 19 of the stop lever 20 which it turns on its pivot and so removes its opposite end out of the path of the stop 12 on the cam-shaft 9 which is then free to be turned by the hand-wheel 10.

On turning the shaft 9 the pin 27 extending from the face of the cam 15 first moves away from the depending leg 25 of the bell-crank lever which is then moved away from the prize delivering slides.

The cam 15 next engages the depending lever 22 which it moves in the direction to withdraw the slide-operating lever 55 which withdraws any slides behind whose upstanding part it was lowered when the apparatus was last operated. During this movement of the depending lever 22 it withdraws the push rod 50 and moves the lower end of the swinging-shoot 17 away from the pin 19 at the end of the stop-lever 20 from which the coin that operated it falls into the magazine 28. If any slides were withdrawn the coins at the bottom of the pile in the magazine that occupied the hole in it or them will have been slid laterally until they were delivered into the return shoot.

During the further rotation of the shaft 9 the cam 15 moves away from the depending lever 22 which is drawn towards the depending-leg 25 of the bell-crank lever by the spring 24 until the pin 27 engages the depending-leg 25 of the said bell-crank lever which it then moves in the direction to return any prize slides that had been withdrawn. The further rotation of cam 15 also causes the depending-lever 22 to move in the direction to return the slide-operating lever 55 to its position behind the upstanding parts of

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the slides.

When the cam *o* engages the roller on the arm *r* of the rocking frame *s*, the rod *k* is raised against the resistance of the spring *p* until its upper end raises the frame *x* so as to disengage its roller *y* from the teeth *w* of the drum *u* in which raised position the frame *x* is maintained by the detent 4. At this moment the point of the cam *o* passes the roller on the arm *r* of the rocking frame *s* and so allows the rod *k* to descend rapidly under the influence of its spring *p* and impart a rotative impulse to the spindle *b* by reason of the engagement of the pawl *l* with the ratchet-wheel *q* mounted on the said spindle.

During the upward movement of the frame *s* the pin *r*² on its other arm *r*¹ withdrew the plunger 5 from the dash-pot 6 against the resistance of the spring 8 but so soon as the said frame descends under the influence of the spring-impelled rod *k*, the plunger 5 is urged towards the bottom of the dash-pot cylinder by the spring 8 and so soon as the rod of the said plunger comes into contact with the abutment on the link 7 the detent 4 is withdrawn, the frame *x* descends and its roller *y* engages a V-shaped space *z* between two of the V-shaped teeth *w* on the drum *u* and arrests the further rotation of the disc *a*.

According to the modified construction illustrated by Figs. 6 to 8 of the drawings three selector-levers 67, 68, 69 depend from a pivot 70 each of which is provided with a pin 71 at a point nearest the surface of the drum *u* and is connected at its lower end to one of the prize-delivery slides so as to allow it to be withdrawn when the cam 15 allows the spring 72 to retract the arm 73 pivoted on the pin 74 and connected at its other end to the lowermost prize-delivery slide 30.

When one of the shortest notches *v* in the drum *u* stops opposite the pins 71 the one carried by the selector-lever 69 will pass through it and so enable the arm 73 to withdraw the lowermost slide 30, and at the same time puts in tension the springs 75 that connect the said slide 30 to the slides 38 and 39 respectively, above it.

If a notch long enough to allow the pins carried by the two selector-levers 69 and 68 stops in line with them, the prize-delivery slides 30 and 38 connected to them will be withdrawn when the arm 73 withdraws the slide 30 and puts the springs 75 in tension, while the slide 39 will be retained in its innermost position by the pin on its selector-lever 67 which will be prevented from moving by reason

of its engagement with the drum *u*.

When one of the longest notches stops in line with the pins they will all be free to move forward so as to enable all the slides to be withdrawn when the spring 72 is put in tension.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Coin-freed amusement apparatus having a disc mounted on a spindle adapted to rotate inside a casing provided with openings or windows through which indications on said disc can be displayed; means, released by a coin, for rotating a disc-operating cam; a sliding rod actuated by said cam against the action of a spring; a ratchet wheel on said spindle; a pawl pivoted on said rod adapted to engage said ratchet wheel and drive the aforesaid spindle when the said rod is free to move under the influence of its spring; a drum or equivalent part connected to said disc and provided with openings or projections entered or engaged by a selector or one or other of two or more selectors when the disc stops in predetermined positions; a magazine to receive an inserted coin after it has freed the apparatus; one or more prize-delivery slides connected to or controlled by said selector or selectors; a stop on the aforesaid cam shaft normally obstructed by a stop-lever; a slot for the insertion of a coin; means of guiding said coin on to the aforesaid lever to release the disc-rotating means and means for withdrawing the prize slide or slides selected and delivering its or their contents into a shoot to convey them outside the apparatus to the player, substantially as described.

2. Coin-freed amusement apparatus according to the preceding claim having V-shaped teeth on the periphery of said drum; a rocking frame pivoted above said drum having a roller adapted to engage the spaces between said teeth to stop said drum when said rocking frame is lowered; means of raising said frame before the drum is rotated; a detent to retain it in the raised position and means of withdrawing said detent by hand or by means of a spring retarded by a dash-pot released by the disc-rotating means after it has imparted an impulse to said disc, substantially as described.

3. Coin-freed amusement apparatus according to the preceding claims in which the drum mounted on the disc spindle is provided with a plurality of notches on its periphery of varying dimensions and in different angular positions; a magazine to receive the coin after it has released

- the apparatus; prize delivering slides situated beneath said magazine and each of which is provided with a hole into which coins pass from said magazine and
- 5 has an upwardly projecting part of different height; a selecting lever having a depending arm pivoted thereto at one end and adapted to be lowered behind one or more of the upwardly projecting parts of
- 10 the prize-delivering slides according to the angular movement of the selecting lever; a plurality of pins of different length at the opposite end of the selector lever one or more of which pins can enter
- 15 the notches on said drum according to the dimensions of the notch that stops opposite said pins so as to determine the angular movement of said selector; means of preventing said pins from entering
- 20 said notches until the drum has stopped and means actuated by a cam of withdrawing the aforesaid depending arm and any prize-delivering slides engaged by it, so as to cause them to deliver their contents into a return shoot substantially as described.
4. Coin-freed amusement apparatus according to claim 3 having a supplementary selector provided at one end with a
- 30 part adapted to pass through any one of the notches in the disc drum when it stops opposite said part and a coin deflector connected to the other end of said selector and adapted to divert a coin as it
- 35 falls from the coin-shoot, from the magazine into the return shoot direct when the aforesaid part of the selector passes through a notch substantially as described.
- 40 5. Coin-freed amusement apparatus according to claims 1 and 2 having a drum mounted on the disc spindle, provided with a plurality of notches of varying dimensions on its periphery and in
- 45 different angular positions; a magazine to receive the coin after it has released the apparatus; prize-delivering slides situated beneath said magazine each of which is provided with a hole into which coins pass from said magazine; a selector arm connected to each slide at one end and pivoted at the other to a stationary part so as to extend adjacently to the aforesaid drum, each said selector having a pin adapted to enter a notch in said drum when one stops in line with its pin so as to permit the slide connected to it to be withdrawn by a spring when permitted by the retraction of the slide-returning part substantially as described.
6. In a coin-freed amusement apparatus according to the preceding claims a lever, one end of which normally engages a stop on the operating mechanism while its other end extends into a slot in a swinging shoot into which a coin inserted to free the apparatus is guided and means of subsequently swinging said shoot away from said lever so as to release said coin and allow said lever to return to its stopping position substantially as described.
7. Coin-freed amusement apparatus constructed and operating substantially as described with reference to Figs. 1 to 5 of the drawings.
8. Coin-freed amusement apparatus constructed and operating substantially as described with reference to Figs. 6 to 8 of the drawings.
9. The combination and arrangement of parts constituting an improved coin-freed amusement apparatus substantially as described in the specification and as shown in the various Figures of the drawings.

Dated this 10th day of June, 1929.

EDGAR A. GODDIN,

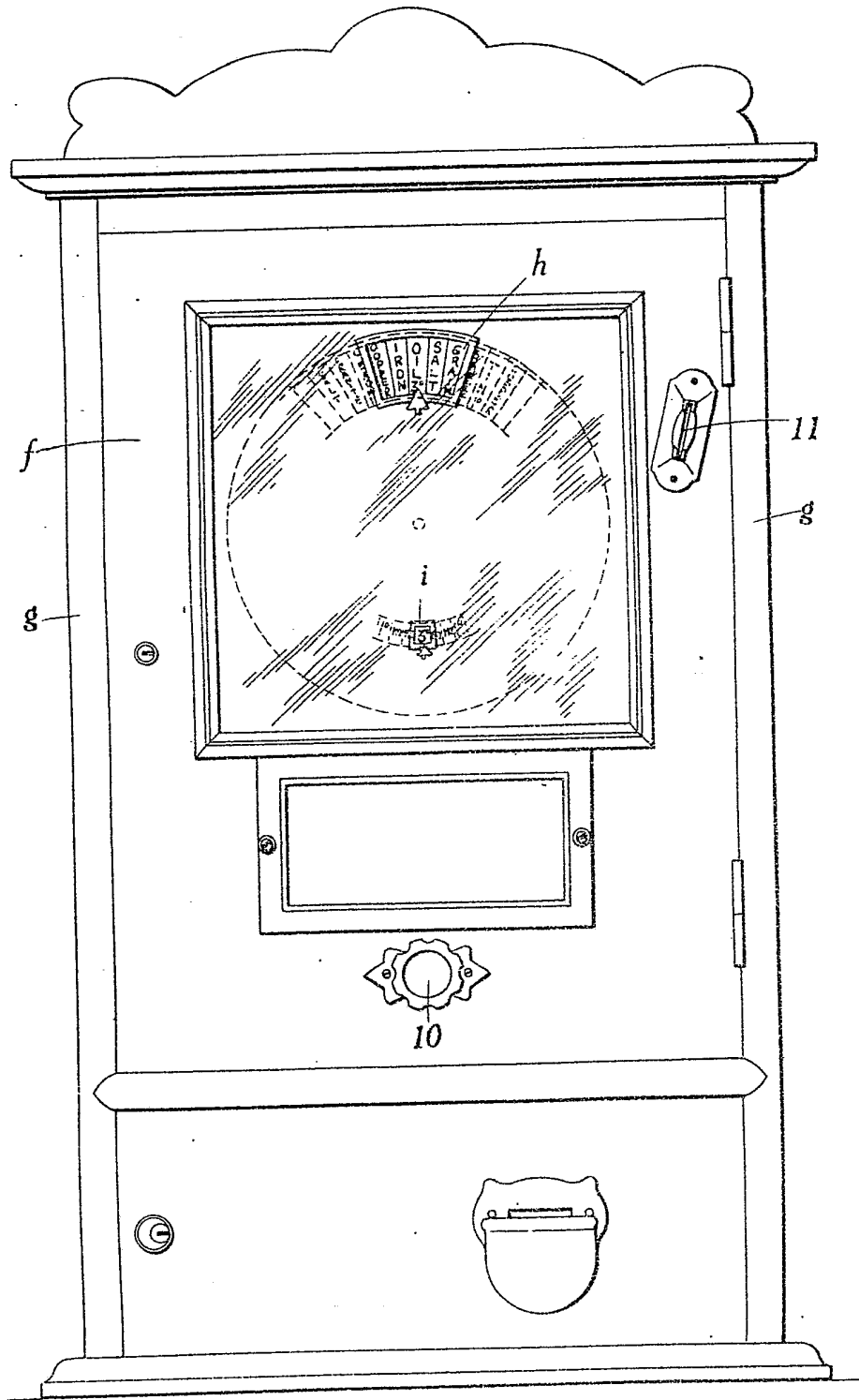
Chartered Patent Agent,

61 and 62, Chancery Lane, London.

W.C. 2,

Agent for the Applicant.

Fig. 1.



[This Drawing is a reproduction of the Original on a reduced scale.]



Fig. 2.

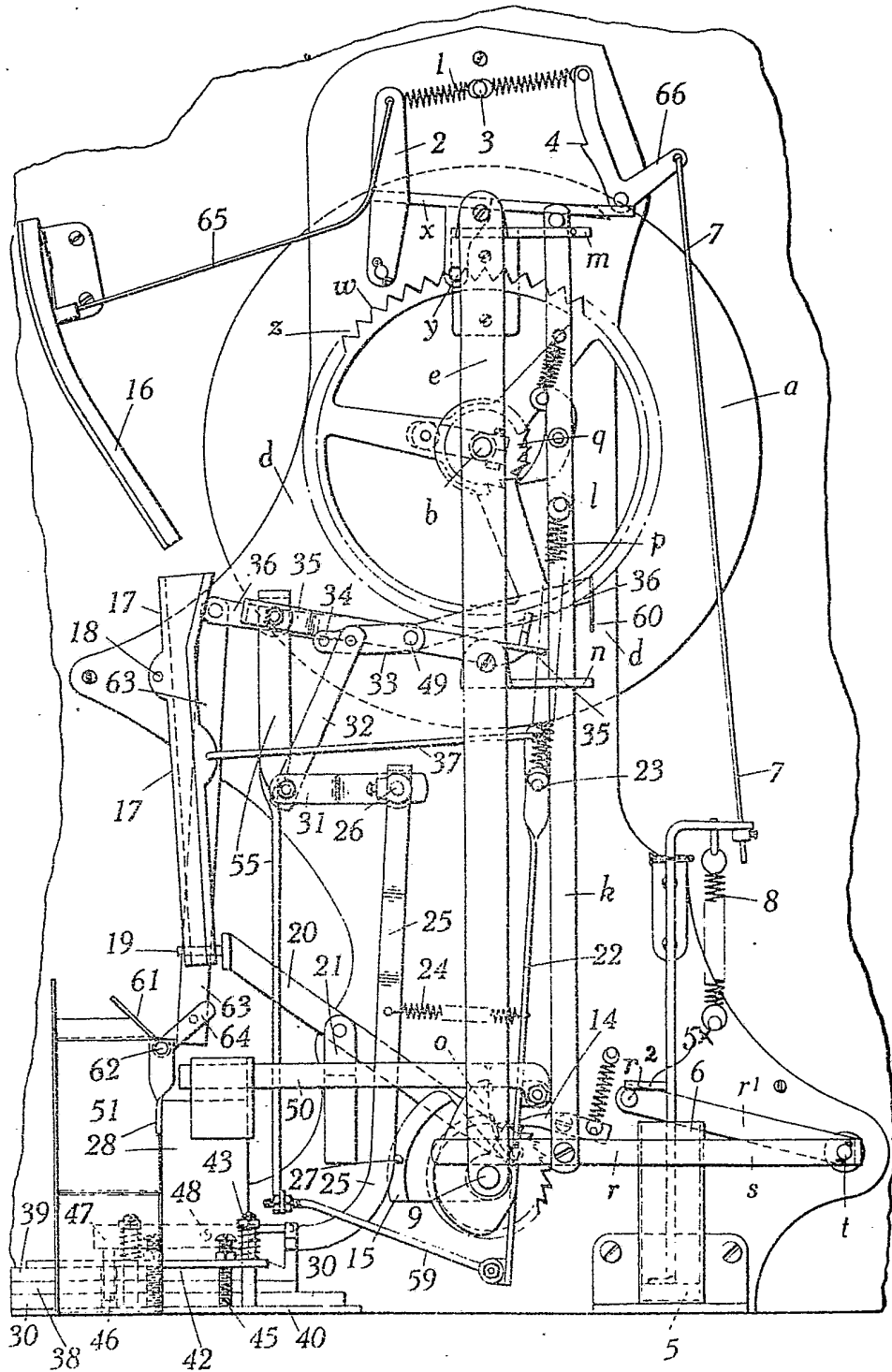
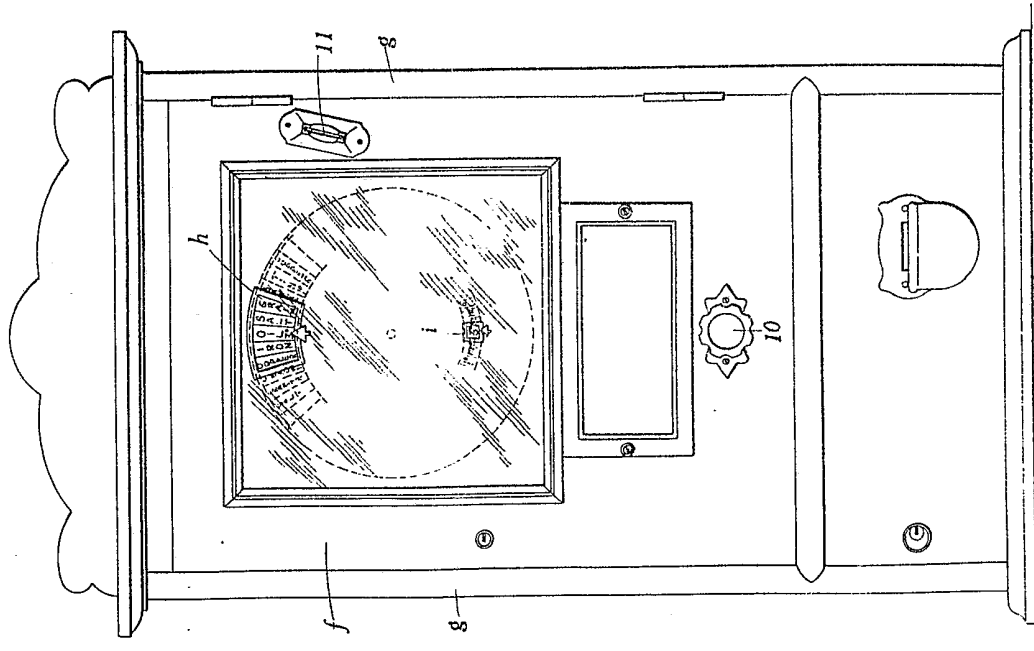
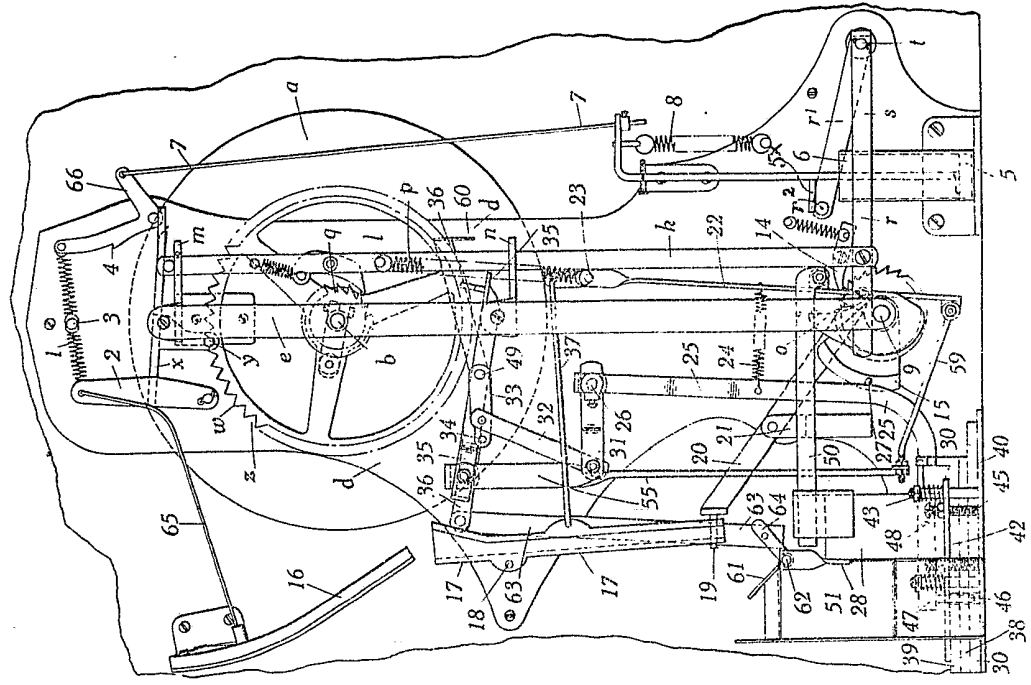


Fig. 1.



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Fig. 2.



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Fig. 3.

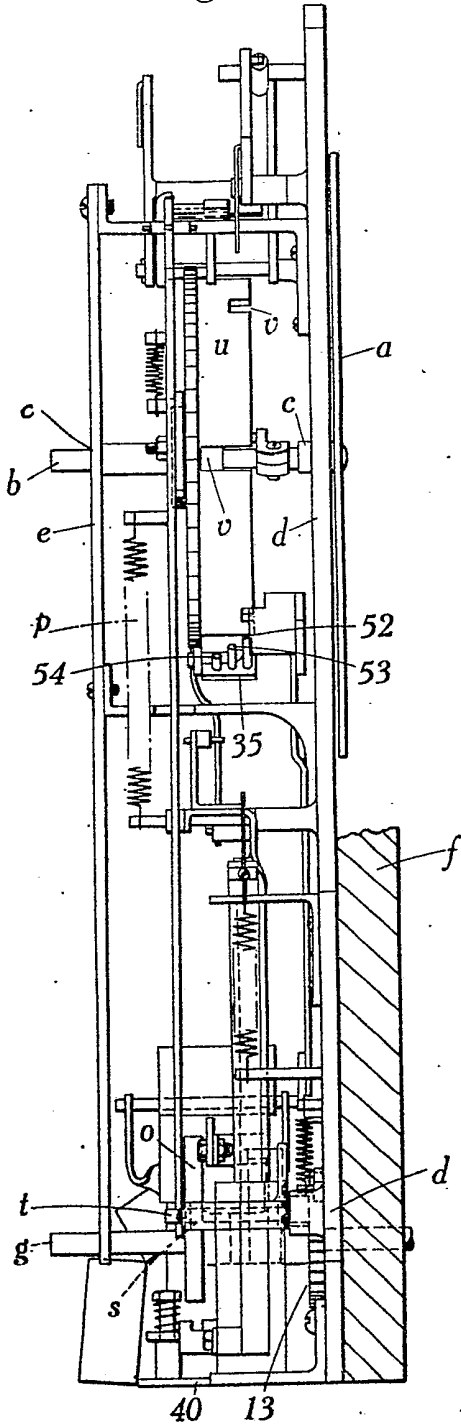


Fig. 4.

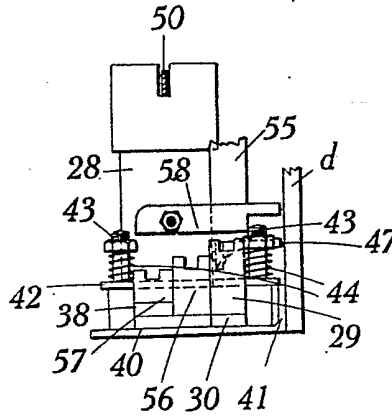


Fig. 5.

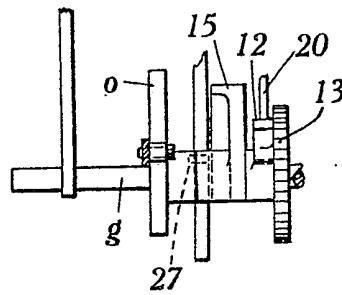


Fig. 6.

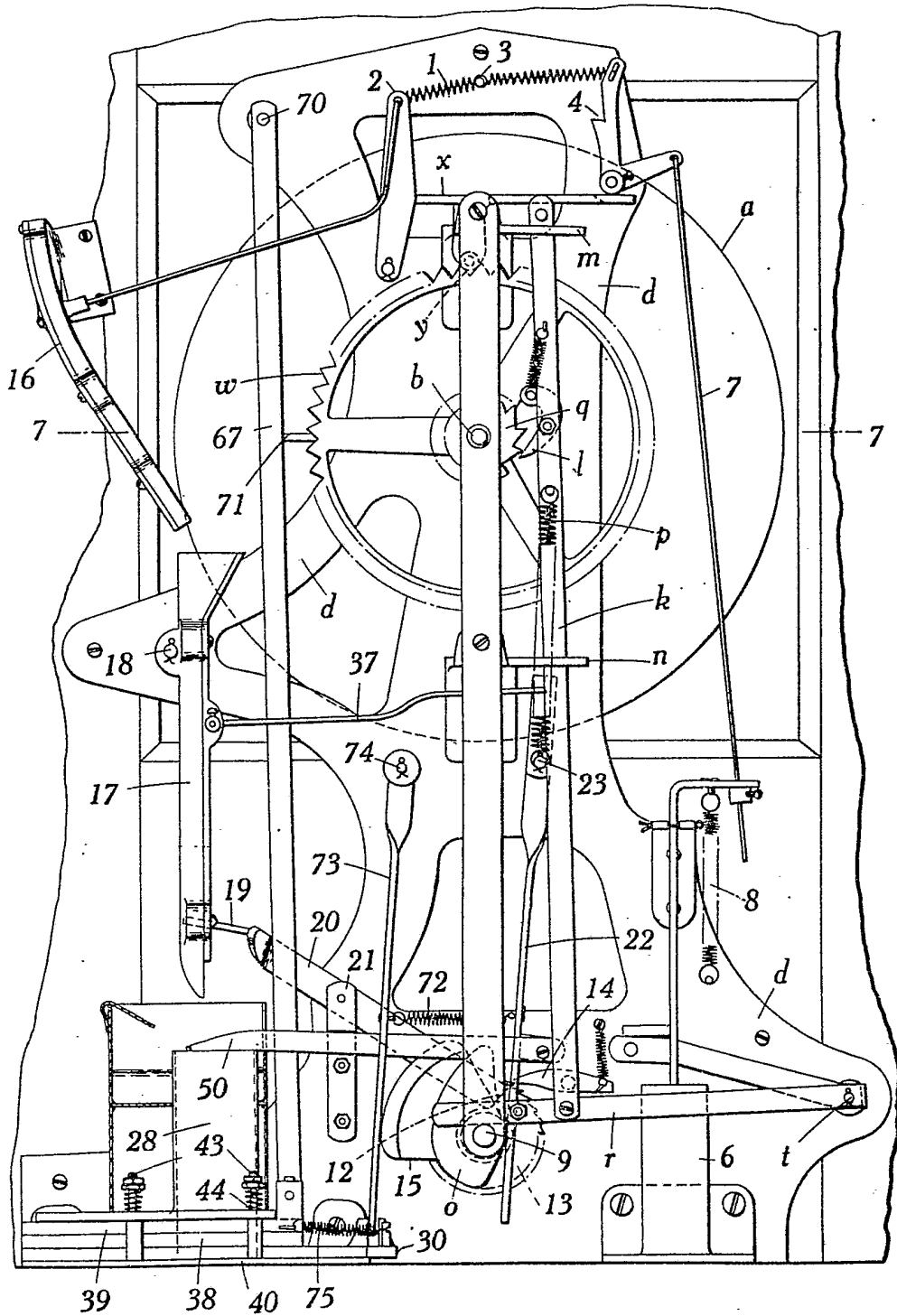


Fig. 3.

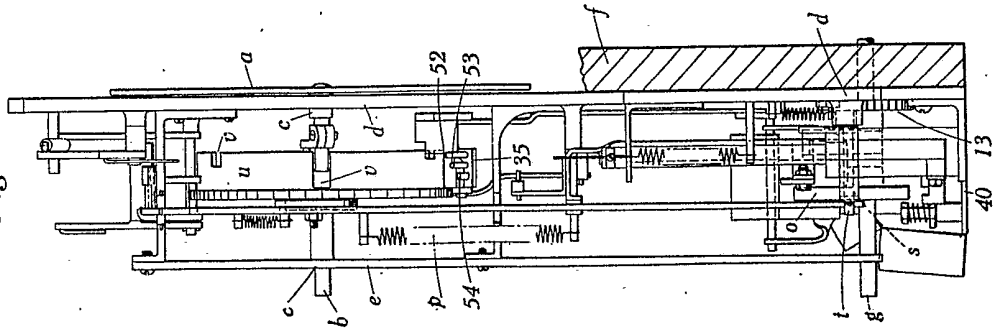


Fig. 4.

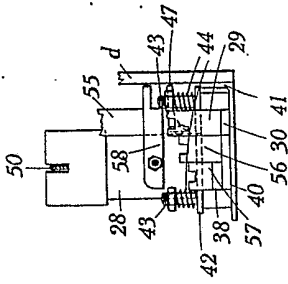


Fig. 5.

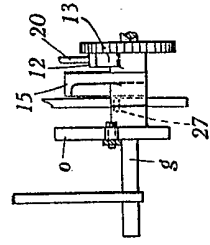
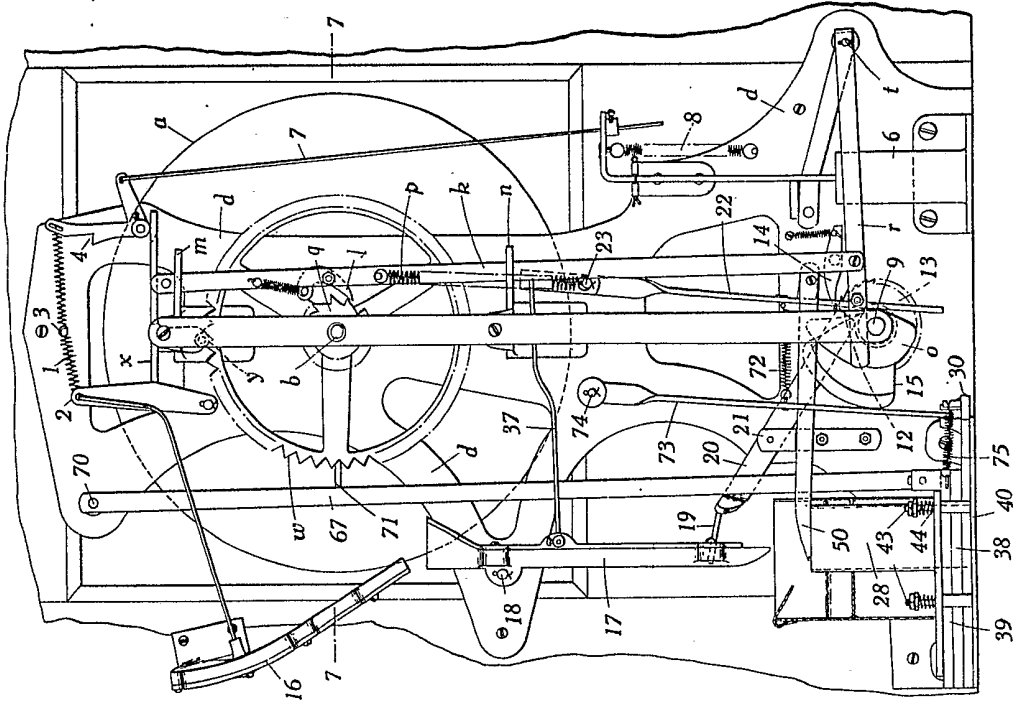


Fig. 6.



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