

PATENT SPECIFICATION

913,064

DRAWINGS ATTACHED.



Date of filing Complete Specification : Sept. 14, 1961.

Application Date : Aug. 16, 1960. No. 28262/60.

Complete Specification Published : Dec. 19, 1962.

Index at Acceptance :—Classes 27, A1(H3:PIB1); 132(2), H6(C3:F1:F9).

International Classification :—G07f. A63d.

COMPLETE SPECIFICATION.

A Coin-Operated or Freed Amusement Machine.

I, WILLIAM EDWARD BRYAN, of 10 London Road, Kegworth, Derby, a British Subject, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention is concerned with amusement machines of the kind in which the player receives a reward in the form of a coin, token, or prize, as a result of propelling a ball along a hazardous path into a win receptacle.

The invention provides a coin-operated or freed amusement machine, wherein insertion of a coin makes available for presentation at a loading station a plurality of balls, from a magazine, for projection by an operator-actuated projector along a path leading to deflecting obstructions and thence, fortuitously, to a "loss" receptacle and to at least one "win" receptacle, characterised in that the projector has a single control for the operator and, operated by that single control, a loader which moves a ball from the loading station to a striking station and a spring-loaded striker which projects that ball from the striking station, successive operations of the projector by the operator serving to project seriatim the balls presented at the loading station. The expression coin as used herein includes a token, and the expression ball includes an equivalent projectile. The win receptacle referred to above may be the magazine or may communicate with the magazine.

According to an important subsidiary feature of the invention the machine has at the loading station an inclined track on which the presented balls rest and at the lower end of which the loader operates, the

balls gravitating along the track to move seriatim into the field of operations of the loader.

Desirably the machine has an operator-actuated device for forcing the inserted coin between spaced abutments at least one of which is movable. There may be means whereby movement of the movable abutment releases the balls from the magazine. There may be a counting device operable by successive movements of the movable abutment, and a selector movable by the counting device between alternative positions in one of which the win passes onwards to a coin receptacle and, in the other of which the coin passes onwards to a jack-pot, the counting device being constructed and arranged to determine the frequency with which an inserted coin is passed to the jack-pot. Preferably the counting device is capable of being pre-set to the required frequency.

The machine may have a jack-pot, a stacking accumulator for accumulating, in a stack, balls entering the win receptacle or receptacles, and means whereby the last ball in a stack of predetermined number effects discharge of the jack-pot. For this purpose there may be connections operable by the operator-actuated device in response to the presence of the required number of balls in the stack to discharge the jack-pot.

In order to enhance the element of skill there may be an operator's control for adjusting the attitude or position of the win receptacle or receptacles.

The foregoing and other features of the invention are incorporated in the amusement machine which will now be described in detail with reference to the accompanying drawings in which:—

Figure 1 is a front elevation of an amuse-

[Price 4s. 6d.]

ment machine according to this invention;

Figure 2 is a rear perspective view of the mechanism of this machine;

5 Figure 3 is a rear elevation of part of this mechanism;

Figures 4 and 5 are views illustrating the operation of the projector;

Figure 6 shows a detail of the mechanism.

10 Referring primarily to Figure 1 the machine therein shown has a coil slot 10 and a transparent front panel 11. Behind the transparent panel there may be seen the inclined track 12 at the loading station, the upper part of the projector 13, the spiral track 14 along which the balls are projected (which track terminates near the top at mouth 15), the deflecting obstructions in the form of pins 16, a plurality of win receptacles 17a, 17b and 17c, a funnel-shaped collector 18 leading to a loss receptacle 19, a movable retaining pin 20 at the base of receptacle 19, and a jack-pot 21. Below the loss receptacle 19 there is a gap 22 in the spiral guide 14 permitting balls arriving at the lower part of the inner convolution of the guide (e.g. from receptacle 19 or from the mouth 15) to be returned to the loading station and below that there is an aperture 23 through which as hereinafter described balls from the win receptacles 17a to 17c are also returned to the loading station. The single control or thumb lever of the projector is shown at 24. The machine also has an operating handle 25, the purpose of which is hereinafter explained, and a knob 26 which may be turned by the operator so that the win receptacles may be swung to catch the balls.

40 The construction of the machine may best be described with reference to its method of operation, it being assumed that initially three, or any other appropriate number of balls, are located on top of one another in the loss receptacle 19. The coin inserted in the coin slot 10 gravitates along a downwardly curved coin chute 27 which is indicated diagrammatically in Figures 2 and 3. On emerging from the delivery end of the chute the coin rests between a fixed abutment pin 28 and a movable abutment pin 29, immediately below the out-turned end 30a of lever 30 pivoted at 31. The operator then rotates crank handle 25 in the clockwise direction Figure 1. On the rear end of spindle 32 of this crank handle there is a ratchet wheel 33 carrying a crank 34 connected by connecting rod 35 to a lever 36 on a plate member 37 pivoted at 38. The ratchet wheel 33 has check pawls 39a, 39b shown in Figure 2. Plate member 37 has, pivoted to it, a lever arm 40 connected by connecting rod 41 to an end of lever 30. Lever arm 40 is connected to levers 100 and 105, hereinafter mentioned, 65 by springs 107 and 112.

Rotation of the crank handle 25 therefore results in the out-turned end of 30a of lever 30 being pressed down on the arrested coin, so that latter is forced between pins 28 and 29. Pin 29 is mounted in a plate member 42 which is pivoted at 43 and is biased in the clockwise direction in Figure 3 by spring 44. Therefore as the coin is pressed down pin 29 yields so that the coin can pass downwards between the two pins. On emerging from the gap between these pins the further path of the coin is determined by a deflecting pin 144 (the selector aforesaid) carried by a lever 45 pivoted at 46. In the position of pin 144 shown in Figure 3 the coin passing down a narrow space at the back of plate 47 will fall into a coin receptacle or coin tube 48.

In the alternative position of pin 44 at the bottom end of a slot 49, the coin will be deflected down chutes 47a and 50 into the jack-pot 21 which at the rear has a movable discharge door 51 hinged along a horizontal axis at the region 51a in Figure 3. When this door is opened as hereinafter described the contents of the jack-pot 21 will be delivered down chute 52 to a delivery pocket 53 (Figure 1) from which the coins may be removed by the operator.

The frequency with which the deflecting or selecting pin 44 is moved to a position in which an inserted coin is diverted into the jack-pot 21 is controlled by mechanism hereinafter described.

Movement of member 42 about its pivot 43 as the inserted coin is pressed downwards by lever 30 operates a pawl 54 to step around a ratchet wheel 55 comprised in a counting device. In due course a pin 57 on the ratchet wheel makes contact with the underside of a lever 56 pivoted on the pin axis 58 and connected to lever 45 by a lost motion connection. This results in lever 45 being moved in the anti-clockwise direction (Figure 3) so as to displace selecting pin 144 to a position in which the inserted coin is diverted into the jack-pot. The starting position of the ratchet wheel 55 is determined by a pin 59 which initially engages the top side of lever 56 and may be placed selectively in any one of a number of alternative holes 60. Thus the positioning of pin 59 controls the frequency with which an inserted coin is diverted into the jack-pot 21. Member 42 is temporarily held in its displaced position by a catch 85 which, on completion of rotation of crank handle 25, is lifted and released by a pin 86 on lever 30. Ratchet wheel 55 is biased in the anti-clockwise direction, Figure 3, by a pivoted weight 113 and a flexible connection 114 wound round a spool (not shown) on the wheel.

The displacement of pin 29, and movement of member 42 about its pivot 43, 130

results in a tie rod 61 being pulled upwards. This tie rod is connected at 62 to a lever 63. This lever 63 has a horizontal arm near the front end of which it is pivoted and the rear end of which has a downwardly depending and substantially vertical arm. Upward movement of tie rod 60 therefore results in this depending arm being swung rearwards. The retaining pin 20 shown in Figure 1 is connected to it; therefore this pin 20 is withdrawn from its obstructing position in the base of the loss receptacle 19 and permits the balls therein to fall down and pass through the gap 22 on to a starting portion of the spiral 14 where they are temporarily retained by a pin 64. Lever 63 also has a projection 65 engaging in a levre 66 pivoted at 67 and having its lower end connected to pin 64. Therefore as lever 63 makes its return movement under the influence of spring 44 and projects the retaining pin 20, it also retracts the retaining pin 64 so that the balls pass to the inclined track 12 and gravitate down it towards its right hand lower end (Figure 1).

The balls thus being presented at the loading station, the operator moves the thumb piece in a clockwise direction (Figures 1, 4 and 5) towards stop 70, this movement being effected against the action of a loading spring 71. On the same spindle 72 as member 24 there is a lever 73 (the striker aforesaid) and a lever 74 having pivoted to it at 75 a push rod 76 (the loader aforesaid). This loader 76 moves between guide pins 77a, 77b (Figures 4 and 5). By this clockwise movement of thumb piece 24 the loader 76 is thus moved upwards. Its upper end face engages beneath and lifts the right hand ball 84 from the track 12 as illustrated in Figure 5. This ball may come to rest on a support 78. If either before or after the raised ball has come to rest on support 78, member 24 is then released, the striker 73 moved by spring 71 strikes the raised ball and projects it along the track 14, movement of the striker being terminated by a buffer 79. It will be appreciated, that dependent on the moment at which the operator releases member 24, the striker 73 may strike the ball either before or after it has reached support 78. This effects the trajectory of the ball so that variation of trajectory is within the skill of the operator; the variation of trajectory in turn effect the path taken by the ball when it emerges from the spiral at the mouth 15.

On emerging at mouth 15 the ball may continue along the right hand part of the spiral (Figure 1) and may descend through gap 22. Alternatively it may strike pins 16 and thereafter the path followed by the ball is a matter of chance. It may descend into the funnel 18 and thence into the loss recep-

tacle 19; it may descend into one of the win receptacles 17a, 17b, 17c. By turning the knob 26 these win receptacles may be rocked about pivots at their lower ends so as to displace their upper ball-receiving mouths sideways. Thus the operator may endeavour to catch a ball. The mechanism for displacing these receptacles is indicated generally at 81 in Figure 2, the spindle of knob 26 being shown at 82.

When a ball 84 enters one of the win receptacles 17a to 17c it gravitates through a slot 87a, 87b or 87c at the back thereof, and through a funnel 88, Figure 3, into a guide 89 and passes through a hole 90 in a plate 91 (Figures 3 and 6) into registering holes 92 and 93 in respective slides 94, 95 and sits on a shelf 96. During rotation of crank handle 25 lever 100 pivoted at its lower end to member 37 draws slide 94 to the right (in Figure 3 or 6). The ball thus couples slides 94 and 95 together so that slide 95 is also drawn to the right and in turn withdraws a pusher plate 97 from the base of the coin receptacle 48 to permit the stack of coins therein to descend by the predetermined amount onto retaining plate 98. In continued movement of slides 94 and 95 to the right the ball eventually passes beyond the right hand end of shelf 96 and drops into a funnel 101 being temporarily retained at the right hand end of the funnel by pin 102 on slide 95. Continued rotation of crank end 25 swings lever 100 to the left. Lever 100 moves slide 94 to the left and, eventually, also makes contact with and moves slide 95 to the left so that pusher 97 pushes the lowermost coin or coins out of the receptacle 48. The discharged coin (or coins) passes down chute 52 to the pocket 53. The number of coins thus discharged from the receptacle 48 in response to a single win ball may be changed by substituting pusher plates 97 of differing thickness.

As slide 95 moves to the left it carries with it pin 102 so that the win ball descends from the funnel 101 into a stacking accumulator 103 where it comes to rest on the end 63a of lever 63.

When a predetermined number of win balls has accumulated in the accumulator 103 the top ball of the stack is utilised as a connecting member in mechanism which serves to discharge the jack-pot 21. For this purpose there is a pusher 104 pivoted to lever 105 which is itself pivoted at 106 to lever 100 and is drawn to the left in Figure 3 by spring 107. In movement of levers 100 and 105 to the left, pusher 104 is checked by the top ball in the stack; hence lever 105 is moved anti-clockwise about its pivot 106. Lever 105 therefore pulls on a rod 108, the end 108a of which is inclined outwards and extends through the hole in

70

75

80

85

90

95

100

105

110

115

120

125

130

lug 109 of the jack-pot door 51 which is thus opened; the contents of the jack-pot thus fall down chute 52 to the pocket 53.

5 The accumulated win balls in the accumulator 103 are subsequently released when a further coin has been inserted in slot 10 and crank handle 25 is operated to swing lever 63 rearwards; the balls pass through chute 110 and drop through hole 10 23, Figure 1, onto the starting portion of the spiral 14.

The coin receptacle 48 is readily removable so that its contents may be removed being held in position by a spring 111.

15 Any suitable means may be provided for causing undersized or bent coins to be bypassed to pocket 53 without operating the mechanism of the machine.

20 Instead of metering or counting the inserted coins into the jack-pot, matters may be so arranged that the inserted coins first go to fill the coin receptacle or the jack-pot and subsequently-inserted coins go to fill the jack-pot or the coin receptacle as the case may be. Instead of the jack-pot 25 containing coins it may hold a small prize such for example as a packet of cigarettes or sweetmeats, which prize is loaded into it manually.

30 WHAT I CLAIM IS:—

1. A coin-operated or freed amusement machine, wherein insertion of a coin makes available for presentation at a loading station a plurality of balls, from a magazine, 35 for projection by an operator-actuated projector along a path leading to deflecting obstructions and thence, fortuitously, to a "loss" receptacle and to at least one "win" receptacle, characterised in that the projector 40 has a single control for the operator and, operated by that single control, a loader which moves a ball from the loading station to a striking station and a spring-loaded striker which projects that ball from the 45 striking station, successive operations of the projector by the operator serving to project seriatim the balls presented at the loading station.

2. A machine according to Claim 1 50 having, at the loading station, an inclined track on which the presented balls rest and

at the lower end of which the loader operates, the balls gravitating along the track to move seriatim into the field of operations of the loader. 55

3. A machine according to either of the preceding claims, having an operator-actuated device for forcing the inserted coin between spaced abutments at least one of which is movable. 60

4. A machine according to Claim 3, having means whereby movement of the movable abutment releases the balls from the magazine. 65

5. A machine according to Claim 3 or Claim 4, having a counting device operable by successive movements of the movable abutment, and a selector movable by the counting device between alternative positions in one of which the coin passes 70 onwards to a coin receptacle and, in the other of which the coin passes onwards to a jack-pot, the counting device being constructed and arranged to determine the frequency with which an inserted coin is 75 passed to the jack-pot.

6. A machine according to Claim 5, wherein the counting device is capable of being pre-set to the required frequency. 80

7. A machine according to any of the preceding claims, having a jack-pot, a stacking accumulator for accumulating, in a stack, balls entering the win receptacle or receptacles, and means whereby the last 85 ball, in a stack of predetermined number, effects discharge of the jack-pot.

8. A machine according to any of Claims 3—6, as modified by Claim 7, having connections operable by the operator-actuated device, in response to the presence 90 of the required number of balls in the stack, to discharge the jack-pot.

9. A machine according to any of the preceding claims, having an operator's control for adjusting the attitude or position of 95 the win receptacle or receptacles.

10. A coin-operated or freed amusement machine, substantially as described herein with reference to the accompanying drawings. 100

ERIC POTTER & CLARKSON,
Chartered Patent Agents.

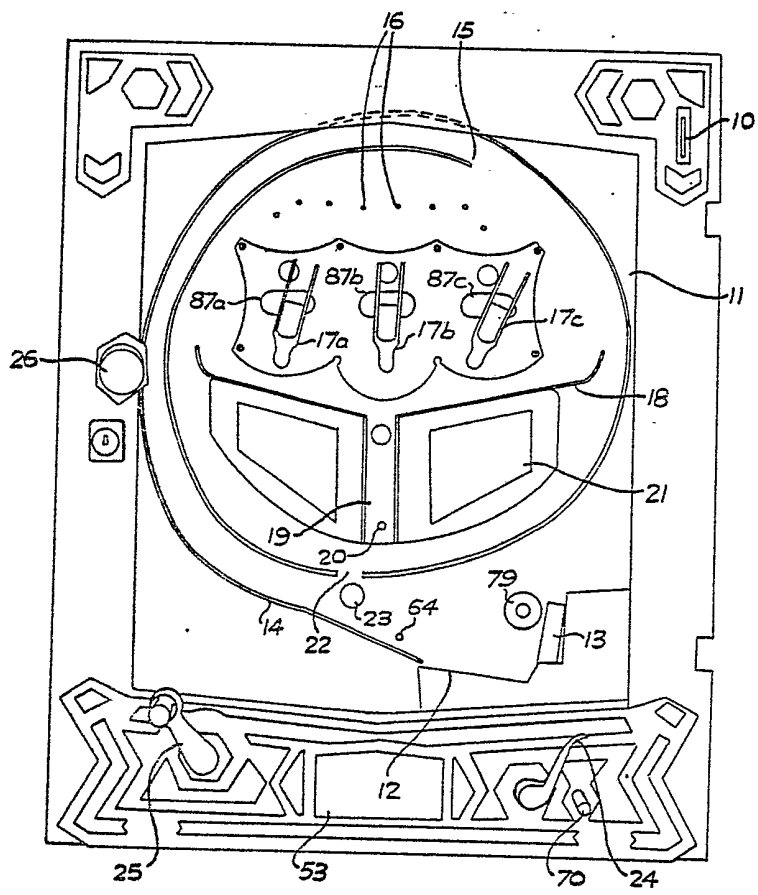


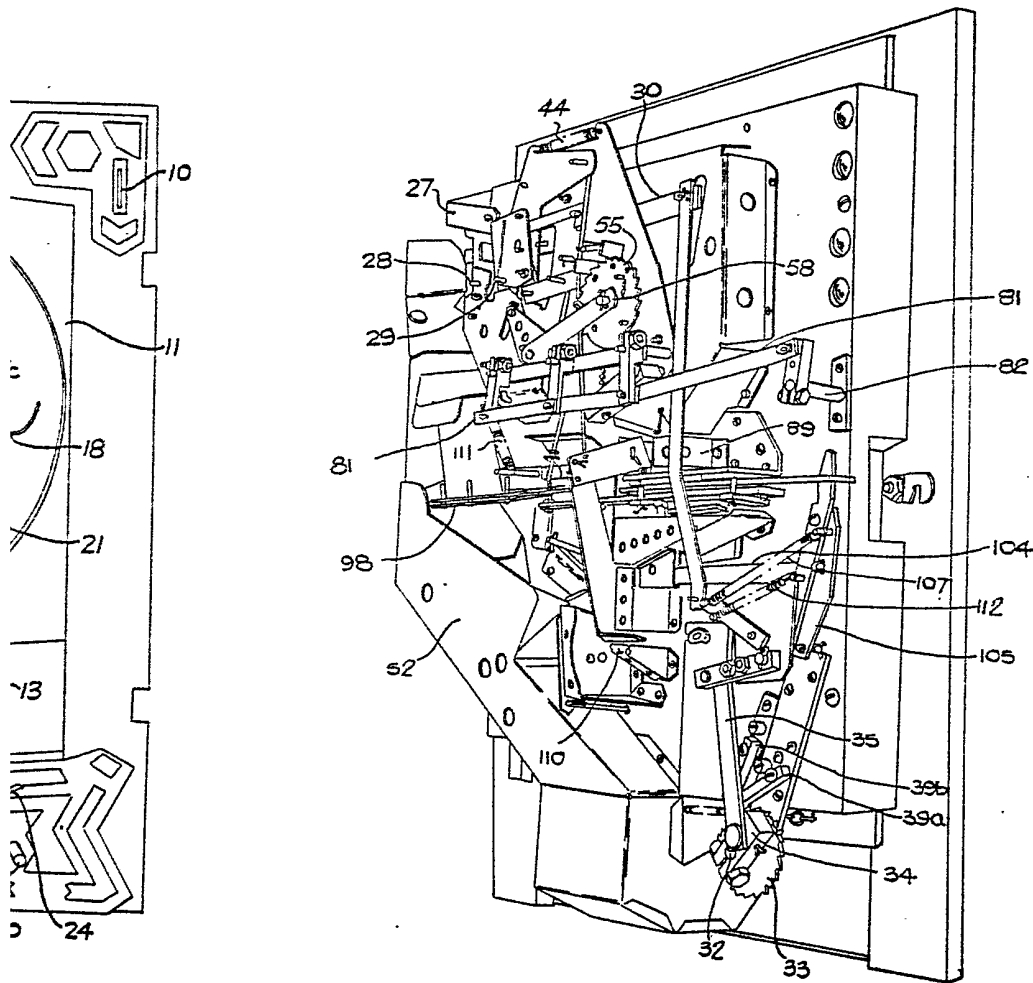
FIG. 1.

913064

COMPLETE SPECIFICATION

4 SHEETS

*This drawing is a reproduction of
the Original on a reduced scale
Sheets 1 & 2*



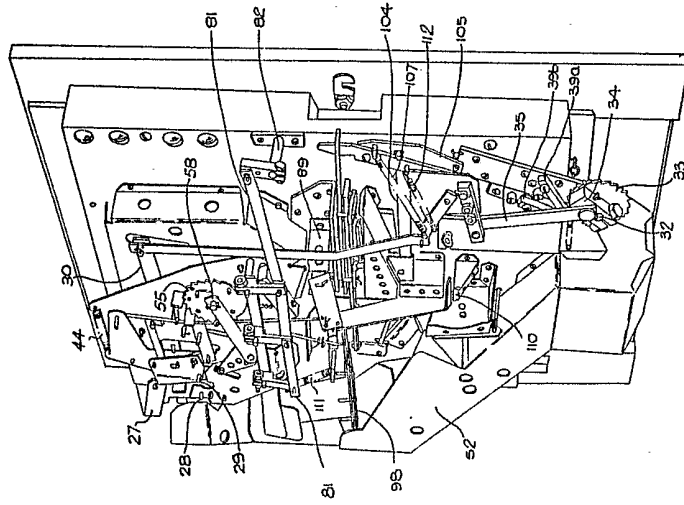


FIG. 1.

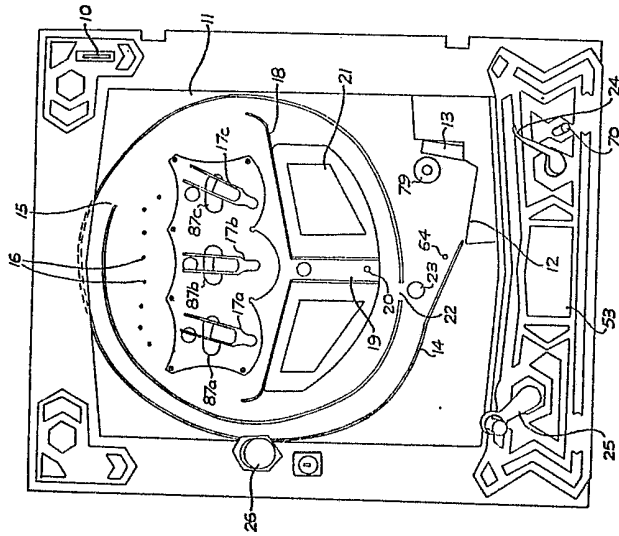


FIG. 2.

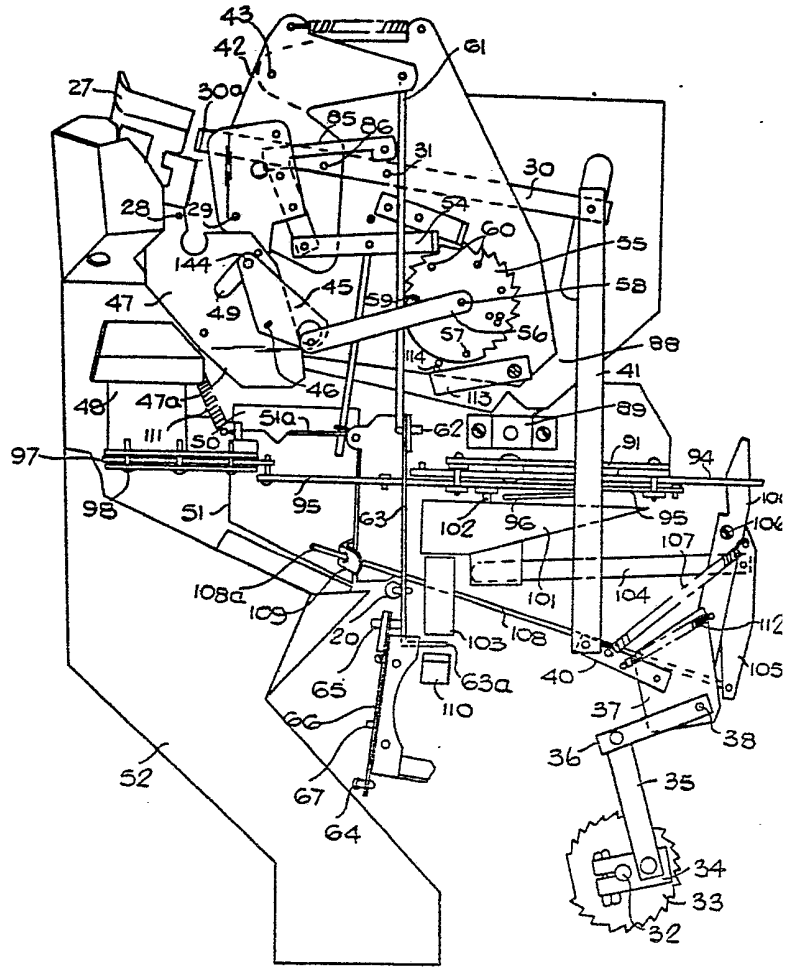


FIG. 3.

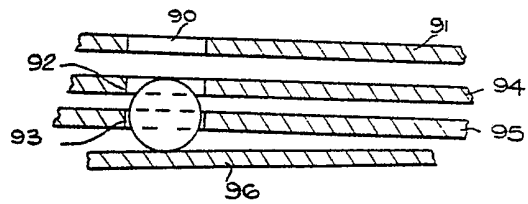
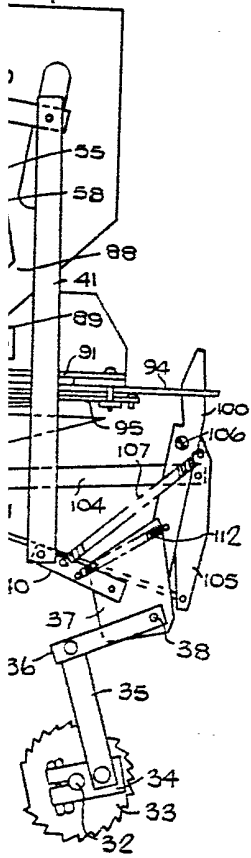


FIG. 6.



94

95

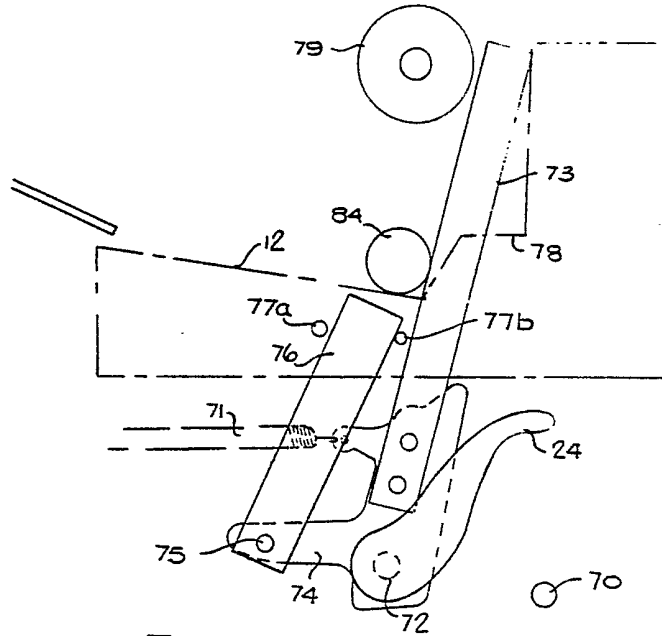


FIG. 4.

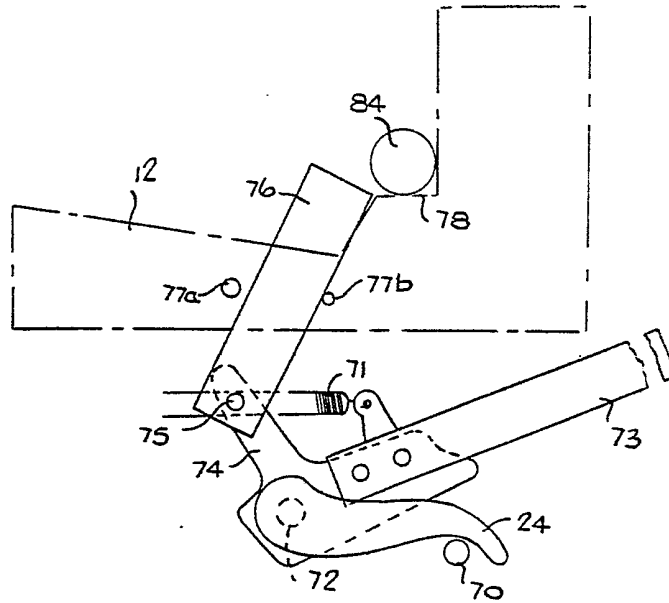


FIG. 5.

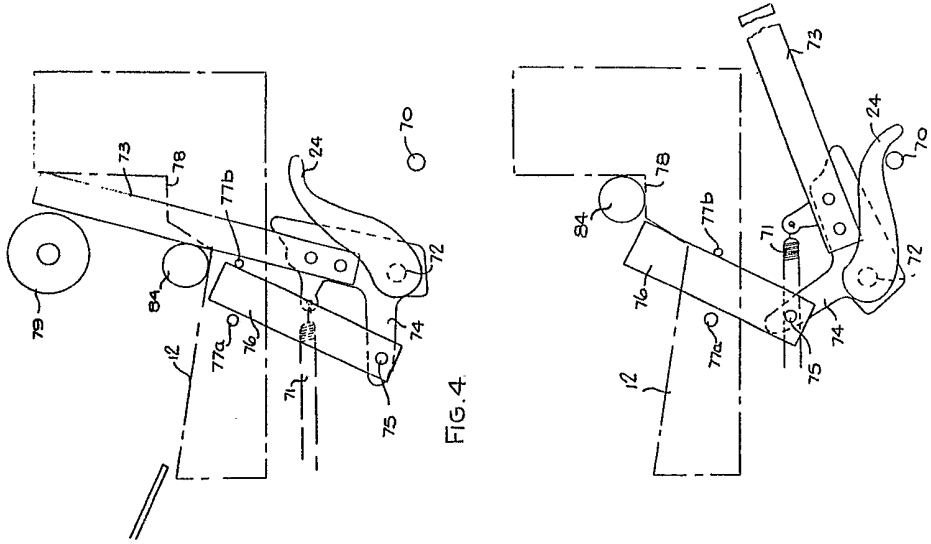


FIG. 4.

FIG. 5.

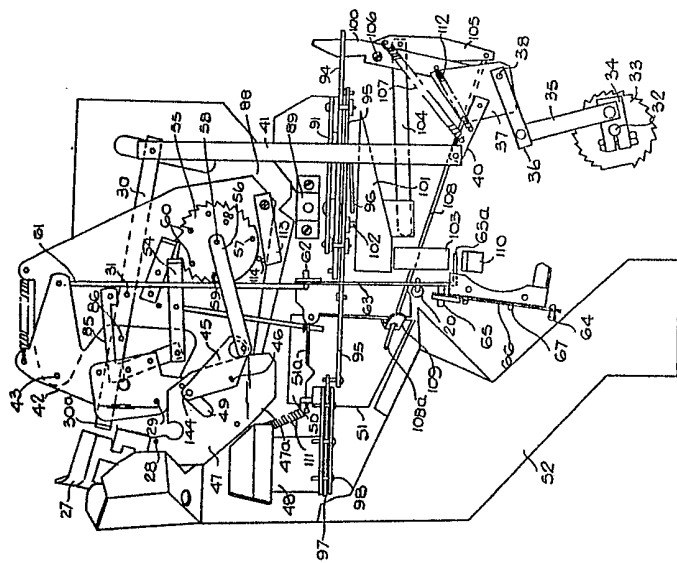


FIG. 3.

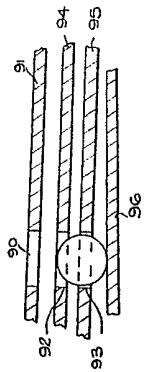


FIG. 6.