

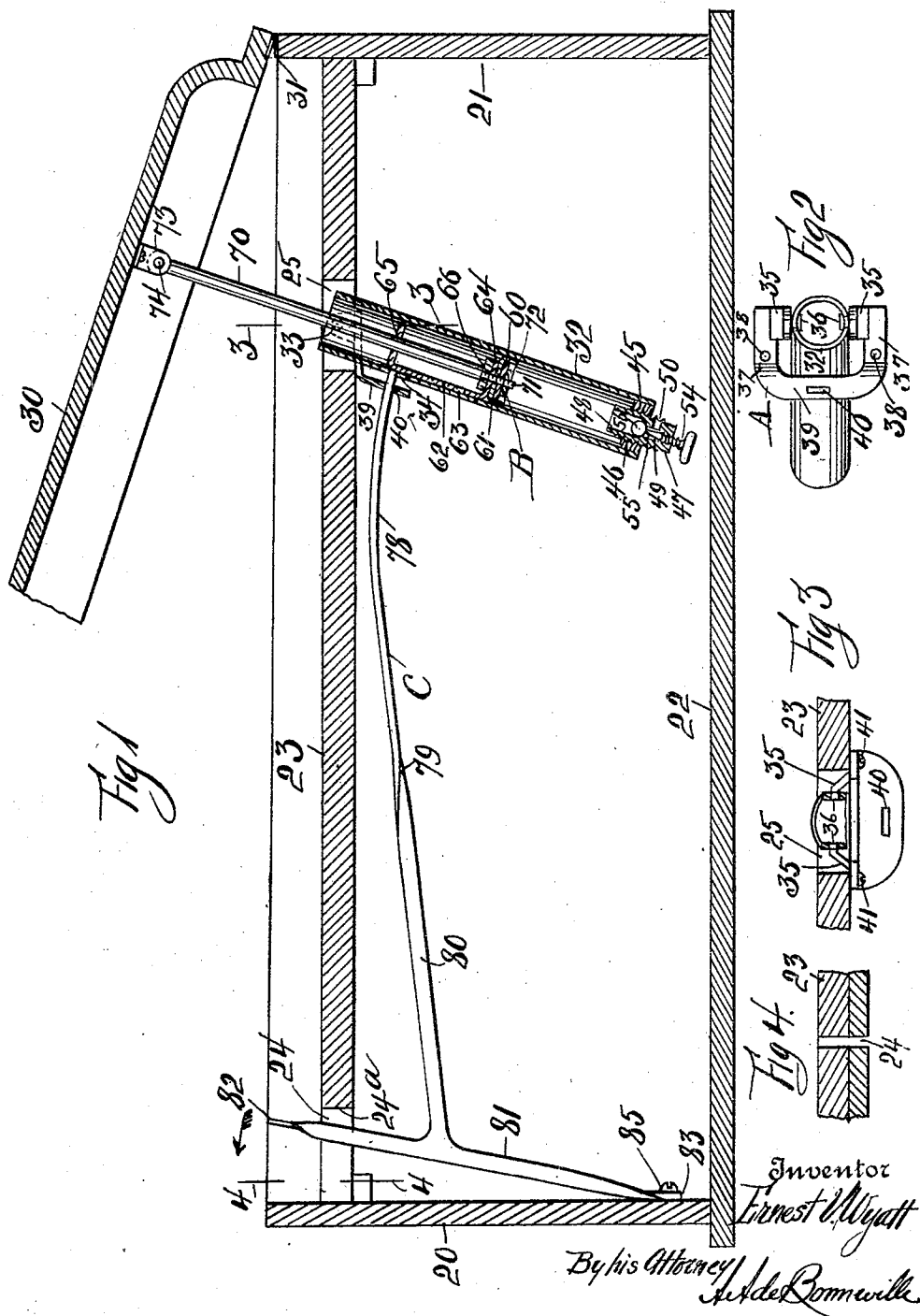
June 30, 1925.

E. V. WYATT

1,544,117

GRAVITY PNEUMATIC LID CHECK

Filed May 16, 1923



UNITED STATES PATENT OFFICE.

ERNEST V. WYATT, OF NEW YORK, N. Y.

GRAVITY PNEUMATIC LID CHECK.

Application filed May 16, 1923. Serial No. 639,356.

To all whom it may concern:

Be it known that I, ERNEST V. WYATT, a citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in a Gravity Pneumatic Lid Check, of which the following is a specification.

10 This invention relates to a gravity pneumatic lid check.

The organization of the invention comprises a pneumatic cylinder with a piston and piston rod. The said rod at its upper end is hinged to a lid of a receptacle. The cylinder is trunnioned to the top wall of the receptacle in an opening therein. The lower end of the cylinder contains a valve for the discharge of compressed air and its operation can be controlled by the operator. A spring tensioned clamping arm locks the piston of the cylinder in place, when it is located in its raised position.

The object of the invention is the production of a gravity pneumatic lid check, by means of which the lid of a receptacle can be lowered without jar or noise and which is automatically locked when in its raised position. A second object of the invention is the production of a pneumatic lid check, in which the pressure of the air therein can easily be controlled for lids of different weight.

Various other objects will be evident from the description and claims.

The lid check is specially applicable to the receptacles of phonographs, but it may be used for various other receptacles and is applicable when a lid or swinging member is to be gently lowered.

In the accompanying drawings Fig. 1 represents a vertical section of a receptacle with its lid, with the pneumatic lid check partially in axial longitudinal section connected thereto; Fig. 2 shows a plan view of some details; Fig. 3 indicates a section of Fig. 1 on the line 3, 3 and Fig. 4 shows a section of Fig. 1 on the line 4, 4.

A receptacle is indicated with the front wall 20, the rear wall 21, the bottom wall 22 and the top wall 23 having the longitudinal guide slot 24 and the opening 25. A lid 30 is hinged to the top edge of the wall 21, by means of the hinge 31.

The lid check is indicated to comprise the

cylinder 32 open at its top end with the journal openings 33 at its upper end and the latch opening 34 in its wall. A bracket is indicated in its entirety by the letter A. The said bracket comprises a pair of inclined members 35, each of which at its upper end terminates in the trunnion 36. Arms 37 with openings 38 extend from the members 35, and an apron 39 with the latch opening 40 connects said arms. The inclined members 35 with their trunnions 36 extend into the opening 25 of the top wall 23. The bracket A is fastened in place by means of screws 41, which extend through the openings 38 in the arms 37 and engage the top wall 23. The trunnions 36 engage the journal openings 33 of the cylinder 32, by means of which said cylinder is enabled to swing to different positions. A head 45 with the interior thread 46 is fastened to the lower end of the cylinder 32. A threaded sleeve 47 engages the opening 46. An axial opening 48 in the upper end of the sleeve 47, connects with the axial opening 49 at the lower end thereof. A port 50 in the sleeve 47 connects with the opening 49. The lower portion of the opening 49 is threaded for the needle valve 54, having the tip end 55. A ball valve 56 is located in the opening 48 and normally closes the upper end of the opening 49. The tip end 55 of the needle valve 54 can be located to bear up against the ball valve 56 and raise it, so that it will be spaced a predetermined distance from its seat, and thereby predetermined amounts of air can escape from the cylinder as will be described.

A piston is located in the cylinder 32 and is indicated in its entirety by the letter B. The piston comprises the disk 60, upon which is located the cup shaped packing 61. A latch bracket comprises the longitudinal member 62 with the latch opening 63, the lower member 64 and the top guide member 65. A disc 66 bears on the lower member 64. A piston rod 70 extends into the cylinder 32 and has formed at its lower end the threaded shank 71, which latter is smaller in diameter than the main portion of said rod. The threaded shank 71 extends through the openings in the disc 66, the lower member 64, the cup shaped packing 61 and the disc 60. A nut 72 is in threaded engagement with the shank 71 and clamps together the elements thereon. A journal bracket 73 is fastened

to the lid 30 and the upper end of the piston rod 70 is pinned to the bracket 73 by means of the pin 74.

A spring clamping arm is indicated in its entirety by the letter C, and comprises the curved spring member 78 practically in a horizontal plane, which is twisted to a vertical plane at 79 to form the rear member 80. An operating bar 81 extends from the arm 80. The bar 81 at its top end is twisted ninety degrees to form the handle 82, and is also twisted ninety degrees at its lower end to form the foot 83. The foot 83 is fastened to the wall 20, by means of the screw 85, and the upper portion of the arm 81 extends through and is guided in the longitudinal guide slot 24. The outer end of the member 78 extends through the opening 40 in the apron 39. To operate the gravity pneumatic lid check, and to open the lid 30 it is manually raised as indicated in the drawing until the outer end of the curved spring member 78 locks with the latch opening 63 of the latch bracket. The lid 30 will then be securely locked in its raised position. The latch bracket remains in its locked position, by reason of the tension of the arm 78 and bar 81. When it is desired to lower the lid the operator moves the handle 82 in the direction of the arrow D, against the tension of the arm 81, and the outer end of the arm 78 will unlock from the latch opening 63. The lid 30 will then swing down and the piston B will lower in the cylinder 32, against the pressure of the air in the lower end thereof. The pressure of the air is controlled by the position of the tip end 55 of the needle valve 54. If the said tip end 55 does not touch the ball valve 56, the latter is fully seated on its valve seat, completely closing the upper end of the opening 49, and

the only air that can escape from the cylinder 32 is that due to leakage of the piston B. When the tip end 55 bears up against the ball valve 56, some of the air escapes through the opening 49 and the port 50. The amount of pressure in the lower end of the cylinder 32 is thus controlled by the needle valve 54. For lids of heavy weight the pressure in the lower end of the cylinder 32 must be greater than for lids of light weight.

The edge 24^a of the guide slot 24 constitutes a stop for the operating bar 81, to prevent the spring member 78 to extend too far into the cylinder 32.

The present exemplification of the invention is to be taken as illustrative and not limitative thereof.

Having described my invention what I desire to secure by Letters Patent and claim is:—

In a pneumatic check the combination, of a cylinder trunnioned to the wall of a receptacle, a piston adapted to move in said cylinder, a piston rod with one end thereof extending from said piston and its other end pinned to the hinged lid of the receptacle, a spring clamping arm comprising a spring member and an operating bar, the lower end of the bar fastened to a wall of the receptacle and the outer end of the spring member adapted to lock with an element extending from said piston at a predetermined position thereof, said bar adapted to swing to move the spring member and means to control the extent of the swing of said bar.

Signed at the borough of Manhattan, city of New York in the county of New York and State of New York, this 26th day of April A. D. 1923.

ERNEST V. WYATT.