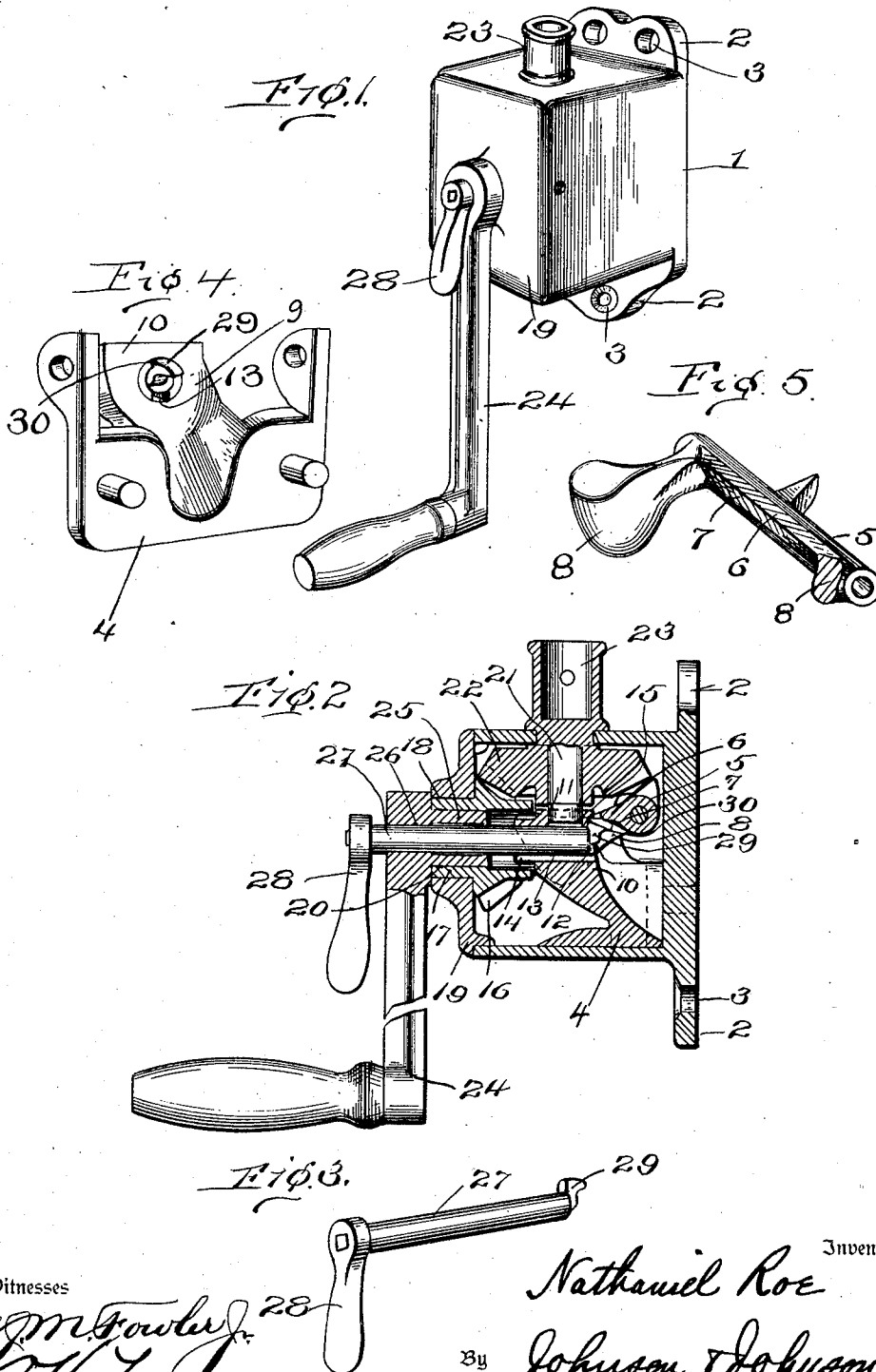


N. ROE.
AUTOMATICALLY LOCKED GEAR BOX.
APPLICATION FILED DEC. 12, 1910.

1,006,405.

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Witnesses

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UNITED STATES PATENT OFFICE.

NATHANIEL ROE, OF PATCHOGUE, NEW YORK.

AUTOMATICALLY-LOCKED GEAR-BOX.

1,006,405.

Specification of Letters Patent.

Patented Oct. 17, 1911.

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To all whom it may concern:

Be it known that I, NATHANIEL ROE, a citizen of the United States, residing at Patchogue, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Automatically-Locked Gear-Boxes, of which the following is a specification.

This invention relates to gear boxes, and more particularly to that class wherein the gears are automatically locked at any desired position.

The object of my invention is to construct a gear box, consisting of a box proper having arranged therein in a compact and unique manner two gears in mesh, and a weighted pawl, with means for driving the gears and controlling the pawl.

With these and further objects in view, as will in part be hereinafter stated, and in part become obvious, the invention comprises certain novel constructions, combinations and arrangements of parts, as hereinafter specifically claimed.

In the drawings:—Figure 1, is a perspective view, Fig. 2, is a sectional view and Fig. 3 is a detail view. Figs. 4 and 5 are detail views.

Referring by numerals to the drawings, 1 represents the casing or housing consisting of a square box cast with flanges 2, said flanges being provided with apertures 3, adapted to receive bolts or screws for securing the box to the side of a window or building, as may be desired. Secured within the box in any desirable manner is a yoke 4, pivoted between the respective ends of which is a pawl 5, said pawl being provided with a flange 6, having a slight depression 7, in the center thereof and corresponding weights 8. This yoke is formed with an arm 9, the end of which is enlarged as shown at 10, said enlarged portion being provided with a vertical central bore 11, and a horizontal central bore 12, the bore 12 being provided with a groove or channel 13. This enlarged portion is also provided with a sleeve 14, which prolongs the bore 12, and a flat bearing surface 15, surrounding the bore 11, as clearly shown in the drawings.

Mounted outside of the sleeve 14, is a small gear 16, having a sleeve 17, which fits an aperture 18, in the top 19 of the box, said top being secured upon the box in any

desirable manner. This sleeve 17, is provided with a square bore 20, adapted to receive the crank.

Mounted on the flat bearing surface 15, upon a shaft 21, which fits into the bore 11, and projects through the wall of the housing is a gear 22, normally in engagement with the pawl 5, said gear 22, being in mesh with the gear 16. The shaft 21 which is adapted to be driven by the gear 22, is provided with a sleeve 23, for the reception of a driving rod adapted to operate any mechanism wherein an automatically locking gear may be employed.

The crank 24, is provided with a square lug 25, adapted to fit snugly into the square bore 20, the lug 25, has a central bore 26, in which is mounted a shaft 27, provided upon one end with a handle 28, and upon its other end with a short angular arm 29, adapted to pass through the groove or channel 13, and to engage the flange 6 and the depression 7 therein upon the pawl, this arm 29, is also adapted to engage a recess 30, in the portion 10, which locks the shaft 27, against rotation.

Mode of operation.—The parts being assembled as described, the handle is inserted. The small handle upon the shaft 27, is turned up so that said shaft can be shoved in, until it is brought in contact with the flange 6, the handle 28, is then turned down so as to force the angular shaped arm 29 up against the flange 6 and into the depression 7, where it is firmly held by said depression and by the weight of the handle 28, and when in such a position, the pawl 5, is released from the gear 22, thereby permitting the turning of the crank 24, and the movement of the gears in order to drive the shaft 21, which in turn drives the mechanism to which it may be connected.

It will be noted that upon raising the handle 28, the gears become at once locked as the pawl immediately engages the gear 22, and when in such a position, the crank and the shaft carried thereby may be withdrawn. The pawl may be further locked or held in a disengaged position by slightly pulling the shaft carrying the handle 27 out, so as to force the angular arm 29 carried thereby into a recess 30, as clearly shown in Fig. 2.

It is thought that the invention will be

fully understood by all conversant in such matters, the extreme simplicity rendering an elaborate description unnecessary.

Having thus described the various features of my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a crank box, in combination with the box proper, a yoke secured in said box, a weighted pawl pivoted between the respective ends of the yoke, said yoke carrying a boss, a horizontal bore in the end of the boss, a vertical bore in said boss, gears in mesh mounted upon the boss, a crank for operating one of the gears, a shaft carried by the crank, said shaft being adapted to pass through the said horizontal bore, an arm carried upon the end of said shaft, said arm being adapted to raise the said pawl, means for locking the shaft against rotation, substantially as specified.

2. In a crank box, in combination with the box proper, a yoke mounted in said box, a weighted pawl pivoted between the respective ends of the yoke, said yoke supporting a boss, gears in mesh mounted upon the boss, an operating shaft, one of the gears being adapted for driving the operating shaft, a crank handle for operating the other gear,

a shaft carried by the crank handle, said shaft having a handle upon one end and an arm upon its other end, the arm upon the shaft being adapted to engage a flange carried by the pawl, and means for locking the shaft against rotation, substantially as specified.

3. In a crank box, the combination with the box proper, a yoke mounted in said box, said yoke having a boss formed integral therewith, a weighted pawl pivoted between the respective ends of the yoke, said pawl having a flange, gears in mesh mounted upon said boss, an operating shaft, one of the gears being adapted to drive the operating shaft, a crank handle for operating the other gear, a shaft carried by said crank handle, a handle upon one end of the shaft carried by the crank, and an arm upon the other end of said shaft, the arm being adapted to engage the flange upon the pawl, and means for locking the shaft carried by the crank against rotation, substantially as shown and for the purpose specified.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."