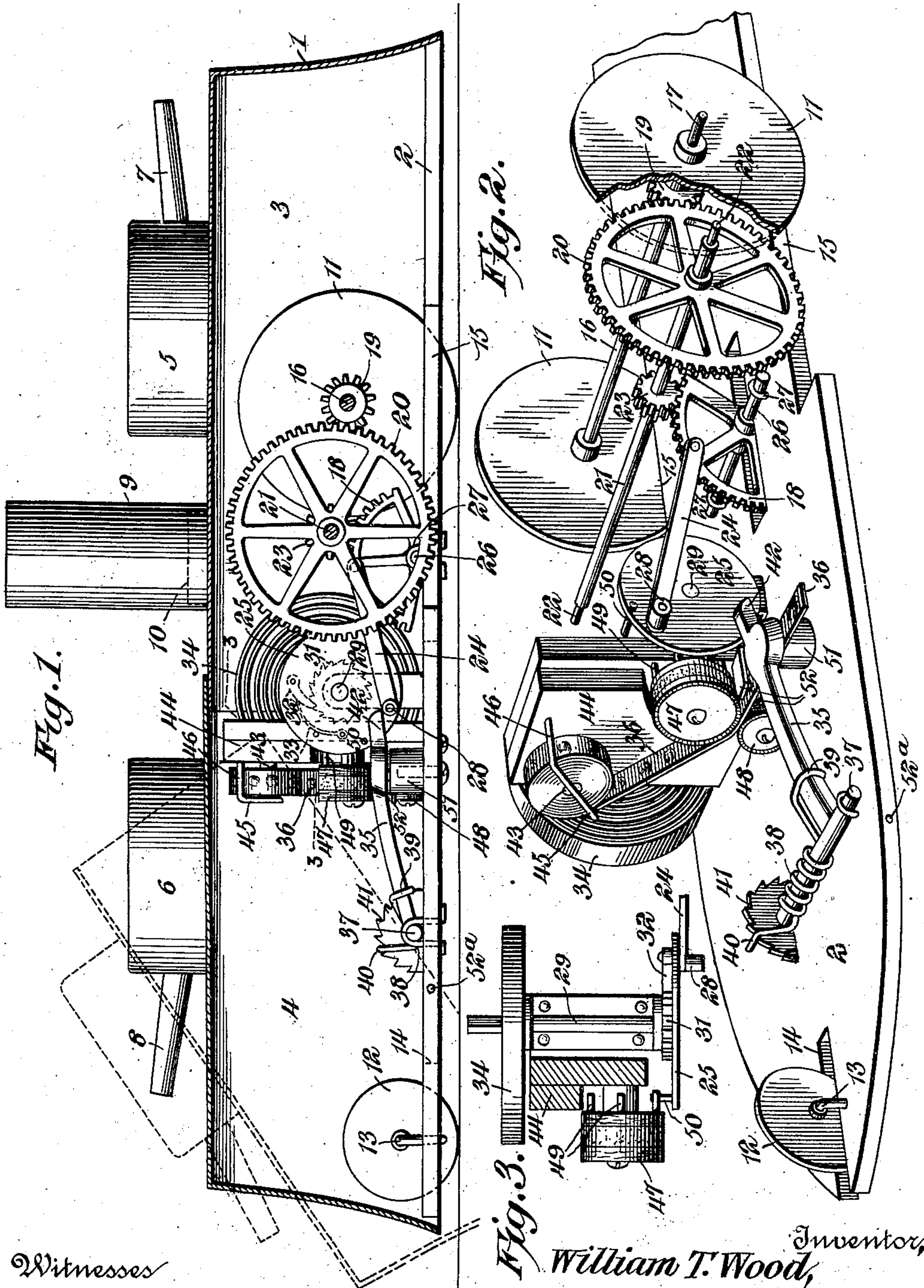


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W. T. WOOD.
TOY BATTLE SHIP.

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TOY BATTLE-SHIP.

No. 840,409.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM THOMAS WOOD, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful Toy Battle-Ship, of which the following is a specification.

The invention relates to a toy battle-ship.

The object of the present invention is to improve the construction of toys and to provide a simple and amusing toy battle-ship adapted to run back and forth and capable of discharging a paper cap while it is stationary or is reversing its motion.

A further object of the invention is to enable the motor to operate the firing mechanism during the interval when the motor is not employed for propelling the toy.

The invention also has for its object to enable a fulminate-ribbon to be fed to the firing mechanism and to provide means for affording ready access to the interior of the toy when it is desired to place a roll of fulminate-ribbon in position to be fed to the firing mechanism.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a longitudinal sectional view of a toy battle-ship constructed in accordance with this invention, the propelling and firing mechanism being shown in elevation. Fig. 2 is a perspective view, the casing being removed. Fig. 3 is a detail sectional view taken substantially on the line 3 3 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates the body of the toy, preferably in the form of the upper portion of a battle-ship, and the said body consists of a bottom 2 and a sheet-metal casing composed of fixed and pivoted sections 3 and 4. The ends of the body of the toy are tapered, and short cylinders 5 and 6 are secured upon the

sections and represent turrets. The cylinders 5 and 6 are provided with projecting tapering tubes 7 and 8, extending toward the ends of the body and representing guns. The fixed section 3 of the sheet-metal casing is also provided with a removable smoke-stack 9, of cylindrical form, detachably fitted on a projecting flange 10 and adapted to be removed and placed within the body of the toy for compactly arranging the same for shipping or storing. The exterior configuration of the toy may be varied, as will be readily understood, and instead of presenting the appearance of a battle-ship it may have the form of any other fighting-machine.

The body of the toy is supported by a pair of traction-wheels 11 and a pilot-wheel 12, which is loosely mounted on a spindle 13 and which is adapted to wobble to change the course of the toy and cause the same to maneuver. The spindle 13 has its terminals bent downward and embedded in the bottom, which is preferably constructed of wood and which is slotted or bifurcated at one end at 14 to receive the wheel 12. The bottom is recessed or cut away at 15 to permit the traction-wheels to extend through it and rest upon the floor or other supporting-surface. The traction-wheels are fixed to an axle or shaft 16, which is journaled at its ends 17 in suitable bearings of the sides of the fixed section 3, and which is connected by a train of gears with an oscillatory segment 18, whereby the traction-wheels will be rotated for a period of time in one direction and will then be reversed and rotated in the opposite direction, thereby causing the toy to move back and forth. The gears of the train may be of any desired number and of any desired size to cause the toy to move at the desired speed and to adapt the propelling mechanism to the size of the toy to be propelled; but the said train preferably comprises a pinion 19, which is suitably fixed to the shaft or axle 16 and which meshes with a gear-wheel 20 of a counter-shaft 21. The counter-shaft, which is disposed transversely of the toy, is journaled at its ends 22 in suitable bearings of the sides of the fixed section 3 of the sheet-metal casing, and it is provided with a pinion 23, which meshes with the oscillatory segment 18. The oscillatory segment, which is connected by a rod 24 with a crank-wheel 25, is mounted on a shaft 26, journaled in

suitable bearings 27 of the bottom 2, and the latter is slotted beneath the segment to permit a free movement of the same.

The crank-wheel, which is provided with an eccentrically-arranged wrist-pin 28, is mounted on a winding-shaft 29 of the spring-motor and is connected with the said winding-shaft by means of a clutch. The clutch consists of a ratchet-wheel 31 and a pawl 32, which is held in engagement with the ratchet-wheel by means of a spring 33. A barrel-spring 34 is connected at its inner end with the winding-shaft and is suitably fixed at its outer end and is adapted to actuate the crank-wheel, as will be readily understood. When the crank-wheel is rotated, the connecting-rod will be reciprocated and will oscillate the segment 18, and rotary motion will thereby be communicated through the train of gears to the wheels 11 of the toy.

When the oscillatory segment reaches the limit of its movement in one direction, the toy will stop, and the propelling mechanism will remain inactive while the connecting-rod is passing around the dead-center of the crank-wheel. The power of the spring-motor, which would otherwise be unemployed except to carry the connecting-rod around the dead-center, is utilized at one of the dead-centers for operating firing mechanism, which preferably consists of a spring-actuated hammer 35, provided at one end with a head for engaging a strip 36 of fulminate-ribbon and having a pivot 37 at its other end. The pivot 37, which extends laterally from opposite sides of the shank or stem of the hammer, is journaled in suitable bearings of the bottom of the toy, and one of its extended portions has a coiled spring 38 disposed on it. One end 39 of the coiled spring is extended and engaged with the hammer, preferably by bending it partially around the same, as clearly shown in Fig. 2 of the drawings. The other end of the spring is extended to form a substantially L-shaped arm 40, which is engaged with a tooth of a segmental ratchet 41, rigidly mounted on the bottom of the body of the toy and preferably provided with an opening receiving one end of the pivot of the hammer. By engaging the L-shaped arm 40 of the coiled spring with the teeth of the fixed ratchet, the tension of the spring may be regulated to throw the hammer into engagement with the fulminate-ribbon with the desired force. Also the spring may be controlled or adjusted to suit the power of the spring-motor, which is adapted to raise the hammer, as hereinafter explained. The engaging end of the hammer is provided with a projection 42, which is arranged in the path of the wrist-pin and which is adapted to be lifted by the same. The projection of the hammer is located adjacent to one of the dead-centers of the connecting-rod, and the greater portion of the

upward movement of the hammer takes place while the wrist-pin is passing around the dead-center and when the motor is not employed for propelling the toy.

The fulminate-ribbon is arranged in the form of a roll and is placed on a horizontal pivot or spindle 43, which projects from a support 44, on which the spring-motor is mounted. The ribbon is retained on the pivot by means of a pivoted arm 45, provided at one end with a pivot or stem 46, which is also mounted on the support. The pivoted arm is adapted to be swung away from the pivot to permit a roll of fulminate-ribbon to be arranged on the same, and after the roll of ribbon has been placed in position the arm is swung back to a point adjacent to the outer end of the pivot, whereby the roll will be retained on the same. The free end of the ribbon is passed between a pair of feed-rolls 47 and 48, mounted on suitable spindles, which are secured to the support 44. The feed-rolls are located above and below the free end of the pivot, and the upper roll is provided at one of its faces with a series of projecting pins or teeth 49, arranged to be engaged by a projecting pin or tooth 50 of the crank-wheel, whereby the feed-roll will be moved the distance of one tooth at each revolution of the crank-wheel. The projecting pins or teeth of the upper feed-roll are placed the proper distance apart to feed the fulminate-ribbon the proper distance, so that the fulminate will be brought over an anvil or support 51. The feed-rolls are designed to be provided with rims of felt or other suitable material for enabling them to engage the ribbon or strip with the necessary friction to positively feed the same. A ribbon-guide 52 is arranged adjacent to the hammer at a point between the anvil or support 51 and the feed-rolls for holding the ribbon in proper position and for preventing the same from adhering to and being lifted by the hammer. The guide 52 consists of a pair of spaced horizontal flanges or portions located above and below the ribbon and extending from a suitable support.

The firing mechanism might be duplicated, so that a discharge will take place while the wrist-pin is passing around each of the dead-centers of the crank-wheel, and as this is an obvious change or duplication illustration thereof is deemed unnecessary.

The section 4 of the sheet-metal casing of the body of the toy is pivoted at 52^a at opposite sides of the bottom 2, and it is adapted to be swung upward, as illustrated in dotted lines in Fig. 1 of the drawings, to afford access to the interior of the toy. The pivots of the section 4 are located at a point between the center and the outer end of the section, so that the inner portion of the section will be heavier than the outer portion to retain it in its normal position. The inner end of the

pivoted section overlaps the adjacent end of the fixed section, as clearly illustrated in Fig. 1 of the drawings, in order to present a neat appearance at the joint.

5 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination of a movable body, a motor for propelling the same, means for reversing the motion of the body, firing mechanism, and means for operating the firing mechanism at the reversal of the movement of the body.

2. In a device of the class described, the combination of a movable body, a motor for propelling the same, means for causing the body to move forward and backward, firing mechanism, and means for actuating the firing mechanism in the interval between the forward and backward movements.

3. In a device of the class described, the combination of a movable body, a spring-motor for moving the same, devices connected with the motor for causing the body to move forward and backward, firing mechanism, and means actuated by the said motor for operating the firing mechanism in the interval between the forward and backward movements.

4. In a device of the class described, the combination of a movable body, a motor for propelling the same, said motor being provided with a crank element, and firing mechanism arranged to be operated by the crank element.

5. In a device of the class described, the combination of a movable body, a motor for propelling the same, said motor being provided with a crank element, and firing mechanism arranged to be operated by the crank element while the same is passing around the dead-center.

6. In a device of the class described, the combination of a movable body, a motor, gearing for communicating motion from the motor to the body embodying a crank element, said gearing being also provided with means for reversing the motion, and firing mechanism arranged to be operated by the crank element while the same is passing around the dead-center.

7. In a device of the class described, the combination of a movable body, a motor, and means for communicating motion from the motor to the body, said means embodying an oscillatory segment for reversing the motion, a crank element, and a connecting-rod extending from the crank element to the segment, and firing mechanism arranged to be operated while the crank element is passing around the dead-center.

8. In a device of the class described, the combination of a movable body, a motor, means for communicating motion from the motor to the body, said means embodying a

crank element, and firing mechanism having a spring-actuated hammer arranged in the path of the crank element.

9. In a device of the class described, the combination of a movable body, a motor, means for communicating motion from the motor to the body, said means embodying a crank element, and firing mechanism arranged to be operated by the crank element and comprising a pivoted hammer, a fixed segmental ratchet, and a spring having opposite ends connected respectively with the hammer and with the segmental ratchet.

10. In a device of the class described, the combination of a movable body, a motor, means for communicating motion from the motor to the body, said means embodying a crank element, firing mechanism arranged to be operated by the crank element, and means also operated by the crank element for feeding a fulminate strip or ribbon to the firing mechanism.

11. In a device of the class described, the combination of a movable body, a motor provided with means for communicating motion to the body, firing mechanism operated by the motor, and means also operated by the motor for feeding a fulminate strip or ribbon to the firing mechanism.

12. In a device of the class described, the combination of a movable body, firing mechanism mounted on the body, a motor for propelling the body, and means actuated by the motor for operating the firing mechanism.

13. In a device of the class described, the combination of a movable body, firing mechanism mounted on the body, a motor for propelling the body, means for feeding explosives to the firing mechanism, and means actuated by the motor for operating the firing mechanism and also the explosive-feeding means.

14. In a device of the class described, the combination of a movable body, a motor, a crank element, means for communicating motion from the crank element to the body, firing mechanism arranged to be operated by the crank element, feed wheels or rolls arranged to feed a fulminate strip or ribbon to the firing mechanism, one of the wheels being provided with projections or teeth, and means carried by the crank element for engaging the said projections or teeth.

15. In a device of the class described, the combination of a movable body, a motor, means for communicating motion from the motor to the body, firing mechanism operated by the motor, a ribbon-guide arranged to guide a ribbon to the firing mechanism, and ribbon-feeding means also operated by the motor.

16. In a device of the class described, the combination of a movable body, a motor, means for communicating motion from the motor to the body, firing mechanism oper-

ated by the motor, a pivot arranged to receive a roll of fulminate-ribbon, a movable device for retaining the roll on the pivot, and means operated by the motor for feeding the ribbon.

17. In a device of the class described, the combination of a movable body, a motor for actuating the same, firing mechanism also operated by the motor, means operated by the motor for feeding a fulminate strip or ribbon to the firing mechanism, and a ribbon-guide having spaced projecting portions or flanges arranged to receive the ribbon between them.

18. In a device of the class described, the combination of a body composed of a bottom and a casing consisting of fixed and movable sections each having a top and side walls, the movable section being pivotally connected with the bottom at a point be-

tween the center and the outer end of the section, whereby the inner portion of the movable section is heavier than the outer portion.

19. In a device of the class described, the combination of a body composed of a bottom, and a sheet-metal casing consisting of fixed and movable sections, each having a top, and side walls, the movable section being pivotally connected with the bottom and arranged to be moved out of alinement with the fixed section to open the casing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM THOMAS WOOD.

Witnesses:

CHAUNCEY C. FOSTER,
EDWARD W. MORGAN.