E. FRITZ.

TOY.

APPLICATION FILED AUG. 29, 1918.

1,303,787.

Patented May 13, 1919.

4 SHEETS—SHEET 1.

Fig. 1.

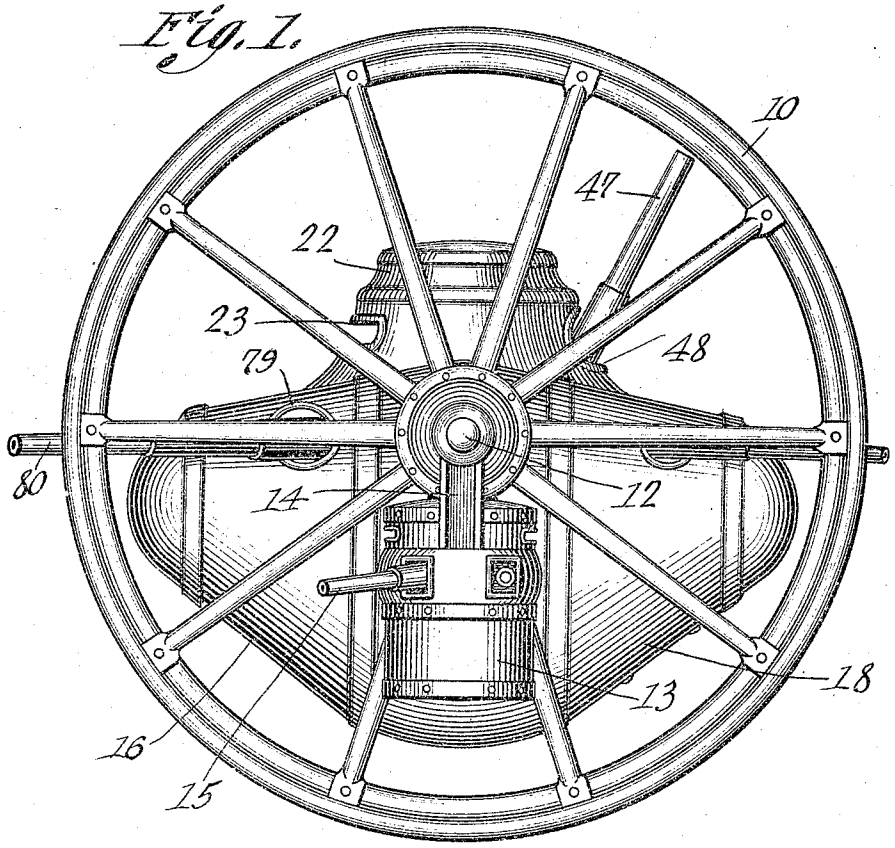
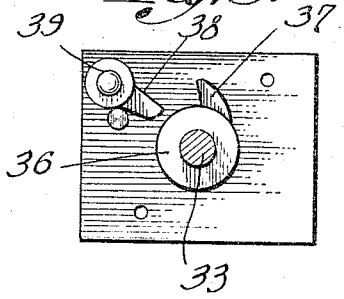


Fig. 9.



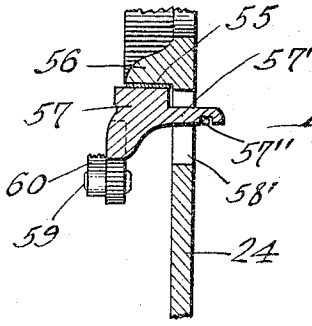


Fig. 10.

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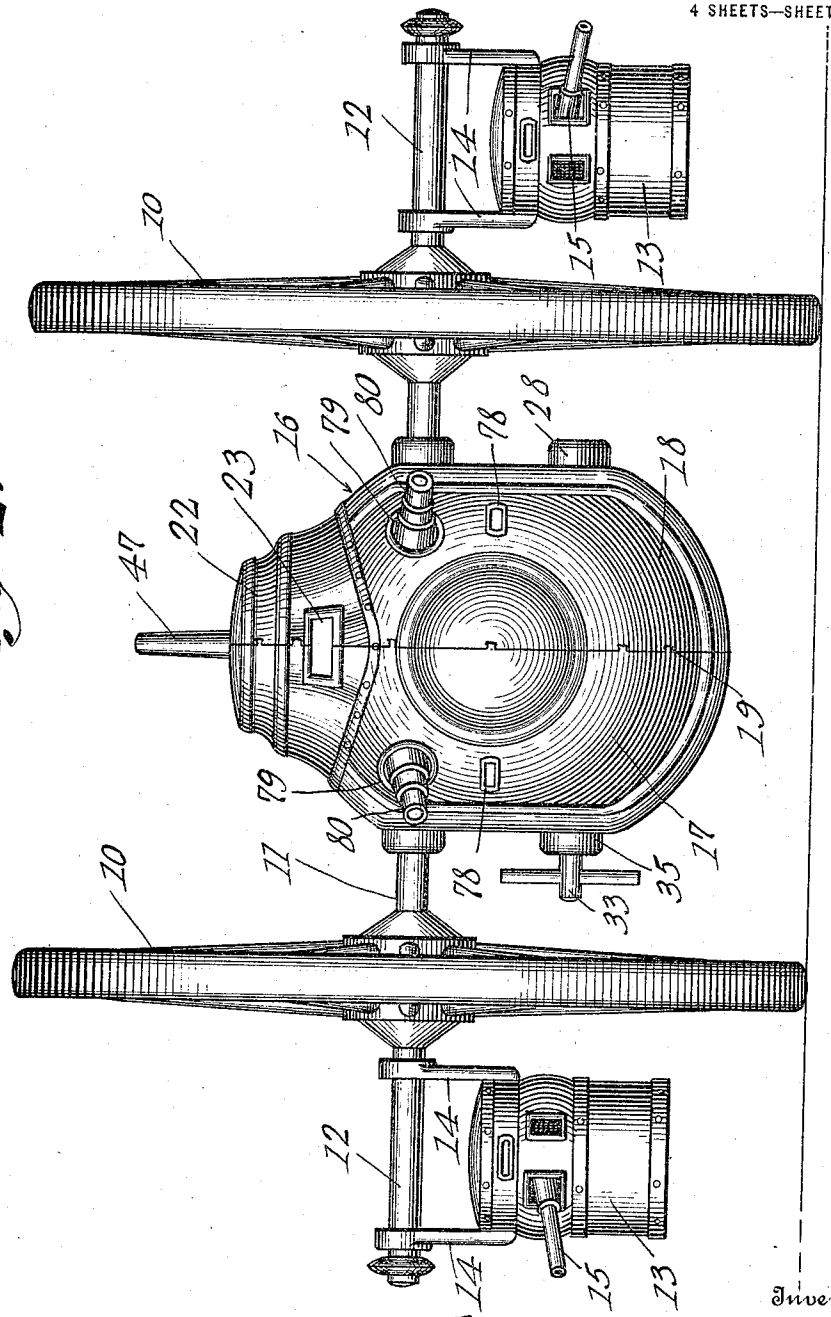
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4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

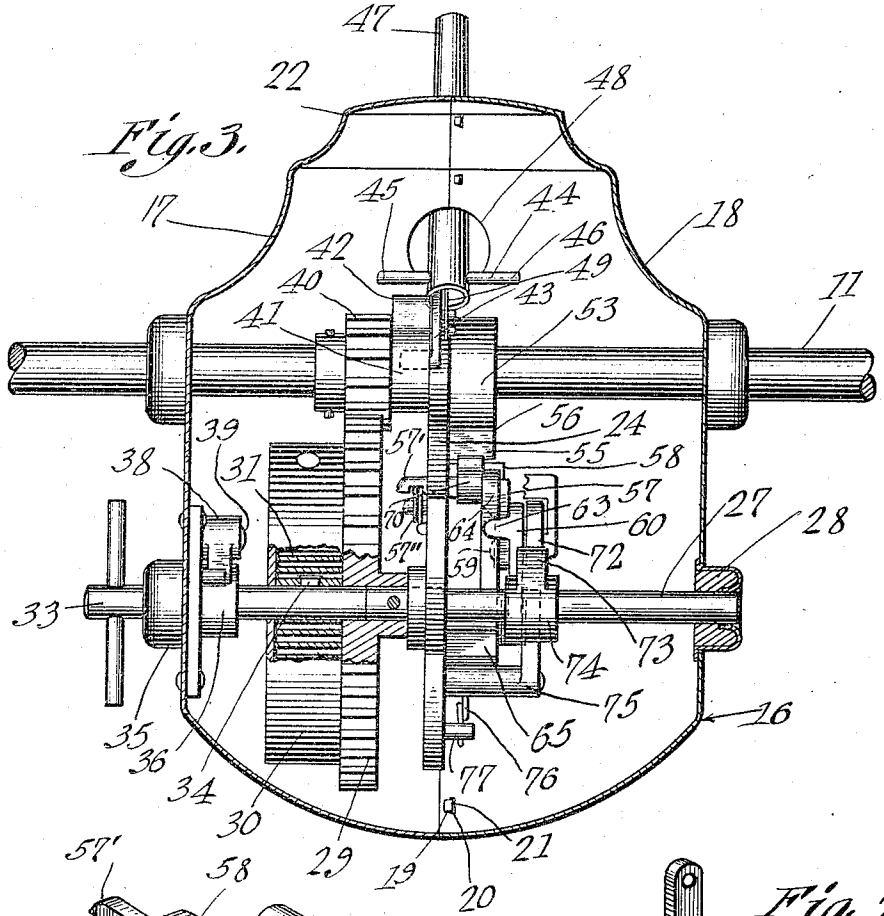


Fig. 6.

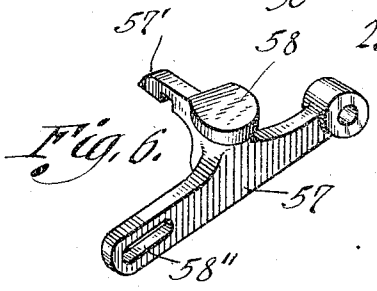


Fig. 8.

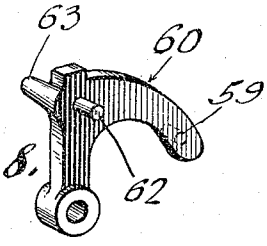
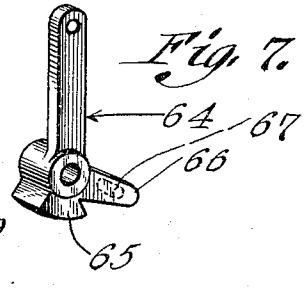


Fig. 7.



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4 SHEETS—SHEET 4.

Fig. 4.

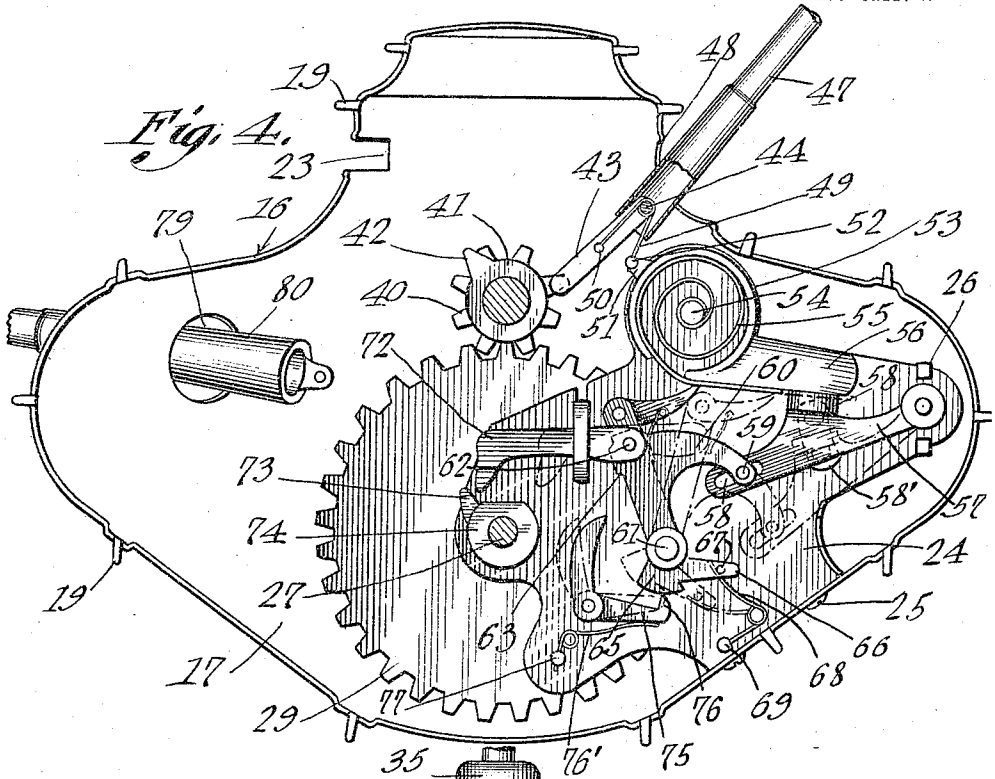
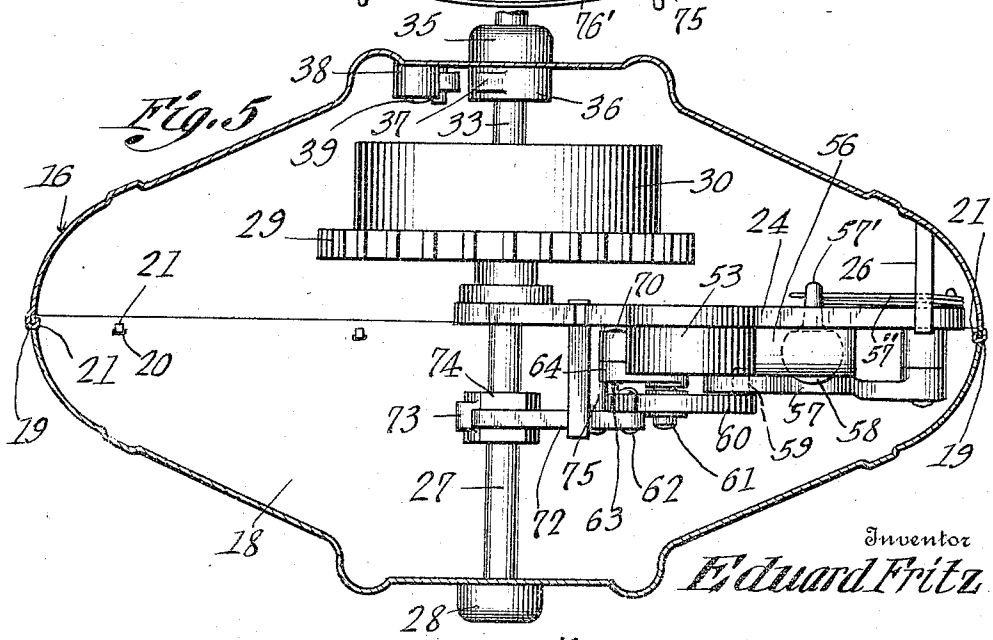


Fig. 5



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1,303,787. Specification of Letters Patent. **Patented May 13, 1919.**

Application filed August 29, 1918. Serial No. 251,931.

To all whom it may concern:

Be it known that I, EDUARD FRITZ, a citizen of the United States, and a resident of Poughkeepsie, in the county of Dutchess and State of New York, have invented new and useful Improvements in Toys, of which the following is a specification.

This invention relates to toys and has particular reference to self propelled automatically actuated toys.

An important object of the invention is to provide a toy of the above mentioned character suggestive of a self propelled overland traveling engine of destruction.

A further object of the invention is to provide in a toy of the above mentioned character a means whereby certain mechanism employed therein may be automatically actuated to successively produce a series of explosions suggestive of the firing of cannon or machine guns.

A further object of the invention is to provide in a toy of the above mentioned character a means whereby the explosive composition may be fed at regular intervals into the mechanism employed as a means for effectuating the successive detonations.

A further object of the invention is to provide in a toy of the above mentioned character a means whereby the device as a whole may be quickly and easily assembled.

Other objects and advantages of the invention will be apparent during the course of the following description taken in connection with the accompanying drawings.

In the drawings, forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of the device embodying my invention,

Fig. 2 is an end elevation of the same,

Fig. 3 is a central vertical transverse sectional view of Fig. 1,

Fig. 4 is a central vertical longitudinal sectional view of Fig. 1,

Fig. 5 is a horizontal longitudinal sectional view of Fig. 1,

Fig. 6 is a perspective view of a firing hammer,

Fig. 7 is a perspective view of a trigger,

Fig. 8 is a perspective view of a trigger operating arm,

Fig. 9 is a side elevation of a pawl and ratchet mechanism, and,

Fig. 10 is a transverse sectional view of a firing hammer, the firing hammer being shown in a coöperative position with respect to an anvil.

In the drawings, wherein for the purpose of illustration is shown a preferred form of my invention, the numeral 10 indicates a pair of wheels provided with a shaft 11, the shaft 11 being extended a substantial distance through the hubs of the wheels 10 to provide a pair of stub shafts 12. From each of the stub shafts 12 there is suspended a turret 13 by means of arms 14, the arms 14 being rotatably mounted upon the stub shafts 12. Within each of the turrets 13 there is arranged a miniature cannon 15.

Upon the shaft 11 substantially intermediate the wheels 10 there is rotatably mounted a casing, which casing is indicated as a whole by the numeral 16. The casing 16 is made up of a pair of substantially oval shaped sections 17 and 18, the section 17 being provided with a plurality of tongues 19 arranged to enter a plurality of openings 20 provided by the section 18, the tongues 19 having their ends bent inwardly as shown at 21 to lock the sections 17 and 18 in their respective positions as shown in Fig. 2. The sections 17 and 18 are of such a contour as to form, when united together as shown in Fig. 2, a dome 22, the dome 22 being provided with an observation port 23.

Within the section 17 there is arranged a wall 24 which is secured in position by means of screws or the like 25 and braced at one end thereof by means of a bracket 26 which is secured to the inner wall of the section 17 as clearly shown in Fig. 5.

Within the casing 16 there is arranged a shaft 27, one end of which is journaled within the wall 24 while the other end thereof is mounted within a journal 28 provided by the section 18 as clearly shown in Fig. 3. To one end of the shaft 27 there is keyed a spur gear 29, to which spur gear there is rigidly connected a casing 30, within which there is arranged a spring 31, one end of the spring being secured to the casing as shown at 32 while the other end of the spring is secured to a shaft 33 as shown at 34. The shaft 33 is arranged co-axially with the shaft 27 and has one end journaled within the gear 29 while the other end is mounted within a journal 35 carried by the section 17. To the shaft 33 there is connected a hub 36, which hub is provided with a lug 37 arranged to coöperate with the pawl 38

which is pivotally connected to the side of the section 17 as shown at 39.

To the shaft 11 there is keyed a spur gear 40 arranged in alinement and having engagement with the spur gear 29. The shaft 11 is further provided with an annular ring 41 carrying a lug 42, the lug 42 being adapted to intermittently engage an arm 43 which is carried by a shaft 44 pivotally connected to the sections 17 and 18 as shown at 45 and 46. To the shaft 44 there is connected a miniature cannon 47, the cannon being projected through a port 48 arranged within the dome 22. In order to retain the cannon 47 normally in the position shown in Fig. 4 there is journaled a spring 49 which is coiled about the shaft 47 and connected with the arm 43 as shown at 50 and with a lug 51. As shown at 52 the lug 51 is arranged upon a container 53.

Within the container 53 there is arranged a spindle 54 adapted to receive a roll of detonation caps 55 which are intermittently fed longitudinally along the lower face of an anvil 56 which is carried by the wall 24.

To one end of the wall 24 there is pivotally connected a firing hammer 57, which hammer is provided with a head 58 arranged to co-act with the anvil 56 as will more readily be understood when considering the hereinafter described operation of the device. The firing hammer is provided with an arm 57′ having engagement with a spring 57″, the arm 57′ being projected through an opening 58′ provided by the wall 24 and the spring 57″ being adapted to move the firing hammer 57 from the dotted line position to the full line position shown in Fig. 4 as will hereinafter be more fully described. Within the free end of the hammer 57 there is arranged an elongated slot 58″ adapted for the reception of a pin 59 carried by a trigger operating arm 60, the trigger operating arm being journaled upon a shaft 61 carried by the wall 24 and provided with a pin 62 and a lug 63. Upon the shaft 61 and in proximity to the trigger arm 60 there is mounted a trigger arm 64, one end of which is provided with a lug 65 and finger 66, the finger 66 being provided with a pin 67 which is adapted for engagement with a spring 68 having engagement with a pin 69 carried by the wall 24. To the upper end of the trigger arm 64 there is pivotally connected a dog 70 which is provided with a spring 71 arranged for retaining the free end of the dog 70 in engagement with the roll of detonation caps as clearly shown in Fig. 4. To the pin 62 carried by the trigger operating arm 60 there is connected a reciprocating lever 72 adapted for intermittent contact with a lug 73 which is carried by a hub 74 secured to the shaft 27.

To the wall 24 there is connected an annular trip arm 75, one end of which is provided with a dog 76 adapted to engage the lug 65, the short end of the trip arm 75 being adapted to intermittently engage the lug 73. In order to retain the trip arm 75 normally in engagement with the lug 65 there is provided a spring 76′ which is connected to the wall 24 as shown at 77.

The casing 16 is provided with a pair of observation ports 78 and with a pair of openings 79 through which openings are projected a pair of miniature cannons 80, the cannon 80 being secured to the inner walls of the sections 17 and 18.

In use, the operation of the device is as follows: Energy is stored within the spring 31 by rotating the shaft 33. Upon the escapement of the spring 31 rotation is imparted to the gear 29 and to the shafts 11 and 27. By the rotation of the shaft 11 linear motion is transmitted to the device as a whole while the rotation of the shaft 27 is utilized to operate the various automatic elements as for example, when the lug 73 is moved into contact with the arm 72 the trigger operating arm 60 is moved forward. The lug 63 carried by the trigger operating arm 60 engages the trigger arm 64. As a result of the engagement between the lug 63 and the trigger arm 64, the trigger arm is moved forward simultaneously with the trigger operating arm. As a result of the forward movement of the trigger operating arm the firing hammer 57 is moved to its dotted line position shown in Fig. 4. As a result of the forward movement of the trigger arm a portion of the roll of detonating caps 55, as is apparent, is moved to firing position between the anvil 56 and the head 58 of the firing hammer 57. When the trigger arm is moved forward a sufficient distance the angular trip arm 75 is permitted to move under the influence of spring 76′ to the dotted line position shown in Fig. 4 whereupon the lug 76 locks the trigger arm in its dotted line position. Immediately subsequent to the locking of the trigger arm in its dotted line position lug 73 is disengaged from arm 72, thereby permitting elements 72, 60 and 57 to assume, under the influence of spring 57″, their respective positions being shown in full lines in Fig. 4. As a result of the impact of the head 58 upon that portion of the roll of detonating caps 55 which has been moved to firing position an explosion or detonation is caused. Immediately subsequent to the movement of elements 72, 60 and 57 from the dotted line position in Fig. 4 to the full line position therein, the lug 73 is brought into engagement with the trip trigger 75 which causes the trip arm to move from its dotted line position in Fig. 4 to its full line position, thereby disengaging lugs 76 from lug 65. As a result of the disengagement between lugs 76 and 65 the trigger arm 64 under the influence of spring 68 is moved from

its dotted line position of Fig. 4 to its full line position therein. With the return of the trigger arm to its normal position one cycle of the various automatically operated elements employed both as a feeding mechanism and firing mechanism for the detonating caps is completed. It is to be understood that a continuous operation of the device will continue to operate successively the various elements as above described. During the operation of the device the lug 42 is moved successively into contact with the arm 43, thereby imparting a vertical oscillatory movement to the cannon 47.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, what I claim as new and desire to secure and protect by Letters Patent of the United States is:

1. A device of the character described comprising a shaft having a pair of wheels connected therewith, a casing suspended from said shaft, said casing being adapted to receive a roll of detonation caps, means for imparting rotation to said shaft, automatically operated mechanism operated by said shaft for intermittently exploding portions of said detonating cap roll, a cannon pivotally connected within said casing, and means for intermittently moving said cannon immediately prior to the explosion of a portion of said roll, the movement of said cannon being dependent for its operation upon the rotation of said shaft.

2. A device of the character described comprising a rotatable shaft, a casing suspended from said shaft, means for rotating said shaft, a receiver arranged within said casing, said receiver being adapted to receive a roll of detonation caps, an automatically intermittently operated hammer arranged to explode portions of said roll in succession, said hammer depending for its operation upon the rotation of said shaft, a cannon pivotally connected within said casing, and means for intermittently moving said cannon immediately prior to the explosion of a portion of said roll, the movement of said cannon being dependent for its operation upon the rotation of said shaft.

3. A device of the character described comprising a shaft having a pair of wheels secured thereto, a casing journaled upon said shaft and suspended therefrom, spring tension means arranged within said casing for rotating said shaft, a receptacle arranged within said casing, said receptacle being adapted to receive a roll of detonating caps, an automatic intermittently actuated hammer arranged to contact with portions of said detonating cap roll, spring tension means for normally retaining said hammer in contact with said cap roll, means for moving said hammer out of engagement with said cap roll, means for locking said hammer out of engagement with said cap roll, an automatically actuated means for releasing said hammer, the last named means being dependent upon the rotation of said shaft for its operation.

4. A device of the character described comprising a shaft having a pair of wheels secured thereto, a casing suspended from said shaft, said shaft being free to rotate within said casing, means for rotating said shaft, a receptacle arranged within said casing, said receptacle being adapted to receive a roll of detonation caps, an anvil associated with said receptacle, a firing hammer adapted to co-act with said anvil, means tending to retain said hammer in engagement with said anvil, means for moving said hammer out of engagement with said anvil, feeding mechanism actuable simultaneously with said hammer means for locking said hammer out of engagement with said anvil, and means for releasing said locking mechanism whereby said hammer may be moved into contact with said anvil.

5. A device of the character described comprising a shaft having a pair of wheels contacting therewith, a casing suspended from said shaft, said shaft being adapted to rotate within said casing, means for rotating said shaft, a receptacle being adapted to receive a roll of detonating caps, an anvil, a firing hammer adapted to normally contact said anvil, means for moving said hammer out of contact with said anvil, means for moving portions of said roll into firing position, means for locking the firing hammer out of contact with said anvil, means for returning said hammer into contact with said anvil whereby a portion of said roll may be exploded, a cannon pivotally connected within said casing, and means for intermittently moving said cannon immediately prior to the explosion of a portion of said roll.

6. A device of the character described comprising a shaft having a pair of wheels secured thereto, a casing suspended from said shaft, a spring arranged within said casing for rotating said shaft, a second shaft journaled within said casing, a receptacle adapted to receive a roll of detonating caps, an anvil, a firing hammer, a trigger arm arranged to intermittently feed portions of said roll into firing position, a trigger operating arm connected with said firing hammer, means intermittently actuated by the second named shaft for moving said trigger arm, and trigger operating arm, means for locking said trigger arm in a retracted position, means for releasing said locking mech-

anism, means for returning said trigger arm to a normal position, means for moving said trigger operating arm to a normal position whereby said firing hammer may be moved into contact with a portion of said detonating roll.

7. A device of the character described comprising a shaft having a pair of wheels secured thereto, a casing suspended from said shaft, said casing being adapted to receive a roll of detonation caps, a firing hammer for exploding portions of said cap roll in succession, a trigger operating arm connected with said firing hammer, a trigger arm, means for intermittently actuating said trigger arm, trigger operating arm and firing hammer simultaneously in one direction, means for moving said trigger arm, trigger operating arm and firing hammer in an opposite direction.

8. A device of the character described comprising a shaft having a pair of wheels secured thereto, a casing suspended from said shaft, said casing being adapted to receive a roll of detonation caps, a firing hammer for exploding portions of said cap roll in succession, a trigger operating arm connected with said firing hammer, a trigger arm, means for intermittently actuating said trigger arm, trigger operating arm and firing hammer simultaneously in one direction, means for returning the trigger arm to a normal position, and means for returning the trigger operating arm and hammer immediately prior to the return of said trigger arm.

9. A device of the character described comprising a shaft having a pair of wheels secured thereto, means for rotating said shaft, a casing suspended from said shaft, said casing being adapted to receive detonation caps, a firing hammer for exploding said caps in succession, intermittently actuated means for moving the caps successively into firing position, a trigger operating arm connected with said hammer, spring tension means tending to retain said hammer and trigger operating arm in their respective normal position, a trigger operating arm adapted to be moved in one direction simultaneously with the trigger operating arm and firing hammer, and means for returning the trigger arm to a normal position subsequent to the return of the trigger operating arm and firing hammer.

10. A device of the character described comprising a shaft having a pair of wheels secured thereto, means for rotating said shaft, a casing suspended from said shaft, said casing being adapted to receive detonation caps, a firing hammer for exploding said caps in succession, intermittently actuated means for moving the caps successively into firing position, a trigger operating arm connected with said hammer, spring tension means tending to retain said hammer and trigger operating arm adapted to be moved in one direction simultaneously with the trigger operating arm and firing hammer, means for locking said trigger arm in a retracted position, means for releasing the locking means, and means for returning said trigger arm to a normal position subsequent to the return of said firing hammer and trigger operating arm to their respective positions.

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