Aug. 7, 1928. 1,680,077

F. E. ALLENDER

TOY CATAPULT

Filed June 13, 1927 2 Sheets-Sheet 1

Fig. 1.

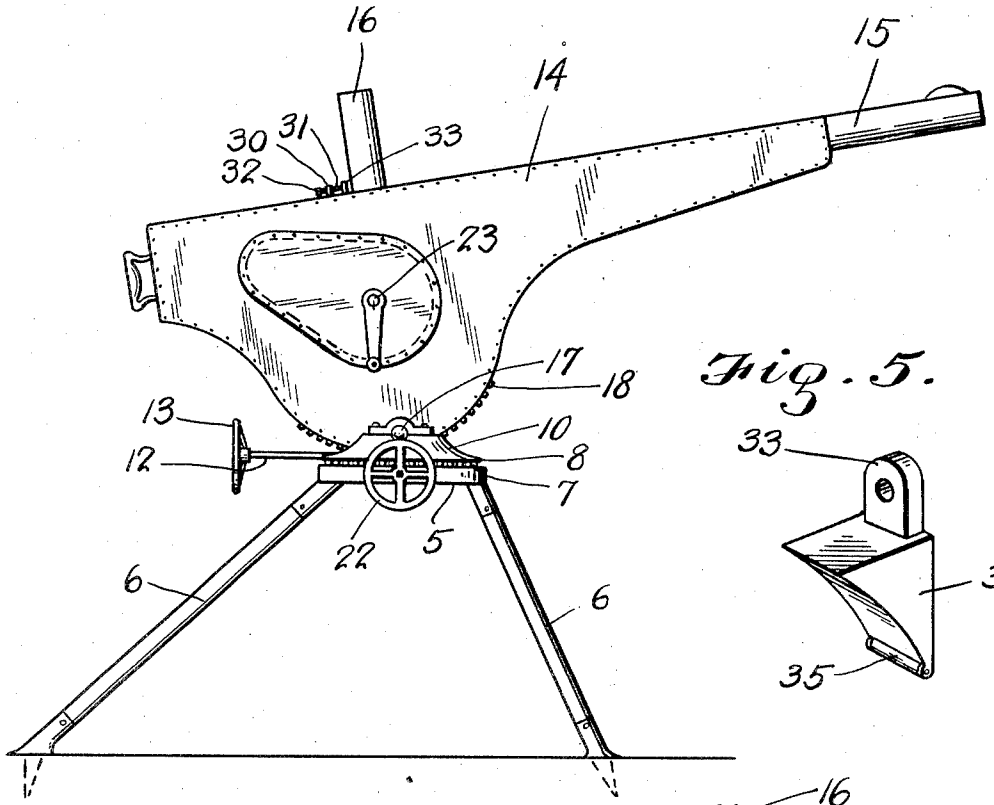


Fig. 5.

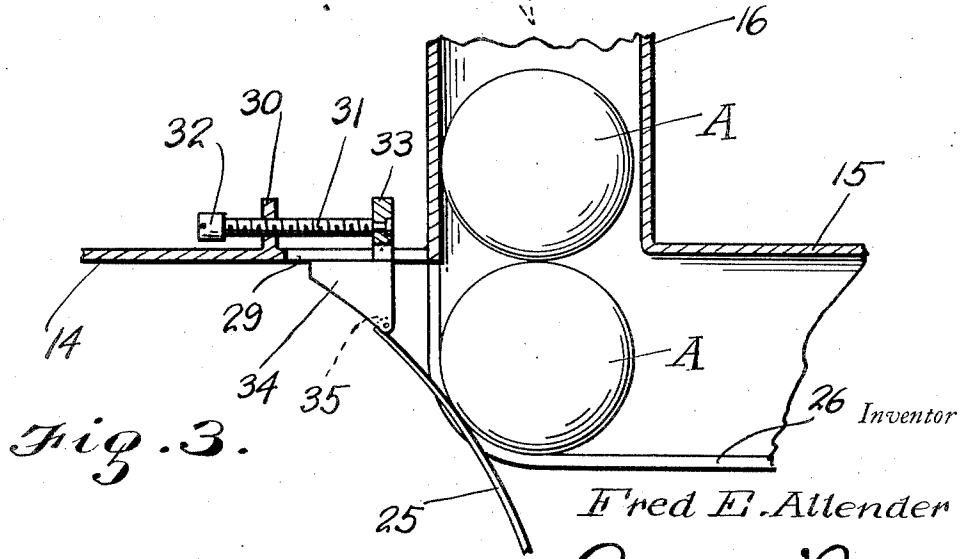


Fig. 3.

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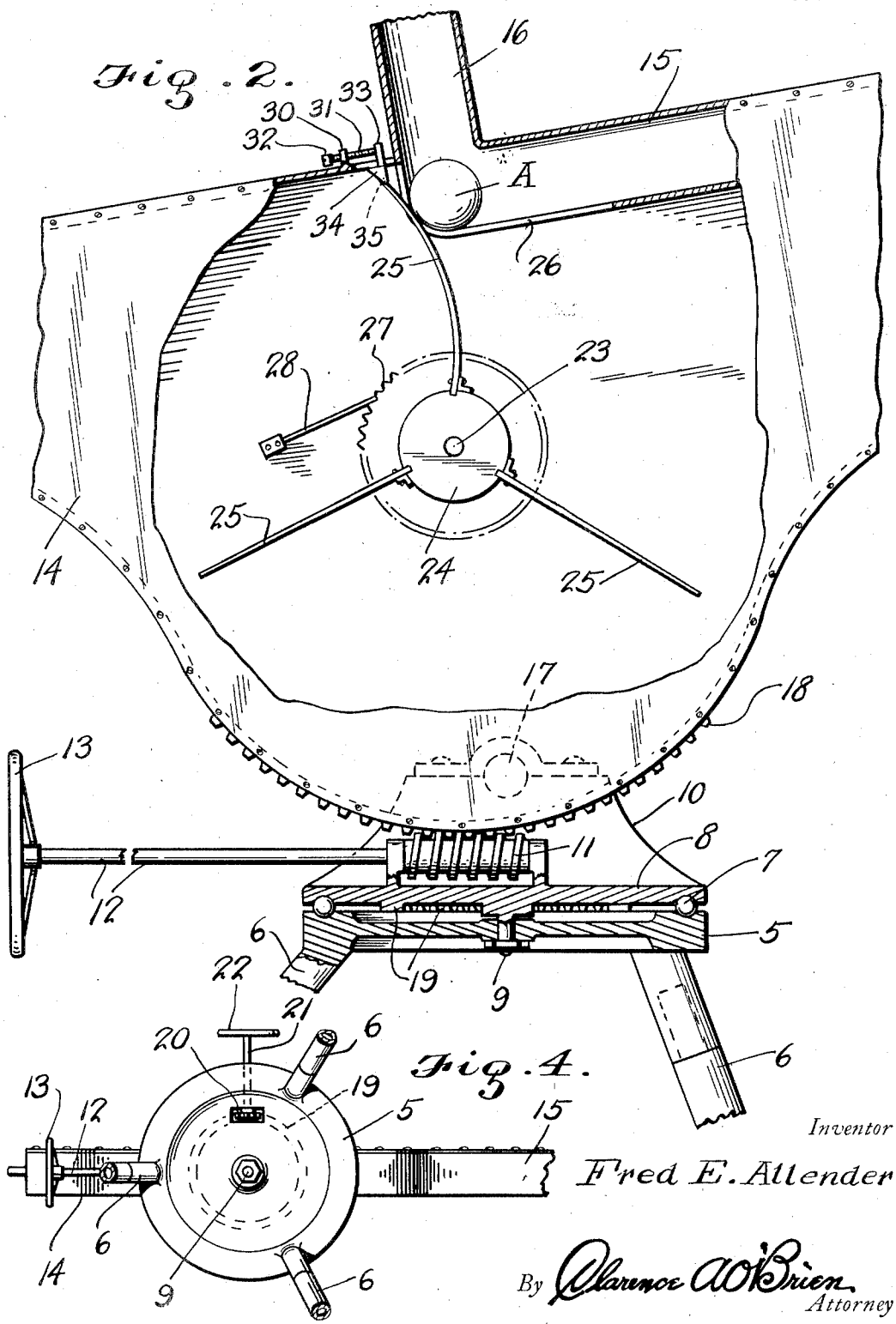
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Fig. 2.



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UNITED STATES PATENT OFFICE.

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TOY CATAPULT.

Application filed June 13, 1927. Serial No. 198,547.

This invention relates to new and useful improvements in toy catapults, and aims to provide a highly novel, simple and amusing device wherein objects may be hurled through the air in rapid manner for knocking down toy soldiers, aeroplanes, boats, etc., but which can, on a larger scale be successfully employed as a trench mortar in throwing hand grenades, incendiary and other kinds of bombs.

Furthermore the device can be so constructed as to be employed for the projection of clay balls in trap shooting, and this in a much more rapid manner than any similar device now in use.

In carrying out my invention, there is provided a construction generally simulating a rapid fire gun, the projecting structure per se, being so mounted upon a supporting tripod as to permit the barrel of the gun to be raised or lowered and to be swung upon a horizontal axis, in order that the projectiles may be discharged in a predetermined direction.

The invention further aims to provide a catapult of the hereinbefore mentioned character that is of exceedingly simple construction, the same embodying but few parts and these so compactly and mechanically efficiently arranged, as to reduce the possibility of breakage and inoperation to a minimum.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the drawings.

In the accompanying drawings forming part of this application:—

Figure 1 is a side elevation of my improved catapult.

Fig. 2 is an enlarged fragmentary sectional view for more clearly disclosing the supporting means for the projecting unit. wherein said unit may be raised or lowered or swung upon a horizontal axis, and also for more clearly disclosing the projecting mechanism per se.

Fig. 3 is an enlarged fragmentary section through the projectile barrel and feed chamber therefor, also disclosing the means whereby the force of the projecting elements may be regulated.

Fig. 4 is a bottom plan view of the catapult, and

Fig. 5 is a perspective of the adjusting element per se, for the spring projecting blade.

Now having particular reference to the drawings, my novel catapult consists of a supporting tripod including a circular base 5 from which depends converging and supporting legs 6 preferably of detachable sections.

The base 5 of the tripod is formed at its top face and adjacent its edge with a circumferential channel for receiving ball bearings 7. Disposed upon this base 5 is a circular plate 8 equipped centrally with a depending pivot pin 9 arranged through and secured within a central opening in the tripod base 5, the under side of said plate 8 being also circumferentially channeled for receiving said ball bearings 7, (see Fig. 2).

The top side of this plate 8 is formed at its edge thereof with upstanding and spaced standards 10—10 while located between the standards is a horizontal worm 11 attached to the inner end of a rearwardly projecting shaft 12, the extreme outer end of which is equipped with a hand wheel 13, to facilitate the turning of the worm.

The invention further consists of a projecting unit 14 of sheet metal or other suitable material constructed to simulate the magazine of a machine gun, the forward end of which is shaped to simulate the breech of the gun.

Located horizontally within this unit 14 and projecting through the forward end thereof, is a barrel 15, the rear end of which terminates vertically to provide a projectile feed trough 16, which trough extends above the body of the unit as clearly indicated in Fig. 2.

The opposite side walls of the unit 14 adjacent the lower edge of the magazine portion thereof are equipped with trunnions 17 which are mounted within bearings at the upper edges of the plate standards 10—10. The bottom wall of said magazine simulating portions of the unit 14 is of curved formation and is provided externally with spaced rack teeth 18 for mesh with the teeth of the worm 11, with the obvious result that when the worm is rotated, the unit 14 will be raised or lowered.

Furthermore, the bottom surface of the plate 8 within the edge thereof is formed with a ring gear 19 in spaced relation with the base 5 of the tripod which ring gear has mesh with a gear 20 upon the inner end of a suitably journaled shaft 21, the outer end of which is equipped with a hand wheel 22,

this construction being provided to facilitate the turning of the entire projecting unit upon a horizontal axis.

Located within the projecting unit 14 beneath the feed chamber 16, is a horizontal shaft 23 upon which is mounted a disk 24, the periphery of which is equipped with radiating projecting blades 25 of heavy spring metal, the outer ends of which are adapted to pass through a longitudinal slot 26 within the inner end of the barrel 15 and lower back side of the feed chamber 16 for said barrel, and to engage the lowermost one of the projectiles A located therein.

This shaft 23 is further equipped with a ratchet gear 27 cooperating with which is a spring dog 28 to prevent the reverse rotation of said shaft and consequently the projecting blade 25.

The top wall of the projecting unit 14 is directly in back of the projectile feed chamber 16, and is longitudinally slotted as at 29, while at the rear end of the slot, there is provided an upstanding lug 30 having a threaded opening therethrough. Threaded through this opening is an elongated threaded pin 31, headed as at 32 at its outer end to facilitate the turning of said pin through said lug. The forward end of this pin 31 is swiveled within a tongue 33 that projects vertically through the slot 39, said tongue being formed upon the upper end of an abutment block 34, for the spring blades 25 which block is as clearly disclosed in Figs. 2 and 3, located within the body 14 at the rear end of the barrel 15.

The rear surface of this block 34 is of arcuate shape while the lower end thereof is provided with a roller 35, this block being obviously for the purpose of causing the bowing of the blades 25 which when passing beyond the roller 35 of said block will with great force cause the projection of the projectiles A through the barrel 15, by reason of their tendency to assume a straight position.

Furthermore, the degree of bow may be regulated by the positioning of the block 34 towards and away from the barrel 15, thus regulating the force by which the projectiles are hurled from said barrel 15.

It will thus be seen that I have provided a highly novel, simple, and efficiently operating catapult, that may be employed for the purposes heretofore designated, and even though I have herein shown and described the invention, as consisting of certain detail structural elements, it is nevertheless to be understood that some changes may be made therein without affecting the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new is:—

1. In a catapult of the character described, a chamber, a horizontal barrel within this chamber and projecting through the forward end thereof, the rear end of the barrel being slotted, means for feeding projectiles through the rear end of the barrel, a rotor within the chamber beneath the rear end of said barrel, spring blades radiating from the periphery of the rotor, the outer ends of said blades adapted for movement through the barrel slots for engagement with the projectile disposed within the barrel, means adjacent the barrel for causing the rearward bending of the blades whereby upon being released they will swing into engagement with the projectiles, means for causing the movement of said rotor, said first mentioned means consisting of a block within the chamber at the rear of the barrel, the lower edge of said block being equipped with a roller to facilitate the easy stripping of the blades thereby.

2. In a catapult of the character described, a chamber, a horizontal barrel within this chamber and projecting through the forward end thereof, the rear end of the barrel being slotted, means for feeding projectiles through the rear end of the barrel, a rotor within the chamber beneath the rear end of said barrel, spring blades radiating from the periphery of the rotor, the outer ends thereof adapted for movement through the barrel slots for engagement with the projectile within the barrel, means adjacent the barrel for causing the rearward bending of the blades which upon being released, will swing into engagement with the projectile, means for causing the movement of said rotor, said first mentioned means consisting of a block within the chamber at the rear of the barrel, the lower edge of said block being equipped with a roller to facilitate the easy stripping of the blades thereby, and means whereby the block may be adjusted toward or away from the barrel to regulate the degree of bend of said blade.

In testimony whereof I affix my signature.

FRED E. ALLENDER.