

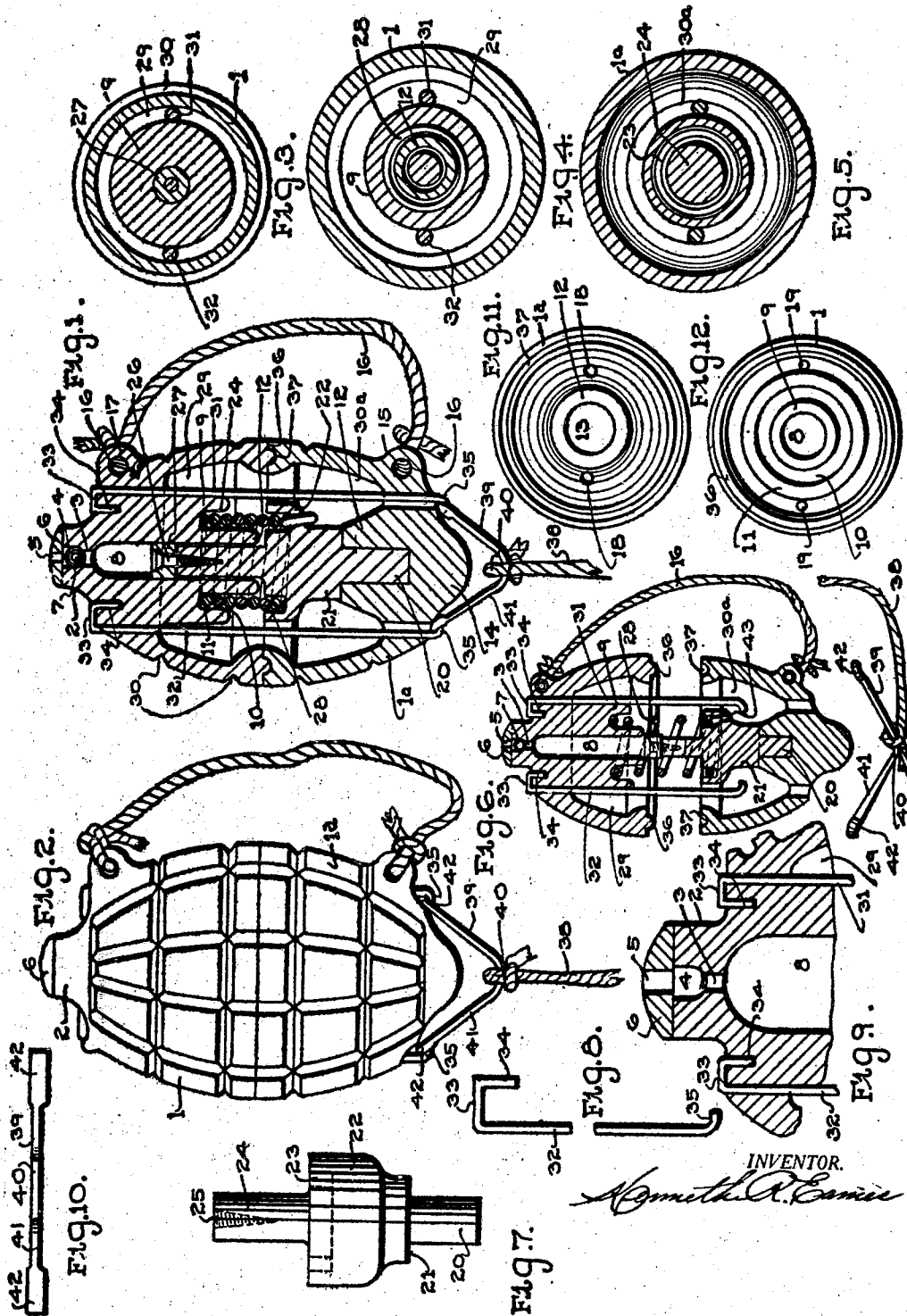
May 5, 1925.

1,536,261

K. R. EAMES

TOY HAND GRENADE

Filed April 15, 1921.



UNITED STATES PATENT OFFICE.

KENNETH R. EAMES, OF WORCESTER, MASSACHUSETTS.

TOY HAND GRENADE.

Application filed April 15, 1921. Serial No. 461,650.

To all whom it may concern:

Be it known that I, KENNETH R. EAMES, a citizen of the United States, residing at the city of Worcester, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Toy Hand Grenades, of which the following is a specification.

This invention relates to improvements in toys and more particularly to hand grenade toys.

One of the objects of my invention is to provide a simple, inexpensive and highly efficient toy closely resembling in appearance and effect the deadly hand grenade used in the recent war.

Another object of my invention is to provide a novelty in the nature of a rubber hand grenade designed to be used over and over again without the use of any explosive and yet capable when thrown from the hand of emitting a sharp, quick report as any torpedo does.

A still further object of my invention is to provide a device made of two rubber segments of similar design and construction having a cylinder and piston connection and so operable that when brought together the piston is set so as to make a report by suction when the two segments forcibly fly apart.

With the above and other objects in view my invention consists in the arrangement, combination and details of construction disclosed in the drawings and then more particularly pointed out in the appended claims.

In the drawings wherein similar reference characters designate similar parts throughout the respective views.

Figure 1 is a vertical, sectional elevation thru my invention.

Figure 2 is a side elevation of my invention.

Figure 3 is a cross section thru one segment of my invention.

Figure 4 is a cross section thru another segment of my invention.

Figure 5 is still another cross section thru the segment also shown in section in Figure 4.

Figure 6 is a vertical sectional elevation

of my invention showing the two members disjoined.

Figure 7 is a side view of a piston to be described.

Figure 8 is a fragmental view of a latch rod.

Figure 9 is a fragmental, sectional view of one segment.

Figure 10 is a plan view of a trigger.

Figure 11 is a bottom plan view of one member, and.

Figure 12 is a bottom plan view of another member.

In the drawings which are merely illustrative of my invention 1 and 1^a designate a pair of similarly sized and shaped rubber segments shaped externally so as to simulate the hand grenades used in the World War, each segment being cup-shaped in configuration. The segments are made preferably of rubber or similar material. Segment 1 terminates at one end in a tapering nipple 2 formed with an axial port 3 widened as at 4 to provide a seat for a suitable check valve 7 the valve seat being covered by a piece 6 having an outlet passage 5 for the vent port 3. Communicating axially with port 3 is a relatively wider and elongated piston chamber 8 formed in an air cylinder 9 which projects centrally and axially within segment 1 and is formed with an annular flange 11 arranged concentrically around cylinder 9 so as to provide an annular groove 10 forming a suitable spring seat.

Segment 1^a is formed internally thereof with an axial central boss 12 having a central bore 13 for the reception of the stub 20 of a preferably wooden piston 24 formed between its ends with the cylindrical enlargement 22 having the shoulder 21 which seats upon the outer flat face of boss 12. The enlargement 22 is formed with an annular spring seat 23 substantially of even diameter with the annular flange 11. It will be seen that the piston rod 24 projects snugly into the air cylinder passage 8 and that the piston head 27 is secured to the piston rod 24 by a screw 26 threaded in the threaded hole 25 formed in the piston rod as shown in Fig. 7. The spring 28 is coiled snugly around the tubular cylinder 9 and fits snugly at opposite ends in the annular

seats provided therefor 11 and 23 and is thus properly positioned and made of a length to normally separate the annular bead 36 on segment 1 from the annular groove 37 formed in segment 1^a as clearly shown in Figure 6. The segments are shown in Figure 6 just as they should appear before cocking or priming the toy hand grenade, it being seen that the spring 28 is uncompressed and fits the spring seats aforementioned, this spring being fixedly secured in the annular groove 10 and portion 22 but is unattached in seat 11 so as to allow the segments 1 and 1^a to separate and fly apart in simulation to the flying fragments of a real hand grenade when the latter bursts. A string 16 is adapted to connect segments 1 and 1^a so they will not become separately lost, the ends of this string being fastened to the lugs 15 and 16. Segment 1 is formed with the axially disposed openings 19 while segment 1^a is similarly formed with the openings 18. A pair of straight stout wires 31 and 32 are provided which project thru the openings 18 and 19 being formed at one end with the hooks 33 firmly secured into segment 1, the free terminals of wires or rods 31 and 32 being formed with slight hooks 35. It should be noticed (see Figure 1) that the holes 18 are considerably wider than the diameter of rods 31 and 32 so that the hooks 35 cannot obtain a hold therein, so in order to connect the latch rods to make them contribute to hold segments 1 and 1^a into contact the releasable trigger in the shape of a V-shaped piece is provided. Note that rods 31 and 32 (see Figure 6) are made just long enough to equal the effective length of the completed grenade after the segments 1 and 1^a shall have been pressed together. Formed terminally on the V-shaped trigger arms 39 and 40 are knobs 42 which engage the hooks 35 of the latch rods, after segments 1 and 1^a have been primed by being pressed together from the position shown in Figure 6 to the position shown in Figure 1, this act tending to compress the coil spring 28 and inducing the piston head 27 to move towards the inner end of the air cylinder 9 and in doing so unseating check valve 7 so air may be forced out thru vent 3 and port 5, and when this takes place bead 36 will fit snugly in groove 37, and the trigger holds the latch rods so they cannot become released and thus the spring is set. The string 38 is secured at 40 to the trigger.

To intonate the toy grenade with the parts as shown in Figure 1 the string 38 is taken hold of in one hand and the grenade is thrown violently, thereupon the trigger is released, the spring quickly relaxes and pulls the piston head 27 sharply in air chamber, so this head by suction closes valve 7 in its seat and when piston head has left air

cylinder the sudden report of a cartridge will be heard. Thereupon the parts of the top hand grenade are as shown in Figure 6 and are ready to be put together again and operated in the manner already explained. 70

Numerous modifications may be resorted to in practice without departing in principle from the details of construction herein disclosed.

What I desire to claim and secure by Letters Patent is:— 75

1. A device as described consisting of a pair of similarly sized and shaped rubber members, one of said members having an internal air cylinder, a piston and rod carried by the other member and working in said air cylinder, said air cylinder having a vent port, said members being formed with spring sockets, a coiled spring projecting into both sockets, means for holding said members into contact so as to compress said spring, and a trigger for releasing said spring and causing said members to be forcibly separated. 80 85

2. A device as described consisting of a pair of similarly sized and shaped rubber members, each being hollow, said members having a cylinder and piston fit, a spring connected internally within both members, and releasable means for holding said members in releasedly close contact against the compression of said spring. 90 95

3. A device as described consisting of a pair of similarly sized and shaped rubber members, each being hollow, an air cylinder formed internally of one hollow member, a rod and piston carried internally of the other member, said piston working within said air cylinder, said cylinder having an air vent, a spring, means for positioning said spring within both members, means projecting thru both members to hold them in flat contact together as to compress said spring, and a trigger externally of one of said members and engaging said last named means to lock it in set position and operable when disengaged from said means to cause said rubber members to separate. 100 105 110

4. A device as described consisting of a pair of similarly sized and shaped rubber members each being hollow, longitudinally alining portions formed centrally internally of said members, one of said alining portions being formed centrally internally of said members, one of said alining portions being formed with an air cylinder and the other section being formed with a piston working slidably in said cylinder, resilient means compressible in said members when the latter are brought into contact, latch rods connecting both members to hold them in contact with each other, and a trigger holding releasedly said latch rods in set position. 115 120 125 130

5. A device as described consisting of a pair of similarly sized and shaped rubber members each being hollow, one member having a centrally axially arranged portion opening out of one end thereof and providing an air cylinder, a check valve in the outer end of said air cylinder, a spring seat formed upon said portion, a piston and rod carried by the other member slidably working in said air cylinder, a spring seat formed in the piston rod, a spring coiled in both spring seats so as to be retained therein, means for holding said members in contact with each other to form a closed body, and releasable means associated with said last named means for causing said last named means to be inoperative.

6. In combination two hollow rubber segments, a string connecting said segments together, a pair of latch rods carried by one segment and projecting through the other segment and formed with terminal hooks, a trigger connecting both latch rods together and causing said segments to contact to form a closed body, a string connecting said trigger with the other string, and means internally of said closed body giving a sharp air report as said trigger is displaced and said segments fly apart.

7. In combination two hollow rubber segments, a string connecting said segments together, complimentary means in the respective segments adapted by suction to make a sharp report when separated, means for latching said segments in closed relation, and means for releasing said latch and actuating said complementary means.

8. In combination two hollow rubber segments, a pair of interengageable members in said segments designed when forcibly separated to give a sharp report, means for resiliently cocking said members and causing said segments to contact together, a trigger adapted to release said means and a string connecting together said segments and said trigger.

9. In combination a pair of rubber hollow segments having a tongue and groove contact fit, one of said segments being formed with axially disposed holes, a pair of latch rods carried internally of the other member and having hook terminals loosely projecting thru said holes, a V-shaped latch member having opposing terminals engaging said hook terminals and the adjacent segment so as to be supported by said rods and hold the segments in contact, a string for pulling said trigger loose from said latch rods, a string connecting said segments together and a piston suction device in both segments cocked as said segments move into contacting relation and making a sharp report when said segments are separated.

10. A device as described consisting of two rubber segments, one having an axially extending air cylinder with a check valve at one end and a tubular spring seat at its other end, the other segment having a piston rod extending axially therein and formed with a valve seat around said piston rod, a piston on said rod projecting into said air cylinder, said air cylinder being formed with a port, a spring coiled around the tubular and the other valve seats and secured fixedly to one segment, latch rods carried by one segment and having terminal hooks, the other segment being formed with holes in which said hook terminals loosely project a V-shaped trigger releasedly engaging said latch rods to hold them in said holes and said segments in contact and a string connecting together said trigger and segments.

In witness whereof he has hereunto set his hand and affixed his seal this 10th day of January, 1920.

KENNETH R. EAMES. [L. s.]

Attested:

WILLIAM E. BAFF,
R. E. DONAHUE.