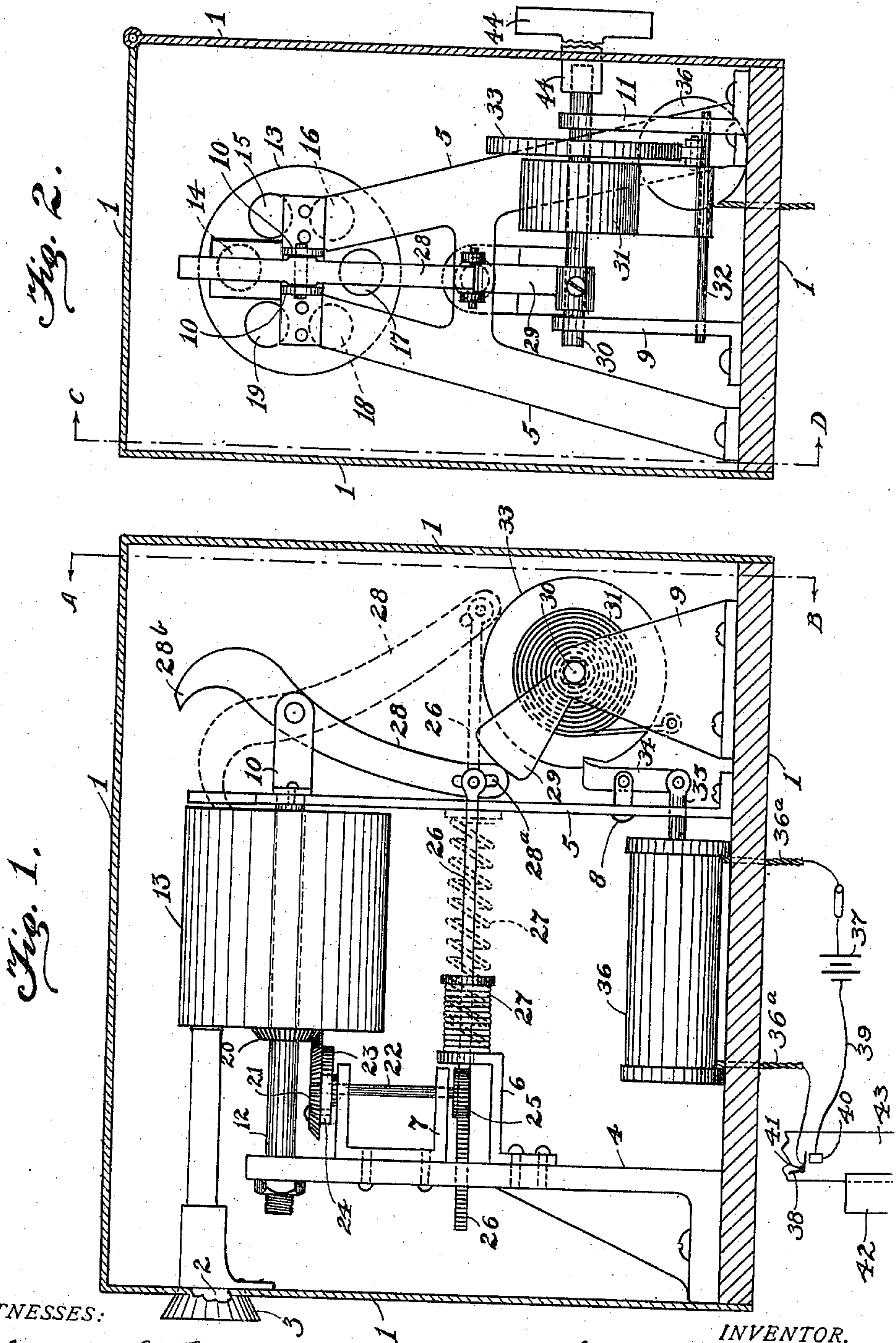


963,118.

E. A. CANAVAN.
BURGLAR ALARM.
APPLICATION FILED OCT. 2, 1908.

Patented July 5, 1910.



WITNESSES:
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EDWARD A. CANAVAN, OF DULUTH, MINNESOTA.

BURGLAR-ALARM.

963,118.

Specification of Letters Patent.

Patented July 5, 1910.

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To all whom it may concern:

Be it known that I, EDWARD A. CANAVAN, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Burglar-Alarms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to burglar alarms for the protection of windows, doors, and other devices.

It consists of the constructions, combinations and arrangements of parts hereinafter described and claimed.

In the drawings, Figure 1, is a side elevation of my invention, partly in vertical longitudinal section and partly in diagram. Fig. 2, is an end elevation of the same, partly in vertical transverse section, on the line "A"—"B," of Fig. 1, omitting the diagrammatic portion.

In the drawings, 1, is a casing, having a suitable port 2 formed therein for the passage of sound waves and smoke, a barrel or tube 3 is preferably mounted on said casing in registration, with one of the hereinafter described cartridge chambers and with the said port. Within the casings are positioned brackets or posts of any suitable construction, as 4—5—6—7—8—9—10—and 11. Mounted on the posts 4 and 5 is a shaft 12, whereon is mounted a rotatable cylinder 13 having one or more chambers as 14—15—16—17—18—and 19 formed therein for the reception of explosive powder cartridges. Said cylinder has formed upon one end thereof a pinion 20, which meshes with a pinion 21, which is loosely mounted on shaft 22 rotatably mounted on the bracket 7. A ratchet wheel 23 is rigidly mounted on said shaft 22 and is engaged by the free end of a spring-dog 24 which is secured to said pinion 21, the construction being such that the rotation of the ratchet wheel in one direction will by means of said dog cause the rotation of the pinion 21, but when the ratchet wheel and shaft 22 are rotated in the opposite direction, the teeth of the ratchet wheel will slip past the dog without causing the rotation of said pinion 21, said shaft also has rigidly mounted thereon a pinion 25 which meshes with a reciprocable rack-bar 26, the movement of which in

operation is effected by a suitable spring 27 and the retracting movement of which rack bar is effected by a lever or hammer 28 which is pivotally connected at one end to one end of said rack bar through a slot 28^a. Said hammer is pivoted intermediate of its ends to the bracket 10 and is provided at its free end with a striking point 28^b adapted to strike the end of one or another of said cartridges as they successively are brought into registration with its path of movement. Said hammer is operated in its striking movement by said rack bar under the impulse of said spring 27, and is retracted by means of a radial arm 29, which is rigidly secured to a rotatable shaft 30 mounted on the posts 9 and 11. Said shaft, 30, is rotated by means of a suitable spring 31 of greater power than the spring 27, one end of which spring 31 is secured to said shaft and the other end of which is secured to any suitable fixed anchorage, as the bar 32. Upon said shaft 30 is also rigidly mounted a ratchet wheel 33, adapted to be engaged by a dog 34, which is pivoted intermediate of its ends to the pivoted bracket or link 8 and is at its opposite end, pivoted to the piston 35 of a solenoid 36. One end of a wire 36^a forming part of said solenoid is connected to one pole of a source of electricity, as the battery 37, the other end of said wire 36^a is connected to a lever 38 forming one contact of a normally open electric circuit including said source. The opposite pole of said source of electricity is connected in any suitable manner or by any suitable means, as by a wire 39 to a post 40 adapted to form the opposite contact of said normally open electric circuit. Said lever 38 is pivoted intermediate of its ends to a post 41 and extends into the path of a window sash 42, said posts 40 and 41 being mounted on the window frame 43. Said shaft 30 is adapted in any suitable manner, as by the formation of a squared end thereon for the engagement therewith of a key as 44, by which it may be rotated to wind up the spring 31.

In operation, the key is applied and the spring 31, is wound up, the dog 34 temporarily preventing the unwinding thereof. One or more of the cylinder chambers are then loaded with blank powder cartridges, provided with percussion caps in the usual manner. When the electric circuit is closed by the swinging of the lever 38 consequent

to raising the sash, the solenoid is operated to thrust outward the piston 35 thereby swinging the dog 34 clear of the ratchet wheel 33. The spring 31 now causes the rotation of the shaft 30 which carries the radial arm 29 past the pivoted end of the lever 28 this freeing said lever and permitting the expansion of the spring 27, which operates the rack bar and causes it to swing the hammer 28 violently against the cartridge temporarily in the path of its upper end, thereby causing the explosion of such cartridge. The continued rotation of the shaft 30 carries the radial arm or projection 29 around until it strikes the pivoted end of the lever 28 and retracts it, causing it to retract said rack bar against the spring 27. The rack bar during such retracting movement rotates the pinion 25, which rotates the shaft 22 which rotates the ratchet wheel 23 which by means of the dog 24 rotates the pinion 21 which rotates the cylinder 13 so as to turn a new cartridge chamber into the path of the free end of the lever 28. By loading some of the chambers and leaving others vacant, intervals are obtained in the firing and the shots may be counted with respect to such intervals and with respect to each other and with respect to a predetermined number given to the location of the alarm. For example, if a window governed by the alarm were numbered 121, the first cartridge chamber should be filled to represent the number 1, the second chamber should be empty to afford an interval, the next two chambers should be filled to represent the number 2, the fourth chamber should be vacant, the fifth chamber should be filled. If desired a large number of chambers may be provided. The number could then be repeated, by leaving vacant the sixth, seventh and eighth chambers for a repeating interval and by filling the ninth, eleventh, twelfth and fourteenth chambers. Or if desired, only one chamber need be provided, or, if desired a plural number of chambers may be provided and all loaded. The megaphone or equivalent preferably extends outside the building in which the alarm is used, so that the explosions will be clearly heard at a distance and attract the attention of more or less distant residents or pedestrians or police.

By making obvious changes in the posi-

tions of the circuit closing contacts, the alarm may be applied to doorways, mats, or other approaches to be protected. It is obvious also that many modifications or alterations of said construction, or of the arrangement of parts thereof, or by the substitution of other devices for the parts shown may be made within the scope of certain of my claims.

What I claim is—

1. In an alarm, the combination of a support, a cartridge holding device mounted thereon, a hammer, a reciprocable rack bar pivotally connected at one end to one end of said hammer, means for reciprocating said bar in one direction to operate said hammer, power transmission means interposed between said rack bar and said cartridge holder and engaging said rack bar and said cartridge holder and adapted to be operated by said rack bar during its retracting movement and to partly rotate said cartridge holder, means for retracting said hammer and rack bar and for holding them in their retracted position, means for locking said retracting means in its holding position, and means including a normally open electric circuit for retracting an element of said locking means.

2. In an alarm, the combination of a support a cartridge holding device mounted thereon, a hammer, a reciprocable rack bar pivotally connected at one end to one end of said hammer, means for reciprocating said bar in one direction to operate said hammer, power transmission means interposed between said rack bar and said cartridge holder and engaging said rack bar and said cartridge holder and adapted to be operated by said rack bar during its retracting movement and to partly rotate said cartridge holder, means for retracting said hammer and rack bar and for holding them in their retracted position, means for locking said retracting means in its holding position, and means for retracting an element of said locking means.

In testimony whereof I hereunto affix my signature, in presence of two witnesses.

EDWARD A. CANAVAN.

Witnesses:

JAMES T. WATSON,
CHAS. S. OLSON.