

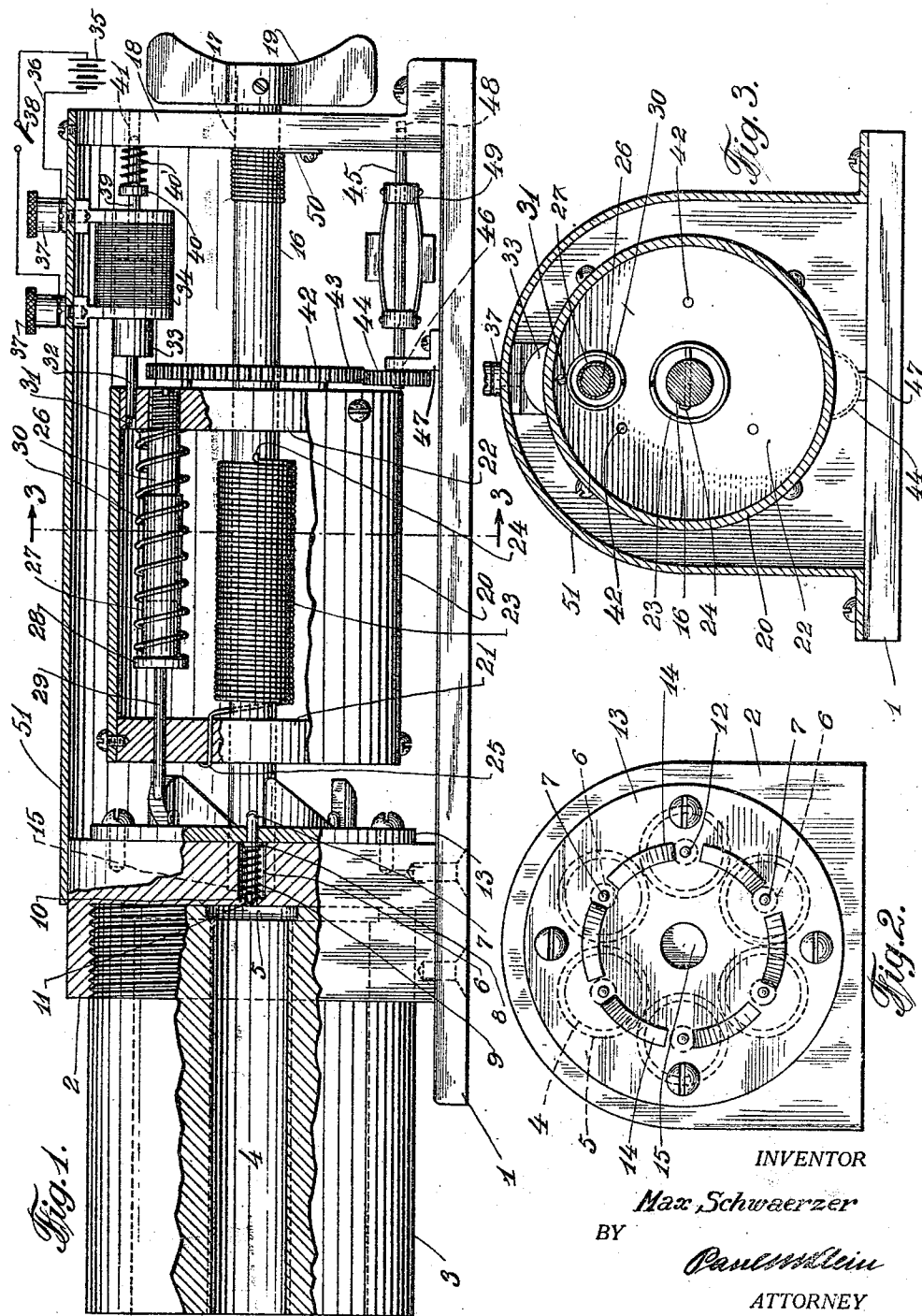
April 21, 1925.

1,534,085

M. SCHWAERZER

DETONATING DEVICE

Filed April 2, 1923



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DETONATING DEVICE.

Application filed April 2, 1923. Serial No. 629,520.

To all whom it may concern:

Be it known that I, MAX SCHWAERZER, a subject of Germany, and resident of 29 Rock Street, Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Detonating Devices, of which the following is a specification.

This invention relates to detonating devices in general and particularly to the kind applicable for use as burglar alarms.

The prime objects of my invention are to provide a simple, inexpensive and easily operable mechanism of this kind, which due to its simple construction will not only be safe, but also positive in its operation, and will not be subject to getting out of order.

Another object of my invention is to provide within such device, simple and positive operating means, adapted to be easily replaceable.

Another object of my invention is to provide within such device a stationary cartridge receiver provided with individual firing pins and a rotary hammer arrangement and a starting and stopping device.

The foregoing and further objects will be more fully apparent from the following description and the accompanying drawings forming part of this specification and illustrating one of the many possible forms of my invention, and in which:

Figure 1 is an elevation of my device partially in section and with half of the cover removed.

Figure 2 is an end view of the cartridge receiver, seen from within the housing.

Figure 3 is a cross sectional view taken on line 3—3 of Figure 1.

Referring to the drawings, numeral 1 denotes the base upon which my device is mounted and to which is positively attached a cartridge receiver block 2, in which is mounted a stationary cartridge receiver 3, which is preferably detachable from block 2 and may be associated therewith after loading.

The cartridge receiver is provided with a plurality of bores 4, having a cartridge seat 5. The cartridge receiver block 2 is provided with recesses 6 for receiving firing pins 7, corresponding to the number of cartridge bores 4.

The firing pins are preferably provided with a flange, indicated at 8, against which

bears with one of its ends spring 9, while its other end bears against end wall 10 of the recesses 6 provided with the perforation 11 in which is guided the firing point 11 of the firing pin.

By means of spring 9 the firing pin is held in position above the percussion cap of the cartridge, not shown in the drawing.

Attached to block 2 at the opposite side from the cartridge receiver, is attached a cam plate 12, provided with a plurality of apertures for permitting pins 7 to protrude therethrough and which are pressed against it by spring 9. The plate is provided with a plurality of annularly arranged cams 14, spaced from each other and in which spaces the firing pins 7 are located. At the center of block 2 and cam plate 12 there is provided a bearing 15 housing one end shaft 16, which latter passes substantially parallel to base plate 1, into another bearing 17 provided in end plate 18 attached also to base 1.

Shaft 16 protrudes through end plate 18 and attached to its protruding end is a winged handle 19 provided, the purpose of which will be explained later.

Rotatably mounted on the shaft 16 is a drum 20 having end plates 21 and 22. Within the drum and wound about shaft 16 is a power spring 23, one end 24 of which is secured to shaft 16 the other end 25 being anchored in end plate 21 of the drum.

Mounted inside plate 22 of the drum is a pin 26 upon which slides a cylinder 27 provided with a flange 28. Extending from the latter is a hammer pin 29, which, together with the cylinder 27, comprises the hammer of my device.

Against flange 28 and end plate 22 of the drum bears an expansion spring 30 adapted to press cylinder 27 in the direction of the cams 14.

Provided also in the end plate 22 is an aperture 31 for receiving a locking pin 32 of the electro-magnet 33 actuated by the current passing through coil 34 from battery indicated at 35.

The circuit comprising coil 34 and battery 35 and the conduits 36 secured to posts 37, is controlled by a switch or other contact means indicated at 38.

Extending from electro-magnet 33 at the opposite side of locking pin 32 is a guide pin 39 provided with a flange 40 and extending into guide hole 41 provided in end

plate 18 of my device. Spring 40' disposed between flange 40 and end plate 18 tends to always keep locking pin 32 pressed against end plate 22 of drum 20.

5 Attached to the end plate 22 by means of lugs or any other suitable means indicated at 42 is a gear 43 meshing with a pinion 44, which latter is keyed to a regulator shaft 45 journaled in bearing 46 of brackets 47 and 48 of end plate 18.

10 Mounted upon regulator shaft 45 is a regulator indicated at 49 adapted to control the speed of the drum 20 when the latter is free to rotate.

15 For the purpose of arresting the back rotation of shaft 16 when winding the main spring 23, there is a ratchet arrangement of any convenient construction, indicated at 50.

20 Operation: To set up the alarm, the cartridge receiver 30 is removed from the cartridge receiver block 2, filled with cartridges and replaced to its proper position so that the percussion caps of the cartridges will register with the individual firing pins 7.

25 Release pin 32 being normally pressed by spring 40' into aperture 31 of end plate 22 of the drum, prevents the latter from moving. Now the handle 19 is turned in clockwise direction, in which manner main spring 23 is wound.

30 When the circuit is closed by contact 38, electro-magnet 33 is pulled into coil 34 and pin 32 releases drum 20 and permits the latter to rotate.

35 By so rotating the firing hammer is also caused to rotate and the hammer pin 29 will travel upon annular cams 14. When pin 29 starting at the lowermost portion of a cam 40 14 is caused to travel upon the incline of the cam, cylinder 27 of the hammer is pressed towards end plate 22 of the drum thereby compressing spring 30 until pin 29 reaches the uppermost point of cam 14, in which position the hammer is cocked.

45 By further movement of the drum, and consequently of the hammer, hammer pin 29 is caused to abruptly leave cam 14 and is propelled by spring 30 against one of the firing pins 7, which latter causes the explosion of the percussion cap of one charge.

50 By continuing its rotation the function of the hammer is repeated until all the cartridges are fired. In order to regulate the intervals of firing so as to be as nearly equal as possible, the rotation of the drum is controlled by speed regulator 49 of any suitable construction.

60 As will be seen my apparatus is extremely simple in its design and operation and positive in its function with all the moving parts in housing 51 and providing ready access to the cartridge receiver, the charges of which are to be replaced.

By providing a stationary cartridge drum the device is greatly simplified, compared with other devices for similar purposes.

While I have shown a specific construction of my invention, be it understood that various changes and improvements may be made without departing from the broad scope of my invention, for which I claim:

1. A detonating device comprising a stationary cartridge receiver, a combination rotary and sliding hammer and means for automatically controlling the latter.

2. A detonating device comprising a stationary cartridge receiver, a combination rotatable and sliding hammer, means for automatically rotating said hammer and means for automatically controlling the speed of operation of said rotating means.

3. A detonating device comprising a stationary cartridge receiver, a combination rotatable and sliding hammer, means for automatically rotating the latter, means for alternately cocking and releasing the hammer, and automatic means for controlling the speed of operation of said rotating means.

4. In a detonating device having a combination rotary and sliding hammer, annular cocking and releasing means for said hammer, means for automatically operating said hammer, means for controlling the speed of operation of said hammer operating means, and means for controlling the starting and stopping of said operating means.

5. In a detonating device having a stationary cartridge receiver and a combination rotary and sliding hammer, an annular cam arrangement for cocking and releasing said hammer, and electrically actuated controlling means for stopping or starting the operation of the said hammer, automatic means for operating the hammer, and automatic control means for governing the speed of operation.

6. In a detonating device, a stationary cartridge receiver, a rotor, a sliding hammer associated with said rotor, an electrically actuated rotor stop and starting mechanism, an annular cam device for cocking and releasing said hammer, automatic means for propelling said rotor, and automatic means for controlling the speed of the latter.

7. In a detonating device, a stationary cartridge receiver having individual firing pins, a rotary hammer adapted to actuate said firing pins, means for rotating and means for controlling the rotation of said hammer, means for regulating the speed of rotation, and an annular cam arrangement adapted to alternately cock and release said hammer against the individual pins.

Signed at New York in the county of New York and State of New York this 19th day of March A. D. 1923.

MAX SCHWAERZER.