

PUBLISHED  
JUNE 1, 1943.  
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ROUNDS OF AMMUNITION FIRED  
FROM OR AVAILABLE TO A GUN  
Filed July 21, 1939

Serial No.  
285,810

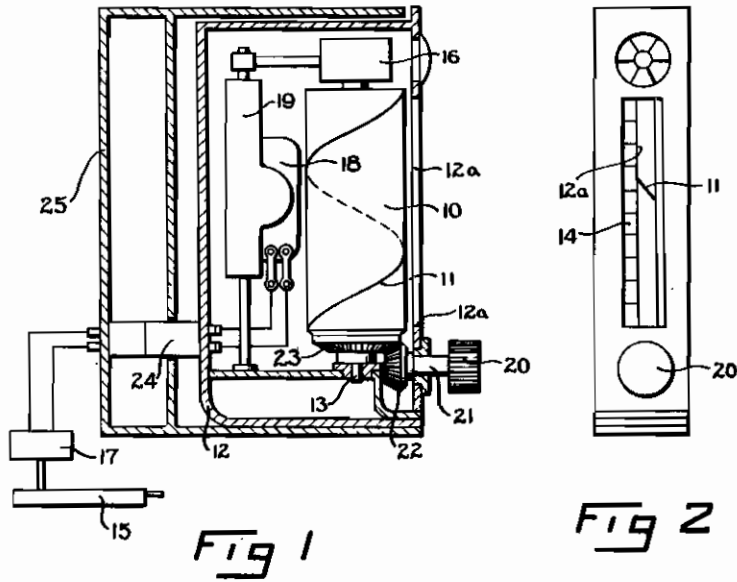


FIG 2

FIG 1

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# ALIEN PROPERTY CUSTODIAN

INDICATING MEANS, AND MORE PARTICULARLY TO MEANS FOR INDICATING THE NUMBER OF ROUNDS OF AMMUNITION FIRED FROM OR AVAILABLE TO A GUN

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Application filed July 21, 1939

This invention relates to indicating means, and more particularly to means for indicating the number of rounds of ammunition fired from or available to a gun.

One of the objects of the present invention is to provide novel means for indicating to a gunner the number of rounds of ammunition available to a gun located at a point remote from the gunner.

Another object is to provide a novel indicator of the above character which is light in weight, small, requires a small amount of energy for actuation, and therefore is especially adapted for use in aircraft.

A further object is to provide a novel indicator of the above character which is dependable in operation, and which can be read rapidly and accurately.

The above and further objects and novel features will more fully appear from the detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for purposes of illustration only and are not intended as a definition of the limits of the invention, reference being had for this latter purpose to the appended claims.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is a side elevation, partly in section, of one embodiment of the invention; and,

Fig. 2 is a front elevation of the embodiment of Fig. 1.

The form of the invention illustrated in the accompanying drawings, by way of example, comprises means for indicating the number of rounds of ammunition which have been fired from a gun and hence means for indicating the number of rounds which remain available to the gun. The indicating means includes a rotatable drum having curved indicia thereon which can be read against a suitable scale. Means are provided for advancing the drum step-by-step in predetermined angular increments, each angular advancement being in response to a firing of a remotely located gun.

As shown in Fig. 1, the novel device is constituted by a drum 10 having curved indicia 11 thereon which, for example, comprises a helix marked upon the cylindrical surface of the drum. The drum is rotatably mounted in a housing 12 upon a shaft 13, the housing having a slot 12a therein through which a portion of the drum is visible together with a fixed scale 14 against which the curve 11 can be read.

In order that the drum can be angularly advanced in predetermined angular increments, each of which corresponds to a separate actuation of the device as produced, for example, by each firing of a round of ammunition from a machine gun 15, a suitable step-by-step advancing system 16 is provided which may, for instance, comprise a ratchet and pawl mechanism (not shown).

Means for operatively interconnecting the gun 15 and the rotatable drum are provided comprising an intermittently operable switch 17 which controls an electric circuit, the switch being closed by the gun, for example, when the lock or bolt thereof is in a "ready" position for firing. Switch 17 governs the flow of current to an electro-magnet 18 which has an armature 19. The latter is operatively connected to the step-by-step system in such a manner that the drum is advanced by a predetermined angular amount each time the electro-magnet is energized.

Manually operable means for adjusting the drum to an initial or zero position are provided comprising a knurled knob 20 upon a shaft 21, the latter having a bevel gear 22 thereon which is in mesh with a bevel gear 23 upon the shaft 13. A suitable friction clutch (not shown) is interposed, for example, between member 16 and drum 10 in order that the drum may be manually turned with reference to the remainder of the device.

The embodiment illustrated is provided with a plug connection 24 in the electric leads interconnecting elements 17 and 19, which enables the inserting of housing 12 into a master container 25 without the necessity for screw connections. This invention is primarily for aircraft, and since there are, ordinarily, several machine guns on board such craft, there should be provided an indicator for each gun. These indicators can be easily mounted in a common housing. In the event that one indicator becomes inoperative or defective, it is only necessary to withdraw it from the housing and to replace it by another which is at once ready for operation.

In operation, the intermittent closing of the switch 17 by the gun 15 intermittently energizes electro-magnet 18 which in turn moves the drum a predetermined amount for each energization thereof by means of the step-by-step system. Thus the curve 11 moves relative to scale 14 and indicates the number of rounds fired or the number available to the gun.

There is thus provided a novel indicator which, due to the small size, light weight, and compact-

ness thereof, is especially adapted for being mounted upon the instrument panel of an aircraft.

Although only one embodiment of the present invention has been illustrated and described in detail, it is to be expressly understood that the invention is not limited thereto. For example, the indicator is not confined to use with guns but may be employed with other devices which

require indications of the number of intermittent actuations thereof. Various changes may be made in the design and arrangement of the parts without departing from the spirit and scope of the invention as the same will now be understood by those skilled in the art.

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