G. E. COOK.

AERIAL BOMB.

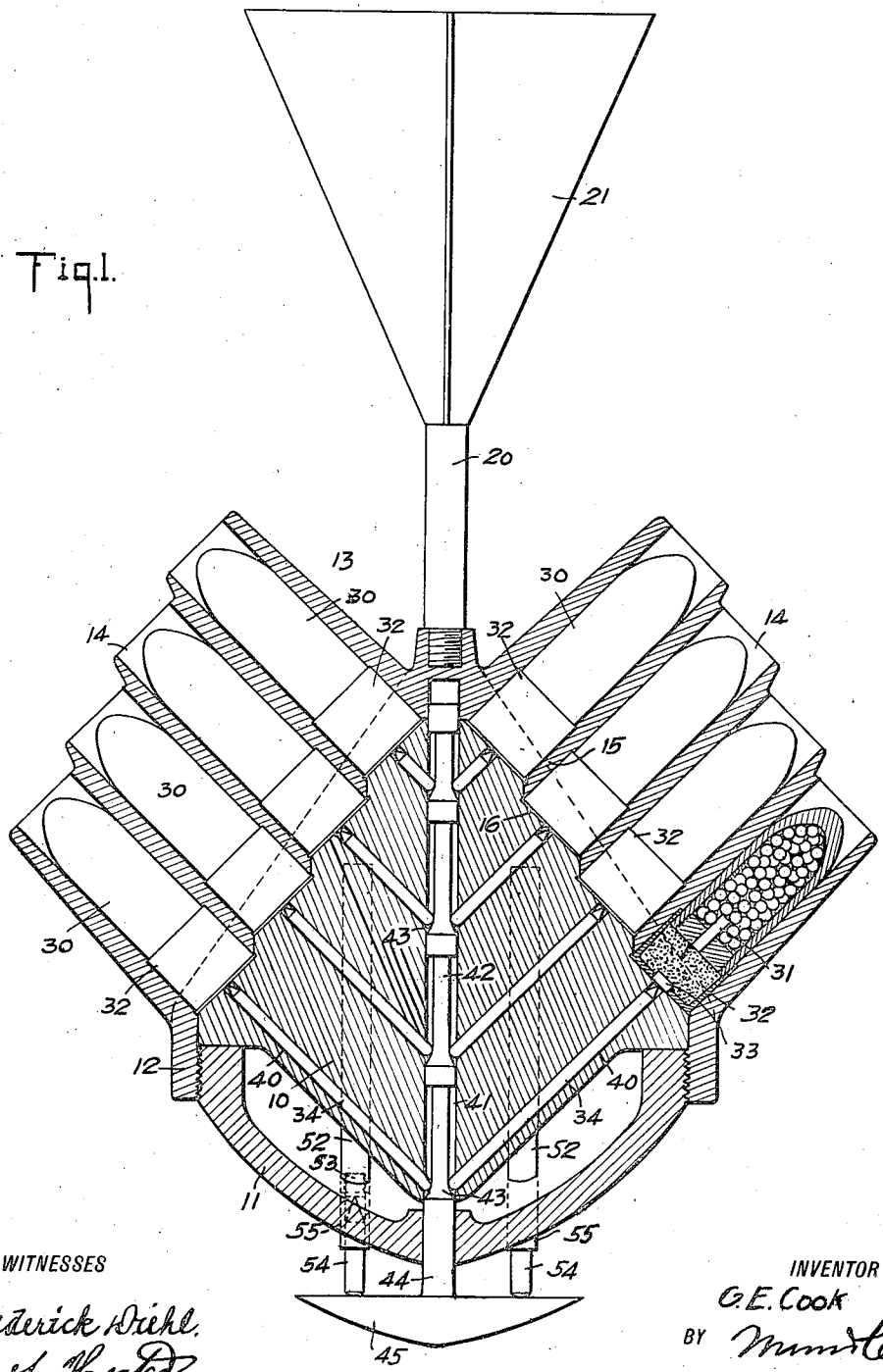
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1,343,036.

Patented June 8, 1920.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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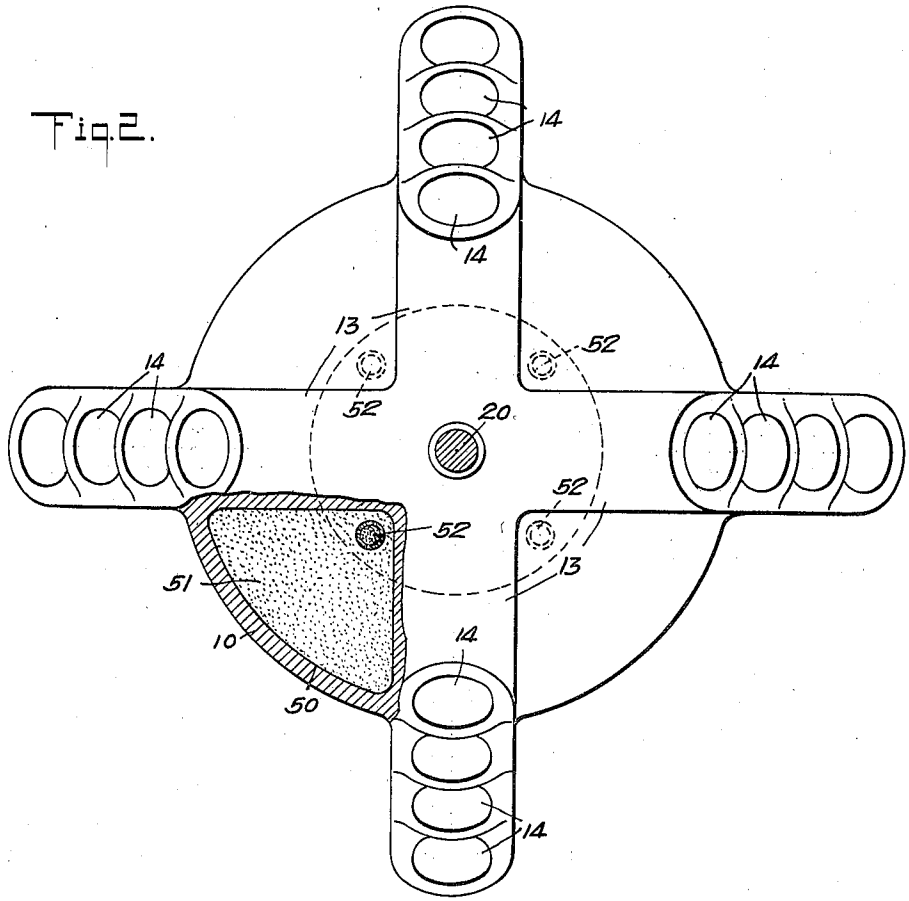
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2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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AERIAL BOMB.

1,343,036. Specification of Letters Patent. Patented June 8, 1920.

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To all whom it may concern:

Be it known that I, GEORGE ELWOOD COOK, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Aerial Bomb, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved aerial bomb more especially designed to be dropped from an aeroplane, dirigible or other aircraft, and arranged to explode its body on striking an object and to scatter over a wide area a large number of explosive shells containing shrapnel or the like, which shells in turn explode before reaching the ground thus rendering the bomb exceedingly destructive. Another object is to provide a bomb of simple construction and which is not liable to fail after being dropped and striking an object.

With these and other objects in view the invention consists of certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a sectional side elevation of the aerial bomb; and

Fig. 2 is a plan view of the same with parts in section.

The body 10 of the bomb is provided with a detachable bottom 11 on the upper end of which screws a flange 12 of a barrel carrier 13 fitting onto the upper conical portion of the body 10 and thus fastening the body 10, the bottom 11 and the carrier 13 together. The bottom 11 forms with the body 10 a plurality of chambers for a purpose hereinafter described. The carrier 13 is provided with tiers of barrels 14, each barrel being inclined upwardly and outwardly and having its breech end 15 seated on a seat 16 formed on the body 10. The tiers of barrels 14 are preferably arranged in cross form, as plainly indicated in Fig. 2, and the top of the barrel carrier 13 is provided with an upwardly extending stem 20 carrying wings 21 for properly guiding the bomb in its flight, that is, to prevent the bomb from turning upside down. Each barrel 14 is charged with a shell 30 filled with an explosive and with canister, and the bottom of the shell 30 is provided with a time fuse 31 to set off the charge of the shell and burst the same after the shell has left its barrel 14, as hereinafter more fully explained. The time fuse 31 is adapted to be set off by an explosive propelling charge 32 held in the breech end 15 of each barrel 14, and this propelling charge 32 is provided with a percussion cap 33 or similar device adapted to be struck by a firing pin 34 to ignite the propelling charge 32 with a view to produce sufficient pressure to fire the shell 30 out of its barrel and cause the same to fly a predetermined distance and be burst at a given time by the time fuse 31 setting off the charge in the shell 30.

The firing pins 34 for the several barrels 14 have their axes coinciding with the axes of the barrels 14, and the said firing pins 34 are mounted to slide in bores 40 formed in the body 10. The inner ends of the firing pins 34 extend into a central bore 41 formed vertically in the body 10 and in this bore 41 is mounted to slide a stem 42 provided with cams 43 engaging the inner ends of the firing pins 34. Thus when the stem 42 is moved upward the firing pins 34 are simultaneously pushed outward by the cams 43 to set off the percussion caps 33, as above explained. The lower end 44 of the stem 42 is mounted to slide in the apex of the bottom 11 and this end 44 projects a distance downward beyond the bottom 11 and terminates in a head 45 adapted to strike an object during the flight of the bomb to push the stem 42 upward for actuating the firing pins 34, as above explained. It will be noticed that when the bomb is dropped and the head 45 strikes an object then the several propelling charges 32 are fired whereby the shells 30 are forced out of their barrels and are finally exploded while being scattered over a wide area.

The chambers 50 formed by the body 10 and bottom 11 are filled with an explosive material 51 and in each chamber extends a filled perforate firing tube 52 provided in its lower end with a percussion cap 53 adapted to be set off by a firing pin 54 mounted to slide in a bearing 55 attached to the bottom 11. The lower ends of the firing pins 54 rest on the top of the head 45 so that when the latter strikes an object and moves upward then the firing pins 54 are moved in a like direction and set off the percussion

caps 53 to cause the firing tubes 52 to ignite the explosive materials 51 in the several chambers 50 to burst the body 10 into fragments thus adding to the destruction caused by the bursting shells 30, as above explained.

It will be noticed that by arranging the barrels in tiers disposed radially and by inclining the barrels in each tier upwardly and outwardly it is evident that the shells 30 fired simultaneously from the several barrels are scattered over a wide area and in dropping explode before reaching the ground thus causing destruction over a wide area. It will also be noticed that as the body of the bomb bursts, its parts and the parts mounted thereon are rent asunder thus creating havoc in the immediate area in which the bomb strikes an object. It will further be noticed that the bomb is not liable to explode prematurely as it requires some force to push the head 45 upward especially as the stem 42 encounters the resistance of the firing pins 34 and the head encounters the resistance of the firing pins 54. When the bomb, however, is dropped and its head 45 strikes an object then the weight of the bomb causes a quick, forcible upward movement of the stem 42 and its head 45 to actuate the several firing pins 34 and 54 as above explained.

From the foregoing it will be noticed that the bomb can be safely carried by an aeroplane, dirigible or other aircraft and it is not necessary for the attendants of the aircraft to do any adjusting of the bomb it being only necessary to release the bomb and to allow the same to drop with a view of striking a desired object.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A bomb comprising a conical body provided with tiers of integral barrels, the barrels in each tier being inclined outwardly and upwardly and each adapted to contain a shell, said body having bottom chambers charged with explosives, actuating means slidable in said body and having a member projecting downwardly from the bottom of the body and adapted to engage an object to push the actuating means upwardly, said actuating means having camming portions, upwardly and outwardly disposed igniting means for each shell mounted on said body and controlled by said camming portions of the actuating means, and igniting means for said explosives in the chambers and controlled by said actuating means.

2. A bomb, comprising a body having a plurality of chambers for an explosive, a central bore, a plurality of upwardly inclined barrels, each adapted to receive a shell, and a plurality of upwardly inclined passages leading from the bore, firing pins for the shells slidable in the said passages, a stem slidable in the bore of the body and provided with a plurality of cams for engaging the firing pins, said stem extending below the body and having a head at its ends and a plurality of firing pins operated by the head for firing the explosive of the chambers.

3. A bomb, comprising a body having a central bore and upwardly and outwardly extending passages leading from the bore, a bottom forming with the body a plurality of explosive chambers, a barrel carrier screwing on the bottom and holding the body, bottom, and barrel carrier together, said carrier having a plurality of upwardly inclined barrels, each adapted to receive a shell, firing pins for the shells slidable in the said passages, a member slidable in the bore of the body and having means for operating the firing pins, and means controlled by the said slidable member for firing the explosive of said chambers.

4. A bomb, comprising a body having chambers charged with explosives, the body having a detachable bottom and a barrel carrier fitting on the said body and screwed on the said bottom to hold the body, bottom and barrel carrier together, the barrel carrier having a plurality of barrels inclined upwardly and outwardly with their breech ends facing the said body, each barrel being charged with an explosive shell having a time fuse, each barrel being charged at its breech with an explosive material for firing the corresponding shell out of its barrel, a set of firing pins slidable in the said body and adapted to fire the said explosive materials in the breeches of the barrel, a stem mounted to slide centrally in the said body and its bottom and having cams adapted to push the said firing pins outwardly, the lower end of the stem terminating in a head extending below the said bottom and adapted to strike an object during the flight of the bomb, igniting means in the said chambers, and a second set of firing pins for the said igniting means in the chambers and slidable in the said bottom, the said second set of firing pins resting on the said head.

GEORGE ELWOOD COOK.