

J. H. WILY.
GAS CANNON.
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1,352,715.

Patented Sept. 14, 1920.

Fig. 1

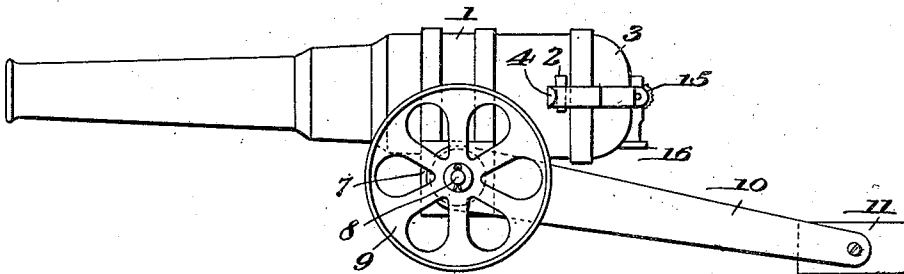


Fig. 2.

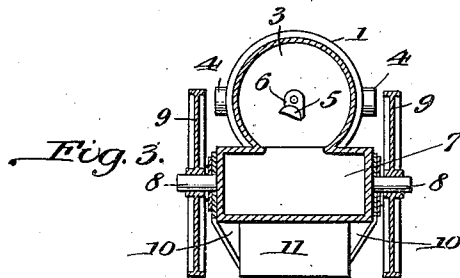
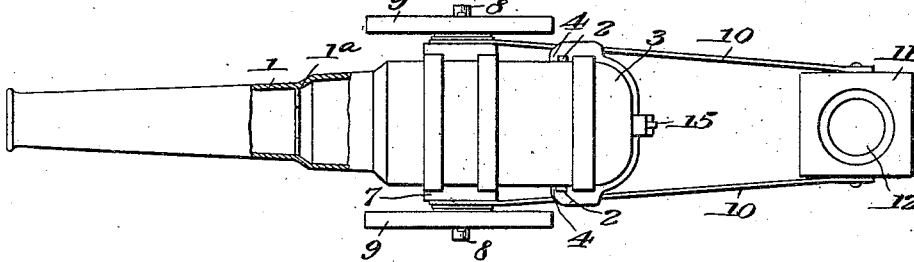
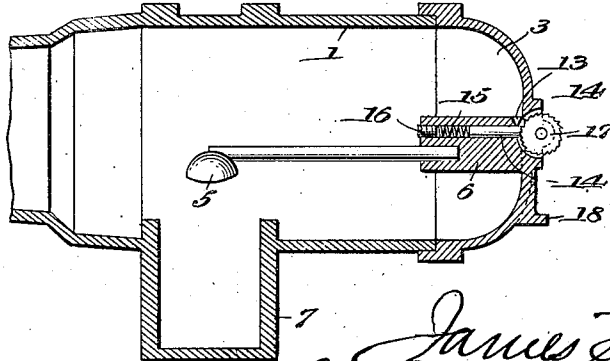


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GAS-CANNON.

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To all whom it may concern:

Be it known that I, JAMES H. WILY, of South Bethlehem, in the county of Northampton, and in the State of Pennsylvania, have invented a certain new and useful Improvement in Gas-Cannon, and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to an improvement in gas cannons, but especially to cannons designed for the purposes of instruction, as toys, and as signals.

The object of my invention is to provide a device of this character in which the operation of the cannon, charging and exploding the same, may be carried out in the simplest manner and without the necessity of any elaborate instructions or precautions. The object of my invention is particularly to provide a device of this character in which the charging of the cannon with the material used for producing the gas to be exploded automatically causes the cannon to be adequately ventilated prior to supplying the same with a new charge of explosive gas. A further object of my invention is to provide a device of this character in which the breech mechanism has to be removed in order to re-load the cannon with the gas-producing material, thereby ventilating the cannon. A further object is to arrange the parts so that the locking of the breech in place, after the insertion of the gas-producing materials brings into contact the gas-forming materials. A further object of my invention is to construct the cannon, in such a manner, that the body of liquid used in connection with the formation of the gas, is carried in a chamber located on the axle of the cannon so that there is less movement of this body of liquid, and thus less danger of throwing the liquid out of the chamber when the cannon is being adjusted as to its direction of discharge in the operation of the cannon, and so that also a more cannon-like construction may be produced. Another object of my invention is to provide for the cannon, an igniting device of a durable and efficient type.

While my invention is capable of embodiment in many different forms, for the purpose of illustration I have shown only one form of my invention in the accompanying drawings, in which,

Figure 1 is a side elevation of a cannon made in accordance with my invention;

Fig. 2 is a plan view of the same partly broken away;

Fig. 3 is a transverse cross-section of the same; and

Fig. 4 is a longitudinal section of a portion of the same.

In the drawings I have shown a cannon barrel 1, having a baffle 1^a and having at its rear a pair of inclined lugs 2, to lock in place a breech 3, having ears 4, adapted to extend over the lugs 2. The breech 3 preferably is of large size so as to permit the adequate ventilation of the cannon when it is removed. This breech 3 has a spoon which is located in a cylindrical extension 6, projecting from the interior of the breech 3. The spoon 5, which is adapted to introduce into the cannon calcium carbide or any other gas-forming material, is of such a length that when the breech 3 is in place on the barrel 1, the spoon is located over a liquid chamber 7, which in case calcium carbide is used is partly filled with water. Said chamber 7 has at its sides two axles 8 to receive wheels 9, and a rear supporting frame which comprises two side arms 10, connected at their rear to a block 11, having an opening 12, which may be used to contain the supply of ammunition, which in this case is the gas-forming material. In the rear of the cylindrical extension 6, there is an opening 13 to permit the entry into the cannon of sparks produced by a body of pyrophoric metal 14, in the cylindrical extension 6 and pressed forward by a spring 15 resting against a screw 16 in said extension 6 located adjacent to an abrading wheel 17, pivoted to the back of the breech 3. Below the wheel 17 there is a finger-rest 18, which is of assistance as a rest for the finger when the wheel 17 is to be turned.

In the operation of the cannon, the breech, or other removable part 3, is removed by turning the same slightly and withdrawing it rearwardly. Then a quantity of the gas-forming material, which may be powdered calcium carbide, is dipped up by the spoon 5 from a body of material which may be contained in the block 11. The breech 3 is then applied to the cannon and rotated nearly 180° so as to lock the ears 4 behind the lugs 2. This movement of the breech turns the spoon

5 over so as to discharge the carbid into the body of water contained in the water receptacle 7. A body of acetylene is thus immediately formed which mixes with the air in
 5 the cannon back of the baffle 1^a to form an explosive gaseous mixture. It is not necessary to insert any closure in the end of the cannon at the front thereof, as the body of air located in the front portion of the barrel of the cannon serves the same purpose, although a cork or other stopper may be inserted, if desired. When now the wheel 17 is rotated by resting the first finger beneath the finger-rest 18, and moving the wheel 17
 15 with the thumb, the body of pyrophoric metal 14 is abraded, so as to project a number of sparks into the interior of the cannon through the opening 13. This explodes the gaseous mixture in the cannon, thus producing a loud report. The explosion is such, however, that no possible damage can occur to anyone or anything located in front of the cannon, so that the device is entirely safe in its operation. When the cannon is to be
 25 again discharged, the breech, or other removable part 3, is removed in the manner already described, which has the effect of ventilating the interior of the cannon, so as to remove the non-combustible gases
 30 therefrom and replace the same with a body of air ready for mixture with a further quantity of acetylene to bring about the next explosion in the cannon.

While I have described my invention
 35 above in detail, I wish it to be understood that many changes may be made therein without departing from the spirit of my invention.

I claim:

40 1. A cannon having an explosion chamber therein, means for admitting oxygen to said chamber, and means for generating within said chamber a gas which, when mixed with the oxygen therein forms an explosive gas.

45 2. A cannon having means for charging a body of explosive gas into the same, comprising a spoon, and means requiring the ventilation of the cannon, prior to each operation
 50 of the chaging means.

3. A cannon having means for charging a body of explosive gas into the same, comprising a spoon, and means requiring the ventilation of the cannon, prior to each operation
 55 of the charging means, comprising a removable breech attached to the spoon.

4. A cannon having means for charging a body of gas-forming material into the same, and a liquid receptacle therein, the charging
 60 means being so constructed as to discharge into the receptacle when being locked in place.

5. A cannon having means for charging a body of gas-forming material into the same,
 65 comprising a breech, and a liquid recepta-

cle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place.

6. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, and a liquid
 70 receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place.

7. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, and a liquid
 75 receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place, by the rotation of the breech.

8. A cannon having means for charging a body of gas-forming material into the same, supporting means comprising wheels and an axle, and a liquid receptacle formed on the
 85 axle, the charging means being so constructed as to discharge into the receptacle when being locked in place.

9. A cannon having means for charging a body of gas-forming material into the same, comprising a breech, supporting means comprising wheels and an axle, and a liquid receptacle formed on the axle, the charging means
 90 being so constructed as to discharge into the receptacle when being locked in place.

10. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, supporting means comprising wheels and an axle, and a liquid receptacle formed on the
 100 axle, the charging means being so constructed as to discharge into the receptacle when being locked in place.

11. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, supporting means comprising wheels and an axle, and a liquid receptacle formed on the axle, and the charging means being so constructed as to discharge into the receptacle when being
 110 locked in place, by the rotation of the breech.

12. A cannon having means for supplying a gas-forming material thereto, supporting means comprising wheels and an axle, and
 115 a water receptacle for receiving the gas-forming material located on the axle.

13. A cannon having means for charging a body of explosive gas into the same, means requiring the ventilation of the cannon, prior to each operation of the charging means, and a pyrophoric metal igniting device on the cannon.

14. A cannon having means for charging a body of explosive gas into the same, comprising a spoon, means requiring the ventilation of the cannon, prior to each operation of the charging means, and a pyrophoric metal igniting device on the cannon.

15. A cannon having means for charging 130

a body of explosive gas into the same, means requiring the ventilation of the cannon, prior to each operation of the charging means, comprising a removable breech, and a pyrophoric metal igniting device on the cannon.

16. A cannon having means for charging a body of explosive gas into the same, comprising a spoon, means requiring the ventilation of the cannon, prior to each operation of the charging means, comprising a removable breech attached to the spoon, and a pyrophoric metal igniting device on the cannon.

17. A cannon having means for charging a body of gas-forming material into the same, a liquid receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

18. A cannon having means for charging a body of gas-forming material into the same, comprising a breech, a liquid receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

19. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, a liquid receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

20. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, a liquid receptacle therein, the charging means being so constructed as to discharge into the receptacle when being locked in place, by the rotation of the breech, and a pyrophoric metal igniting device on the cannon.

21. A cannon having means for charging a body of gas-forming material into the same, supporting means comprising wheels and an axle, a liquid receptacle formed on the axle, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

22. A cannon having means for charging

a body of gas-forming material into the same, comprising a breech, supporting means comprising wheels and an axle, a liquid receptacle formed on the axle, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

23. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, supporting means comprising wheels and an axle, a liquid receptacle formed on the axle, the charging means being so constructed as to discharge into the receptacle when being locked in place, and a pyrophoric metal igniting device on the cannon.

24. A cannon having means for charging a body of gas-forming material into the same, comprising a rotatable breech, supporting means comprising wheels and an axle, and the charging means being so constructed as to discharge into the receptacle when being locked in place, by the rotation of the breech, and a pyrophoric metal igniting device on the cannon.

25. A cannon having means for supplying a gas-forming material thereto, supporting means comprising wheels and an axle, a water receptacle for receiving the gas-forming material located on the axle, and a pyrophoric metal igniting device on the cannon.

26. A cannon comprising a body having an explosion chamber therein, a liquid containing receptacle in communication with said chamber, and means for depositing a charging material from said chamber into said receptacle.

27. A cannon having a removable device for supplying into the same a body of material to generate a gas adapted to explode in the presence of air, and an operating means for said device arranged to ventilate the cannon after each explosion thereof when the supplying device is withdrawn.

In testimony that I claim the foregoing I have hereunto set my hand.

JAMES H. WILY

Witnesses:

M. K. MORSE,
AGNES F. McLAUGHLIN.