

VOID : SEALING FEE NOT PAID.

N° 1142



A.D. 1912

(Under International Convention.)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in Switzerland), } 15th Jan., 1911

Date of Application (in the United Kingdom), 15th Jan., 1912

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 10th Oct., 1912

COMPLETE SPECIFICATION.

Flash-light Apparatus without Smoke Discharge.

I, GEORG HOFMANN, of Bern, Switzerland, Photographer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a flash-light apparatus which requires no smoke discharge, in which a readily locked combustion chamber, with partly transparent wall, a removable charging device and a buffer for momentarily recoiling the blow of the ignition mechanism, is adjoined to the smoke-receiving room with which it is movably connected by an automatic closing contrivance. The apparatus is contrived in such a manner that at the moment of firing the flash-light powder, the resulting gas pressure will force open the communication into the smoke-receiving room so that the smoke can escape, while, at the decrease of the gas pressure, the communication is instantaneously and nearly completely closed so as to prevent the smoke from returning to the combustion chamber. It is the purpose of this arrangement to enable the apparatus to be used at frequent successive intervals without having to discharge each time the smoke-receiving room into the atmosphere.

The accompanying drawings show an embodiment of the invention by way of example.

Fig. 1, is a perspective view of the apparatus.

Fig. 2, is an elevation, partly in section, of the lower portion of the smoke chamber and the combustion chamber.

Fig. 3, is a vertical section on the line III—III of Fig. 2.

Fig. 4, is a horizontal section on the line IV—IV of Fig. 2.

Fig. 5, is an underside view of the closing device.

The square well closed combustion chamber 1 is on three sides surrounded with metal walls, while the fourth side is fitted with a glass pane so as to give sufficient passage for the light. In the combustion chamber 1 is provided a charging device. This is formed by a sliding carrier 4 moving in guides 3 and carrying the powder pan 5 for the reception of the flash-light powder, the anvil 6 and a spring 7 with the striker 8. The opening in the wall of the combustion

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chamber for the withdrawal of the charging device is closed by a cover 11 carried by a spring 10. In the wall of the combustion chamber is turnably mounted a shaft 12 which has external wings 13 for rotating it. Upon the shaft 12 is fast a striker 14 so arranged that a spring 15 tends to press such striker against the buffer 9. The striker 14 has a projection 16 which, on the striker being turned 5 backwards in the direction indicated by arrow in Fig. 3, comes against the arresting spring 17 fixed to the wall of the combustion chamber. The free end of the spring 17 carries at its end externally of the chamber an arm 18 which is fitted with a set screw 19. Between the arm 18 and the wall of the combustion chamber is placed a small indiarubber ball or inflator 20 which communicates 10 with a conduit 21 and a bulb 22.

The combustion chamber has at its upper end a suitable connection with the smoke receiving chamber or bag normally closed by an automatic closing device. This receiving chamber or bag 23 has, when filled, a balloon-shaped form; it is by its closed upper end sustained by a carrier 24 fixed to the combustion chamber. 15 The envelope of the receiving chamber or bag 23 is made of gas-tight material, for example, light caoutchouc linen. The lower end of the envelope forms the closing device. It is for this purpose passed between the cylindrical superposed collar 25 and a band 26 surrounding same, and is then secured to two springs 27. The upper ends of these springs have the tendency to spread apart and thereby 20 nearly completely close the receiving chamber at the lower portion by pulling the lower edge of the inturned envelope as far apart that their two halves touch one another. The portion of the envelope between the band 26 and the free end of the springs has two slit-like openings 28 which are covered by flaps 29. These flaps are fixed to the envelope only along one side and two ends and are 25 so arranged as to render possible the passage of the gas in the downward direction. In the lower part of the superposed collar 25 is a strainer 30.

The manner of using the apparatus is as follows:—

After moving aside the cover 11, the charging device is taken out, an ignition cap or pellet is placed between the anvil 6 and pin 8, the flash-light powder 30 is placed on the pan, and after the device is replaced in the combustion chamber, the cover 11 is closed. Immediately before the photographic exposure is made, the ignition mechanism is set by turning the shaft 12. At the moment when, through the compression of the pneumatic bulb, the bulb 20 forces the spring 17 away from the projection 16 a blow is delivered on the buffer 9 and pin 8 to 35 produce the firing of the ignition cap or pellet and the flash-light powder. The buffer 9 becomes compressed under the blow so that the striker can momentarily knock against the pin 8 but the buffer immediately turns back the striker. The strong smoke from the combustion of the flash-light powder forces the closure of the receiving chamber up and, in contracting the free ends of the two springs, 40 moves quickly upwards in the latter. Through the slit-like openings 28 occurs then an equalization of pressure.

The apparatus has the advantage that a discharge of the smoke into the atmosphere after each use is not necessary; it ensures, moreover, the safe charging and absolutely safe use. 45

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

Flash-light apparatus without discharge of smoke, characterized in that a well closed combustion chamber with partly transparent wall and removable 50 charging device and igniting device provided with buffer for the momentary recoil of the blow is connected with a communicating receiving chamber for the smoke by an automatic closing device in such a manner that at the moment of ignition of the flash-light powder, in consequence of the resulting gas pressure, the passage to the receiving chamber is opened so that the smoke can pass, but 55 that the said opening instantaneously and almost entirely closes at the reduction

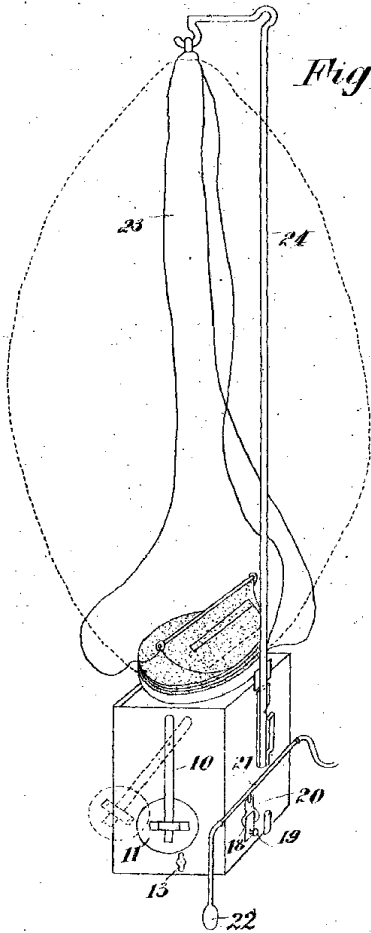
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of gas pressure so as to sufficiently prevent the return flow of the smoke into the combustion chamber, the whole for the purpose of permitting the use of the apparatus at successive intervals without each time discharging the receiving chamber into the atmosphere.

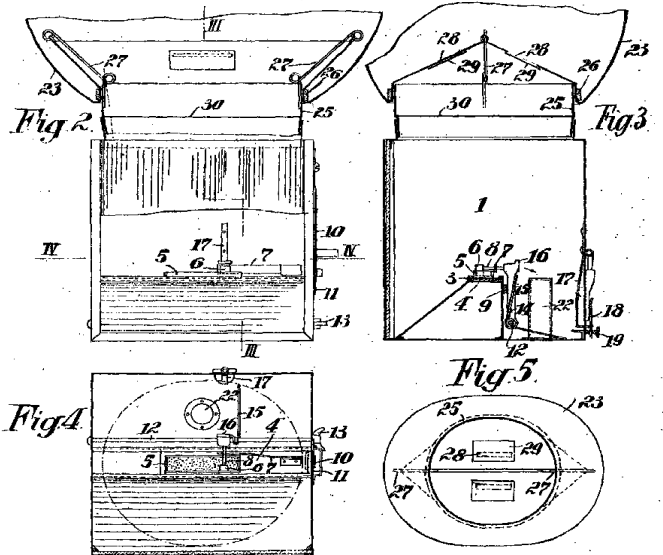
5 Dated this 15th day of January, 1912.

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Fig 1

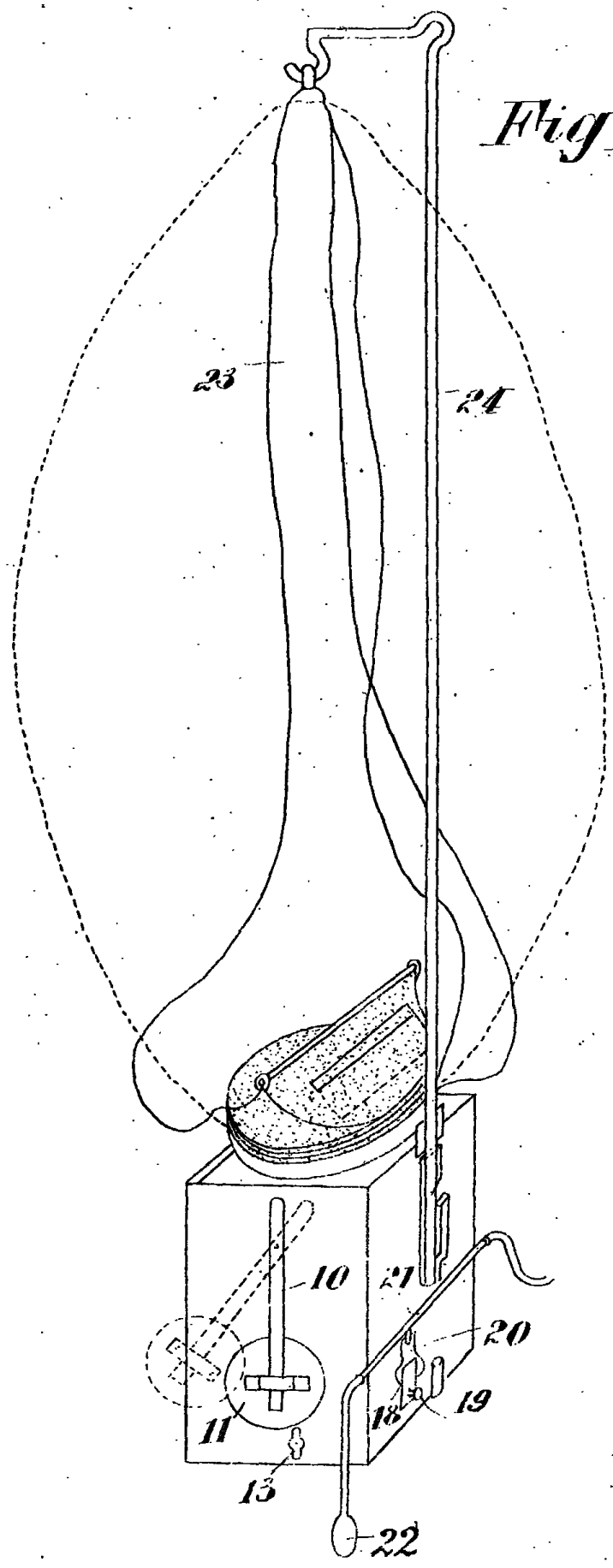


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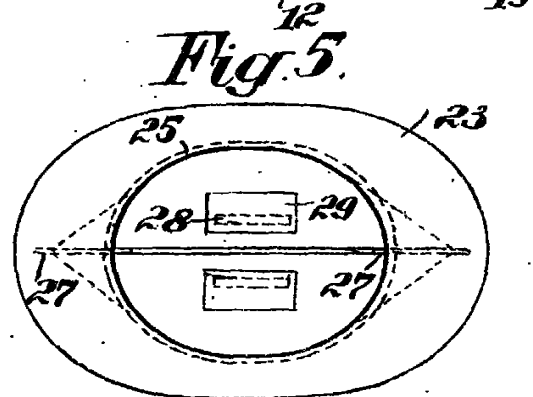
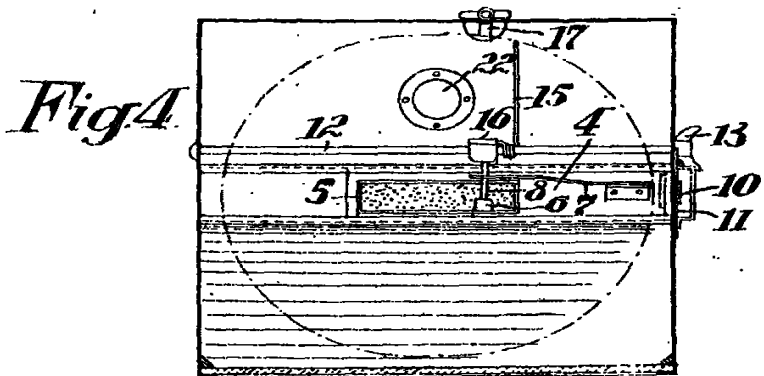
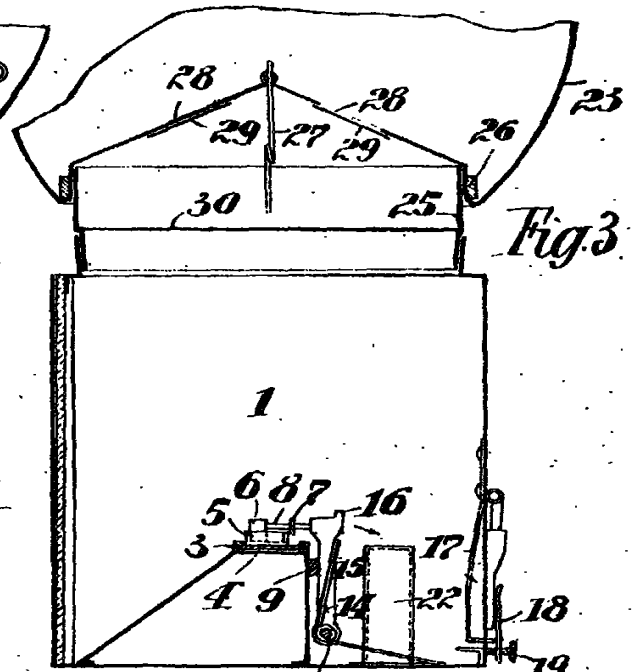
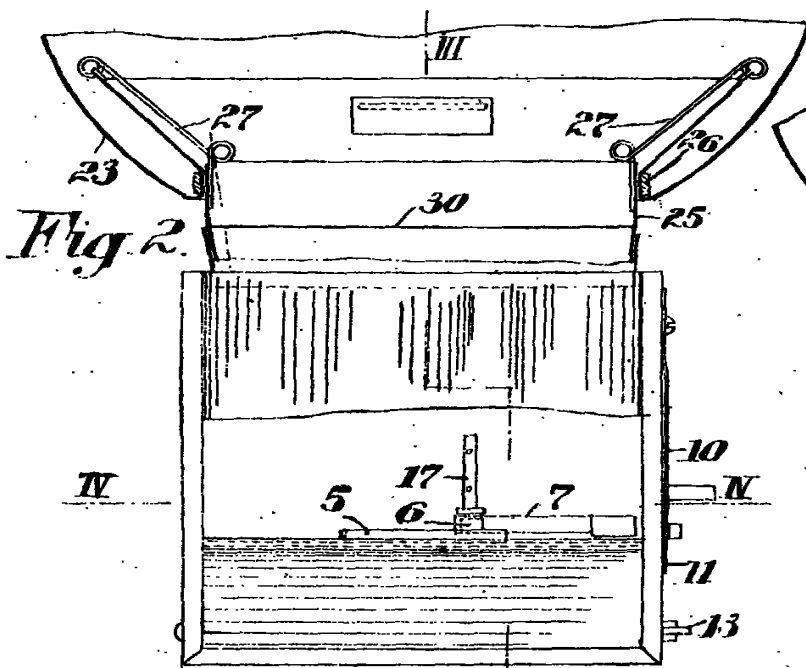


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Fig 1



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