

(No Model.)

S. STAUTH & C. WIEBACH.
PYROTECHNIC PROJECTILE.

No. 508,152.

Patented Nov. 7, 1893.

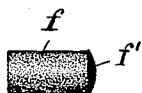


Fig. 1



Fig. 2

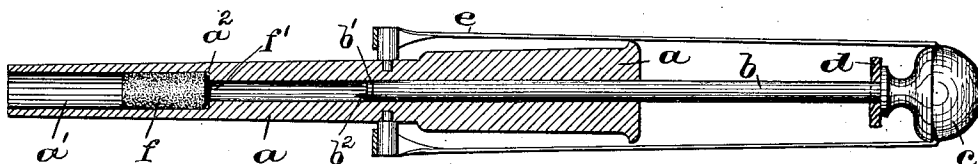


Fig. 3

WITNESSES:

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UNITED STATES PATENT OFFICE.

SEBASTIAN STAUTH AND CARL WIEBACH, OF NEWARK, NEW JERSEY,
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PYROTECHNIC PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 508,152, dated November 7, 1893.

Application filed January 21, 1891. Serial No. 378,518. (No specimens.)

To all whom it may concern:

Be it known that we, SEBASTIAN STAUTH and CARL WIEBACH, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Pyrotechnic Toys; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The present invention relates to a pyrotechnic toy or projectile which can be placed in the barrel of a gun and propelled therefrom at the same time being ignited and flying through the air as a ball of fire or like a shooting star.

The invention therefore consists in the production of such pyrotechnic balls provided with a friction-igniting surface adapted to be ignited by contact with the end of the plunger or rod within the gun, whereby by the concussion said friction surface is ignited and thus sets fire to the pyrotechnic compound of which the ball is manufactured.

The invention is illustrated in the accompanying sheet of drawings, in which—

Figure 1 represents one of our pyrotechnic projectiles or balls, provided on one end thereof with a friction-igniting head, and Fig. 2 is a vertical section of a spherical ball covered entirely with a friction-igniting surface. Fig. 3 is a sectional view of any suitable form of gun, with the pyrotechnic ball or projectile in position in the gun, and with the plunger or rod of the gun partially drawn back.

Any pyrotechnic compound such as nitrate of strontium, nitrate of baryta, and shellac, &c., is dissolved in alcohol and formed in a plastic state into a spherical ball or into the cylindrical ball, illustrated in Figs. 1 and 2; one end of the ball or small cylinder, or its entire surface, if desirable, is then coated with a friction-igniting matter, such as chlorate of potash, phosphorus and gum, or any other well known friction compound. The ball is then dried, when it is ready to be used in connection with any form of toy gun.

One form of gun is illustrated in Fig. 3, and the same consists of a barrel *a* in which is arranged a plunger or rod *b* which projects from one end of the gun and is provided with a ring or head *c*, for partially withdrawing the same from the back end of the gun, as will be understood. In front of this ring or head upon the plunger may be placed a leather or other washer *d*. The ring or head *c* can be connected by means of a strong rubber band, or its equivalent, *e*, secured to the barrel of the gun and passing over the head or through the ring, as shown, whereby the rod or plunger is returned with great force back into the barrel of the gun, after it has been partially withdrawn therefrom and let go by the person desiring to send the ball into the air. Instead of the rubber band *e* the rod or plunger *b* can be provided with the usual spiral spring, which will answer the same purpose as the rubber band, as will be evident. The forward end of the barrel *a* is preferably provided with an enlarged tubular portion *a'* into which the pyrotechnic ball *f* is loaded so that its friction-igniting head or surface *f'* rests against the annular projection *a''* within the barrel. The ball is made to fit snugly into this portion of the gun. The plunger or rod *b*, which may be made of wood or metal, is provided on its end within the barrel of the gun, with a metallic tip *b'* having any number of points *b''*. Of course it will be understood that the bore of the gun can be made straight, if desirable, instead of with an off-set *a''* shown, in which case the ball will at all times rest upon the pointed end of the rod or plunger and will become ignited by the friction between the pointed end and the friction material and also the sides of the bore in its flight therefrom. Now, when the rod or plunger has been drawn back and the gun loaded with one of our pyrotechnic balls, by releasing the ring or head of the rod or plunger, the latter will be returned with great force into the barrel, the points *b''* forcing themselves into the friction surface of the ball, thereby igniting the same, and propelling the ball from the muzzle of the gun, the pyrotechnic compound having been set on fire and the ball sailing through the air as a brilliant fire ball or shooting star of any desirable color according to the con-

tents of the pyrotechnic compound employed in the construction of the ball.

Of course we do not claim as our invention the specific preparations of the different colored lights, for such pyrotechnic compounds, known as "Bengal fire" are not new in themselves, but we do claim as our invention such compounds formed into a plastic mass in the shape of balls provided with a friction-igniting surface whereby the balls can be placed within a gun, ignited therein and propelled from the gun, as has been described.

Having thus described our invention, what we claim is—

1. As a new article of manufacture, a projectile or pyrotechnic ball consisting of a py-

rotechnic compound coated with a friction-igniting compound, as and for the purposes set forth.

2. As a new article of manufacture, a projectile or pyrotechnic ball consisting of a pyrotechnic compound provided with a head of a friction-igniting compound, as and for the purposes set forth.

In testimony that we claim the invention set forth above we have hereunto set our hands this 19th day of January, 1891.

SEBASTIAN STAUTH.
CARL WIEBACH.

Witnesses:

FREDK. C. FRAENTZEL,
FRED BECHT.