W. H. WILLSON.

FIREWORKS.

APPLICATION FILED AUG. 30, 1916.

1,217,544. Patented Feb. 27, 1917.

Fig. 1.

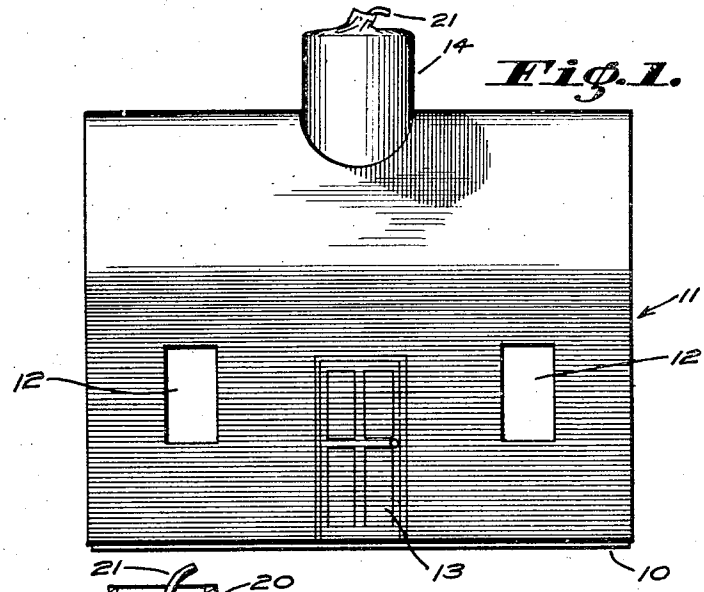


Fig. 2.

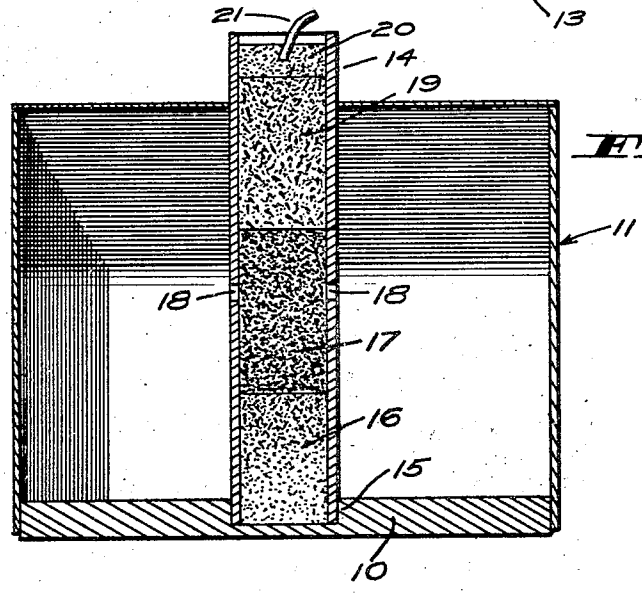
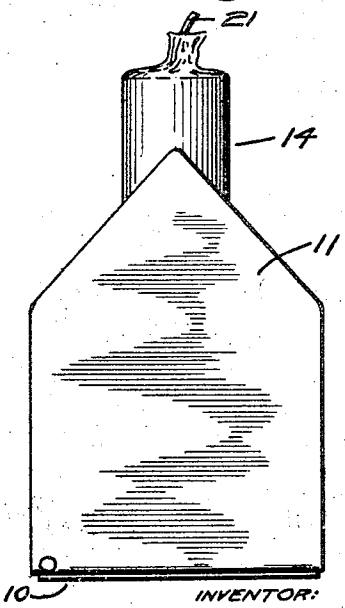


Fig. 3.



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FIREWORKS.

1,217,544. Specification of Letters Patent. Patented Feb. 27, 1917.

Application filed August 30, 1916. Serial No. 117,727.

To all whom it may concern:

Be it known that I, WILLIAM H. WILLSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Fireworks, of which the following is a specification.

This invention relates to fireworks.

It is an object of this invention to provide a piece or fireworks which will, during the process of its combustion produce a series of effects similar to the various stages in the burning of the building, such as the starting of the fire in a chimney followed by the burning of the chimney accompanied by sparks and red glow; the essence of the invention residing in means whereby smoke and fire will be directed into the interior of the building and out wall openings therein and after an interval of time the structure will be set afire to effect its destruction

Another object is to provide a piece of fireworks producing the above results and which may be readily ignited from a single ignition point.

It is a further object to provide a piece of fireworks which is practically harmless and will thus be safe for use of children and which will produce results which are natural in their effect.

Other objects will appear hereinafter.

The invention is illustrated, by way of example, in the accompanying drawings in which:

Figure 1 is a view in side elevation illustrating the piece of fireworks prior to its combustion.

Fig. 2 is a view in vertical section through the article.

Fig. 3 is a view in end elevation of the structure.

Referring more particularly to the drawings, 10 indicates a base which is preferably of wood and upon which is secured a boxlike structure 11 of paper or other combustible material which is here shown as formed to represent a small house having side walls and a roof. The outer surfaces of the structure 11 are printed to indicate weather boarding and shingles and one side of the structure is formed with openings 12 to represent windows. A door 13 is indicated between the windows.

An opening is formed through the roof of the structure 11 and is adapted to receive a powder receiving tube 14 which extends downwardly and seats within a counter bore 15 formed in the upper face of the base 10. The tube 14 is so positioned that its upper end will extend a distance above the ridge of the roof to represent a chimney. This tube is preferably made of pasteboard and is packed with combustible powder which is arranged in strata within the tube and is of such character that it will burn successively to produce various effects. The lower stratum 16 is composed of a powder which will produce a hot flame when burning and which will generate a sufficient heat to set fire to the structure. The stratum 17 directly above the stratum 16 is composed of a powder which will generate a dense smoke while burning, this stratum extends upwardly through the tube above outlet ports 18 formed through the tubular wall and which ports will allow the smoke to pass out into the structure 11 and through the window 12. Upon the smoke powder 17 is packed a stratum of red glow 19 and above that is a stratum composed of a kindling powder 20. The kindling powder is adapted to be ignited from a fuse 21 which extends outwardly from the end of the tube and is secured within the chimney top.

The action of the fireworks when ignited is as follows:

On ignition of the fuse 21 it will burn down into the stratum of kindling powder 20, lighting same, and which on burning will emit sparks and produce sufficient heat to ignite the upper portion of the red glow powder 19. As the latter burns it will throw off a bright glowing light greatly resembling a fire within a chimney flue. After the stratum 19 has burned away the smoke strata will be ignited and will cause smoke to be emitted from the chimney and when the powder has burned down to the level of the ports 18 smoke will pass out through these ports into the structure 11 and thereafter pass out through the window opening 12. After the burning of the smoke powder the stratum 16 will be ignited and will throw off a bright light and flame at the same time set fire to the tube 14, which on burning will ignite the structure 11.

I claim:

1. A piece of fireworks, comprising, a boxlike structure having openings through the side walls thereof, a powder receiving tube disposed to extend vertically from said

structure, said tube having an aperture intermediate its ends, and combustible means adapted to be ignited within said tube whereby a flame will be produced passing upwardly from the end of the tube and thereafter smoke and flame will be emitted from the end of the tube and through the walls of the structure.

2. A piece of fireworks comprising a box-like structure having a series of openings through the side walls thereof, a powder-receiving tube adapted to rest on the floor of the box and extend through the top thereof, a series of powder strata having different pyrotechnic properties within said tube arranged to be successively ignited, said tube having means whereby the products of combustion produced by the ignition of the powder within the tube will first pass out of the upper end of said tube and thereafter also pass out through the openings in the side walls of the box structure.

3. A piece of fireworks, comprising, a box like structure formed of inflammable material and having openings through the side walls thereof, a powder receiving tube disposed to rest upon the floor of said structure and extend vertically through the top of the box and having openings through its walls and mid-way its length, a heat powder stratum within the bottom of said tube, a smoke powder stratum positioned thereupon, a red glow powder stratum disposed upon said smoke stratum, and means whereby the upper red glow stratum will emit its light through the upper end of the tube and will thereafter ignite the remaining strata so they will produce fire and smoke which will pass from the end of the tube and through the openings in the walls of the tube and the structure.

In testimony whereof I have signed my name to this specification.

WILLIAM H. WILLSON.