April 24, 1928.

1,667,180

W. H. WILLSON

FIREWORKS AND BLANK FOR MAKING THE SAME

Filed Sept. 20 1926

Fig. 1

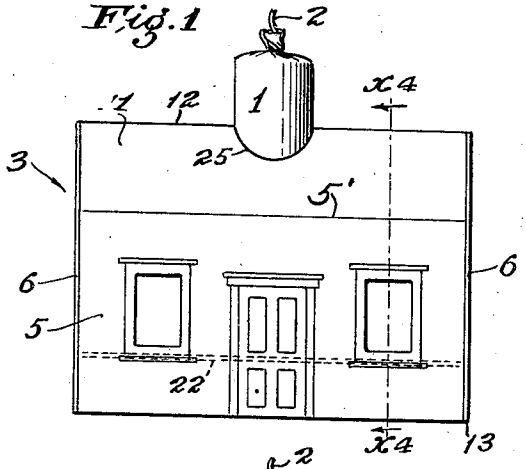


Fig. 2

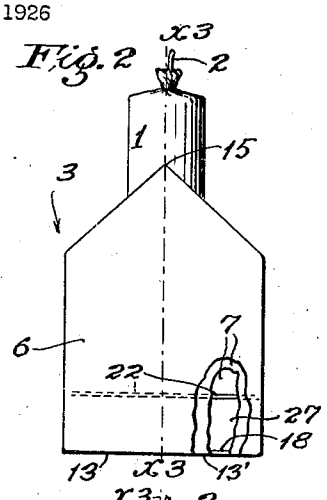


Fig. 3

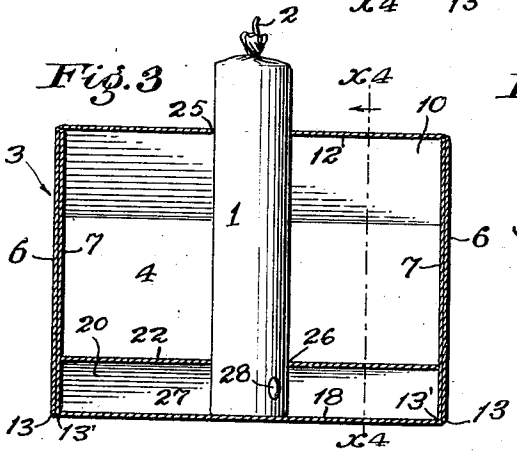


Fig. 4

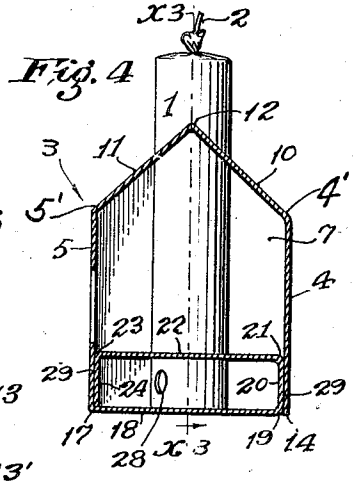
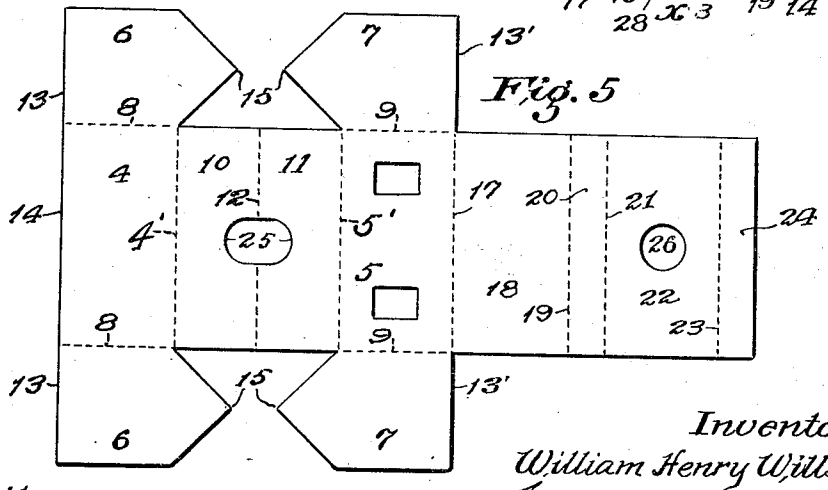


Fig. 5



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Witness

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UNITED STATES PATENT OFFICE.

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FIREWORKS AND BLANK FOR MAKING THE SAME.

Application filed September 20, 1926. Serial No. 136,453.

This invention relates to and is an improvement on fireworks set forth in my patent for "Improvements on fireworks," patented February 27, 1917, No. 1,217,544, which shows a hollow combustible representation of a house with a pasteboard tube representing the chimney of the house and containing combustibles.

An object of this invention is to reduce the cost of manufacture and at the same time provide a magazine in which a store of combustibles and mild explosives, red fire or the like may be stored, to be set off at the close of a preliminary conflagration.

One advantage over the former invention is a lighter and cheaper securely braced foundation for the powder tube or chimney of the fireworks provided by means of a double base, on the lower plate of which the tube stands, and through the upper deck of which base the tube is inserted so as to be supported thereby.

An object is simplicity of manufacture; for and by this invention the house may be made ready for the powder tube by simply stamping, folding and gluing pasteboard, paper, or other inflammable sheet material that will hold its shape in folded or bent form.

Provision is made whereby the depth of the auxiliary combustible storage chamber may be changed by a change of the stamping and scoring dies.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

The accompanying drawing illustrates the invention.

Figure 1 is a side elevation of a piece of fireworks constructed in accordance with this invention.

Fig. 2 is an end elevation of the same fireworks; portions of the end wall being broken away to expose interior construction.

Fig. 3 is a vertical longitudinal section on line x^3, Figs. 2 and 4.

Fig. 4 is a section on line x^4, Figs. 1 and 3, looking toward the fireworks tube that represents the chimney of the miniature house.

Fig. 5 is a plan of the slip or stamping from which the house is folded. The scoring or creasing applied to said slip is indicated in broken lines and is to enable the folder to accurately fold the slip to form the bends of the slip in the miniature house.

1 is an upright shaft that in the piece of fireworks consists in an open ended tube adapted to be loaded with combustibles and provided with a fuse 2 to ignite such combustibles after the manner of the fireworks shown in my said patent. The miniature house 3 is formed of a single unitary stamping or slip bent and folded in the manner hereinafter set forth, in combination with the tube, and comprising panels, and bends and flap or wings having peaks; there being two side panels 4, 5 to the ends of which the wings 6 and 7 are connected by right angle bends 8 and 9.

The first side wall panel 4 and the first wings 6 connected thereto by bends 8, form the end of the slip and the second side panel 5 is united to the second wings 7 by the right angle bends 9 and is connected to the first panel 4 by first roof and second panels 10 and 11 that are joined by the peak bend 12. Each of the end wings or flaps has a bottom edge as at 13, 13′ and the bottom edges 13 are alined with the bottom edge 14 of the panel 4; said edges 13 and 14 forming one end of the slip. The end panels or wings 6 and 7 are complementary to each other terminating in pointed tips 15 that are central to a vertical at line x^3 bisecting the bottom edges 13 and 13′ respectively.

The bottom edges 13′ of the wings are alined with a bottom bend 17 that connects a bottom panel 18 to the side panel 5. 19 is a bend connecting the bottom panel or plate 18 to a vertical subpanel 20 that is connected by a bend 21 to an upper horizontal deck or floor panel 22, which is connected by a bend 23 to a terminal upright subpanel 24 that fits against the inside of the side panel 5 while the companion panel 20 fits against the side panel 4.

The upper, or roof panels 10 and 11 are notched with notches 25 which are oblong as shown in Fig. 5 when the strip is flattened out, and which forms an aperture to fit the upright tube 1. The upper floor panel or deck 22 is provided with a central hole or aperture 26 vertically below the aperture at 25. A storage space 27 is formed between the bottom panel 18 and the floor panel 22 to contain combustibles that may be fired by communication therewith of the fire in the tube 1 through the hole 28 in the tube.

In practical manufacture the slip will be creased at the lines between the panels, and between the wings and the upright panels that carry said wings; so that to assemble the house, it is only necessary to bend the panels 24, 22, 20, 18 to form the open ended rectangular box 27 at the base of the house 3, applying a suitable cement at the joints 29 between the vertical sub-panels and the upright side panels and to apply such cement between the contacting faces of the wings 6 and 7, and also to the bottom of the loaded tube 1, then inserting such tube through the hole formed by the notches 25 and through the hole 26 onto the bottom 18.

When it is desired to place combustibles in the box, the wings need not be cemented together, but the ends of the box may be left open so that they may be filled at any time and then the ends 6 and 7 may be cemented together.

It is thus seen that I have produced a miniature house from a folded slip of pasteboard or thick paper; said slip comprising side panels 4 and 5, roof panels 10 and 11 and end wings 6 and 7; said roof panels being connected to said side panels by eave bends 4′ and 5′, and the end wings 6 and 7 being connected to the ends of the side panels 4 and 5 by upright bends 8 and 9, and that the end wings are overlapped and cemented together, so that the miniature house enclosure is firm and true, and the base for holding the bottom of the fireworks chimney tube is formed by folding the panels 18, 20, 22 and 24, with right angle corners at the bends 17, 19, 21 and 23, to form an open ended box, the ends of which abut against and are closed by the innermost end wings 7 in Fig. 3, and that by cementing to the side walls the upright subpanels 20 and 24, a very firm and stable miniature house construction is produced, and that by providing the roof panels and the upper bottom panel 22 with holes or perforations 25 and 26, and inserting the pyrotechnic tube 1 thereinto and cementing it in place, a light, strong pyrotechnic shell having the appearance of a house with a chimney is produced, and the lower end of the tube may be surrounded in the chamber 27 by any desirable combustible to complete a miniature conflagration when the inflammable filling of the tube as burned so as to communicate fire to the inflammable matter in the chamber 27.

I claim:—

1. A piece of fire works comprising a box-like structure having a chambered base, a peaked roof and walls connecting the base and the roof; said roof having an aperture in the peak, and said base comprising a bottom plate and a floor deck; said deck having an aperture vertically below the aperture in the roof; and an upright powder holding shaft seated on the bottom sheet and extending through both apertures, and said chambered base adapted for the storage of the combustibles to be ignited by fire emanating from said shaft.

2. A piece of fire works comprising a box-like structure, having a chambered base, a roof, and walls connecting the base and the roof; said roof having an aperture, and said base comprising a bottom plate and a floor deck; said deck having an aperture vertically below the aperture in the roof; and an upright open ended tube containing a combustible seated on the bottom sheet and extending through both apertures, and open to the space between the deck and bottom plate, and said space arranged to hold a quantity of combustibles adapted to be ignited by fire from said tube.

3. The combination with a powder holding shaft; of a miniature combustible house, comprising first and second side-wall panels, peaked end-wall panel, roof panels, bottom and deck panels, and first and second base panels, and bends connecting adjacent panels; the side panels, subpanels and end panels being upright, the roof panels being aslant and connected respectively to each other and to side flaps, by bends; the end panels overlapping each other and having their peaks aligned with the bend between the roof panel; the bottom panel being connected with the second side panel by a right angle bend; the first subpanel being connected with a bottom panel by a right angle bend; the deck panel being connected with the first subpanel by a right angle bend and connected with the second sub panel by a right angle bend; the deck panel and the roof panel being provided with apertures in vertical alignment with each other and the said shaft resting on the bottom panel and extending up through the deck and roof apertures; and said bottom and deck panels forming a space for the storage of combustible that may be ignited by communication therewith of the fire emanating from said shaft.

4. A piece of fireworks comprising a miniature inflammable house having panels and bends and formed with a bottom chamber adapted to contain combustibles, walls and a roof; and a tube resting on the bottom plate and extending through the deck and roof and adapted to contain combustibles and to communicate with the bottom chamber to cause the ignition of the combustibles therein.

5. A blank for forming a miniature house, consisting of a creased slip having a row of panels with parallel creases for forming bends between the panels, one end panel being provided with wings having peaks and an intermediate panel provided with wings having like peaks; the peaks of the

wings on each side being directed toward each other; two panels disposed between the panels to which the wings are attached and adapted to be bent to form a roof; an end extension creased to form deck and bottom panels and sub-panels for folding in between the panels to which the wings are attached and forming a base when the panels are folded, the roof panels being notched to form an aperture and the extension being provided with an aperture adapted to come into vertical position below the aperture in the roof panels for the purpose of receiving and supporting a chimney tube inserted through the roof aperture when the blank is folded.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 13th day of September, 1926.

WILLIAM HENRY WILLSON.