Jan. 11, 1927. 1,613,852

J. H. SHUNK

HOLDER FOR PYROTECHNICAL DEVICES

Filed Sept. 3, 1925

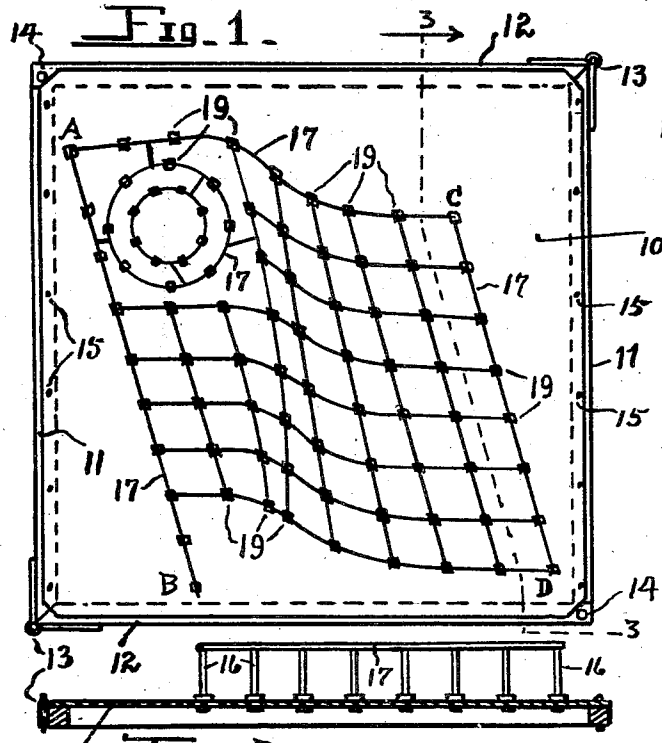


Fig. 1.

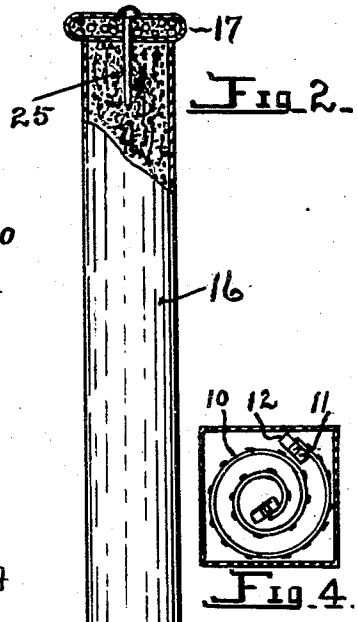


Fig. 2.

Fig. 4.

Fig. 3.

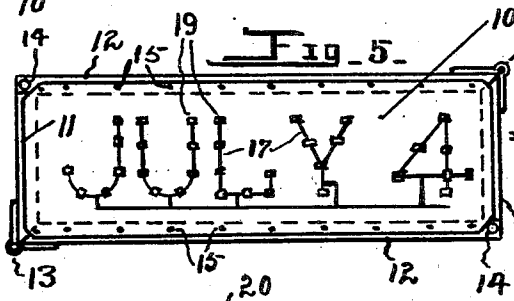
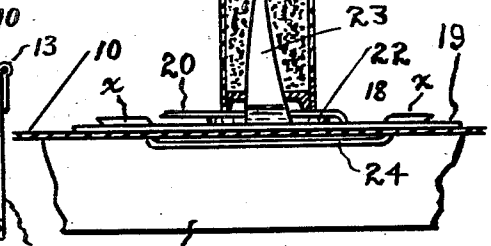


Fig. 5.



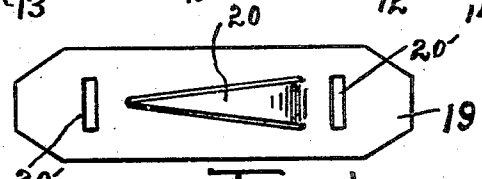


Fig. 6.

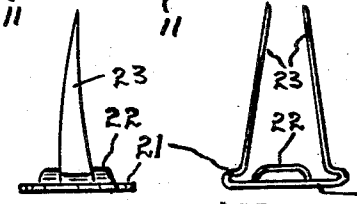


Fig. 8.

Fig. 9.

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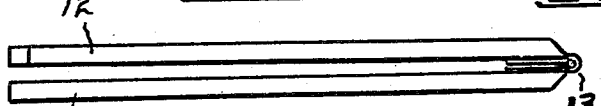


Fig. 7.

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UNITED STATES PATENT OFFICE.

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HOLDER FOR PYROTECHNICAL DEVICES.

Application filed September 3, 1925. Serial No. 54,337.

This invention relates to a means found to be of great advantage for holding pyrotechnical devices in such a manner that they will represent any selected design, symbol or emblem which may be desired on a background for exhibition, and includes such a construction for a holder that the pyrotechnical devices may be conveniently mounted and will be of advantage in describing all required angles or curves for a symbol or design.

Another object is to provide a lance holder consisting of few and simple parts so that it may be manufactured practically and economically. The invention also includes a lance holder of such construction that all inflammable parts may be detached from the holder to be shipped from the factory as a separate package, this being a feature relating to the saving of expenses in express charges, since rates in the matter of these charges depend upon classification. The invention includes such a construction that the lances or other pyrotechnical devices may be readily assembled on the holder and secured thereto by an inexperienced person after delivery at destination.

The invention is fully described herein and its new and useful features are particularly pointed out in the appended claims, and is illustrated by the accompanying drawing, wherein,—

Fig. 1 is a plan or side view of a lance-holder embodying my invention, the lances and fuses being mounted thereon. Fig. 2 is an enlarged, broken away view, partly in section, showing a lance mounted on the holder. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is an end view of a shipping package, the holder therein being in rolled position. Fig. 5 is a side or plan view of a lance-holder with lances and fuses thereon. Figs. 6, 7, 8 and 9 are views in detail to clearly show construction. Fig. 6 is a plan view of a base-strip of a fastener. Fig. 7 is a plan view showing a pair of connected frame-strips. Fig. 8 is a side view of an impaling-piece for a lance or similar pyrotechnical device, and Fig. 9 is a view of the impaling-piece taken at right-angles to the view shown in Fig. 8.

Before describing the drawing it should be stated that it has been the custom of manufacturers to secure the lances and fuses to the lance-holders or frames before shipments are made, this however being a disadvantage, since the lances may become displaced from the holder unless unusual care is exercised in packing and boxing, and since in such instances the inflammable parts are attached to the holders or frames, the expense, on account of the express rates, are considerable, especially when shipping the larger sizes.

In order that the benefits and advantages first mentioned may be attained, I provide a lance-holder consisting, in part, of a web 10 which may consist of any strong material sufficiently thin and flexible to permit it to be rolled upon itself to occupy a limited space, and to be attached to a frame, and to which, before shipment, suitable fasteners may be secured for supporting the lances.

While I do not wish to limit myself to any particular kind of frame I prefer to use one which may be folded, consisting of connected frame-strips 11 and 12, used in pairs, hinges 13 being shown for these connections, and one of said pairs being shown in Fig. 7 of the drawing. To form a complete frame, the ends of the strips, opposite to the hinges, may be incised, chamfered or dovetailed (not shown) and connected by suitable, removable keepers 14, and since the web is secured to two opposed strips by keepers 15, the frame-strips and web 10, after the strips 11 and 12 have been folded, may be rolled to occupy a very limited space for boxing, as shown in Fig. 4.

It will be understood that the lances 16 and fuses 17, since they are inflammable, are also packed, this package being separate from the web and its frame.

To prepare the holder ready to be shipped, after the web has been secured to the frame as shown in Fig. 1, an operator or draftsman sketches or paints the image, symbol, emblem or design on the web, and if a flag is to be exhibited similar to the one shown in the drawing, the drafting will show lines indicating the flagstaff, the stripes and other parts of the flag, including the cross-bars. The web is then provided with suitable fasteners 18, a considerable number of these being used and disposed in spaced relation on the lines provided by the draftsman.

While I do not wish to limit myself to any particular kind of fastener, I have used one to great advantage constructed of small strips of sheet metal, one of these being an

elongated base-plate 19 having a tongue 20 at its upper side and provided with apertures 20′ near its respective ends, another part of the fastener being a cap 21 provided with a loop 22 at its upper side and having upwardly projecting prongs 23 at the opposed sides of the loop, said cap being disposed on the plate 19 with its loop receiving the tongue 20; and since the tongue is of tapered form, the cap, for a secure mounting on said plate, may be pressed toward the divergent part of the tongue. A narrow holder strip 24 is then employed below the web, its end portions being passed through or penetrating the web and passed through the apertures 20′ of the plate 19, and when parts of the strip 24, near its ends, have been bent downwardly, as indicated at x (Fig. 2) to lie upon the top of said plate 19, the fastener thus described will be effectively secured to the web; and in the work of securing the fasteners to the web, the operator places them at the intersections of the lines mentioned and upon other parts indicative of the flag, including the flag-staff and stars of the flag.

Relative to the exhibit shown in Fig. 5 of the drawing, the foldable or collapsible features for the pairs of frame-strips 11 and 12, and use of the web 10 and fasteners 18 are the same as already mentioned, and any further description relating to Fig. 5 is not considered necessary. According to the present invention it will be appreciated that very large frames and webs of large area may be prepared, and may be shipped at, comparatively, a limited expense.

It will be noted, by referring to Fig. 9 of the drawing, that the pair of prongs 23 for a cap 21 are disposed upwardly convergent relative to each other, also that, as shown in Fig. 8, each prong is formed upwardly convergent, these features being of great advantange for supporting a lance and maintaining it at right-angles to the surface of the web, it being understood that each lance, for its mounting on the web, must be manually pressed toward the web to its seat upon a cap 21 of a fastener 18, the prongs 23 engaging in the lower end of a lance, as shown in Fig. 2 of the drawing.

It will be understood that all of the lances employed for a design are suitably spaced apart in a manner conforming to the fasteners on the web, and the lances are connected with the fuses 17 by any suitable means, pins 25 or other suitable impaling elements being shown for securing the fuses upon the outer ends of the lances; and the lances with the fuses secured thereon are then carefully packed, and after delivery at destination and after the web and frame have been assembled to form a flat background, the fuses and lances are mounted upon the fasteners 18, each pair of prongs 23 engaging in the lower end of a lance, as described, said lances and fuses being so placed that they will conform to the arrangement of the fasteners on the web.

In the practice of the invention, any person of ordinary skill, and without any instruction or experience, will have no difficulty in mounting the lances upon the fasteners, for the reason that the assembled lances thus connected with the fuses will have the same form as the design shown by the fasteners on the web. However, suitable indicating characters A, B, C and D, may be provided for the web and marked thereon, as shown in Fig. 1, and corresponding characters (not shown) may be provided for the assembled fuses and lances, as a guide, so that each lance will engage its corresponding fastener.

While I have shown lances mounted on the fasteners 18 it is obvious that I may mount other pyrotechnical devices thereon. Also while I have shown frames and webs of rectangular form, I may use other forms, and may use any desired number of connected strips for a frame, said strips being disposed at the edges of the web and connected therewith in any suitable manner. Also I may dispense with a frame provided, of course, that the web is of such consistency that it will support the fasteners and pyrotechnical devices.

The use of a web is considered to be the important feature of the present invention since it has approximately a uniform consistency throughout its length and breadth and therefore has many advantages over parallel bars and chains heretofore used, and while I prefer a frame for the web I do not wish to limit myself to its use in all instances. Also I may make changes in form, size, and proportion of parts and minor details of construction, as found to be of advantage, said changes being determined by the scope of the invention as claimed.

I claim as my invention,—

1. A holder for pyrotechnical devices, comprising a frame providing an enclosed area, a web disposed in said area and connected with the frame, and a plurality of fasteners secured to the web for engaging the pyrotechnical devices.

2. A holder for pyrotechnical devices, including a frame providing an enclosed area, a web secured to the frame and disposed in said area and a plurality of fasteners each being disposed upon and having a part extending through the web for supporting a pyrotechnical device.

3. In a holder for pyrotechnical devices, a flexible web having opposed, approximately parallel edges, a plurality of connected frame-strips disposed at the edges of the web, means for connecting the web with the frame-strips at two of the opposed edges

of the web, and a plurality of fasteners attached to the web, each providing a mounting for a pyrotechnical device.

4. A holder for a pyrotechnical device, comprising a frame providing an enclosed area, a web disposed in said area and connected with the frame, and a fastener secured to the web for engaging the pyrotechnical device.

5. In a holder for a pyrotechnical device, a frame providing an enclosed area, a web connected with the frame and disposed in said area, and a fastener disposed upon and having a part extending through the web for supporting a pyrotechnical device.

6. In a holder for pyrotechnical devices, a web having approximately a uniform consistency throughout its length and breadth, and a plurality of fasteners mounted on the web to provide mountings for the pyrotechnical devices.

7. In a holder for pyrotechnical devices, a web, and a plurality of fasteners to provide mountings for the pyrotechnical devices, each fastener being disposed at one of the sides and having a part extending through the web for a stationary mounting thereon.

8. In a holder for pyrotechnical devices, a flexible web, a plurality of fasteners providing mountings for the pyrotechnical devices, each fastener being disposed at one of the sides and having a part projecting through the web for a stationary mounting thereon, and a plurality of connected frame-strips disposed at the edges and connected with parts of said web.

9. In a holder for pyrotechnical devices, a flexible web having opposed, approximately parallel edges, a plurality of connected frame-strips disposed at the edges of the web, a plurality of fasteners, means for connecting the web with the frame strips at two of the opposed edges thereof, each fastener having a part projecting through the web for a stationary mounting thereon and having a part for engaging a pyrotechnical device.

10. A holder for pyrotechnical devices, comprising a frame providing an enclosed area, an imperforate web disposed in said area and connected with the frame, a plurality of fasteners secured to the web for engaging the pyrotechnical devices, said web having an approximately uniform consistency throughout its length and breadth and being flexible to permit it to be rolled upon itself.

11. A holder for pyrotechnical devices, including a frame providing an enclosed area, a web secured to the frame and disposed in said area, a plurality of apertured fasteners each being disposed upon a side of the web for supporting a pyrotechnical device, and a plurality of holder-strips on that side of the web opposite to the fasteners engaging in the apertures of said fasteners.

12. A holder for pyrotechnical devices including a frame providing an enclosed area, a web secured to the frame and disposed in said area, a plurality of fasteners providing mountings for the pyrotechnical devices, each fastener including an apertured base-plate seated on the web, and a plurality of holder-strips on that side of the web opposite to a holder-plate, each engaging in the apertures of a base-plate.

13. In a holder for pyrotechnical devices, an imperforate web, a plurality of fasteners secured to the web to provide mountings for the pyrotechnical devices, said web being flexible to permit it to be rolled upon itself.

14. In a holder for pyrotechnical devices, a web, a plurality of fasteners mounted on the surface of the web to provide mountings for the pyrotechnical devices, said web being flexible and having a surface sufficiently uniform to permit said fasteners to be disposed upon all parts of its surface.

15. In a holder for pyrotechnical devices, a web, a plurality of fasteners to provide mountings for the pyrotechnical devices, each fastener including an apertured base plate disposed at one of the sides, and a holder-strip at the opposite side of and extending through the strip into the apertures of said plate.

16. In a holder for pyrotechnical devices, a web approximately of rectangular form in plan and flexible in a degree permitting it to be rolled upon itself, a plurality of fasteners secured to the web to provide mountings for the pyrotechnical devices, a pair of pivotally connected frame-strips, a second pair of pivotally connected frame-strips, one of the strips of each pair being secured to an edge of the web and permitting the strips of each pair to be swung toward each other when said web is rolled.

17. In a holder for pyrotechnical devices, a web, a frame consisting of hingeably connected strips arranged in pairs, one of the strips of each pair being secured to an edge of said web, fasteners secured to one of the sides of the web to provide mountings for the pyrotechnical devices, said web having a surface sufficiently unform throughout its length and breadth to permit the fasteners to be mounted upon any selected parts thereof, and having a degree of flexibility permitting it to be rolled upon itself.

18. A holder for pyrotechnical devices comprising a frame, a flexible web supported by said frame, and a plurality of means carried by the web for securing pyrotechnical effects thereto.

19. A holder for pyrotechnical devices comprising a frame, a flexible web supported by said frame, said web being secured to the frame at a plurality of points whereby it is

held in distended position by said frame, and a plurality of means carried by the web for securing pyrotechnical effects thereto.

20. In a holder for pyrotechnical devices, a web, a supporting frame for said web, fasteners secured to the web, said fasteners being relatively small and independent of each other, said fasteners being adapted to support pyrotechnical effects on the web, the web being sufficiently uniform throughout its area to permit the fasteners to be mounted upon any selected part thereof.

21. In a holder for pyrotechnical devices, a web, a supporting frame for said web, fasteners secured to the web, said fasteners being relatively small and independent of each other, said fasteners being adapted to support pyrotechnical effects on the web, the web being sufficiently uniform throughout its area to permit the fasteners to be mounted upon any selected part thereof, and having a degree of flexibility permitting it to be rolled upon itself with the fasteners secured thereto.

In testimony whereof, I have affixed my signature.

JAMES H. SHUNK.