

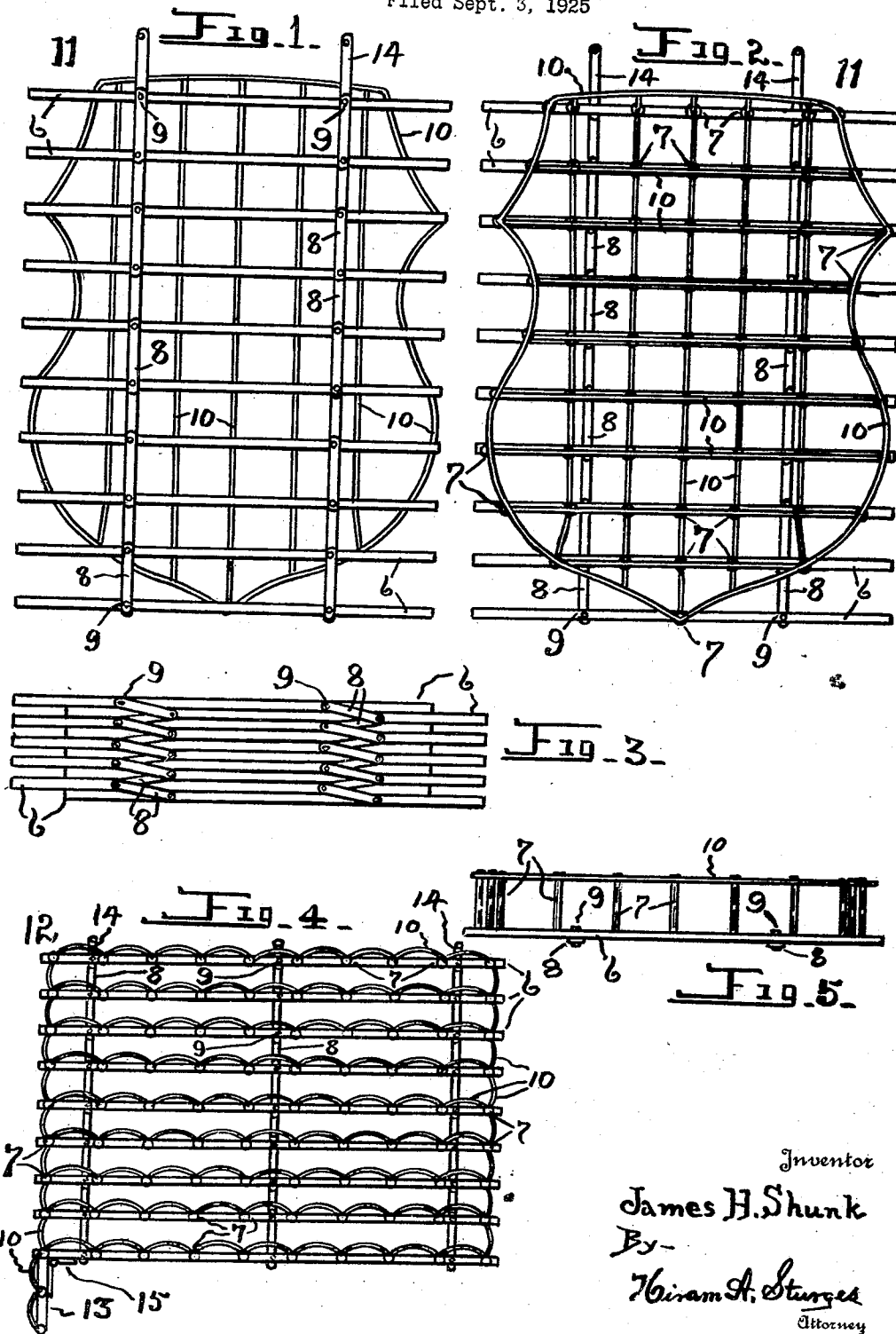
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PYROTECHNIC LANCE HOLDER

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## UNITED STATES PATENT OFFICE.

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PYROTECHNIC LANCE HOLDER.

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This invention relates to a holder for lances or other pyrotechnical devices, of the class employing strips or bars for a frame or background, and has for its principal object to provide such a construction that the bars will be reliably maintained in spaced relation and parallel after the frame has been placed ready for exhibition in its vertical position. The invention includes such a construction that the strips or bars will at all times, whether extended or folded, be disposed approximately parallel. Also it includes such a construction that when folded for shipment, the device will remain in compact form and will resist stresses to advantage. Other objects of the invention will be stated hereinafter and in the appended claims.

The invention is accompanied by a drawing, wherein,—

Fig. 1 is a side view showing the rear of a pyrotechnical lance holder embodying my invention, the bars being extended and maintained parallel. Fig. 2 is a front view of the same. Fig. 3 is a view of the bars when folded. Fig. 4 is a side view of the holder showing a design of modified form. Fig. 5 is an end view of the parts shown in Fig. 2.

Referring now to the drawing, numerals 6 indicate bars or strips disposed adjacent to each other, side by side, upon which are mounted lances 7 or other pyrotechnical devices, and in order that the bars may have swinging movements to extend to the positions shown in Figs. 1, 2 and 4, or may be folded to occupy a limited space as shown in Fig. 3, and also that said bars, during these movements, will at all times be maintained parallel, I provide spacing-links 8, said links being pivotally mounted at one of their ends, as indicated at 9, upon the bars at longitudinal intervals thereof, the links on each bar having a pivotal mounting, also, on a bar adjacent thereto.

On account of the construction as described, all of the strips or bars, during their swinging movements, will be disposed approximately parallel, the spacing-links connected with two adjacent bars being uniform in length.

Numerals 10 indicate fuses, these being secured by any suitable means, to the outer ends of the lances. Any desired number of lances may be employed and they may be secured by any suitable means to the bars; and the lances and fuses may be arranged to

indicate the contour of a shield 11 as shown in Figs. 1 and 2, and to exhibit stars or bars thereon, or may be arranged to indicate the contour of a flag 12 and flag-staff 13 shown in Fig. 4, together with the stars and stripes of said flag; and it will be understood that, as usual, the lances when illuminated may exhibit various colors.

While in Figs. 1 and 2 the fuses are shown extending both longitudinally and transversely of the shield, this feature is not necessary, for the reason that all of the lances would become ignited instantly or practically so, by use of a single fuse in communication with said lances.

In operation, the device may be secured to a support (not shown) in a vertical position, ears 14 being provided for this purpose, and on account of the construction, when the bars or strips 6 are extended, the device while supported dependently will not be changed in form for the reason that the bars will be maintained parallel. It will be appreciated that this feature operates to great advantage and is important since it prevents accidental disarrangement of parts of the design after it has been placed ready for exhibition.

It is well known that pyrotechnical displays often call for quite complicated designs such as portraying the features or facial expressions of individuals of historical interest, and since the correct expression of these personages depends upon the correct spacing of the bars 6 it is important that the pivotally mounted, rigid links, as described, be provided for maintaining said bars in uniformly spaced relation to prevent displacement of the lances.

It will be understood that the work of securing the lances to the bars, and securing the fuses to the lances is performed at the factory before the device is boxed and shipped, and it will be appreciated that the use of the rigid spacing-links as shown and described will operate to advantage in maintaining the device in compact form for resisting stresses to advantage and for preventing injury or disarrangement of parts when packed for shipment, and to permit the device to be folded to occupy a limited space.

Numeral 15 indicates a hinge which permits the flag-staff to be swung inwardly into contact with a bar 6 adjacent thereto, and since the fuses are flexible they may be bent,

without injury, into loop-forms when the bars are swung into folded position ready to be boxed.

According to the present construction it will be noted that the links 6 will not be obtrusive during operation or during exhibitions since they are disposed rearwardly of the bars or strips 6, the pyrotechnical elements 10 being disposed forwardly of said bars.

While I have shown and described specific details of construction I do not wish to be understood as limiting myself in this respect, and changes in form, size, proportion and minor details may be made, said changes being within the scope of the invention as claimed.

I claim as my invention,—

1. In a pyrotechnical lance-holder, a plurality of bars disposed side by side, lances projecting approximately at right-angles from one of the sides and secured to said bars, a plurality of rigid spacing-links each engaging that side of a bar opposite to the lances thereon and having a pivotal mounting at one of its ends on said bar and having a pivotal mounting for its opposite end upon an adjacent bar permitting each bar to be swung into engagement with a bar adjacent thereto, and fuses carried by and arranged to connect said lances one with another.

2. In a pyrotechnical lance-holder, a plurality of bars disposed side by side, lances projecting at right-angles outwardly from one of the sides and secured to said bars, fuses carried by said lances, spacing-links disposed at longitudinal intervals of the bars, each link engaging that side of a bar opposite to the lances thereon and having

a pivotal mounting at one of its ends on said bar and having a pivotal mounting for its opposite end upon an adjacent bar, and ear-members mounted on that side of a bar opposite to said lances and said fuses for use in supporting the lance-holder in an upright position.

3. In devices for the purposes described, the combination with the bars of a lance-holder, said bars being disposed side by side and having lances projecting outwardly from one of their sides, of a plurality of rigid links of uniform lengths disposed at that side of the bars opposite to the lances each link having a pivotal mounting for its respective ends upon two adjacent bars for maintaining said bars at uniform distances from each other.

4. In a pyrotechnical lance holder, a plurality of bars, lances carried by said bars, and a plurality of links pivotally connected to said bars, said links connecting the bars together whereby the bars may have a limited movement relative to each other.

5. In a pyrotechnical lance holder, a plurality of substantially parallel bars, lances carried by said bars, a plurality of substantially rigid links carried by said bars, each link being pivotally connected adjacent its ends to two adjacent bars, each pair of adjacent bars being connected by a plurality of links, said links permitting a limited movement between the bars and maintaining them in substantially parallel relation throughout said movement.

In testimony whereof, I have affixed my signature.

JAMES H. SHUNK.