March 12, 1940. E. F. HOPPES 2,193,067

DIVING PROJECTOR

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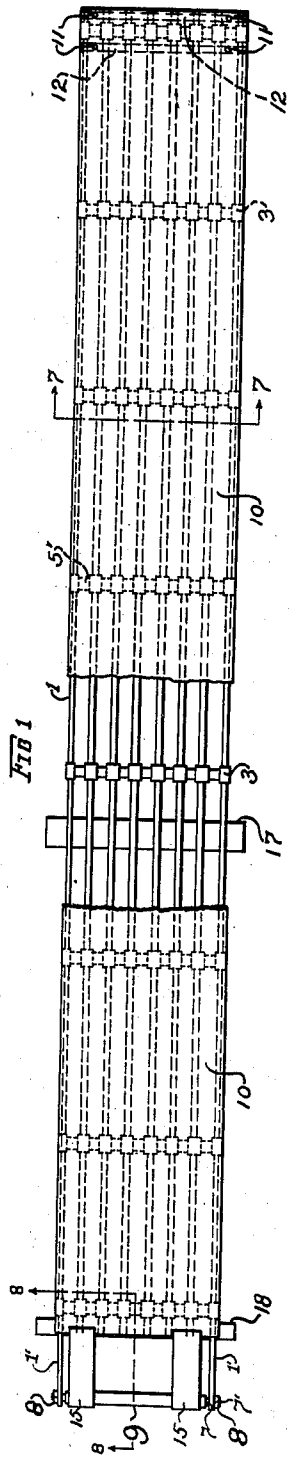


FIG 1

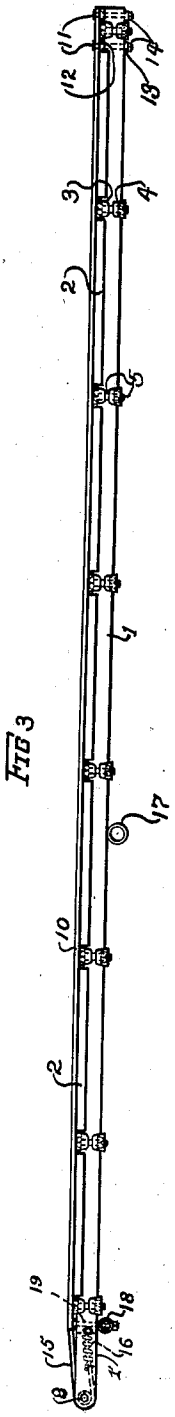


FIG 3

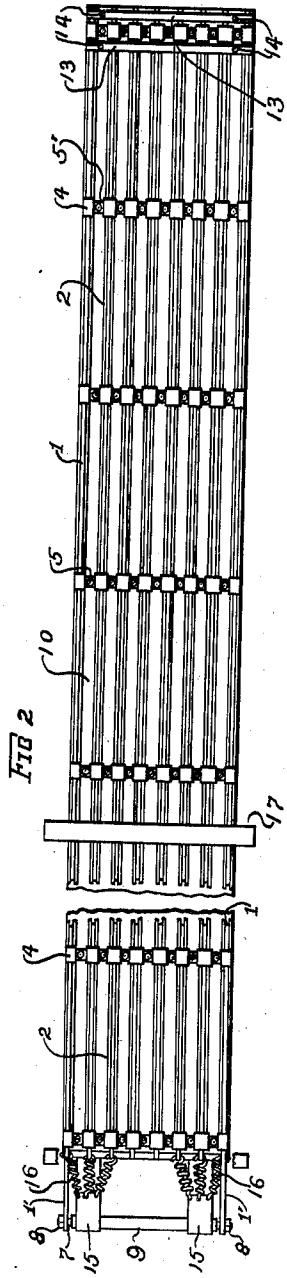


FIG 2

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DIVING PROJECTOR

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FIG 4

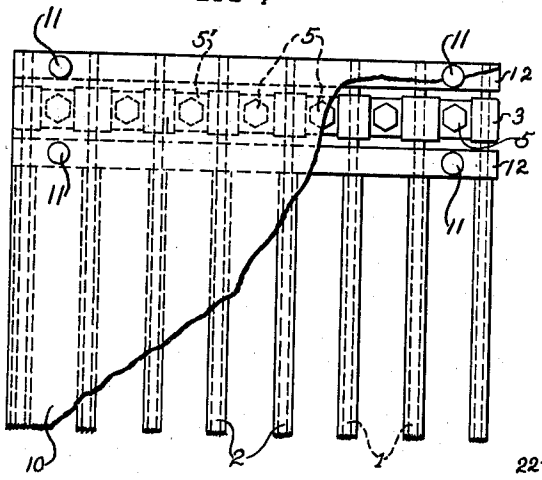


FIG 6

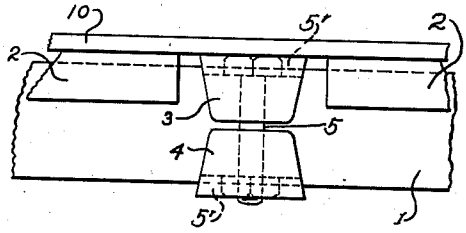


FIG 8

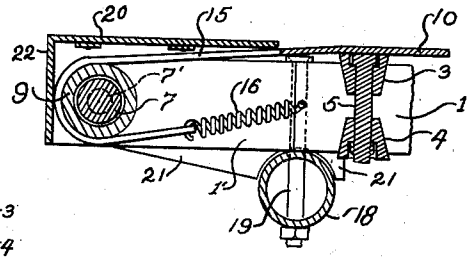


FIG 7

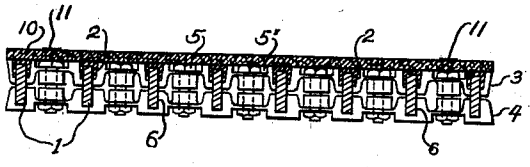


FIG 9

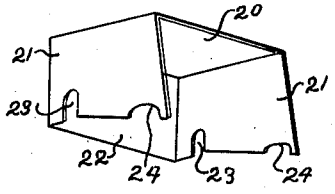


FIG 5

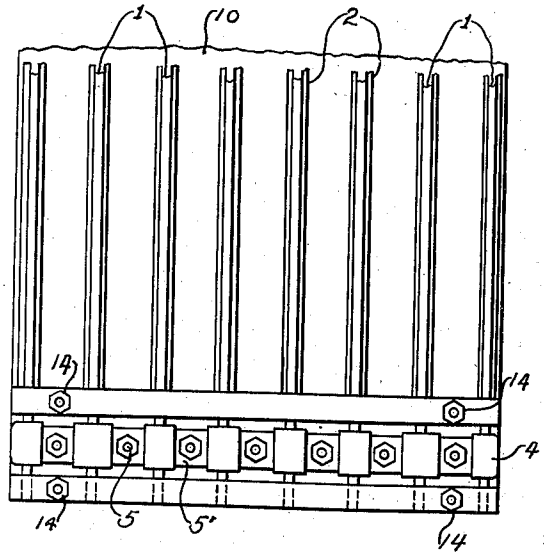
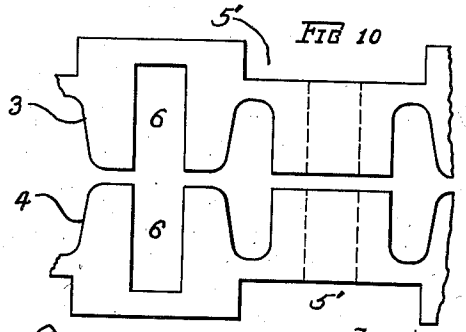


FIG 10



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Patented Mar. 12, 1940

2,193,067

UNITED STATES PATENT OFFICE

2,193,067

DIVING PROJECTOR

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Application March 14, 1938, Serial No. 195,713

7 Claims. (Cl. 272—66)

This invention relates to improvements in a diving projector of the type which is generally known as a spring board; the invention relating more particularly to a projector of this character which is constructed principally of metal.

The object of the invention is to provide a diving projector which will be of simple and sturdy construction and economical in manufacture.

In the accompanying drawings:

Fig. 1 is a top plan view of a diving projector embodying my improvements, the upper portion of the platform being partly broken away.

Fig. 2 is a bottom plan view of the same parts broken away.

Fig. 3 is a side elevation of the same.

Fig. 4 is an enlarged detail in top plan of the diving end of the apparatus.

Fig. 5 is an enlarged detail in bottom plan of the diving end of the apparatus.

Fig. 6 is a detail in side elevation of a portion of the apparatus.

Fig. 7 is a section on the line 7—7 of Fig. 1.

Fig. 8 is a section on the line 8—8 of Fig. 1.

Fig. 9 is an isometric view of the cover for the approach end of the apparatus.

Fig. 10 is a side elevation of portions of two mating batten members.

Referring to the drawings, 1 represents a series of longitudinally extending spaced apart flat spring metal bars forming a spring base, these bars in the present case being equally spaced. While the bars in the present case are shown in parallel relation and as equally spaced, they need not be necessarily so arranged. The upper edge of each of these bars has placed thereon a U-shaped bead 2 which is preferably made of rubber and fabric. The flat bars are so arranged in the structure that their edges will be at the top and bottom and their flat faces presented toward each other as shown best in Fig. 7. In other words, the height of the bars when installed is considerably greater than their width. This provides for a stronger and more resilient structure.

The bars 1 are connected at intervals by battens, preferably cast metal, each of these battens being formed of two mating members 3 and 4 which are connected together by a series of bolts 5, the batten members being recessed as shown at 5' to receive the heads and nuts of the bolts. The mating batten members are also provided with mating longitudinal grooves 6 to receive the spring bars. As shown best in Figs. 6, 8 and 10, the combined depths of the mating grooves are less than the width of the spring bars so as to permit the mating members of the battens to be drawn tightly against the spring bars and clamp them in position. The resilient beads 2 are in sections, with one section arranged between adjacent battens; in other words, the beads do not extend through the battens, as shown in the figures.

At the approach end of the apparatus the two outer spring bars 1 are extended as shown at 1' and these extensions carry a long supporting rod 7, each end of which is reduced as shown at 7' in Fig. 8, the reduced portions extending through the extensions 1' and being threaded to receive nuts 8 to hold the rod in position on the extensions. This rod is for the purpose of carrying a roller 9 which is journalled upon the rod and which will be later referred to.

The construction as thus far described is covered by a flexible covering 10 of any suitable material. A material which has been found satisfactory for this covering is fabric-faced rubber. This covering forms a platform for the divers to walk upon from the approach end to the diving end of the apparatus. The covering is securely fastened at the diving end of the apparatus by flat headed bolts 11, two on each side of the covering, which pass through flat straps 12, a pair of which is located on the upper edges of the spring bars and another pair 13 of which is located on the lower side of the spring bars, the bolts 11 passing through these straps and receiving nuts 14 whereby the straps may be clamped firmly to the spring bars and thence firmly secure the covering in position at the diving end of the apparatus.

At the approach end of the apparatus there is connected to the covering 10 in any suitable way a pair of belts 15 of any suitable flexible material, these belts 15 passing about the roller 9 and being each connected by a plurality of coil springs 16 with the ends of the spring bars 1. These springs serve to keep the covering or platform 10 taut but permit it to yield when the bars 1 flex during diving. At an intermediate point of the apparatus there is provided a fulcrum 17 of any suitable form such as a tube which is carried by any suitable supports (not shown) and at the approach end of the apparatus the steel bars are connected to a tubular member 18 by bolts 19 and this tubular member is carried by any suitable supports (not shown).

The extreme approach end is preferably covered by a cover consisting of a top 20, sides 21 and a back 22. The top 20 stands substantially flush with the covering or platform 10. The sides

of this cover have open notches 23 which are passed over the reduced ends 7' of the rod 7 so as to be clamped by the nuts 8 against the extensions 1'. Each of the sides also has an open recess 24 which drops over the tubular member 18.

Having thus described my invention, I claim:

1. In a diving projector, a spring metal longitudinally-disposed base, an intermediate fulcrum for said base, means to secure one end of said base leaving the other end free, a flexible cover for said base, a roller adjacent one end of said base, flexible devices secured to said base and passing about said roller for attachment to said flexible cover, and coil springs connecting said devices to said base.

2. In a diving projector, a series of flat spring bars, said bars having space therebetween and arranged with their flat faces presented toward each other, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars, and a flexible covering for said bars forming a platform for divers.

3. In a diving projector, a series of spring bars, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars, a flexible covering for said bars forming a platform for divers, a roller at one end of said projector, flexible devices connected with said platform passing about said roller and connected to said flexible covering, springs for connecting said devices with said bars, and means for connecting the other end of said platform with said bars.

4. In a diving projector, a series of spring bars, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars, beads for the upper edges of said bars, and a flexible covering for said bars forming a platform for divers.

5. In a diving projector, a series of spring bars, battens connecting said bars at intervals, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars and a flexible covering for said bars forming a platform for divers.

6. In a diving projector, a series of spring bars, battens connecting said bars at intervals, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars, and a flexible covering for said bars forming a platform for divers, each of said battens consisting of a pair of connected mating members slotted to receive said bars.

7. In a diving projector, a spring metal longitudinally-extending base consisting of a series of flat spring metal bars having space therebetween which when installed have their edges at the top and bottom and their flat faces presented toward each other, means for connecting said bars at the diving end of said projector, attaching means for said bars at the approach end of said projector, an intermediate fulcrum for said bars, and a covering for said bars forming a platform for divers.

EDWIN F. HOPPES.