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CUSHION OR BUMPER FOR BOWLING ALLEY PITS

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Fig. 1

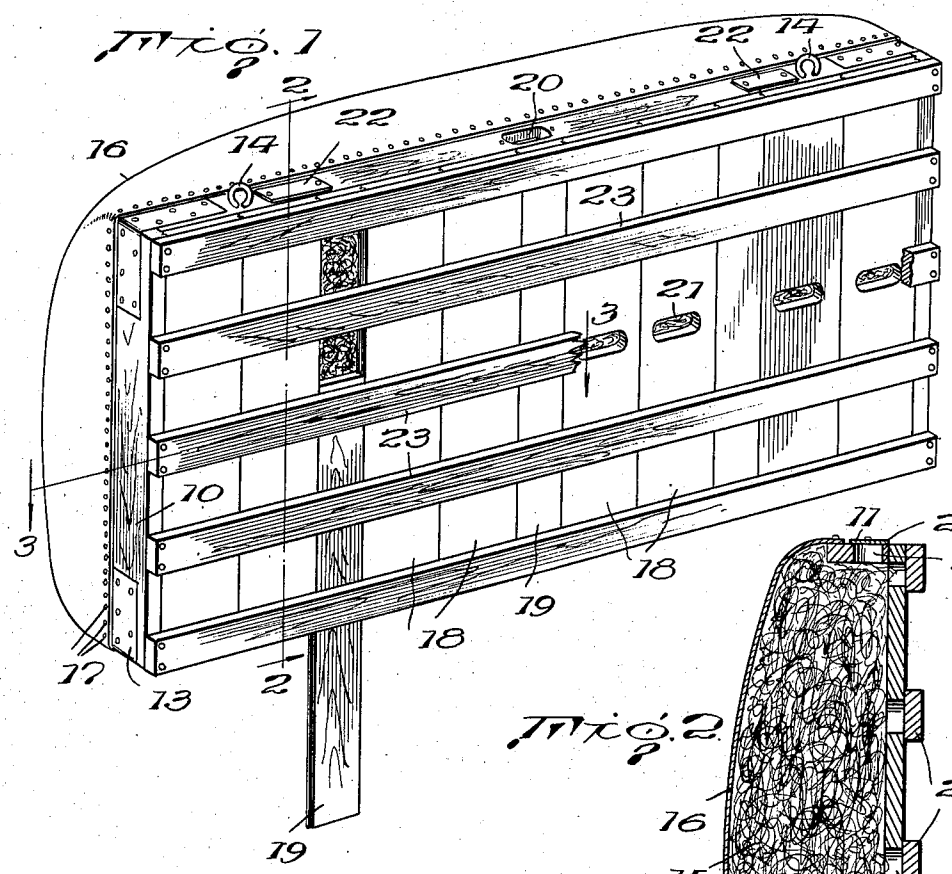


Fig. 2

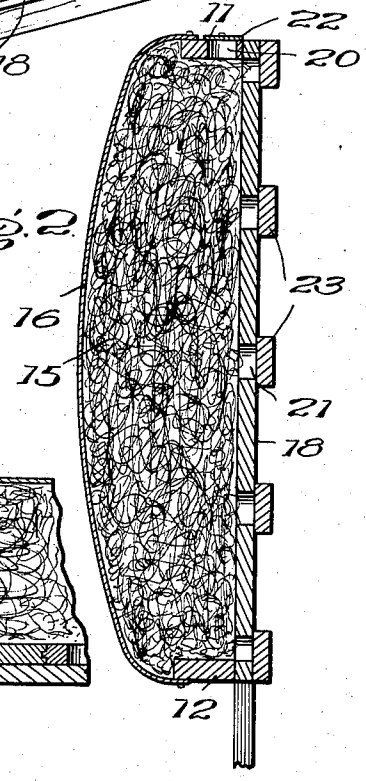
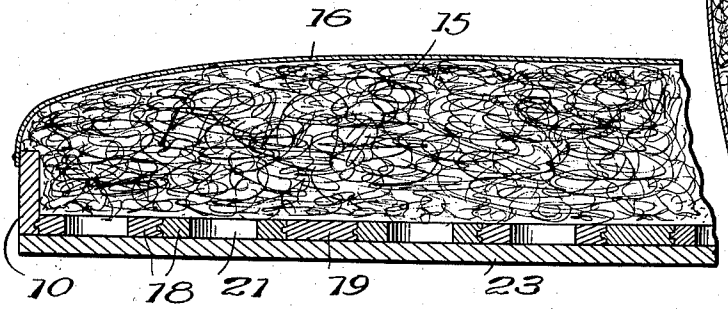


Fig. 3



Inventor

Beryl R. English

By Church & Church

His Attorneys

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CUSHION OR BUMPER FOR BOWLING ALLEY PITS

Beryl R. English, Washington, D. C.

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4 Claims. (Cl. 273—53)

This invention relates to improvements in cushion structures for bowling alleys.

For years the cushion or bumper provided in the so-called pit of bowling alleys primarily performed the function of a stop for larger pins (ten pins) and the comparatively heavy twelve to sixteen-pound balls used in ten-pin bowling. The cushion or bumper merely formed a resilient rear wall interposed between the two side walls of the pit, but its resiliency had no effect on pins or balls impacting against it in the sense that there was no tendency of the pins to rebound from against the cushion and fly back onto the surface of the rear end portion of the bowling alley. However, the present-day trend among manufacturers of standard bowling alley equipment is to increase the scores of the players or bowlers, particularly in the game of duck pins, in which the pins and balls are much smaller than those used in playing ten pins. To this end, current standard bowling alley equipment includes what are known as "kick-back" plates in the form of facings of hard fibre composition on the side walls of the pit and these kick-back plates are periodically shellacked in order to obtain increased action of the duck pins as they are struck by the ball of the bowler and propelled against said plates. In other words, the lighter duck pins are more apt to rebound onto the playing surface of the alley and displace or upset one or more of the pins that have been left standing on the alley. Thus, the chances of the player obtaining what is known as a "spare" or "strike" are materially increased, notwithstanding the fact that he fails to make what might be termed a perfect hit with the ball. Following along this line of attempting to increase the bowler's scores, improvements have heretofore been made in the back cushion or bumper whereby the pins hitting against the same will be substantially noiseless but will, nevertheless, rebound and be thrown onto the normal pin surface of the alley. For instance, the cushions have heretofore been made with the padding or wadding composed, usually, of small pieces of scrap leather compressed to a high degree within the cushion or bumper and covered on the pin-impacting face or front of the bumper with leather which, of course, is placed under rather high tension due to the pressure with which the padding or wadding is compacted. However, even with structures such as this, the constant pounding of the balls and pins against the cushion gradually causes the leather facing to become loose, with the result that the cushion becomes relatively dead, in that the pins will not rebound from a used cushion to the same degree that they would from a comparatively new cushion. When a cushion reaches this stage of deadness, it naturally affects the scores of duck-pin bowlers and has to be replaced due to the fact that its construction is such that it is practically impossible to repack it owing to inaccessibility to the interior of the cushion except by removing the leather facing or covering which cannot be properly replaced without considerable difficulty. That is, in constructing cushions of the type under discussion, the scrap leather is placed in a comparatively shallow cushion frame and a large piece of cowhide leather, constituting the cover, placed over the same, after which the cover and scrap padding are placed in a press which imposes upwards of two or three hundred pounds' pressure on the cover and padding and, while so held, the exposed, free edges of the leather covering are nailed to the bumper frame. Thus, it will be apparent that if a covering is removed by the ordinary bowling alley personnel it will be practically impossible to replace the cover and have it under the same tension at which it was placed by the press in the original construction of the cushion or bumper. On the other hand, the cost of returning the bumper to the factory and having it repacked would be more or less prohibitive.

With the foregoing in mind, the primary object of the present invention is to provide a cushion or bumper construction which can be manufactured without any substantial increase in cost, but which can be readily repaired by normal bowling alley personnel with comparatively little labor or loss of time.

A still further object of the present invention is to provide a bowling alley pit bumper or cushion which can be repacked at the bowling alley by unskilled labor, but highly efficiently in the sense that the tensioning of the leather facing or covering can be restored to the original condition of the covering.

With these and other objects in view, the invention consists in certain details of construction and combinations and arrangements of parts, all as will hereinafter be more fully described, and the novel features thereof particularly pointed out in the appended claims.

In the accompanying drawing, illustrating the preferred embodiment of the invention—

Figure 1 is a perspective view, partly broken away, illustrating the rear wall or face of my improved bumper or cushion;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1; and

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

In accordance with prior practices, the present cushion comprises a frame consisting of shallow end walls 10, top and bottom walls 11, 12, of the same depth, and the rear wall which will be described in detail hereinafter. These walls of the frame are preferably of hard maple and the corners of the frame may be reinforced with metal members in the form of angles 13. The upper side wall of the frame also carries a plurality of eye members 14, by means of which the frame can be pivotally suspended at the rear of the pit. The packing or padding of the cushion, which is usually comparatively small pieces of scrap leather, is indicated at 15 and is retained in the cushion frame by the leather facing or covering 16, whose edge portions are secured to the wooden frame by suitable fastening elements such as nails 17. As previously indicated, this leather facing 16 is rather highly tensioned over the front of the cushion and the scrap leather 15 is compacted so that pins hitting against the face of the bumper will, in a great many instances, rebound to that portion of the alley surface on which the pins are placed.

In order to facilitate not only the original packing of the scrap leather within the cushion, but also to facilitate repacking after the leather facing 16 has become comparatively loose, the rear wall of the cushion frame is formed of a plurality of substantially rigid members, preferably in the form of lengths of hard maple, with the abutting edges of adjacent lengths formed with tongue and groove joints. A majority of these lengths of wood, such as indicated at 18, forming the rear wall may be permanently secured in the frame, but a number of said lengths, such as indicated at 19, are adapted to be slid lengthwise, as indicated in Fig. 1, whereby comparatively large filling openings are provided in the rear wall. Thus, the side and rear walls of the bumper and the leather facing or covering 16 can all be assembled and the major portion of the scrap leather 15 deposited in the interior of the cushion through the openings formed by partially removing the slidable rear wall members 19. The final packing or compacting step in padding the cushion, however, is performed through smaller openings provided in the frame. For instance, one or more comparatively small openings 20 may be provided in the upper wall 11 and similar openings 21 are provided in one or more of the fixed rear wall members 18. While the cushion or pad is in use, these several openings 20, 21, are provided with closure members to insure retention of the packed scrap leather 16 under pressure. For instance, comparatively small plates 22 may be used as closures for the openings 20, while comparatively long slats 23, extending transversely of the rear wall of the bumper, close alined openings 21 in the rear wall. These elongated closures on the rear wall of the bumper are preferably of substantial cross-section and, hence, serve to reinforce the rear wall of the bumper. As stated, these smaller openings can be used for final packing steps in the original manufacture of the bumper, the major portion of the scrap leather being deposited through the openings formed by partial removal of the rear wall members 19 and, after the bumper is substantially filled, smaller increments of leather can be inserted and compacted through the openings 20 and 21. It will be understood that, in packing the bumper through the several openings, a suitable tool can be used to compact the scrap leather 15 until the desired density of the latter and the desired degree of tensioning of the leather covering 16 has been attained.

It will be readily appreciated that this construction of the bumper frame materially facilitates repacking or supplemental packing of the bumper after it has been in use and the constant impacting of balls and pins against the leather facing has loosened or softened the leather face of the bumper to an extent where repacking is necessary to cause the pins to rebound or fly back onto the alley surface to the same extent as in the case of the original, substantially unused, bumper. Usually, as the packing or padding in the bumper loosens up or becomes less dense, the consequent looseness in the leather facing 16 becomes more manifest in the upper portion thereof. Under such conditions, it may only be necessary to remove one or two of the upper cross members 23 to expose the upper openings 21 so as to permit additional scrap leather to be inserted in the cushion and compacted with the packing tool. If desired, packing of the upper portion of the cushion may also be accomplished through the openings 20 by removal of the cover plates 22. In any event, this repacking of the present bumper can be performed by unskilled labor, such as that employed in bowling alleys, usually for replacing the pins on the alley surface after each bowler has completed his turn of play. It will also be seen that this repacking of a bumper right at the bowling alley can be performed in a matter of a few hours so that, on the whole, the expense of maintaining a lively cushion or bumper is substantially minimized. At the same time, this portion of the bowling alley equipment is maintained at maximum efficiency in that the condition of the bumper is always such that the ability of the pins impacting against the same to fly back onto the alley remains substantially constant. Thus, bowling alleys equipped with the present bumper will be more attractive to the players because higher scores will be more readily obtained even though the player does not possess the playing ability necessary to enable him to make substantially perfect hits with the bowling ball.

Also, the ease with which the present invention permits the bumper to be kept in its fully padded or packed condition effects considerable economy for both duck-pin and ten-pin alley proprietors because of the protection afforded the frame-work of the bumper. For instance, when the covering and padding of the usual bumper becomes loose, the frame-work, and particularly the upper portion thereof, is subjected to severe wear by the pins impacting against it. Where the bumper can be so readily repacked, as with the present invention, this wear on the frame is practically eliminated.

What I claim is:

1. A bowling alley pit cushion structure comprising a rectangular frame, a normally flexible material covering the front of said frame, a plurality of abutting plate-like members forming the rear wall of the frame, certain of said members being adapted to slide lengthwise to form openings through which comparatively large increments of padding material can be placed within the cushion, at least one of the frame walls having an opening therein through which small increments of padding material can be deposited in

the interior of the cushion, and removable closure means for said opening.

2. A bowling alley pit cushion structure comprising a rectangular frame, a normally flexible material covering the front of said frame, a plurality of substantially rigid plate-like members forming the rear wall of the frame, padding material compacted in the interior of the cushion formed by said frame and covering to place said covering under tension, certain of said plate-like members being slidable relatively to the others to form openings through which comparatively large increments of padding can be deposited and compacted in the cushion, and certain other plate-like members having openings therein through which smaller increments of padding can be deposited and compacted, and removable closures for said openings.

3. A bowling alley pit cushion structure comprising a rectangular frame, a normally flexible material covering the front of said frame, a plurality of substantially rigid plate-like members forming the rear wall of the frame, padding material compacted in the interior of the cushion formed by said frame and covering to place said covering under tension, certain of said plate-like members being slidable relatively to the others to form openings through which comparatively large increments of padding can be deposited and compacted in the cushion, and certain other plate-like members having openings therein through which smaller increments of padding can be deposited and compacted, and removable cross-members closing said openings.

4. A bowling alley pit cushion structure comprising a frame having substantially rigid rear and side walls, a covering of normally flexible material closing the front of said frame, and padding material compacted within the frame over which said front covering is tensioned, at least one of said walls of the frame having an opening therein through which additional increments of padding material can be deposited in the interior of the frame without removal of any of said walls or covering, said opening being comparatively small whereby the additional padding can be compacted to tension the front covering while said rear and side walls are intact, and a removable closure for said opening.

BERYL R. ENGLISH.