Dec. 17, 1957 U. A. FISH 2,816,871

FOLDING SEAT

Filed May 20, 1955 2 Sheets-Sheet 1

Fig. 1

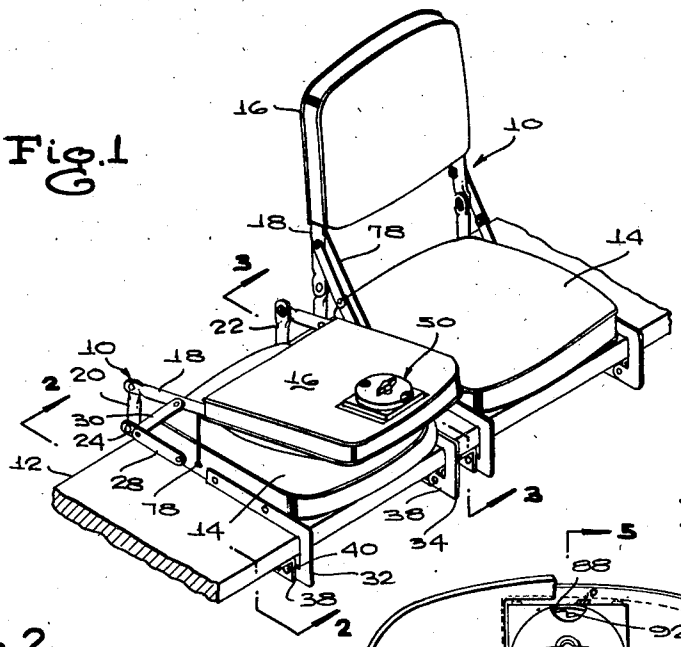


Fig. 4

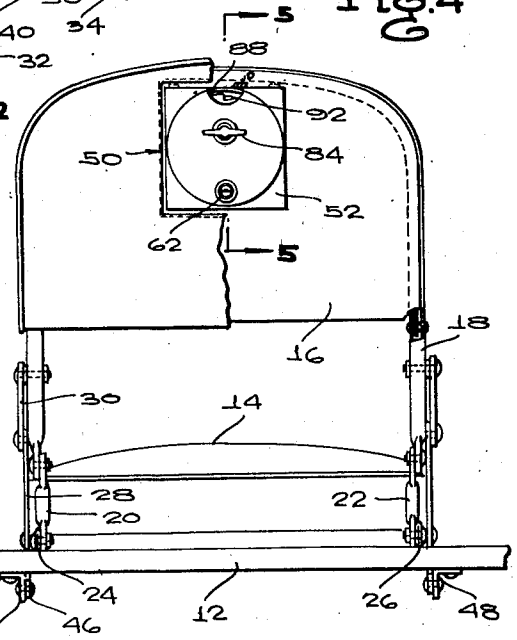
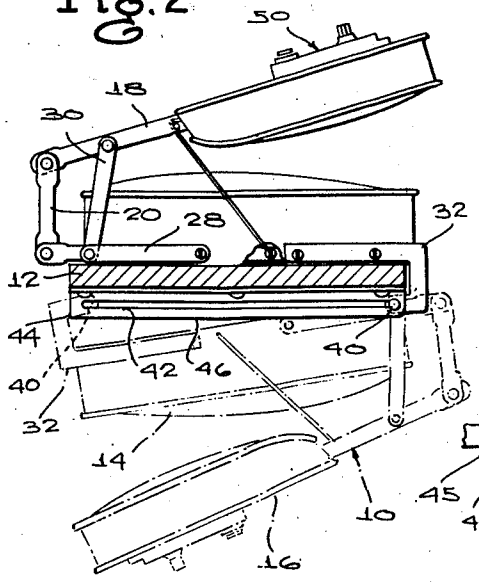


Fig. 2



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Fig. 3

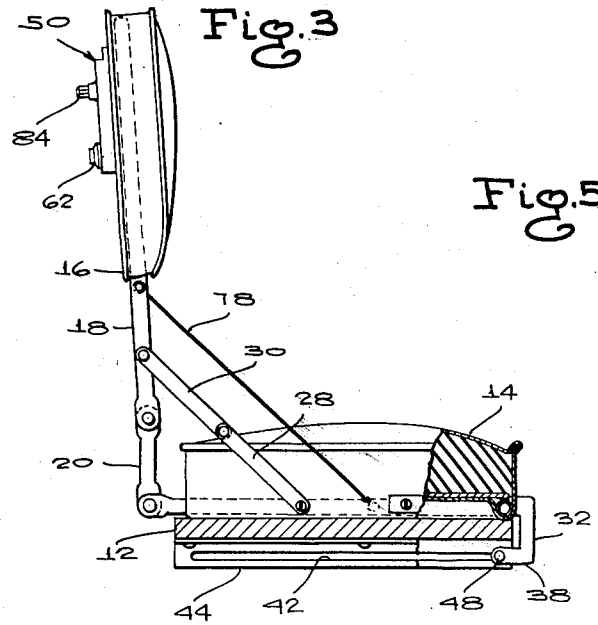
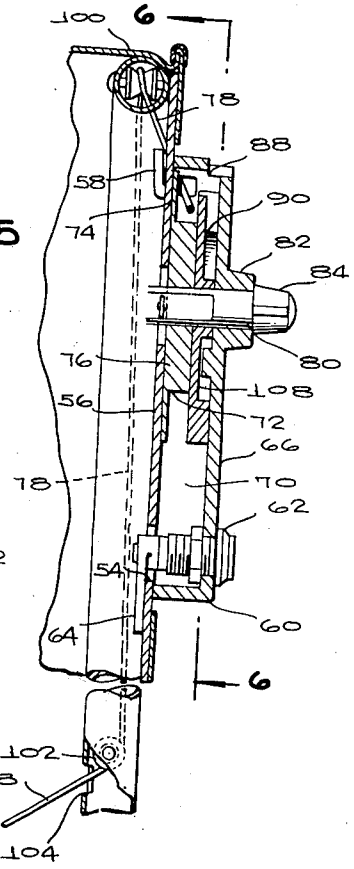


Fig. 5



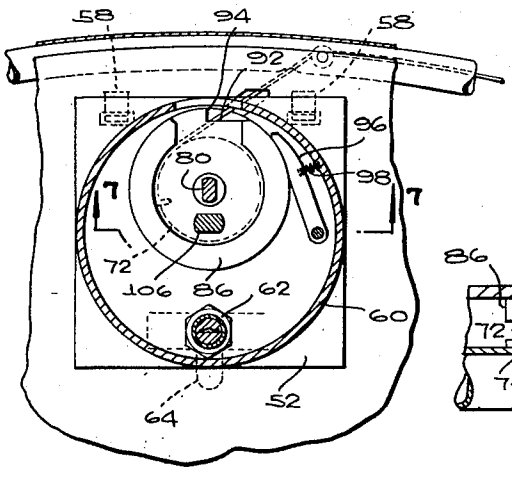


Fig. 6

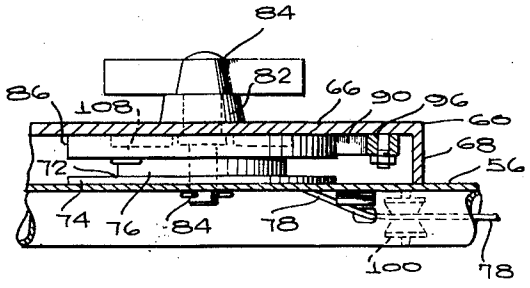


Fig. 7

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FOLDING SEAT

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3 Claims. (Cl. 155—133)

This invention relates to folding seats and more particularly to coin operated folding seats for grandstands and the like.

It is an object of this invention to provide a coin operated folding seat which may be readily secured to the bleacher-type seats in a stadium and which will be in an inactive and unusable position until a proper coin is deposited so as to permit the seat to be placed in its active position whereby the patron will then be provided with a cushioned seat and back rest.

It is a further object of this invention to provide a coin operated folding seat which will eliminate the use of unattached cushions which may be sold by attendants in the stadium, and which may become lost or misplaced by the user, also will eliminate the need for attendants or sales people going about in the stands or stadium selling the loose cushions.

It is a still further object of this invention to provide a coin operated folding seat which may be readily stored or placed in an out of the way position on the bleacher-type seat so as to avoid interference with the normal use of the seat if the patron is not desirous of availing himself of the coin operated cushioned seat and back rest, and which when in the stored position will protect the seat from undue damage due to weather.

Another and still further object of this invention is to provide a coin operated folding seat for a grandstand having bleacher-like seats which is of simple construction yet durable and rugged over extended periods of time.

Other objects and advantages will become apparent from a consideration of the following detailed description, forming the specification, and taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a pair of folding seats, embodying this invention, as applied to a bleacher-like seat and showing one of the seats in the active position and the other in the inactive position;

Figure 2 is a side elevational view of a seat in its inactive position and as taken substantially along line 2—2 of Figure 1, and showing in broken lines the stored position of the seat;

Figure 3 is a side elevational view of the seat of Figure 1 shown in the active position, and as taken substantially along line 3—3 of Figure 1;

Figure 4 is a rear elevational view, partially broken away, of the seat as shown in Figure 3;

Figure 5 is a cross sectional view, on a somewhat enlarged scale, taken along the line 5—5 of Figure 4;

Figure 6 is a cross sectional view taken on line 6—6 of Figure 5; and

Figure 7 is a cross sectional view taken along line 7—7 of Figure 6.

With continued reference to the drawings, there is shown a coin-operated folding seat, generally indicated at 10, and as shown in Figure 1 there are two seats 10 one of which is in the active position and the other of which is in the inactive position. The seats 10 are adapted to

be carried upon the board-like bleacher-type seat 12, commonly found in grandstands and stadiums.

The seat 10 is of the type having a cushioned seat portion 14 and a cushioned back rest 16 carried by the seat portion for pivotal movement from an inactive position, shown in Figure 2, in which it lies in overlying covering relation to the seat portion to an active position, as shown in Figure 3, in which it extends upwardly from the seat portion adjacent one end thereof.

The back rest 16 comprises a generally U-shaped frame member 18 having the free ends thereof pivotally connected to upstanding arms 20 and 22 fixedly secured at their ends remote from the end pivotally connected to the frame 18 to horizontally extending bracket plates 24 and 26 which are horizontally disposed and carried by the seat portion 14 at opposite sides thereof and extending rearwardly therefrom. Between each of the legs of the U-shaped back rest bracket frame 18 at the ends of the respective bracket plates 24 and 26 remote from the ends to which the arms 20 and 22 are secured, extends a pair of pivoted links 28 and 30 which are adapted to maintain the back rest in its active position and serve as a bracing means, as clearly shown in Figure 3.

A pair of L-shaped mounting brackets 32 and 34 are secured at opposite longitudinal sides of the seat portion 14 with the longer leg thereof extending along the longitudinal sides and is secured thereto and extending forwardly therefrom with the shorter leg thereof extending downwardly and across the front edge of the bleacher-type seat 12. Each of the short legs of the respective mounting brackets 32 and 34 have integrally formed, inwardly turned feet 36 and 38 respectively which is in spaced, substantially parallel relation to the longer leg of the respective mounting bracket.

Adjacent the free end of the feet 36 and 38 there is provided a transversely extending pin 40 which is adapted to be received and ride in an elongated slot 42 formed in depending leg 44 of angle members 46 and 48. Each of the angle members extend transversely, in spaced parallel relation, across the undersurface of the seat 12 with the other leg 45 on each of these angle members being secured to the undersurface of the seat 12 as by screws or rivets.

Thus, it will be seen that the seat 10 may be moved to a position underneath the bleacher-type seat 12 by first lifting the rear of the seat so that it will pivot and move in a vertical arcuate path about the pins 40, and assume a position at a level below the seat 12. The seat may then be moved in a rectilinear path toward the rear of the seat by having the pins 40 ride in the slots 42 and the respective angle members 46 and 48 so that the seat will assume a stored and out of the way position as shown in broken lines in Figure 2. With the seat in the stored position, it will be apparent that the bleacher-type seat 12 may be used by the patron without interference of the coin-operated seat 10.

If the patron desires the use of the cushioned folding seat 10, he need merely to move it forwardly from its stored position and then have it rest on the top surface of the bleacher-type seat 12 by rotating it about the pins 40 at the forward end of the slots 42. The patron then inserts a coin of proper denomination into the coin-operated means, generally indicated at 50 which will release the back rest 16 from its inactive position shown in Figure 2 and permit the back rest to be moved to its active position shown in Figure 3, at which time the seat 10 may be used by the patron for the remainder of the event to be witnessed.

The coin operated means 50 is carried by the back rest 16 adjacent the top central portion thereof.

The coin operated means 50 comprises a generally rectangular back plate 52 which is adapted to be received in a complementary rectangular opening 54 in the solid

back piece 56 of the back rest 16. The back plate 52 carries adjacent its upper end a pair of spaced ears 58 which extend outwardly and upwardly therefrom in spaced parallel relation thereto so as to engage the rear surface of the back piece 56 adjacent the upper transverse edge of the opening 54, while the generally circular housing 60 carried by the plate 52 is provided with a lock 62, which is key operated, adjacent the lower central portion thereof and including a locking lug 64 which is adapted to move in an arcuate path so as to engage behind the back piece 56 adjacent the central portion of the lower transverse edge of the opening 54 upon insertion of the key whereby the coin-operated means 50 will be securely locked to the back rest 16 to prevent unwarranted removal therefrom.

The housing 60 includes a generally circular outer plate 66 maintained in spaced parallel relation to the back plate 52 by an integrally formed dependent peripheral flange 68 which is secured to the back plate 52 in any suitable manner, such as by welding.

Thus, the space between the front or outer plate 66 and the back plate 52 defines a chamber 70 in which is disposed a winding drum 72 provided with an outwardly extending annular flange 74 at one side thereof and a hub 76 about which a flexible line or cable 78 is wound. The drum 72 is rotatably mounted on a drum shaft 80 so as to be rotatable therewith and may be secured thereon as by being keyed thereto. The shaft 80 extends transversely through the coin-operated means 50 and is journaled adjacent its outer end in a bearing boss 82 integrally formed and extending outwardly from the front or outer plate 66. That portion of the shaft 80 which extends outwardly of the boss 82 has secured thereon a winged cap 84 to define means whereby the shaft 80 may be manually rotated.

An inner plate 86 of substantially circular form and of a diameter substantially equal to the diameter of the flange 74, is disposed at the side of the hub 76 of the drum 72 remote from the side at which the flange 74 extends so as to define, amongst other things, an area between which the cable 78 may be maintained on the drum 72 when wound thereon.

It will be noted that the housing 60 is provided with a coin receiving opening 88 at its upper central portion and the inner plate 76 is provided with a coin receiving pocket 90 which may be in register with the opening 88 so as to receive the coin placed in the opening 88. The outer end of the pocket 90 has a cut-out or detent 92 formed in the inner plate 86 and defines a stop shoulder 94 which is adapted to engage against the terminal end of a dog 96 pivotally carried by the front or outer plate 66 and spring urged, as by the spring 98, into engagement with the periphery of the inner plate 86 so that upon rotation of the shaft 80 by the winged cap 84, further rotation of the drum 72 will be prevented since the inner plate 86 is rotatable with the drum 72 as the shaft 80 is rotated.

The flexible line or cable 78 merges through a suitable opening in the housing 60 and enters an opening in the tubular frame 18 in one leg thereof and is trained about a guide roller 100 rotatably mounted within the leg of the frame 18. The flexible line is then directed downwardly and about a similar guide roller 102 and emerges from the leg of the frame 18 through a suitable opening 104 so that its end remote from the end secured to the drum 72 is securely attached to one side of the seat portion 14 adjacent the lower longitudinal edge thereof.

Hence, it will be apparent that in the inactive position shown in Figure 2, the seat 10 is maintained in this position by the flexible line or cable being wound about the drum 72 and prevented for unlocking by the spring urged dog 96 engaging the cut-out or detent 92 so that the back rest 16 cannot be moved in its arcuate path to an active position in which it extends upwardly from the seat portion 14.

In order to enable the back rest to be moved from the inactive position in which it lies in overlying covering relation to the seat portion to its active position wherein it extends upwardly from the seat portion adjacent one end thereof, a coin of suitable predetermined denomination is placed in the coin receiving opening 88 and drops into the coin receiving pocket 90. Thus, the outer periphery of the coin will permit the free end of the dog 96, that is the end remote from the end pivotally mounted on the outer plate 66, to ride over the stop shoulder 94 of the cut-out or detent 92 to permit further rotation of the shaft 80 and unwinding of the flexible line or cable 76 to thereby permit movement of the back rest 16 from its inactive to its active position since the single rotation of the drum 72 will pay out sufficient length of the flexible line or cable to accomplish this.

As the shaft 80 is rotated in a clockwise direction, after the insertion of the proper coin, the coin will be deposited in the lower portion of the chamber 70 by engaging a knock-out block 106 formed on the outer plate 66 and extending inwardly therefrom toward the inner plate 86 and riding in an annular groove 108 formed in the inner plate 86, so that the operation of the coin-operated seat 10 may be only accomplished once for each deposit of a coin.

Upon completion of the event which the patron is witnessing, an attendant may then reset the folding seat 10 by moving the back rest 16 to its inactive position and rewinding the cable 78 upon the drum 72 by rotating the winged cap 84 in a counterclockwise direction until the cut-out or detent 92 moves beyond the free end of the holding means or dog 96, and then move the seat 10 to its stored position underneath the bleacher seat 12, as shown in broken lines in Figure 2.

From the foregoing, it will be apparent that there has been provided in a folding seat of the type having a seat portion 14 and a back rest 16 carried by the seat portion for movement from an inactive position in which it lies in overlying covering relation to the seat portion to an active position in which it extends upwardly from the seat portion adjacent one end thereof, a coin operated means 50 carried by the back rest 16, a flexible line 78 connected to the seat portion and wound around the winding drum 72 to maintain the folding seat in its inactive position, folding means defined by the dog 96 disposed in a coin-operated means 50 to prevent unwinding of the cable, and release means provided in the coin-operated means and defined by the coin receiving pocket 90 and the cut-out or detent 92, operable upon insertion of a proper coin to cause disengagement of the holding means thus permitting unwinding of the flexible line and subsequent movement of the back rest to its active position.

With regard to the coin receiving pocket 90 and the cut-out or detent adjacent thereto, it will be apparent that the insertion or deposit of a coin in the pocket will have the periphery of the coin substantially match the periphery of the inner plate 86, or at least extend above the top of the stop shoulder 94 of the detent, so that the dog will ride over the stop shoulder to permit rotation of the drum 72 and unwinding of the flexible line or cable 78 therefrom.

Also, it will be seen that there has been provided a pair of spaced angle members 46 and 48 which define guide rails carried by the bleacher seat, and mounting brackets 32 and 34 carried by the seat portion 14 at opposite sides thereof with each of the brackets pivotally connected to respective ones of the pair of guide rails to permit movement of the folding seat from a position resting upon the bleacher seat 12 to a position of storage underneath the bleacher seat.

While there are shown and described the preferred embodiment of the invention, it is to be understood that the structure is susceptible to change and modification

within the practicability of the invention and therefore should be limited only by the scope of the claims appended hereto.

What is claimed is:

1. In a folding seat of the type having a seat portion and a back rest carried by the seat portion for movement from an inactive position in which it lies in overlying covering relation to said seat portion to an active position in which it extends upwardly from the seat portion adjacent one end thereof, coin-operated means including a winding drum carried by said back rest, a flexible line connected to said seat portion and wound around said drum to maintain the folding seat in its inactive position, holding means in said coin-operated means to prevent unwinding of said cable, and release means in said coin-operated means operable upon insertion of a proper coin to cause disengagement of said holding means permitting unwinding of said line and movement of said back rest to its active position.

2. In a folding seat of the type having a seat portion and a back rest carried by the seat portion for movement from an inactive position in which it lies in overlying covering relation to said seat portion to an active position in which it extends upwardly from the seat portion adjacent one end thereof, coin-operated means to hold said back rest in its inactive position, said means including a winding drum, an inner plate carried by said drum and having a coin-receiving pocket and a detent adjacent said pocket defining a holding means, a spring urged dog engageable in said detent to prevent rotation of the drum; and a cable connected to said seat and wound on said drum to maintain said back rest in its inactive position, said dog being held out of engagement with said detent by a coin deposited in said pocket to

permit rotation of said drum and unwinding of the cable to allow movement of the back rest to its active position.

3. In a coin-operated folding seat of the type adapted to be carried by grandstand seats of the bleacher type, a seat portion, a back rest carried by said seat portion for movement in an arcuate path from an inactive position in which it lies in overlying covering relation to said seat portion to an active position in which it extends upwardly from the seat porton adjacent one end thereof, coin-operated means including a winding drum carried by said back rest, a flexible line connected to said seat portion and wound around said drum to maintain the folding seat in its inactive position, holding means in said coin-operated means to prevent unwinding of said cable, and release means in said coin-operated means operable upon insertion of a proper coin to cause disengagement of said holding means permitting unwinding of said line and movement of said back rest to its active position, a pair of spaced guide rails carried by the bleacher seat, and a mounting bracket carried by said seat portion at opposite sides thereof with each bracket pivotally connected to one of said pair of guide rails to permit movement of the folding seat from a position resting upon said bleacher seat to a position of storage beneath the bleacher seat.

References Cited in the file of this patent

UNITED STATES PATENTS

865,327	Barrett	Sept. 3, 1907
912,781	Barrett et al.	Feb. 16, 1909
1,712,388	Lange et al.	May 7, 1929
2,466,361	Bjornskaas	Apr. 5, 1949
2,577,197	Kinney	Dec. 4, 1951