

July 11, 1961

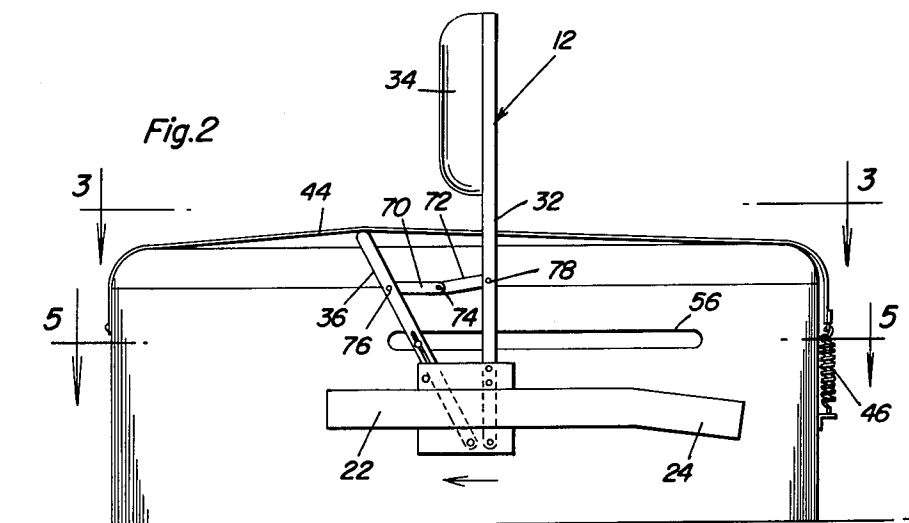
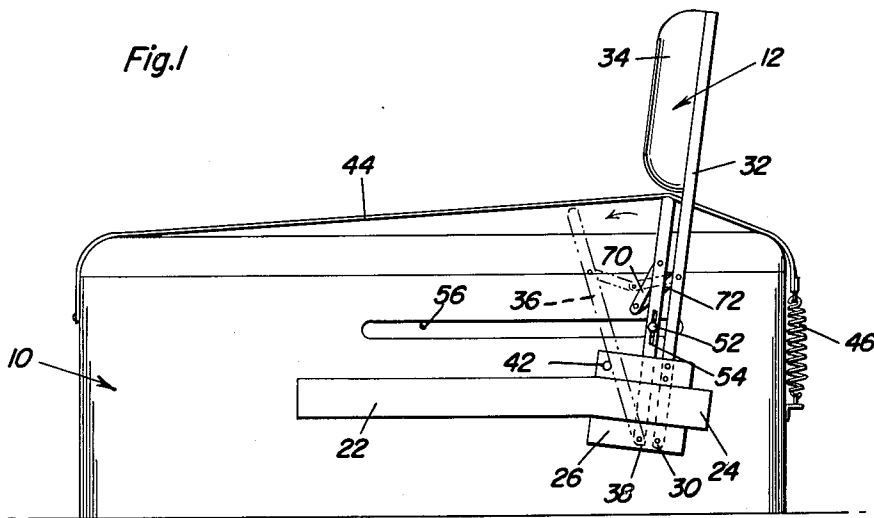
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2,992,044

COIN OPERATED VIBRATING COUCH AND EJECTOR

Filed Oct. 7, 1958

3 Sheets-Sheet 1



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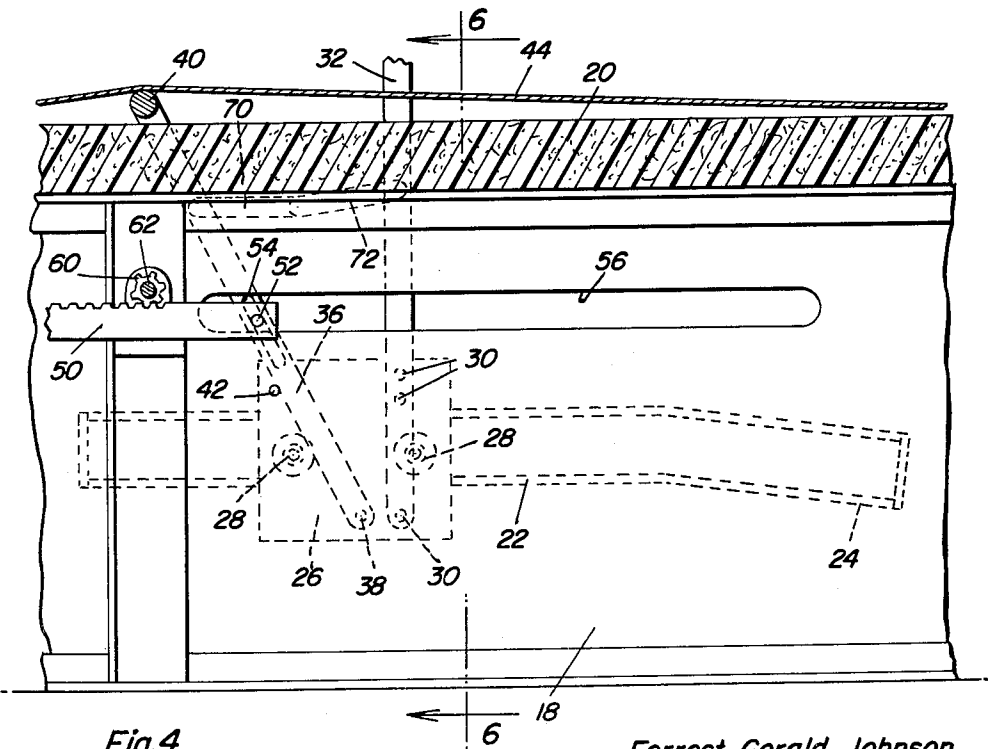
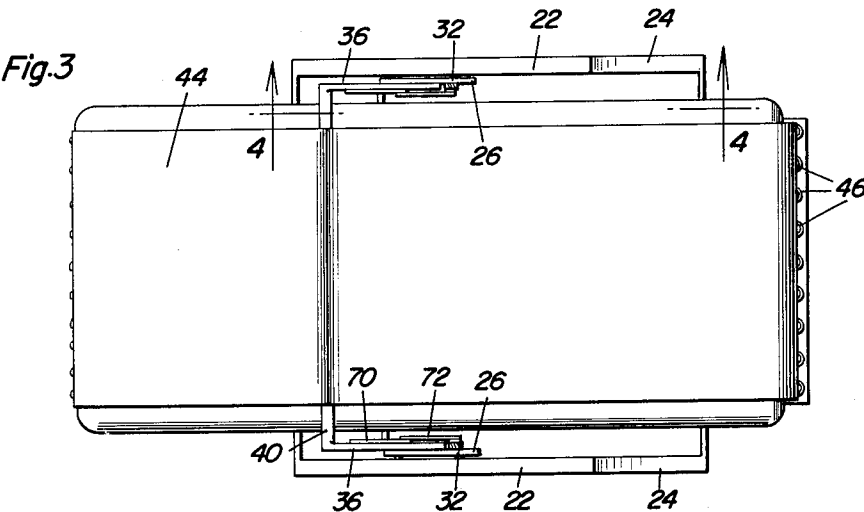
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2,992,044

COIN OPERATED VIBRATING COUCH AND EJECTOR

Filed Oct. 7, 1958

3 Sheets-Sheet 2



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2,992,044 COIN OPERATED VIBRATING COUCH AND EJECTOR

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Filed Oct. 7, 1958, Ser. No. 765,754
14 Claims. (Cl. 297—362)

This invention comprises a novel and useful coin operated couch and ejector and more particularly relates to a couch or chair construction for reclining or resting the occupant, wherein has been built a device for vibrator or massaging the occupant if desired, thus furnishing a facility to rest and relax the user, aided by vibrating or massaging action if desired together with a mechanism for automatically ejecting the occupant of the device after a predetermined time interval of operation of the apparatus. The basic and fundamental purpose of this invention is to provide a couch or chair together with the optional use of vibrator or massager having means operable to eject the occupant thereof after a predetermined timed interval. The device is intended primarily for use by individuals in office buildings or factories and in places where the general public waits, such as railroad or bus depots, for relaxation and the relief of fatigue. The device is also intended for use by doctors or nurses and for use in hospitals and in situations where its value will be for the predetermined timing of massaging or vibrating treatments rather than that of a resting or relaxing device in response to the payment of a coin into a mechanism of the apparatus.

The basic feature of novelty upon which patent protection is sought herein resides in the incorporation into such an apparatus of power operated means for effectively but gently and without danger of harming the occupant causing his ejection from the bed or couch after the lapse of a predetermined time interval of treatment thereby.

The primary object of this invention is therefore to provide a power operated means for ejecting the occupant of a couch or chair of the power operated vibrating or massaging type.

A further object of the invention is to provide an ejecting mechanism in accordance with the foregoing object which shall be gentle and gradual in its operation and while effectively ejecting the occupant from the device, will in no way endanger the occupant.

A still further object of the invention is to provide an apparatus in conformance with the foregoing objects wherein the ejecting operation shall be effective by first initiating movement of an ejecting bar which slowly traverses the supporting surface of the device from the back towards the front thereof, and which bar shall move below the surface of the covering of the device.

Yet another object of the invention is to provide an ejecting mechanism as set forth in the preceding objects wherein the back rest of the chair or couch will be likewise caused to move forward in conjunction with but at a timed interval after the movement of the ejecting bar to complete the ejecting of the occupant.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a side elevational view showing a vibrating or massaging chair in accordance with this invention, the position of the parts being shown in the position which they assume during normal use of the chair, there being shown in dotted lines the position

of the ejector bar at the beginning of the ejecting operation;

FIGURE 2 is a view similar to FIGURE 1 but showing in side elevation the position of the chair back rest and of the ejector bar at the completion of the ejecting operation thereof;

FIGURE 3 is a top plan view of the chair in the position of FIGURE 2, being taken substantially upon the plane indicated by the section line 3—3 of FIGURE 2;

FIGURE 4 is a detail view in vertical longitudinal section taken upon an enlarged scale substantially upon the plane indicated by the section line 4—4 of FIGURE 3;

FIGURE 5 is a horizontal sectional view taken substantially upon the plane indicated by the section line 5—5 of FIGURE 2; and

FIGURE 6 is an enlarged detail view taken substantially in vertical transverse section upon the plane indicated by the section line 6—6 of FIGURE 4.

In the accompanying drawings there is disclosed a couch or chair having a seat portion designated generally by the numeral 10 and a back portion similarly designated at 12. From FIGURES 4 and 6 it will be seen that the seat portion 10 has a suitable supporting framework indicated generally by the numeral 16, this including side members 18 in the form of panels which may be suitably upholstered or covered as desired, together with a cushioning member 20 comprising the seat itself.

Inasmuch as the chair or couch is of a conventional type provided with vibrating means of any suitable character for effecting a massaging or vibratory action upon a person occupying the same, and since the construction of such mechanisms are well known to those skilled in the art and in themselves are not critical in the present invention, an illustration and description of the vibrating means and its actuating mechanism is deemed to be unnecessary for the purposes of this invention. By way of illustrating the utility of this invention, it is contemplated that such vibrating means may be operated by a coin control mechanism so as to energize the same for a predetermined interval of time, thus imparting a vibratory or massaging action upon a person for a period of time corresponding to the coin which has been paid for the same.

The invention claimed herein resides in the provision of an ejector mechanism for gently but forcibly ejecting the occupant of the seat or couch from the same after the period of time for which the coin has been paid has elapsed.

Secured to the opposite sides of the chair in any suitable manner are a pair of guide rails as at 22 which may conveniently consist of channel members facing each other. It will be observed that the forward and main portions of these channel members are substantially horizontal, extending in a direction from the front to the back of the chair, while the rearward portions of the same are inclined slightly downwardly as at 24 for a purpose to be subsequently apparent.

A pair of slides in the form of plates 26 are provided and mounted upon these guide rails, having supporting rollers 28 received in the channel members so that, as shown in FIGURE 4, the slides 26 are mounted for movement longitudinally along the guide rails.

Rigidly secured to the rearward portions of the slides 26 as by fasteners such as rivets or bolts 30 are a pair of arms 32 comprising the back support arms of the back cushion 34. It will thus be apparent that as so far described as the slides move along the guide rails, the back and its cushion will likewise be moved from its rearward position shown in FIGURE 1 to its forwardmost or ejecting position shown in FIGURE 2.

There is provided a further pair of arms as at 36, each

of which is pivoted as at 38 to a slide 26 forwardly of the pivot 30 of the back support arms 32. Extending across the top of these arms last mentioned is an ejector bar 40 which extends transversely across and above the top of the seat cushion 20 previously mentioned. A stop pin 42 is provided on each of the slides in a position to limit forward tilting of the ejector bar arms 36 about their pivot pins 38, this limiting action being shown more clearly in full lines in FIGURES 2 and 4 and in dotted lines in FIGURE 1. The stop pins 42 thus limit the forwardmost motion of the ejector bar and its arms about their pivots 38, the rearward position of the same being shown in full lines in FIGURE 1.

A flexible covering of a suitable pliable material in the form of a sheet indicated at 44 completely covers the top of the seat 20, it being fixedly secured to the front of the seat in any suitable manner, and at its rear end being resiliently connected to the seat as by springs 46. These springs serve to hold the covering 44 tautly across the top of the seat and across the transverse ejector bar 40 which lies therebeneath, as will be apparent from FIGURE 4. However, the resilient connection at 46 gives sufficient yielding to the covering to allow the same to be raised as the ejector bar 40 travels beneath the same from its rearward position shown in full lines in FIGURE 1 to its forwardmost position as shown in FIGURE 2.

The purpose of this arrangement is to enable the forward travel of the ejector bar underneath the covering to render the seat uncomfortable for a person so that he will be warned that his period of use of the device is terminating, while the forward travel of the back 34 serves to physically eject the person from the seat when the back portion has moved into the position shown in FIGURE 2.

Means are provided whereby power is employed to tilt the ejector bar forwardly from the back support arms when the period of use of the seat is drawing to a close, whereby the ejector bar will move to the full line position shown in FIGURE 1; and thereafter to move both the ejector bar and the back together with the slides 26 forwardly upon the slide guide rails 22 to the completion of the ejecting position and the ejecting operation.

For this purpose there is provided a pair of racks 50 suitably guided upon portions of the seat framework, which racks are pivotally connected as by transverse laterally extending shafts or pins 52 to an elongated slot 54 in the ejector bar arms 36. This pin rides in a suitable horizontally extending slot 56 in the side wall or panel 18 of the seat, and the rack bar is engaged with a pinion 60 carried by a shaft 62 which is suitably journaled in the framework of the seat. This shaft in turn has a gear 64 meshing with a pinion 66 operated by a source of power such as an electric motor 68 which may conveniently be mounted upon the interior of the seat construction as suggested in FIGURE 6.

A lost motion connecting means is provided between the ejector bar arms 36 and the back arms 32. This mechanism comprises a foldable linkage consisting of a pair of links 70 and 72, pivoted to each other as at 74 and to the arms 36 and 32 as by pivot pins 76 and 78, respectively.

The arrangement is such that when the source of power 68 is energized by any suitable means, not shown, but set in operation when the period for which the seat is to be employed has expired, the motor will cause the shaft 62 through the pinion 60 to operate the two sets of racks 50 and thereby pivot the ejector bar arms 36 forwardly from the full line position of FIGURE 1 to the dotted line position therein. This forward motion will cause the ejector bar to raise that portion of the covering immediately overlying the same in the vicinity of the back 12. When the links have been straightened or substantially straightened, continued operation of the racks will now pull the ejector bar and the ejector arms forwardly, and since the latter have now engaged their stop pins 42, they

will cause the slides 26 to move forwardly upon the tracks 22. This forward movement will cause the slides to first move up the downwardly inclined portion 24, thus lifting the ejector bar upwardly above the seat to any desired distance, as for example two inches or the like. As the ejector bar and the back now move forward upon the horizontal portion of the track 22, they will gradually force the occupant off the seat.

As will be understood, suitable limit switches and the like will be provided, not shown, for limiting the travel of the ejecting mechanism and to also limit the travel of its return to an operative position of FIGURE 1 when the next coin is deposited to initiate the next period of operation of the vibratory seat.

It will be understood that the seat will be made of appropriate sizes in accordance with the usage to which it is put.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuating means causing movement of said ejector bar across the seat from the back towards the front thereof for ejecting an occupant from the seat, means mounting said back for sliding movement over the seat from the rear towards the front thereof, means connecting said bar to said back for simultaneous movement of the back upon movement of the bar.

2. The combination of claim 1, wherein said connecting means provides a lost motion whereby after initial movement of said bar said back is caused to move in unison with said bar.

3. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuating means causing movement of said ejector bar across the seat from the back towards the front thereof for ejecting an occupant from the seat, a covering overlying said seat, said bar being disposed between said seat and covering.

4. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuating means causing movement of said ejector bar across the seat from the back towards the front thereof for ejecting an occupant from the seat, a covering overlying said seat, said bar being disposed between said seat and covering, resiliently yieldable means securing said cover to said seat.

5. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuating means causing movement of said ejector bar across the seat from the back towards front thereof for ejecting an occupant from the seat, said bar mounting means including arms pivoted to said seat on opposite sides thereof, guide rails mounted on the sides of said seat, slides mounted in said guide rails, said arms being secured to said slides.

6. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuat-

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ing means causing movement of said ejector bar across the seat from the back towards the front thereof for ejecting an occupant from the seat, said bar mounting means including arms pivoted to said seat on opposite sides thereof, guide rails mounted on the sides of said seat, slides mounted in said guide rails, said arms being secured to said slides, a source of power, a rack and pinion connected to said source for operation thereby, said rack being connected to one of said arms.

7. In combination with a vibratory chair having a back and a seat, an ejector bar extending transversely of and above said seat, means mounting said bar for swinging movement from the back to the front of the seat, actuating means causing movement of said ejector bar across the seat from the back towards front thereof for ejecting an occupant from the seat, said bar mounting means including arms pivoted to said seat on opposite sides thereof, guide rails mounted on the sides of said seat, slides mounted in said guide rails, said arms being secured to said slides, said back having arms connected to said slides, a linkage connecting said back arms to said bar arms.

8. An ejector mechanism for use with a vibratory chair or couch of the type having a vibratory seat and a back comprising a pair of horizontal guide rails secured to the opposite sides of said seat, slides mounted on said rails for movement therealong, a pair of arms each pivoted to one of said slides, an ejector bar secured to said arms and extending transversely of and above said seat, a source of power, means connecting said source of power to at least one of said arms for causing swinging movement of said arm on said carriage and thereafter causing movement of said carriage along said track, a covering overlying said seat and said ejector bar, means resiliently securing said covering to said seat.

9. The combination of claim 8, wherein said connecting means comprises a rack bar mounted for sliding move-

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ment and pivoted to said bar arm, a rotatably journaled shaft having a gear engaging said rack, means drivingly connecting said source of power to said shaft.

10. The combination of claim 8, wherein said back has arms fixedly secured to said slides for movement therewith.

11. The combination of claim 8, wherein said back has arms fixedly secured to said slides for movement therewith, a folding linkage connecting said bar arms to said back arms.

12. In combination with a chair having a back and a seat, means mounted on the sides of the chair for travelling movement toward the front of the seat, an ejector bar extending transversely over said seat, means mounting said ejector bar on said travelling means for swinging movement on and travelling movement therewith toward the front of the seat to eject a person from the seat, and actuator means for swinging said bar and subsequently moving said travelling means.

13. The combination of claim 12, and means mounting said back on said travelling means for travel therewith to act in conjunction with said bar in ejecting a person from the seat.

14. The combination of claim 13, said bar swinging and moving in advance of said back.

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