Oct. 11, 1938. O. WESSEL 2,132,664

DIVAN BED

Filed March 27, 1936

Fig. 1.

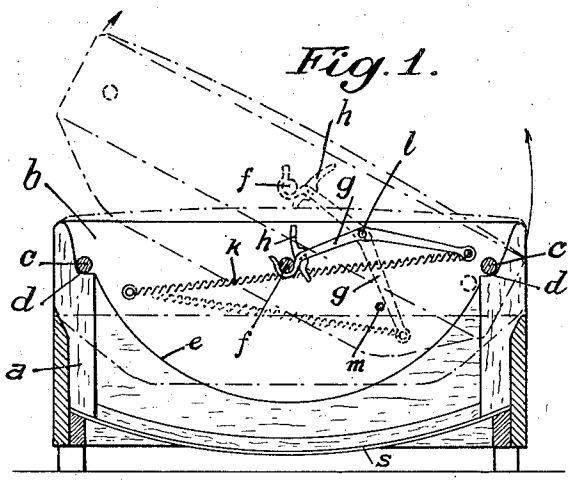


Fig. 2

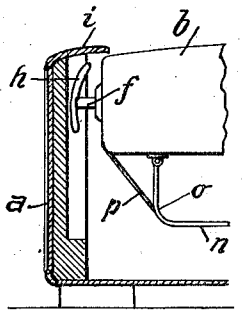


Fig. 3

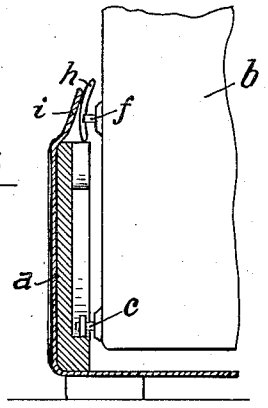


Fig. 4

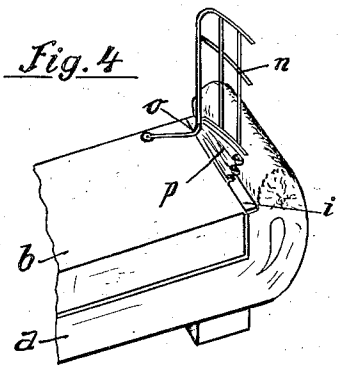


Fig. 5

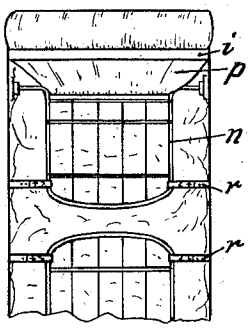
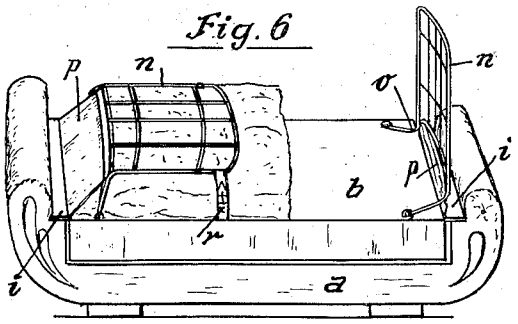


Fig. 6



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2,132,664

DIVAN BED

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Application March 27, 1936, Serial No. 71,086

5 Claims. (Cl. 5—24)

This invention relates to divan beds and has for its object to provide an improved structure of this character.

The known divan beds with reversible frame have the defect that their reversing device is too complicated and not sufficiently strong. For this reason the handling of such divan beds when converting them from the divan form into the bed form is difficult and requires considerable strength and skill. In many cases the upholstery is compressed at the supporting points during the use as bed, so that at those points the upholstery becomes shabby or even damaged. In the case of divan beds which have rollers for supporting the frame the movement of the rollers is responsible for undesirable noisiness during conversion.

According to the invention these defects are eliminated by providing the reversible frame at the ends of opposite sides with supporting rollers or pins adapted to rest on the underframe when the divan bed is in use, axles of rotation being provided between said supporting journals or rollers, whereby the reversible frame is rotatably connected to the underframe.

In the accompanying drawing one embodiment of the invention is diagrammatically illustrated by way of example.

In said drawing:—

Fig. 1 is a part sectional view of the underframe showing the reversible frame with chain dotted lines in the position of rest and in the course of reversal,

Fig. 2 is a section through the axle of rotation of the reversible frame, at right angles to the sectional plane in Fig. 1,

Fig. 3 is a view similar to Fig. 2, showing the reversible frame in its vertical position,

Fig. 4 is a perspective part sectional view of the divan bed, when used as bed,

Fig. 5 is a plan view of the divan bed, when used as bed in closed position,

Fig. 6 is a perspective view of the divan bed, one side closed with bedding, the right side without bedding.

Referring to the drawing, *a* is the underframe, *b* the reversible frame which is fitted on one side as a divan and on the other side as a bed with mattress and bedding. The reversible frame *b* has in the vicinity of the opposite narrow sides rollers or journals *c* whereby it rests on laterally confined bearing shoulders *d* of the underframe, so that it can perform no lateral movements in this position. The bearing shoulders *d* are connected together at the narrow sides of the underframe by respective curved, preferably circular arc shaped guide paths *e* for the rollers or journals. Furthermore, the reversible frame *b* has respective axles of rotation *f* at the opposite narrow sides which are in engagement with respective levers *g* rockable by pivoting them at *l* on the underframe. Each of said levers *g* has near the axle *f* an abutment *h* for lifting and holding a cover flap *i* for the reversing mechanism. The lever *g* is a bell crank lever pivoted at *l* and carries at one end the bearing for the axle *f* of the reversible frame *b* and has connected to its other end a tension spring *k* in such a manner that this spring *k* forms with the lever *g* a very small acute angle in the position of use of the reversible frame *b*, said angle being increased when the reversible frame *b* is lifted, until the parts occupy the position shown dotted in Fig. 1, in which the spring *k* acts upon the bell crank lever *g* with a comparatively large leverage and holds same in the reversing position. The underframe *a* has an abutment *m* whereby the movement of the lever *g* under the action of the spring *k* is limited in the reversing position. The reversible frame *b* has foldable head and foot rests *n* at its narrow sides which are hinged to the reversible frame *b* by means of bent ends or elbows. Owing to the bent ends *o* and the curved formation of the head and foot rests *n* same form a hollow space, when folded down, for the reception of the mattress and the bedding. Said rests may be attached to the reversible frame by means of thongs or straps for holding the mattress and bedding firmly in position when the frame is bed side down. It is preferred to dispose the axles of rotation *f* centrally of the narrow sides of the reversible frame and the pivot point of the levers *g* laterally of said axles.

In the position of use the reversible frame *b* rests with its rollers or journals on the bearing shoulders *d* of the underframe *a*. For reversal one longitudinal side of the reversible frame *b* is slightly lifted, whereby the axles of rotation *f* of the reversible frame *b* are caused to move upwards and the levers *g* are rocked to such an extent that the springs *k* promote the movement of the reversible frame *b* into the reversing position and resiliently hold same in that position. In the reversing position the reversible frame *b* is rotated around the axis passing through the axles of rotation *f*, one pair of the supporting rollers or journals *c* being guided on the paths *e*, until the reversible frame *b* is turned through 180°. The reversible frame is now pressed down against the action of the springs *k* and the lever *g* is returned into its original position, in which

the frame is unable to rise on its own accord under the action of the springs *k* which act upon the levers *g* under a very small acute angle. The reversible frame then will again rest on the bearing shoulders *d* of the underframe *a* with its rollers or journals *c*.

The space between the reversible frame *b* and the underframe *a*, necessary for the play of the reversible gear *f*, *g*, *l*, *m*, *k* is covered above by flaps *i*, which at the conversion of the reversible frame *b* are lifted and held by the abutment *h*, arranged on the lever *g*, till the reversible frame is moved from the reversible position into the respective position of rest. The end walls *n* are connected with the foot rests of the reversible frame by stuff-parts *p* or the like, whereby the bedding is prevented from getting into the space for the reversible gear *f*, *g*, *h*, *l*, *m*, *n*. When the reversible frame *b* is used as a bed the head and foot rests *n* lean with their under ends upon the closed flaps *i*. The foldable head and foot rests *n* cooperate with the reversible gear *f*, *g*, *h*, as it separates the bedding from the gear and its space and permits rotation of the reversible frame *b* with the bedding and holding the bedding on the underside of the frame *b* without touching between the underframe *a* and the gearing *f*, *g*, *h*, *l*, *m*, *k* on the one side and the bedding on the other side. Thus it is believed, the combination of the means for rotation of the reversible frame *b* with the holding means for the bedding is in no aggregation.

I claim:—

1. A divan bed, comprising an underframe, bearing shoulders near the four corners of said underframe, a reversible divan and bed frame, supporting members on said reversible frame adapted to rest on said bearing shoulders, axles of rotation on said reversible frame, supporting levers for said axles each pivoted to the underframe, springs anchored at one end to said supporting levers and at the other end to the underframe and for rocking said supporting levers to lift said reversible frame, flaps on the underframe adapted to cover the space between the underframe and the reversible frame, and flap-operating means attached to the supporting levers to lift said flaps when said frame is operated and to maintain said flaps in the raised position while complete reversion is being effected.

2. A divan bed, comprising an underframe, bearing shoulders on said underframe, a reversible divan and bed frame, axles on opposite sides of said reversible frame, supporting members on said reversible frame and adapted to rest on said bearing shoulders, supporting levers for said reversible frame directly pivoted intermediate their ends on each of two opposite sides of the reversible frame to the underframe, means for rotatably engaging one end of each supporting lever and said axles, means for limiting the upward movement of the axle-engaging lever end, spring means anchored to said underframe at one end and to the free end of the levers for rocking the levers to lift the reversible frame, the arm of the lever attached to springs being longer than the other arm of the lever, the pivoted connection of the lever being positioned at a point vertically between the positions of the axle when the reversible frame is in its upper and lower positions, and the arrangement of the levers and the springs being such that said springs have insufficient leverage on said supporting levers for rocking them, when said supporting members at the reversible frame rest on said bearing shoulders at the underframe, but have sufficient leverage for rocking said supporting levers when said reversible frame is lifted for a certain degree and holding the supporting levers in the position of rotation for the reversible frame.

3. A divan bed, comprising an underframe, bearing shoulders near the four corners of said underframe, a reversible divan and bed frame, supporting members on said reversible frame, adapted to rest on said bearing shoulders, axles of rotation on said reversible frame at two opposite sides thereof, supporting levers for lifting said axles from a lowermost position in which the supporting members rest on the bearing shoulders to a predetermined uppermost position each lever pivoted intermediate its ends on one of the two sides of the reversible frame to the underframe at a position laterally to said axles and vertically disposed substantially half-way between the lowermost and the uppermost position of the axles on the reversible frame, a bearing at one end of each of said supporting levers for said axles and springs anchored at the other end of said supporting levers and to the underframe for rocking said supporting levers to lift said reversible frame and means for limiting the upward movement of the axle supporting portions of said supporting levers and thus determining the uppermost position of the axles.

4. A divan bed, comprising an underframe, bearing shoulders near the four corners of said underframe, a reversible divan and bed frame, supporting members on said reversible frame, adapted to rest on said bearing shoulders, axles of rotation on said reversible frame, at two opposite sides thereof, supporting levers for lifting said axles from a lowermost position in which the supporting members rest on the bearing shoulders to a predetermined uppermost position each lever pivoted intermediate its ends on one of the two sides of the reversible frame to the underframe at a position laterally to said axles and vertically disposed substantially half-way between the lowermost and uppermost position of the axles on the reversible frame, springs anchored at one end of said supporting levers and the underframe for rocking said supporting levers to lift said reversible frame and means for limiting the upward movement of the axle supporting portions of said supporting levers and thus determining the uppermost position of the axles, each spring being arranged with respect to the corresponding rotating axle of the reversible frame and the pivoting point of its associated supporting lever in such a manner that leverage force caused by the spring upon the supporting lever during the lifting of the reversible frame increases continuously so as to assist the lifting and to hold the reversible frame in its uppermost position.

5. A divan bed, comprising an underframe, bearing shoulders near the four corners of said underframe, a reversible divan and bed frame, supporting members on said reversible frame adapted to rest on said bearing shoulders, lateral stops on said bearing shoulders for restraining said supporting members from lateral movement while resting on said bearing shoulders, axles of rotation on said reversible frame at two opposite sides thereof, supporting levers for lifting said axles from a lowermost position in which the supporting members rest on the bearing shoulders to a predetermined uppermost position each lever pivoted intermediate its ends on one of the two sides of the reversible frame to the under-

frame at a position, laterally to said axles and vertically disposed substantially half-way between the lowermost and uppermost position at the axles on the reversible frame, a bearing at one end of each of said supporting levers for said axles and springs anchored at the other end of said supporting levers and to the underframe for rocking said supporting levers to lift said reversible frame, the arrangement being such that said springs have unsufficient leverage on said supporting levers for rocking them, when said supporting members at the reversible frame rest on said bearing shoulders at the underframe, but have sufficient leverage for rocking said supporting levers when said reversible frame is lifted for a certain degree and holding the supporting levers in the position of rotation for the reversible frame.

OSWALD WESSEL.