Jan. 5, 1937. J. BLOOM 2,067,042

HINGE

Filed Aug. 14, 1936

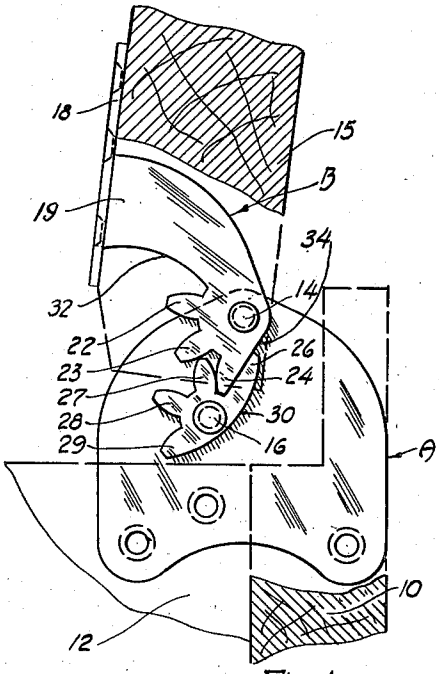


Fig. 1

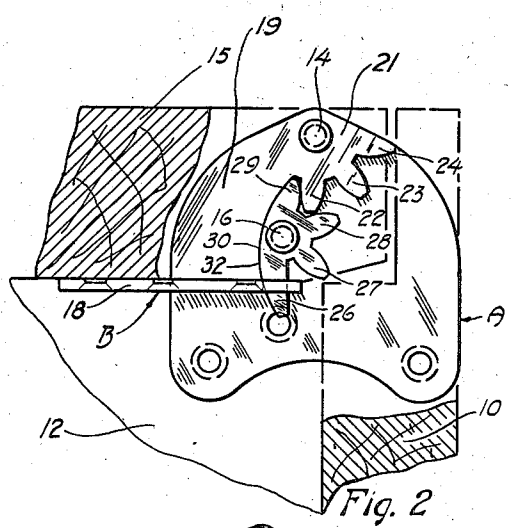


Fig. 2

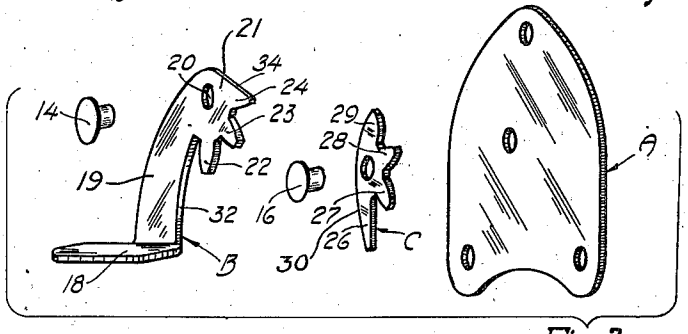


Fig. 3

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Patented Jan. 5, 1937 2,067,042

UNITED STATES PATENT OFFICE

2,067,042

HINGE

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Application August 14, 1936, Serial No. 95,962

2 Claims. (Cl. 16—191)

My invention relates to hinges and relates particularly to hinges used on cedar chests whereby the hinge may be easily attached to or detached from the chest and whereby the lid of the chest will be held in a predetermined position.

Hinges whereby the lid and side portions of the chest are joined or articulated together are useful so that the lid may assume a vertical self-sustaining position without the aid of any outside supporting elements.

It is an object of my invention to provide a hinge which may be easily attached to the outside corner of a cedar chest and which will limit the swinging movement of the lid or top of the cedar chest to an open or a closed position.

Another object of my invention is to provide a hinge which will limit the movement of one of the articulated members from one predetermined position to another predetermined position.

Other objects of my invention are to provide an improved device of the character described which is easily and economically produced, and which is sturdy and compact in construction.

With the above and related objects in view, my invention consists in the details of construction and combination of parts as will hereinafter be more fully described and which will be more readily understood when the description is read in conjunction with the accompanying drawing, in which:—

Fig. 1 is a fragmentary sectional view of my invention in an open position and embodied upon a corner and movable lid of a cedar chest.

Fig. 2 is a view similar to Fig. 1 except that the hinge is positioned whereby the cedar chest lid is closed.

Fig. 3 is an exploded view of the elements comprising my hinge.

Referring now in greater detail to the drawing, I show in Fig. 1 a fragmentary portion of a cedar chest having a rear or back wall 10 joined to a side wall 12 and having a lid or top or cover 15 which is movable to an open or closed position with respect to the side and back walls of the chest. Located upon the outside corner of the chest is a stationary member or fixed plate, generally designated as A, of my improved hinge. Pivotally mounted upon the stationary plate A is a movable hinge plate or member, generally designated as B. Also, pivotally mounted upon the hinge plate A is a segmental plate, generally designated as C, which serves as a stop member. Provision is made in the stationary as well as in the movable plate member for openings whereby the hinge plates may be respectively attached to the side wall and to the lid or movable part of the chest.

The stationary plate A has fixedly attached thereto a pintle 14 which serves as a shaft or pivot for the movable plate B, and a pintle 16 which serves as a shaft or pivot for the stop C is also fixedly attached to the stationary hinge plate A. The plate A is a flat metal member which also may be made of any other rigid material; the plate may be made to have different configurations.

The movable hinge plate B is comprised of an offset or flange 18 which is attached to an inside portion of the lid 15 by means of screws or bolts. The flange 18 is integrally joined to one end of an arcuate shaped arm 19, the latter having at its other end a bearing 20 for pivotal engagement with the pintle 14. Joining the arm 19 adjacent the bearing 20 is a sector 21 having a plurality of gear teeth 22, 23, and 24 thereon.

The medial lines of the arcuate arm and the sector are disposed approximately 90° apart.

The gear teeth 22, 23, and 24 on the movable hinge member are adapted to mesh with gear teeth 29, 28, and 27 on the revolvable stop C. Adjacent the gear tooth 27 on the stop C is a tooth-like projection 26 which is longer than each of the gear teeth 27, 28, or 29; and the projection 26 serves to limit or stop the movement of the hinge plate B in its movement in one direction.

A convex end surface 30 of the stop C joins one of the sides of the projection 26 and the gear tooth 29; and the surface 30 is of a configuration to snugly interfit with the concave surface 32 on the movable hinge plate.

With the elements above described, the pintles 14 and 16 are positioned so that the gear teeth 22, 23, and 24 are adapted to mesh with the gear teeth 29, 28, and 27; and upon movement of the hinge plate B to the position illustrated in Fig. 2, the convex surface 30 of the stop C engages the concave surface 32 of the movable plate B to limit the downward movement of the movable member A with respect to the fixed member.

It is to be noticed that the angle formed by the concave surface 32 when extended to meet the surface 34 on the movable plate B is approximately 90°—the angle through which the movable plate B may move.

When the lid is moved in an upwardly direction, as illustrated in Fig. 1, the extended member 26 of the stop C engages the substantially flat surface 34 of the movable hinge plate B, thereby limiting movement of the hingle plate B in a clockwise direction, as Fig. 1 is viewed.

Hence, the hinge limits movement of the lid through an angle of approximately 90°.

Thus, no strain or stress whatsoever is imposed upon the lid or the side and back of the chest when the lid is moved from one extreme position to its other extreme position, but the strain and stress always comes upon the constituent elements of the hinge.

By tightening the pintles with respect to the plate members, the movable hinge member must have force applied thereto in order to move the lid with respect to the stationary hinge member.

It is to be observed that the relationship of the articulated plates A and B and the cooperable stop member provides that the lid of the cedar chest remains open in substantially a vertical position thereby eliminating the use of any separable lid limiting members which otherwise occupy valuable space.

Suitable grooves may be cut in the sides of the cedar chest so that the elements comprising the hinge are not readily seen.

Although I have described my invention in considerable detail, such description is intended as illustrative rather than limiting since the invention may be variously embodied.

I claim as my invention:—

1. A hinge comprising pivotally connected fixed and movable members, means for connecting said members to elements of a chest which are to be articulated together, said movable member comprising a substantially flat portion having a partial concave bounding surface and a plurality of gear teeth thereon, a pivoted cooperable stop member having a plurality of gear teeth therein which mesh with the gear teeth on said movable member, said stop member having a convex surface adapted to engage said concave surface on said movable member to limit the movement of the movable member in one direction, and a tooth-like extension on said stop member which engages the outside tooth surface of an end tooth on the movable member whereby the movable member is limited from moving in the other direction.

2. A hinge comprising pivotally connected fixed and movable members, means for connecting said members to elements of a chest which are to be articulated together, said movable member comprising a portion having a plurality of gear teeth thereon, a connecting arm portion disposed at approximately 90° to the gear teeth portion of said movable member, a pivoted cooperable stop member having a plurality of gear teeth therein which mesh with the gear teeth on said movable member, said stop member having a convex surface adapted to engage a cooperable concave surface on said movable member to limit the movement of the movable member in one direction, and a tooth-like extension on said stop member which engages the outside tooth surface of an end tooth on the movable member whereby the movable member is limited from moving in the other direction.

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