E. E. HARTMAN.

HINGE.

APPLICATION FILED MAY 10, 1919.

1,320,143. Patented Oct. 28, 1919.

Fig. 1.

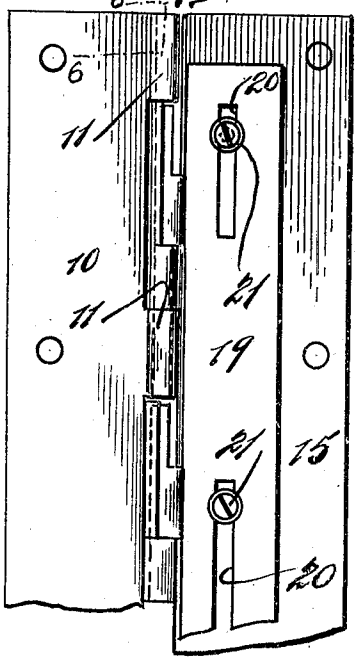


Fig. 2.

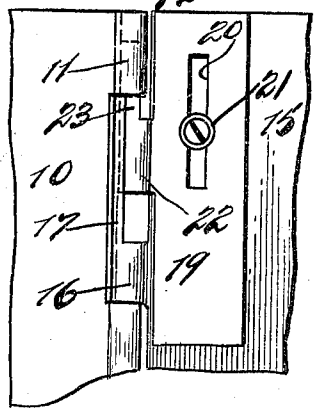
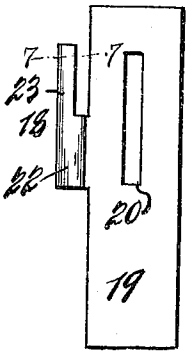


Fig. 3.



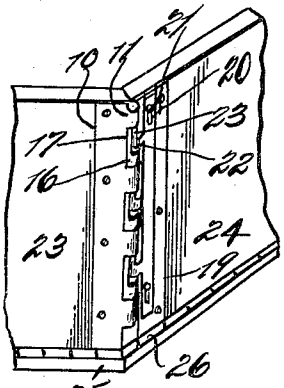


Fig. 9.

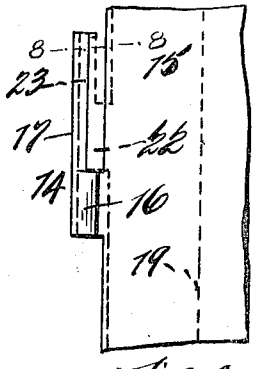


Fig. 4.

Fig. 6.

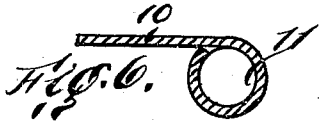


Fig. 8.

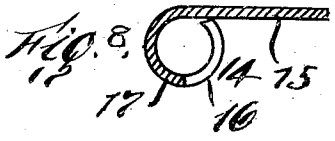


Fig. 7.

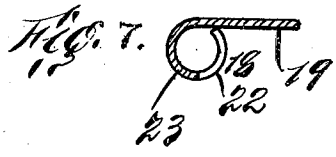
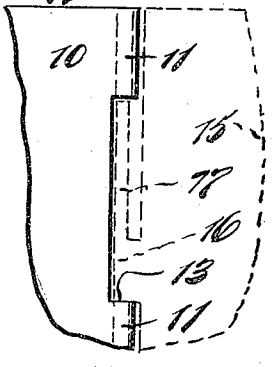


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HINGE.

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Application filed May 10, 1919. Serial No. 296,148.

To all whom it may concern:

Be it known that I, ELLES E. HARTMAN, a citizen of Hungary, residing at New York city, county and State of New York, have invented certain new and useful Improvements in Hinges, of which the following is a full, clear, and exact description.

This invention relates to improvements in locking mechanism arranged to connect the members of a knockdown structure, such as collapsible trunks or suit-cases, said mechanism being also adapted to be used as hinge-members for doors or other similar elements. Whether my improvement is used as a hinge or lock depends more upon the association of the parts connected than upon the connection itself. For instance, if the device is used to connect a door and door-frame, so that the door can be moved to open or closed position, it would be a hinge. If used to connect members of a collapsible structure, said members being hinged to a common support, it would be a locking device.

During the following description of the device, reference will be had to the accompanying drawing, wherein:—

Figure 1 is a fragmentary assembled view of the device unlocked;

Fig. 2 is a similar view of the device locked;

Fig. 3 is a fragmentary detail view of the locking element;

Fig. 4 is a similar view of the tongue member, illustrating the lock in dotted lines;

Fig. 5 is a fragmentary detail view of the socket member, illustrating the tongue member in dotted lines;

Figs. 6, 7 and 8 are sectional detail views, illustrating the tubular portions of the socket-member, the locking-member and tongue-member, taken on lines 6—6, 8—8 and 7—7 of Figs. 1, 4 and 3, respectively.

Fig. 9 is a perspective view illustrating a portion of a foldable trunk or the like having my improvement applied thereto.

My improved device consists of a plate 10 having spaced apart knuckles 11 between which the recessed knuckles 14 of another plate member 15 are adapted to fit. The tongues 14 consist of knuckles 16 and a guide 17, the combined lengths of the cylindrical and semi-cylindrical members 16 and 17 being slightly less than the length of the jaws 13. The portions 17 act as guides for extensions 18 carried by a plate 19 slidably mounted on the tongue carrying plate 15, said slide or plate 19 being provided with slots 20 (one only being shown in Fig. 3), through which screws 21 pass and engage the plate 15. As can be seen in Fig. 3, the extensions 18 consist of a portion 22 and a semi-cylindrical pin 23 arranged to engage the knuckles 11 on plate 10. As can be seen, the extension 18 of plate 19 lies in the guide 17 carried by the plate 15 and is slidably fitted to said guide. To lock the plates 10 and 15 together and also the parts to which they are secured (for instance the end-member 23 and side-member 24 of a collapsible box or trunk, indicated in Fig. 9), the pins 23 will be caused to engage the adjacent knuckles 11 on the plate 10, the engagement of the pins and tubular portions 11 being caused by sliding plate 19 upwardly. To disengage the plates 10 and 15, the plate 19 will be moved downwardly. The plate 10 may be secured to a door and the plate 15 to a door-casing. In this event the device will act as a hinge, in fact will constitute a hinge. When applied as indicated in Fig. 9, the device will act as a lock, as in this event the end-member 23 and side-member 24 will be hinged to a bottom member 25 as indicated by 26. When the device is used as a hinge, the pin 23 will act as a pivot-pin. My device used as a hinge possesses the advantage of enabling a door to be detached from its frame by merely sliding the plate 19 downwardly, thereby withdrawing the pins which pivotally connect the door and frame. Furthermore, the pivot-pins cannot be lost as they are permanently supported by one of the plate or hinge members. To lock the plate 19 against movement, the screw 21 can be tightened up, thereby firmly securing the plate 19 either in open or closed position.

To assemble the device the tongues 14 will be inserted into the spaces between the knuckles or tubular members 11 on the plate 10, as indicated by dotted lines in Fig. 5; the cylindrical extensions 18 on the slidable plate 19 will now be inserted into the tongue-members 14 on the plate 15, as indicated by dotted lines in Fig. 4. As the extensions 18 slidably fit within the semi-cylindrical extensions 17 of the members 14, the plate 15 can be moved up and down. When the plate 19 is moved up the pins 23 will enter the openings of the tubular portions or

knuckles 11; when moved down said pins will be drawn out of said openings and the plates 10 and 15 will be disconnected and may be separated.

Having described my invention, what I claim is:—

1. The combination of a plate having spaced apart knuckles, a plate having recessed knuckles to engage the spaces between said knuckles, a guide carried by said recessed knuckles, and locking pins to engage the knuckles on the plate first named slidably engaging said guides.

2. In a hinge, a plate provided with jaws and openings extending therefrom, a second plate, recessed knuckles carried by the second plate to engage the jaws, pivot pins slidably mounted adjacent said recessed knuckles arranged to engage the openings in the plate first named, and means to secure said pins against movement.

3. In a hinge, a plate having openings, a second plate, pivot pins to engage the openings in the plate first named and movably retained by the second named plate, and means to lock said pins against movement.

4. In a hinge, the combination of separably connected plate members, pins slidably mounted upon one of said members to pivotally connect said plate members, and means to lock said pins against movement.

5. The combination of a plate, spaced apart knuckles carried thereby, a second plate, recessed knuckles carried by the second plate to engage spaces between the knuckles on the first named plate, said recessed knuckles consisting of a tubular portion having a semi-cylindrical guide extending therefrom, a slide mounted on the second named plate, and pins projecting from said slide and engaging the semi-cylindrical guides on the second named plate, said pins being arranged to engage the knuckles on the first named plate.

6. In combination, a pair of hinge-plates provided with coöperating alined pin receiving knuckles, and an independent plate superimposed on and slidably secured to one of the hinge plates, said independent plate having a series of pins adapted to be slidably inserted into or withdrawn from said knuckles substantially as and for the purpose described.

7. In combination, a pair of hinge-plates provided with alined pin receiving knuckles, and an independent plate superimposed on and slidably secured to one of said hinge plates by a pin and slot connection, said independent plate having a series of pins adapted to be inserted into or withdrawn from said knuckles.

8. The combination of a pair of hinge-plates provided with knuckles, an independent plate superimposed upon and slidably secured to one of the hinge-plates, and means on the slidable plate to pivotally connect the knuckles on the hinge-plates.

9. The combination of a pair of hinge-plates having alined knuckles, and means permanently attached to but slidable upon one of said plates to pivotally connect said knuckles.

Signed at New York city, N. Y., this 8th day of May, 1919.

ELLES E. HARTMAN.

Witnesses:
EDWARD A. JARVIS,
MAURICE BLOCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."