May 3, 1966 H. F. GORHAM 3,249,073

FOLDING SHELF

Filed Jan. 4, 1965

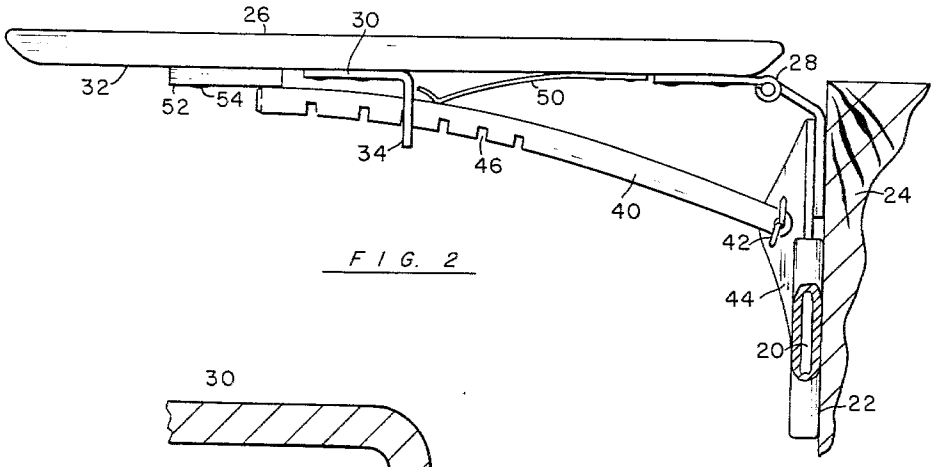


FIG. 2

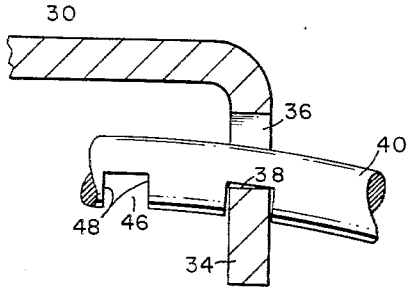


FIG. 3

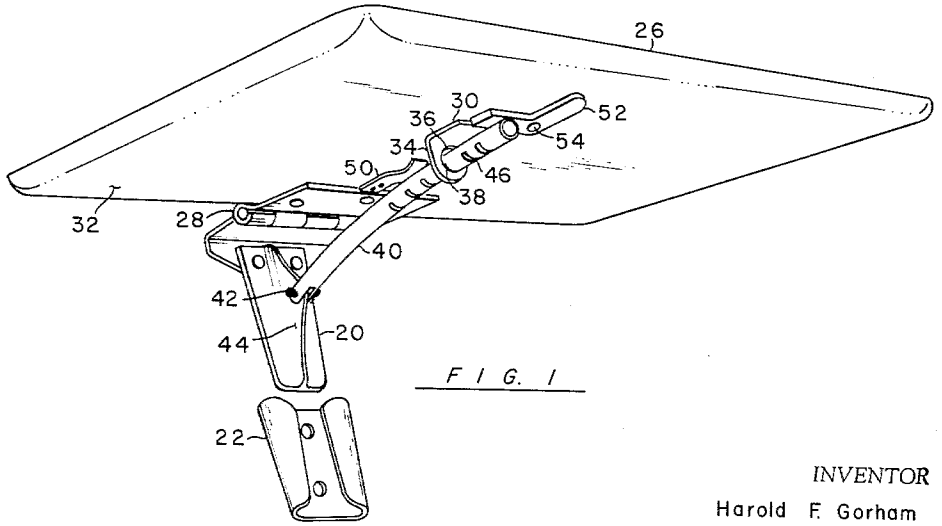


FIG. 1

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FOLDING SHELF

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The present invention relates to a folding element such as a tray or shelf and the latching mechanism therefor, and more particularly to a tray that is carried by a bracket of the type which can be removable attached to a chair, or a table or any article on which a tray or shelf is desirable. The word "tray" as herein used is intended to comprehend other folding elements such as shelves.

The tray of the present invention includes a latching element which depends therefrom and this latching element is provided with a latching abutment. The tray is pivotally attached, about a horizontally extending axis, to a bracket. The device includes also a second latching element which is also pivotally attached to the bracket about a horizontally extending axis. The second latching element is provided with a latching abutment which is adapted to be brought into latching relationship with the abutment on the tray. The device also includes a lock for preventing relative movement of the tray and the second latching element when the abutments are in latched positions with one another.

A spring is interposed between the tray and the second latching element and normally yieldingly urges the abutments into latching position.

The second mentioned latching element is in the form of a rod having a plurality of transversely extending slots in the underside thereof. The shoulders of the slots form abutments. The rod is disposed below the tray and the latching abutment on the tray extends upwardly and that latching abutment can be received by any of the slots. Thus the shoulders forming the slot provides abutments for latching engagement with the abutment on the tray.

The bracket, to which the tray and rod are pivotally attached, is of the removable type so that it can be removable attached to another element such as a chair, etc.

Other features and the advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred embodiment of the invention is illustrated.

In the drawing:

FIG. 1 is a perspective view of the underside of a folding tray and showing the latching mechanism therefor;

FIG. 2 is a side view of the tray and latching mechanism and showing the same carried by a bracket which is removable attached to socket in another element such as a chair, the socket and the other element being shown in section; and

FIG. 3 is a fragmentary view partly in section showing the latching element but on a larger scale.

Referring more in detail to the drawing, the removable bracket **20** is received by a socket **22** attached to a portion **24** of a chair. The tray **26** is pivotally attached about a horizontally extending axis by a hinge **28** to the bracket. An L-shaped bracket **30** is suitably fixed to the underside **32** of the tray and includes a downwardly extending section **34** which extends parallelly with the axis of the hinge **28**. This section is provided with a transverse hole **36**, the wall forming the hole providing an upwardly extending abutment **38**.

A latching element in the form of a rod **40** is pivotally carried by a pin **42** which extends transversely through an extension **44** of the bracket **20**. This extension is disposed below the axis of the hinge **28**. The pin **42** is arranged parallelly of the axis of the hinge.

The rod **40** is provided with a plurality of transversely extending slots **46** in the underside thereof. The walls of the slots form abutments **48**. The rod extends through the

hole **36** and is guided by the walls forming the hole. Any of the slots **46** can receive the upwardly extending abutment **38** of the bracket **30**. Thus, when one of the slots **46** receives the abutment **38**, the walls forming the slots form abutment which are latched with abutment **38**.

A leaf spring **50** is attached to the underside **32** of the tray and the free end thereof is biased downwardly and in engagement with the top of rod **40** so as to normally yieldingly urge the rod downwardly so as to maintain the rod in latch position with the latching abutment on the bracket **30**.

A lock **52** is pivotally attached by a pin **54** on the underside **32** of the tray. This lock is disposed so that it can be swung above or away from the free end of the rod **40**. When it is swung away from above the free end of the rod, the rod can be lifted so as to detach the cooperative abutments. However, when the lock is swung above the free end of the rod, the rod cannot be lifted. In this manner the latching abutments are locked in latching position.

The socket **22** is shown in a position in which the bracket extends vertically, and the tray is in a horizontal position. Under certain conditions, the socket may have to be fixed in such position that the bracket cannot extend in a true vertical position. However, since the underside of the rod **40** is provided with a plurality of slots, the angularly locked position of the tray relative to the bracket can be varied whereby the tray can be arranged in a horizontal position.

Thus it is apparent from the foregoing that there has been provided a relative inexpensive removable and folding tray which can be moved from folded to operative position with ease.

While the form of embodiment herein shown and described constitutes preferred form, it is to be understood that other forms may be adopted falling within the scope of the claims that follow.

I claim:

1. In combination:

(A) A bracket;

(B) a tray having:

(1) a latching element depending from the tray,

(a) said latching element including a wall forming an opening and an abutment on one side of the opening;

(C) means pivotally connecting the tray onto the bracket about a horizontally extending axis;

(D) a second latching element adapted to extend through the opening and having an abutment;

(E) means pivotally connecting the second mentioned latching element onto the bracket about a horizontally extending axis in a position in which the abutments are capable of abutting one another;

(F) and a lock for preventing relative movement of the tray and second latching element when said elements are in abutting relationship.

2. A combination as defined in claim **1**, characterized in that the lock is pivotally attached to the underside of the tray and is movable to a position directly above the second mentioned latching element.

3. A combination as defined in claim **1**, characterized to include:

(G) A spring normally urging the abutments in abutting relationship.

4. A combination as defined in claim **1**, characterized in that the second mentioned latching element is in the form of a rod and the abutment therefor comprises shoulders of a slot which slot extends transversely of the rod and is in the underside of the rod.

5. In combination:

(A) A bracket of the type which is adapted to be removable held in place by a socket;

(B) a tray having:
(1) a bracket depending therefrom, said bracket having an opening therethrough, the wall defining the lower part of the opening forming an upwardly extending abutment;
(C) means pivotally connecting the tray onto the first mentioned bracket about a horizontally extending axis;
(D) a rod having a plurality of transverse slots on the underside thereof for selectively receiving the upwardly extending abutment of the second mentioned bracket;
(E) means pivotally connecting the rod onto the first mentioned bracket about a horizontally extending axis and below the first mentioned means;
(F) a spring interposed between the bottom of the tray and the top of the rod for normally yieldingly urging a rod slot into the abutment;
(G) a lock;

(H) and means pivotally connecting the lock on the underside of the tray in a position to be interposed between the bottom of the tray and the top of the rod.

References Cited by the Examiner

UNITED STATES PATENTS

245,184	8/1881	Locke	108—80
249,312	11/1881	Crawford	108—80
463,915	11/1891	Olson	108—80
1,534,095	4/1925	Walker	108—9
1,571,753	2/1926	Christian	108—47
1,788,800	1/1931	McGinley	108—46 X
2,031,287	2/1936	Swanson	108—134
2,173,569	9/1939	Troendle	108—134
2,239,225	4/1941	Gordon	108—134

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