Feb. 16, 1954 H. E. LENZ, SR 2,669,494

LATCH FOR FOLDING TABLES

Filed July 27, 1948

FIG. 1

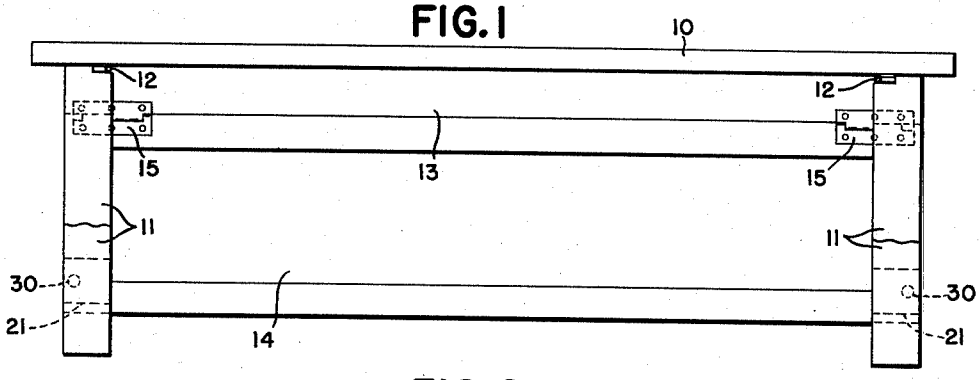


FIG. 2

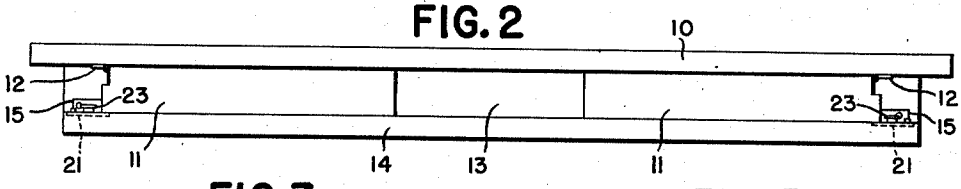


FIG. 3

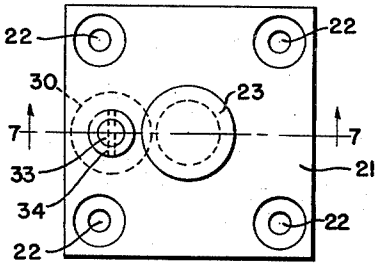


FIG. 5

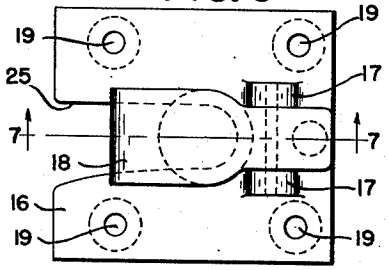


FIG. 4

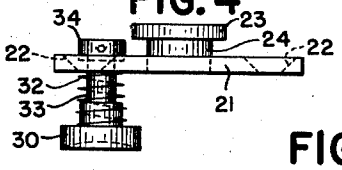


FIG. 6

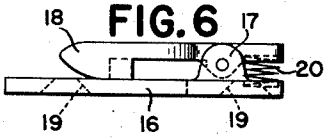
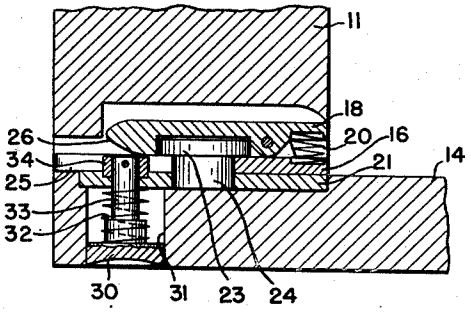


FIG. 7



Inventor
HARRY E. LENZ SR.
BY
Earl Berst
HIS Attorney

Patented Feb. 16, 1954

2,669,494

UNITED STATES PATENT OFFICE

2,669,494

LATCH FOR FOLDING TABLES

Harry E. Lenz, Sr., Dayton, Ohio

Application July 27, 1948, Serial No. 40,860

5 Claims. (Cl. 311—87)

1

This invention relates to novel folding tables, counters, or benches, and latching mechanism for maintaining them in set-up position.

The object of the invention is to provide a novel table, counter, or bench, of the class which is of rugged construction, which is used at intervals, and which must be folded for storage purposes until its next use.

An object of the invention is to provide a folding table, counter, or bench of such a construction that a minimum of space is required for its storage.

A specific object of the invention is to provide a sturdy latch mechanism to hold the table, counter, or bench in its set-up position in such a manner that accidental collapse of the table is prevented.

A specific object of the invention is to provide a latch for a folding table, counter, or bench having a pivoted latch pawl provided with a recess opening into which a projection of the same dimension snugly fits.

With these and incidental objects in view, the invention includes certain novel features of construction and combinations of parts, a preferred form or embodiment of which is hereinafter described with reference to the drawing which accompanies and forms a part of this specification.

In said drawing:

Fig. 1 is an elevational view of a typical counter, table, or bench in set-up position.

Fig. 2 is a front elevation of the table shown in Fig. 1, in its folded position.

Fig. 3 is an elevational view of one part of the latch.

Fig. 4 is a side elevation of the latch part shown in Fig. 3.

Fig. 5 is a plan view of a second part of the latch.

Fig. 6 is an end elevation of the part of the latch shown in Fig. 5.

Fig. 7 is a combined cross-sectional view taken on lines 7—7 of Figs. 3 and 5, and shows the latch in its latched position.

General description

The invention disclosed herein relates to folding tables, counters, or benches of rugged construction and of the type used for display purposes, which must be heavy to carry the weights which they are intended to support. These tables are also usually comparatively long and may be six feet or more in length. These tables, counters, or benches usually provided for this

2

purpose are used at intervals and must be stored between uses. To store a number of such tables, counters, or benches having such large dimensions requires considerable storage space unless they can be folded to a compact unit. One of the principal objections to folding tables, counters, or benches of this rugged class and size has been that no suitable means has been provided for firmly and safely holding them in set-up position, ready for use.

Applicant avoids the above-named objections by providing a table of novel and substantial construction and by also providing latches that are sturdy and that will not accidentally become unlatched, with the consequent collapse of the table.

The counters disclosed herein are provided with end panels, each of which includes two legs, and which panels fold under the counter top. The front, back, or both front and back of the table are provided with an apron of the size equalling the thickness of the legs when folded under the top. To the lower edge of the apron is hinged a folding panel which reaches almost to the floor when in set-up position, leaving only toe space below the panel. The folding panel extends endwise to extend over the legs at both ends of the counter. A latch is provided at each end of the folding panel near its bottom for maximum strength. Each latch consists of two parts, one part being recessed in a leg of the counter to bring its face level with the surface of the leg. The part recessed in the leg of the counter has a pivoted latch pawl with a cam edge at its free end. The pawl is spring-urged toward the outer face of the leg and is provided with a counterbored recess of the size to snugly receive the head of a stud carried by a second part of the latch. The stud-carrying part of the latch is recessed into the inner wall of the hinged panel and so located thereon that, when the panel is moved into its set-up position, the stud comes into contact with the cam on the free end of the latch pawl and rocks the pawl around its pivot against the action of a pawl spring. When the stud registers with the counterbored recess, the pawl snaps thereover and holds the panel and the legs in set-up position. The stud-and-recess construction is such that the latch cannot accidentally come open.

A release knob is supplied to release the latch when it is desired to fold the counter preparatory to storing it away for further use. The release knob is so constructed that considerable force is required to open the latch, so that accidental un-

latching is prevented. As an added precaution, the release latch is recessed into the panel, so that it will not be contacted by accident.

Detailed description

As illustrated in Fig. 1, the counter is provided with a top 10 and four legs 11. For stability, each pair of end legs 11 may be connected by a panel to form a rigid end for each end of the counter. Each leg 11 is hinged to the under side of the top 10 by a hinge 12. The hinges 12 are so located that, when the legs 11 are folded under a top, the side of the leg lies flush with the under side of the table, as shown in Fig. 2. An apron 13 is provided beneath the top 10, which apron extends downwardly a distance equal to the width of a leg 11, so that, when the legs 11 are folded under the table, the outer edge of the leg 11 will come flush with the bottom edge of the apron. A panel 14 is provided with hinges 15, by means of which the panel is connected to the lower edge of the apron 13. When the legs 11 are folded under the table top 10, the panel 14 can be folded against the outer sides of the legs 11, as shown in Fig. 2. Thus, when the table is folded, ready for storage, the space occupied thereby is equal to the thickness of a leg 11 plus the thickness of the top 10 and the panel 14. Any number of the folded tables may be stacked in a convenient stack, using a minimum of space.

A latch plate 16 (Figs. 5, 6, and 7), having two ears 17, in which a spring-actuated latch pawl 18 is pivoted, is provided on each of the legs 11 near their lower ends. Each leg 11 is recessed, as shown in Fig. 7, so that the latch plate 16 will lie flush with the surface of the leg when attached thereto. The latch plate 16 is attached to the recess of the leg 11 by four screws, holes 19 to receive the screws being provided therefor. A spring 20 normally maintains the free end of the latch 18 in contact with the inner surface of the latch plate 16.

The hinged panel 14 is provided with a latch plate 21 (Figs. 3, 4, and 7), which plate is recessed into the panel so that its outer surface comes flush with the inner wall of the panel 14. Four openings 22 are provided for securing the latch plate 21 firmly in position in the recess of the panel 14. A stud 23, having an enlarged head, is secured to the latch plate 21.

When attached to the plate 21, the headed stud 23 forms an annular groove 24, which is of a dimension to pass into a notched portion 25 of the plate 16. The head of the stud 23 passes over the surface of the latch plate 16 and into a circular recess in the under side of the latch pawl 18, thus latching the two members 16 and 21 firmly together. A cam edge 26, formed on the free end of the latch pawl 18, provides a means for camming the latch pawl outwardly when the head of the stud 23 passes therebeneath. To set up the counter, or table, the panel 14 is raised until the leg 11 is free to be moved. When the leg 11 is moved far enough for the cam edge 26 to contact the head of the stud 23, the latch pawl 18 is cammed outwardly, thus permitting the stud 23 to pass within the notch 25 and into the recess formed on the under side of the latch pawl 18. This operation is repeated for each leg or table end, depending upon the construction of the table, whereupon the table is held firmly in its set-up position. When the table is set up, the annular groove 24, being fixed in the notch 25, and the head of the stud 23 lying within the recess on the under side of the pawl 18, locks the leg and the panel in fixed relation. The recess formed on the under side of the pawl 18 is of such dimensions that the head of the stud 23 fits snugly therein, thus preventing any end play between the two latch members. In this manner, the set-up table is held in firm position.

To release the latch 18 when it is desired to fold up the table, a plunger 30 (Figs. 4 and 5) is slidably mounted in the latch plate 21. The plunger 30 fits in a recess 31 in the panel 14. The outer face of the plunger 30 is located flush or substantially flush with the outer face of the panel 14, so that the plunger cannot be accidentally moved to release the latch 18. The plunger 30 is slidably mounted in the plate 21 and is held in its outer position by a spring 32 wound around a stem 33 thereof. The inner end of the stem 33 is provided with a collar 34, normally held in a recess in the latch plate 21 by the spring 32. The inner surface of the collar 34 lies adjacent the inner surface of the latch plate 16, and, when the latch is in latching position, the inner surface of the collar 34 lies adjacent the free end of the latch pawl 18. When it is desired to release the latch pawl 18, the plunger 30 is forced inwardly against the action of the spring 32, whereupon the collar 34, engaging the free end of the pawl 18, rocks the pawl 18 around its pivot and against the tension of the spring 20 until the recess in the pawl 18 is free of the head of the stud 23, whereupon the leg 11 can be moved inwardly on its hinge 12.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form or embodiment disclosed herein, for it is susceptible of embodiment in various other forms.

What is claimed is:

1. In a latch device for a folding table, the combination of a first latch member; a stud on the first latch member, said stud having an enlarged head and a reduced portion forming an annular groove on the stud; a second latch member; a notch formed in the second latch member to receive the reduced portion of the stud; a latch pawl pivoted on the second latch member; a recess formed in the latch pawl of a diameter and depth the same size as the size of said head, and arranged to engage the said head when the reduced portion of the stud is positioned in the notch; and a spring to maintain the recess of the latch pawl in engagement with said head when the latch members are in coincident positions.

2. In a latch device for a folding table, the combination of a first latch member; a stud on the first latch member, said stud having an enlarged head and a reduced portion forming an annular groove on the stud; a second latch member; a notch formed in the second latch member to receive the reduced portion of the stud; a latch pawl pivoted on the second latch member; a recess formed in the latch pawl of a diameter and depth the same size as the size of said head and arranged to engage said head when the reduced portion of the stud is positioned in the notch; a spring to maintain the recess of the latch pawl in engagement with said head when the latch members are in coincident positions; and a release member carried by the first-named latch member to release the latch pawl.

3. In a latch device for a folding table, the combination of a first latch member; a stud on

the first latch member, said stud having an enlarged head and a reduced portion forming an annular groove on the stud; a second latch member; a notch formed in the second latch member to receive the reduced portion of the stud; a latch pawl pivoted on the second latch member; a recess formed in the latch pawl of a diameter and depth the same size as the head and arranged to engage said head when the reduced portion of the stud is positioned in the notch; a cam edge on the free end of the latch pawl adapted to coact with said enlarged head to facilitate the engagement of the recess with said head; and a spring to maintain the recess in engagement with said head when the latch members are in coincidental positions.

4. In a latch device for a folding table, the combination of a first latch member; a stud on the first latch member; said stud having an enlarged head and a reduced portion forming an annular groove on the stud; a second latch member; a notch formed in the second latch member to receive the reduced portion of the stud; a latch pawl pivoted on the second latch member; a recess formed in the latch pawl of a diameter and depth the same size as the diameter and depth of said head and arranged to engage said head when the reduced portion is positioned in the notch; a spring acting to maintain the recess of the pawl in engagement with said enlarged head when the latch members are in coincident positions; and a manipulative device coacting with the free end of the latch pawl when the latch pawl is in latching position to rotate the latch pawl against the action of said spring to release the pawl from said head.

5. In a latch device for a folding table, the combination of a first latch member; a stud on

the latch member, said stud having an enlarged head and a reduced portion forming an annular groove on the stud; a second latch member; a notch formed in the second latch member to receive the reduced portion of the stud; a latch pawl pivoted on the second latch member; a spring normally maintaining the latch pawl in latching position; a recess formed in the latch pawl of a diameter and depth the same size as the diameter and depth of said head, and arranged to engage said head when the reduced portion of the stud is positioned in the notch; a manipulative device coacting with the free end of the latch pawl when the latch pawl is in latching position to facilitate the releasing of the pawl from said head; and a spring to return the manipulative device to its normal position after the latch pawl has been released from the head.

HARRY E. LENZ, SR.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
272,333	Sargent	Feb. 13, 1883
285,995	Gesking	Oct. 2, 1883
1,073,482	Ford	Sept. 16, 1913
1,133,254	Backus	Mar. 30, 1915
1,185,422	Mammelli	May 30, 1916
1,504,371	Ormerod	Aug. 12, 1924
1,923,281	Smith	Aug. 22, 1933
2,463,082	Brown	Mar. 1, 1949

FOREIGN PATENTS

Number	Country	Date
1,971	Great Britain	1899
393,495	France	Dec. 23, 1908
364,515	Great Britain	Jan. 7, 1932