United States Patent

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[72] Inventor **Aaron Harry Lippman**
Rochester, N.Y.

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[73] Assignee **Brainerd Manufacturing Co., Inc.**

[54] **PORTABLE DOOR LOCK**
5 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** **292/292**
[51] **Int. Cl.** **E05c 19/18**
[50] **Field of Search** 292/292, 293, 294, 295, 296, 297, 298

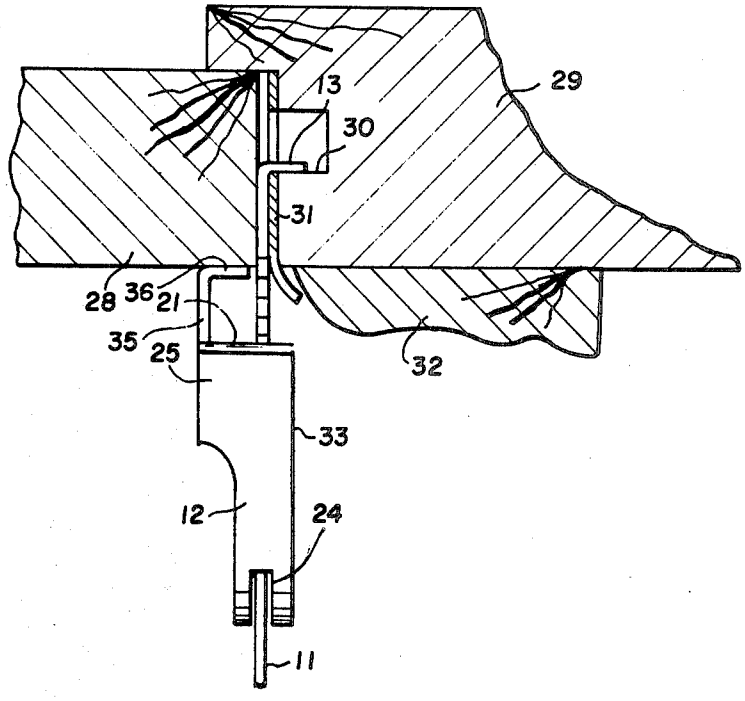
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Primary Examiner—James A. Leppink
Assistant Examiner—Edward J. McCarthy
Attorney—Cumpston, Shaw and Stephens

ABSTRACT: A portable door lock having a toothed latch bar with a hook for engaging the door frame and a blocking member slidable on the latch bar for latching into the teeth to block the door from opening is improved by making the blocking member as a simple, resilient U-shaped band having overlying cross tabs extending across the ends of the U to engage the teeth. Slots are formed in both tabs and in the U-portion for receiving the latch bar, and finger grip regions on each side of the blocker allow it to be squeezed to release the tabs from the teeth.



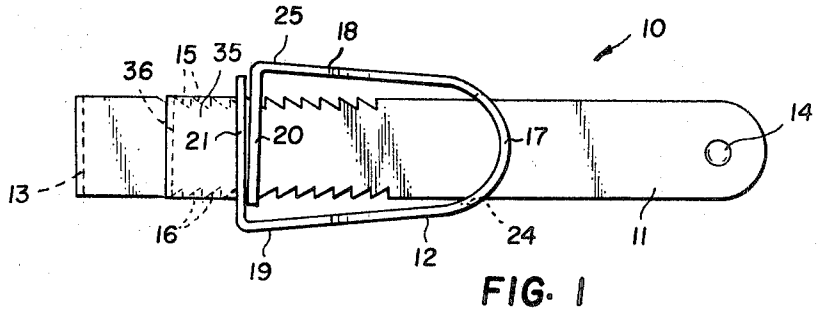


FIG. 1

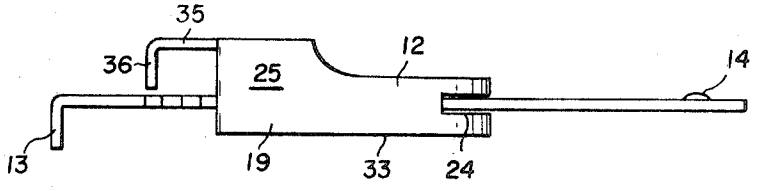


FIG. 2

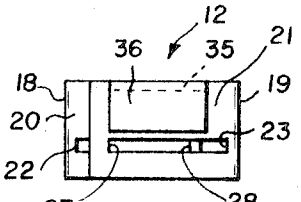


FIG. 3

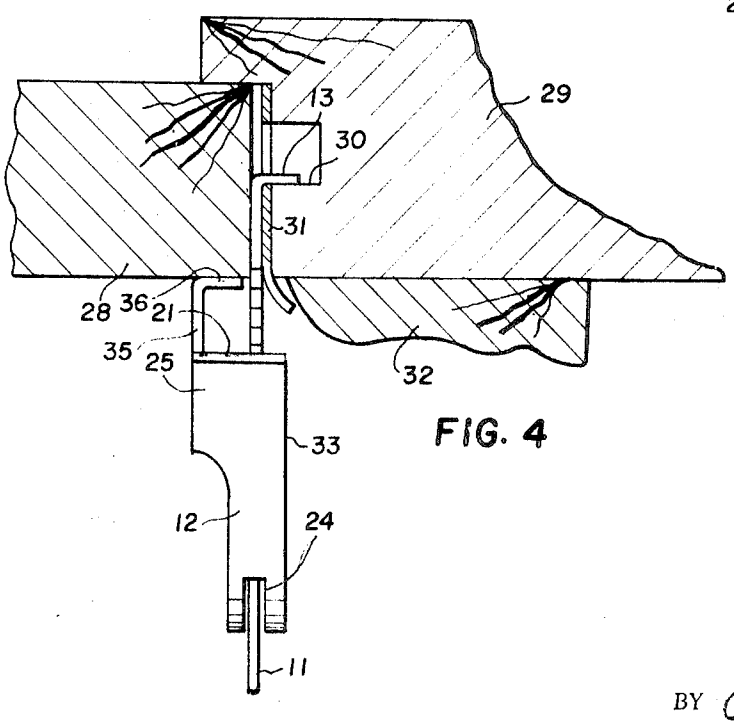


FIG. 4

INVENTOR.
AARON H. LIPPMAN
BY Cumpston, Shaw and Stephens
ATTORNEYS

PORTABLE DOOR LOCK

THE INVENTION IMPROVEMENT

Many door locks have been suggested using a latch bar that extends in between the door and the frame with a hook to engage the frame or the edge of a hole in a striker plate secured to the frame and having a sliding blocker member that is moved up to abut against a closed door and lock the door closed by latching into teeth on the latch bar. This invention improves on such devices by discovering a simpler and more economical way for making such a door lock. The invention also aims at conveniences in use, optimum adjustment, and ease and reliability of operation.

SUMMARY OF THE INVENTION

The inventive improvements in such door locks include forming the blocker as a resilient metal strip having a generally U-shaped portion and inturned, overlying, transverse tabs at the end of the legs of the U-portion with slots formed in the tabs and the U-portion to receive the latch bar. The foremost tab has a projection extending toward the door on the side of the latch bar opposite the hook for butting against the door without interference from the door frame or striker plate. The blocker strip has broad, finger-grip portions in the region of the ends of each of the legs so that it can be squeezed to widen the overlapping portions of the slots in the tabs, and the distal ends of such slots engage teeth on opposites of the latch bar to hold the blocker against the door.

Drawings

FIG. 1 is a plan view of a preferred embodiment of the inventive lock;

FIG. 2 is a side elevational view of the door lock of FIG. 1;

FIG. 3 is a partially cutaway front elevation of the blocker member used in the inventive lock; and

FIG. 4 is a partially cross-sectional view of the inventive door lock in locking position against a door.

DETAILED DESCRIPTION

Door lock **10** includes latch bar **11** and blocker **12**, and latch bar **11** has a hook **13** for engaging a door frame, and if desired, an embossing **14** to keep blocker **12** from sliding off latch bar **11**. Latch bar **11** also has teeth **15** and **16** formed along its opposite edges, and latch bar **11** is preferably made of a flat strip of metal.

Blocker **12** is formed of a resilient strip of metal having a generally U-shaped portion **17** with legs **18** and **19** forming the sides of the U. Cross-tabs **20** and **21** are inturned to overlie each other end extend transversely across the open end of the U, as illustrated. Foremost tab **21** has a projection **35** extending forward from the edge of blocker strip **12** facing away from the door frame so that projection **35** is disposed on the side of latch bar **11** opposite hook **13**. Projection **35** terminates in a right-angled portion **36** that is generally parallel with a door surface.

Tabs **20** and **21** have respective slots **22** and **23** for receiving latch bar **11**, and another slot **24** allows latch bar **11** to extend through the U-portion **17**. Relatively broad, flat, finger-grip regions **25** and **26** are formed at the forward ends of legs **18** and **19** respectively for fingers to grip and squeeze blocker **12**.

In its normally assumed position illustrated in FIG. **3**, the legs of blocker **12** tend to spread open as illustrated so that the distal ends **27** and **28** of slots **22** and **23** respectively are spaced apart by spaced apart by substantially less than the width of bar **11**, but by squeezing finger grip surfaces **25** and **26** together, the overlapping portions of slots **22** and **23** increases, so that distal ends **27** and **28** can be separated by more than the width of bar **11**.

When blocker **12** is released, distal end **27** of slot **23** of tab **21** tends to seek a notch between teeth **15** and to bring tab **21** into abutting relation with the forward edge of one of the teeth **15**. At the same time, distal edge **28** of slot **22** in tab **20** tends

to seek a notch between teeth **16** to bring tab **20** in abutting relation with the forward edge of one of the teeth **16**. Such engagement latches blocker **12** onto latch bar **11** and prevents it sliding rearwardly.

A locking arrangement is illustrated in FIG. **4** where blocker **12** is latched into abutment with door **28** which is closed relative to frame **29**. Hook **13** engages the side of a hole **30** in striker plate **31** fastened to frame **29**, and blocker **12** is latched into the teeth of latch bar **11** so that it will not move to let door **28** open. Striker plate **31** extends outward from frame **29** and would interfere with the seating of blocker **12** against door **28** except for projection **35** extending forward from tab **21** butt its right angled termination **36** firmly against door **28** without any interference with striker plate **31**. Another feature of the inventive door lock that prevents it from interfering with the striker plate or door frame of any door is that slots **22—24** in blocker strip **12** are formed close to edge **33** of blocker **12** so that edge **33** does not extend very far toward frame **29**, and hook **13** extends further toward frame **29** than edge **33**. Then, even if trim strip **32** along door **28** on frame **29** extends considerably outward, edge **33** of blocker **12** clears trim strip **32** in seating against the door **28**.

Successive latching positions for blocker **12** on latch bar **11** alternate between engagement of tab **21** with teeth **15** and tab **20** with teeth **16**. For optimum adjustment of blocker **12** on bar **11**, teeth **15** and **16** are preferably spaced relative to each other to provide approximately equal increments of space between such successive latch positions. Since tabs **20** and **21** are in somewhat different planes, this requires that teeth **15** and **16** be slightly offset relative to each other as illustrated. This allows maximum and optimum adjustment of blocker **12** snugly against any door **28**.

Persons wishing to practice the invention should remember that other embodiments and variations can be adapted to particular circumstances. Even though one point of view is necessarily chosen in describing and defining the invention, this should not inhibit broader or related embodiments going beyond the semantic orientation of this application but falling within the spirit of the invention. For example, different materials and configurations can be used, and the inventive lock can be adapted to many specific circumstances.

I claim:

1. In a portable door lock having a flat, longitudinal bar extending between a door and its frame, said bar having a hook at its forward end to engage said frame and teeth formed along the side edges of the portion of said bar extending outward from said door and frame, and a blocker arranged for sliding along said bar and latching in said teeth to hold said door closed in said frame, the improvement comprising:
   a. said blocker being formed as a resilient metal strip having a generally U-shaped portion and inturned, overlying, transverse tabs at the ends of the legs of said U-portion;
   b. said blocker strip having slots formed in each of said tabs and said U-portion to receive said bar;
   c. the forward one of said tabs having a projection extending toward said door on the side of said bar opposite said hook;
   d. the distal ends of said overlapping slots in said tabs being normally spaced apart by substantially less than the width of said bar, and said slots in said tabs each being longer than the width of said bar;
   e. said blocker strip having broad, finger-grip portions in the region of the end of each of the legs of said U-portion for squeezing said U-portion to widen the overlapping portion of said slots; and
   f. said distal ends of said slots being arranged to engage said teeth with said projection abutting said door.

2. The door lock of claim 1 wherein said teeth on said bar are spaced so that successive latch positions for said blocker alternate between engagement of said tabs with teeth on opposite sides of said bar.

3. The door lock of claim 2 wherein said teeth on opposite edges of said latch bar are relatively spaced to provide approx-

imately equal increments of space between said successive latch positions.

4. The door lock of claim 1 wherein said slots in said blocker strip are in the region of the edge of said blocker strip facing said frame so said hook extends toward said frame beyond said edge of said blocker strip.

5. The door lock of claim 1 wherein said projection extends from the edge of said blocker strip facing away from said frame and terminates in a right-angle portion generally parallel with the surface of said door.