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DOOR FOR BOX LOCKERS AND THE LIKE

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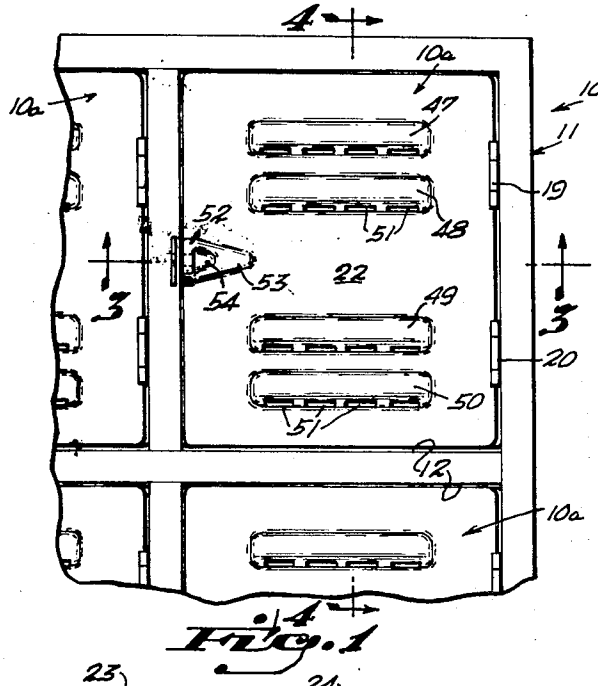


Fig. 1

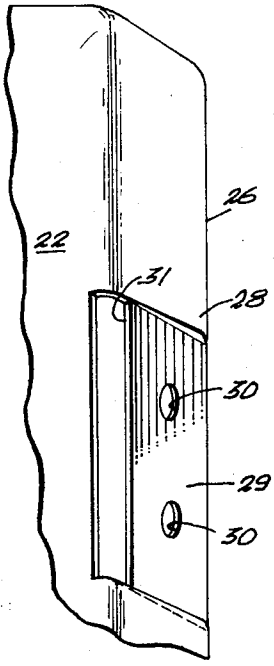


Fig. 5

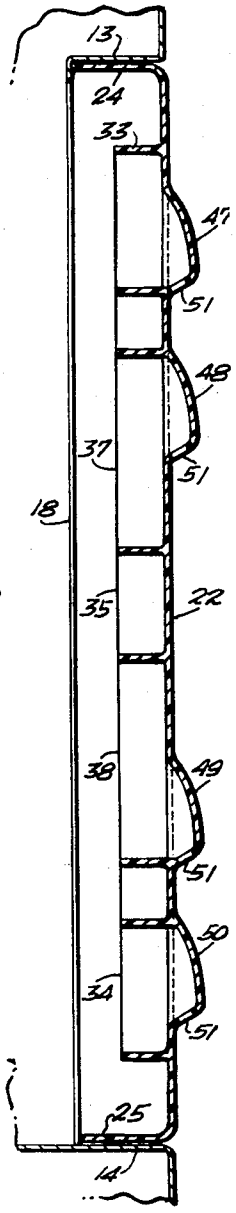


Fig. 4

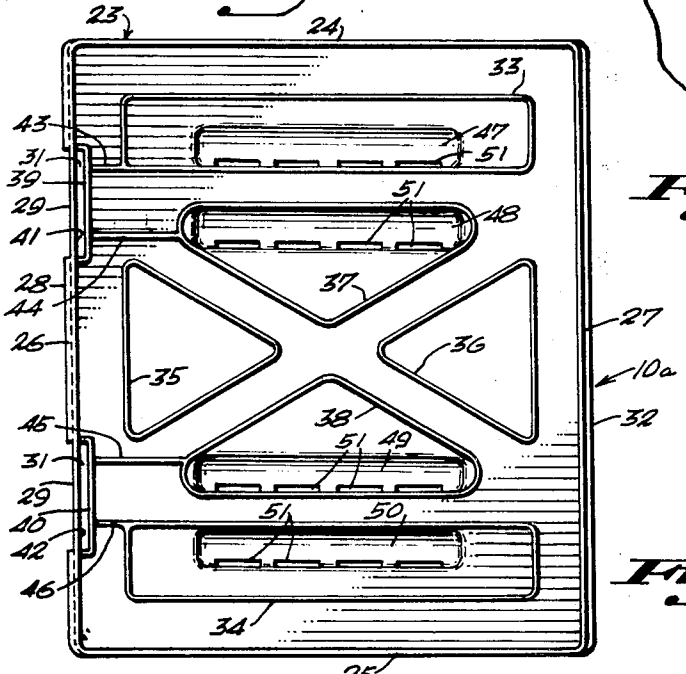


Fig. 2

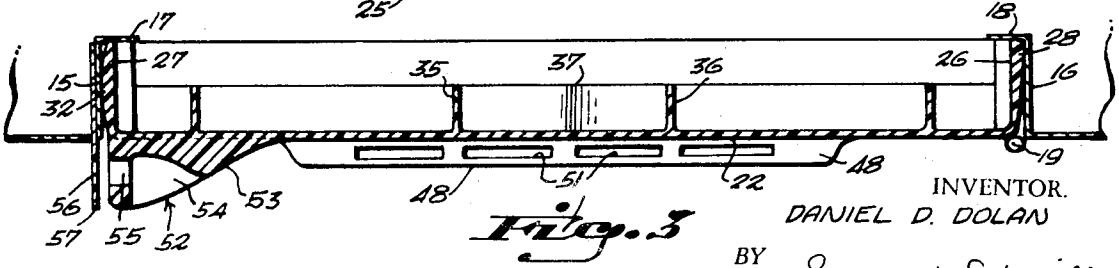


Fig. 3

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DOOR FOR BOX LOCKERS AND THE LIKE

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ABSTRACT OF THE DISCLOSURE

An integrally molded box locker door is described, for use either in substitution for steel doors in ordinary lock box construction, or for use in the original construction of lock boxes of synthetic plastic materials. A rectangular door face panel formed with a peripheral skirt defining a vertically-extending hinge side portion having a wall section of divergently increasing thickness, with respect to which hinge leaves are adapted to secured for hinging for the door to a lock box opening, is described, whereby, due to the resilience of the skirt hinge side with respect to the face panel, spring action operative to prevent door slamming is effected.

This invention relates to box lockers, gymnasium lockers, wardrobe lockers and the like, and is directed particularly to an improved door construction for such lockers.

Various kinds of multiple-unit lockers are used in schools, gymnasiums, public institutions etc. for the personal storage of books, clothing, athletic equipment and the like. Since such lockers are ordinarily constructed of sheet steel, the unlocking and locking of the doors, and the closing of the doors, creates considerable noise. When a great number of such locker compartments are used at the same time, as commonly occurs in schools and gymnasiums, the resulting din can be most unpleasant and annoying. This is especially true in schools where lockers are located in hallways adjacent to classrooms in which classes are being held.

It is, accordingly, the principal object of this invention to provide an improved door for steel lockers that, for the most part, eliminates the noise associated with the opening and closing of locker doors.

A more particular object of the invention is to provide a new and improved locker door of the above nature including resilient means operative just prior to full closure of a locker compartment door that reacts in such a way as to substantially eliminate slamming of the door against the strike plate, or frame structure in which the door is hinged.

Another object of the invention is to provide a locker door of the character above described that can be readily molded or otherwise formed of tough synthetic plastic material.

Yet another object of the invention is to provide a locker door including a combination handle and padlock eye for use in association with an eye plate fixed with respect to the door frame for the insertion of a padlock, and which serves as a strike for the padlock to further minimize noise accompanying the locking and unlocking of a door.

Still another object of the invention is to provide an improved locker door of the character described that can be readily substituted for steel doors in ordinary steel locker construction, as well as being applicable to use in lockers constructed entirely of non-metal or synthetic materials.

Another object is to provide an improved locker door of the character described which will be simple in construction, economical to manufacture, easy to install, which can readily be manufactured in a wide variety of different colors for esthetic purposes and for purposes of identification, and which will be efficient, quiet, and durable in use.

Other objects, features and advantages of the invention will be apparent from the following description when read with reference to the accompanying drawings. In the drawings, wherein like reference numerals denote corresponding parts throughout the several views:

FIG. 1 is a partial front elevational view of a typical steel box locker illustrating doors embodying the invention assembled thereto;

FIG. 2 is a rear elevational view of a locker door embodying the invention, shown separately;

FIG. 3 is a horizontal cross-sectional view, taken along the plane indicated at 3—3 in FIG. 1, on an enlarged scale;

FIG. 4 is a vertical cross-sectional view, taken along the plane indicated at 4—4 in FIG. 1, on an enlarged scale; and

FIG. 5 is a perspective view, on an enlarged scale, of the upper hinge corner position of the locker door, illustrating constructional details thereof.

Referring now in detail to the drawings, reference numeral **10** designates, generally, an ordinary steel locker equipped with locker doors **10***a* embodying the invention. In order that the constructional and operational features of the present invention may be better understood, details of the locker door framework will first be described. As illustrated in FIGS. 1, 3 and 4, the locker framework **11** comprises a plurality of rectangular compartment door openings **12**, each of which is formed with bent sheet metal header and sill portions **13** and **14**, respectively, and laterally-spaced, vertically-extending jamb portions **15** and **16**. As best illustrated in FIG. 3, the vertically-extending jamb portions **15** and **16** are bent to form co-extensive, right-angular, inwardly-extending door strike portions **17** and **18**, respectively. Door hinges **19** and **20** are secured in spaced relation along the jamb portions **16** as by having one hinge leaf thereof received through an appropriate slot (not illustrated) in said jamb portion and welded, riveted or otherwise affixed against the inside of the face of the sheet metal locker framework. In an alternative construction, the fixed hinge leaves could be secured flat against the outside of the jamb portion **16**.

The locker door **10***a* embodying the invention is preferably integrally formed, such as by injection molding, of a tough thermo-plastic material, and comprises a rectangular outer face portion **22**, having slightly rounded corners, and a peripheral skirt **23**. The peripheral skirt **23** comprises identical upper and lower skirt portions **24**, **25** and opposed, vertically-extending hinge side skirt portion **26** and handle side skirt portion **27**. The hinge side skirt portion **26** is integrally formed so that its outer wall is of gradually increasing thickness from the inside to the

outside along its length, as is designated by reference numeral **28** in FIGS. 3 and 5, for the purpose hereinafter appearing. The outer surface of the hinge skirt portion **26** is also provided, in spaced relation along its length, with a pair of hinge leaf recesses **29** (see FIG. 5), each having a pair of vertically-spaced through openings **30**. The outer face portion **22** of the locker door **10***a* is also provided with vertical slots **31** adjacent to the inner edge of and co-extensive with the hinge leaf recesses **29**. The slots **31** provide openings for the reception of the knuckle portions of the door hinges **19**, **20** upon the door being assembled to the locker framework, as in hereinbelow more particularly described.

The handle side skirt portion **27** of the locker door **10***a* is convexly rounded at the outside along its length, as indicated at **32**, for the purpose hereinafter described.

As illustrated in FIGS. 2, 3 and 4, the inside of the outer face portion **22** of the locker door **10***a* is integrally formed with outstanding reinforcement ribs **33**, **34** defining laterally-extending upper and lower rectangular enclosures. For additional strength and reinforcement of the door, the outer face portion **22** is also formed with interior, outwardly-extending pairs of laterally-spaced, triangle-defining ribs **35**, **36**, and vertically-spaced, triangle-defining ribs **37** and **38**. As means for strengthening the locker door in the vicinity of the hinge leaf recesses **29**, the interior of the outer face portion **22** thereof is integrally formed with outstanding, elongated, shallow U-shaped ribs **39**, **40** co-extensive with and in spaced parallel relation with respect to hinge leaf recesses **29**, which define hinge leaf slots **41**, **42** respectively, to receive for assembly to the door, the free leaves of the door hinges **19** and **20**. For the purpose of additionally reforcing locker door **10***a* in the vicinity of hinge leaf slots **41**, **42**, the inside of the outer face portion **22** thereof is further provided with horizontal rib portions **43**, **44** interconnecting rib **39** with ribs **33** and **37**, respectively, and horizontal rib portions **45** and **46** interconnecting rib **40** with ribs **38** and **34**, respectively.

For ventilation purposes, the outer face portion **22** of the locker door **10***a* is integrally formed with an upper pair of vertically-spaced, horizontally-extending, outwardly-projecting louvers **47**, **48** and a lower pair of identical louvers **49**, **50**, all of which are provided along lower surface portions thereof with a plurality of laterally-spaced slot openings **51**.

As is best illustrated in FIGS. 1 and 3, the outer face portion **22** of the locker door **10***a* is integrally formed along the handle side skirt portion **27**, with a rounded, outwardly-extending handle **52** provided with a tapered, laterally-inwardly-extending boss portion **53**. A central rounded recess **54** is provided in the handle portion **53** to provide access to a through opening **55** in handle portion **52** (see FIG. 3). When the door is closed as illustrated in FIG. 3, the handle opening **55** is in horizontal alignment with an opening **56** in an eye plate **57** extending outwardly of the locker framework.

In use, locker doors **10***a* embodying the invention can readily be assembled to an ordinary steel locker, such as described above, simply by inserting the free leaves of the door hinges **19** and **20** within the hinge leaf slots **41** and **42** and then applying fastening rivets (not illustrated) through openings **30** in the door hinge skirt portion **26** and aligned openings in the respective hinge leaves and in slot ribs **39** and **40**. When the door is so assembled, the knuckle portions of the hinges **19** and **20** will be received partially within the slots **31**, as best illustrated in FIGS. 1 and 3, and the door frame leaves of the hinges, upon closure of the door, will be received within the recesses **29**. In this connection, it is to be noted that the hinges, if desired, could be preassembled to the doors embodying the present invention, to provide for fitting of the doors directly to the door openings of doorless box lockers.

The convexly rounded configuration along the length of the outer surface of the handle side skirt portion **27**, as indicated as **32** in FIG. 3, not only provides for close fitting of the door to its door frame opening, but also provides for friction slide fit of the door along the adjacent door jamb to further enhance non-slamming operation of the door. The fabrication of the box locker door by injection molding techniques or the like permits ready rounding of the peripheral corners, which offer less of a hazard when the door is opened than ordinary steel doors heretofore manufactured and having sharp, square corners.

While I have illustrated and described herein only one form in which my invention can conveniently be embodied in practice, it is to be understood that this form is presented by way of example only and not in a limiting sense. The invention, in brief, comprises all the embodiments and modifications coming within the scope and spirit of the following claims.

What I claim as new and desire to secure by Letters Patent is:

1. An improved door for box lockers and the like comprising, and combination, a rectangular door face panel fabricated of a tough thermo-plastic material, said face panel being integrally formed with a peripheral skirt defining a pair of spaced, parallel, vertically-extending hinge side and handle side skirt portions, said hinge side skirt portion being of gradually increasing thickness from the inside to the outside along its length and diverging outwardly of the adjacent edge of said face panel, and means along said hinge side skirt portion to secure one hinge leaf each of a plurality of door hinges so that the hinge leaves secured thereto will lie in a plane inwardly spaced from outer surface portions of said hinge side skirt portion, the wall thickness at the juncture of said face panel and said hinge side skirt portion, and the resilience of said thermo-plastic, being such as to permit flexing between said hinge side skirt portion and said face panel.

2. An improved door for box lockers and the like as defined in claim **1**, wherein said hinge leaf securing means comprises a plurality of hinge leaf recesses formed in spaced relation in the outer surface of said hinge side skirt portion.

3. An improved door for box lockers and the like as defined in claim **1** wherein said hinge leaf securing means comprises a plurality of vertically-spaced, elongated through openings in the zone of juncture between said hinge side skirt portion and said face panel.

4. An improved door for box lockers and the like as defined in claim **2**, wherein said hinge leaf securing means further comprises a plurality of vertically-spaced, elongated through openings in the zone of juncture between said hinge side skirt portion and said face panel and being co-extensive, one each, with said hinge leaf recesses.

5. An improved door for box lockers and the like as defined in claim **3**, wherein said hinge leaf securing means further comprises a plurality of shallow, U-shaped ribs integrally molded with said face panel and said hinge side skirt portion at the inside of said face panel, and defining rectangular slots in register with one each of said elongated openings for the reception of the hinge leaves.

6. An improved door for box lockers and the like as defined in claim **5**, including a plurality of outstanding reinforcement ribs integrally formed with and extending outwardly of the inside of said face panel.

7. An improved door for box lockers and the like as defined in claim **6**, including handle means integrally formed with and extending outwardly of the outside of said face panel adjacent said handle side skirt portion and intermediate the ends thereof.

8. An improved door for box lockers and the like as defined in claim **7**, wherein the outer surface of said handle side skirt portion is convexly rounded along its length.

9. An improved door for box lockers and the like as defined in claim **8**, wherein said handle means comprises

a rounded, outwardly-extending handle formed with a tapered, laterally-inwardly-extending boss portion, said boss portion having a central, rounded recess defining an outwardly-projecting handle portion having a laterally-extending through opening for the reception of a padlock or the like.

10. An improved door for box lockers and the like as defined in claim **9**, wherein said face panel is integrally formed with a plurality of spaced, parallel, outwardly-projecting louvers, lower side portions of which are each formed with a plurality of slot openings for ventilation purposes.

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