

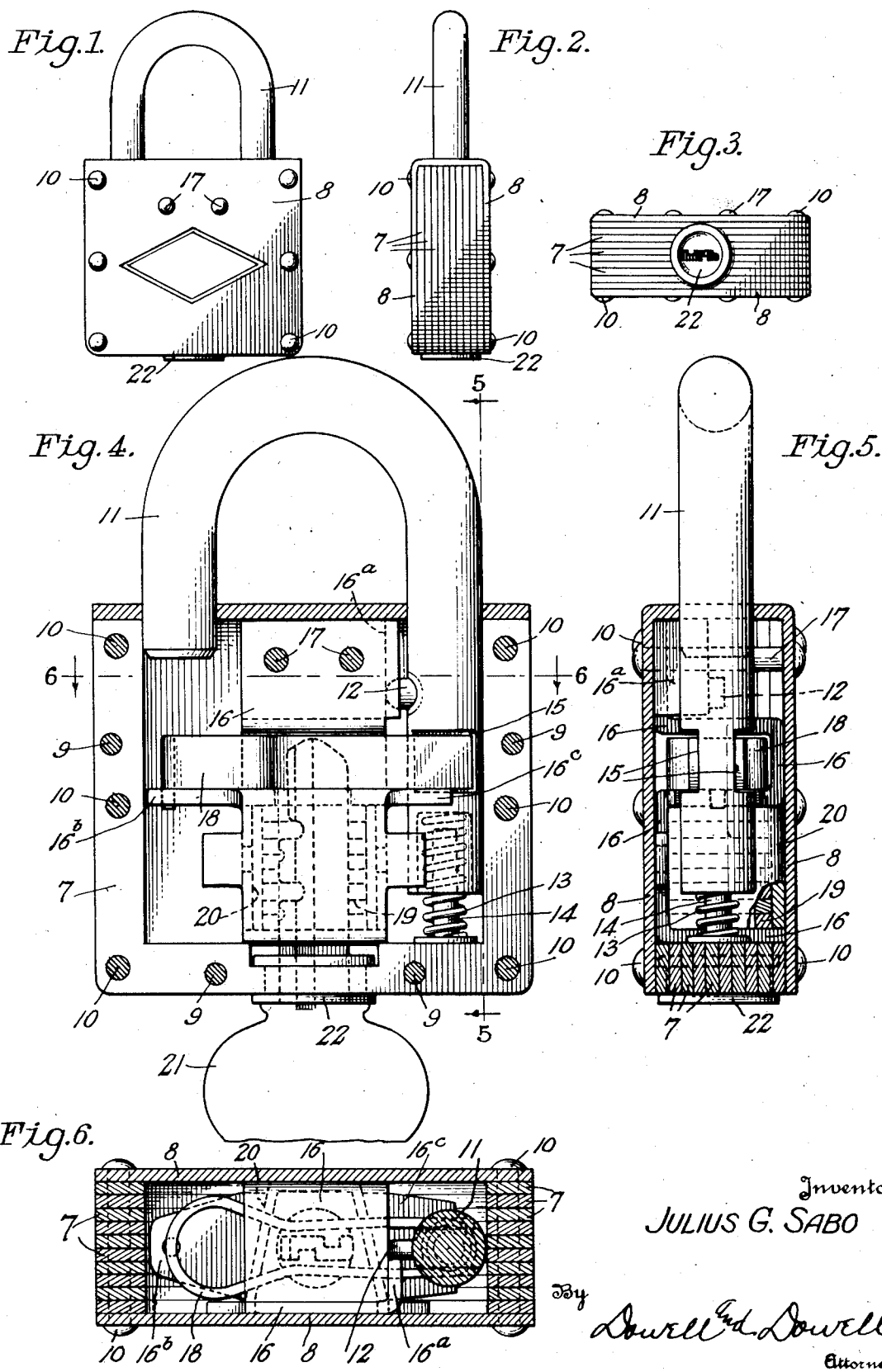
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J. G. SABO

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LAMINATE LOCK

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JULIUS G. SABO, OF MANHEIM, PENNSYLVANIA, ASSIGNOR TO THE SLAYMAKER LOCK COMPANY, OF LANCASTER, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

LAMINATE LOCK

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This invention relates to padlocks and is intended to provide a novel lock of strong construction and few parts costing little to manufacture, especially in large quantities.

It will be best understood by description with reference to the attached drawings wherein one practicable embodiment thereof is illustrated in the form of a padlock.

In said drawings:

Fig. 1 represents the embodiment in side elevation;

Fig. 2 is an end view of the same;

Fig. 3 shows the bottom end with key guide;

Fig. 4 is a sectional side elevation on enlarged scale revealing the interior parts;

Fig. 5 is a sectional end elevation on the line 5-5 of Fig. 4; and

Fig. 6 is a sectional plan view on the line 6-6 of Fig. 4.

The casing of the illustrative lock is formed by a plurality of laminate plates 7 of corresponding or U-shape in this instance, faced together and secured under pressure between the side portions of a saddle or U-shaped plate 8 fitted in opposing relation over the outermost thereof, so that the laminate plates form the two ends and bottom, and the saddle plate forms the opposite faces and top of the casing which is thus given six sides.

Said laminates are advantageously joined initially in a single piece as by dowels 9 (Fig. 4), for greater strength as also ease of assembly, while their union with the saddle plate may be effected by rivets 10 extended transversely through each as represented. It is a matter of preference whether or not these rivets are countersunk in the side portions of the saddle plate and amalgamated over for concealment or surface polish.

The lock piece comprises a shackle 11 in this instance slidable and having one arm swiveled in the casing so as to allow the other, receivable thereinto, to swing free on release. The swivel or longer arm is formed with a projection or lug 12 to limit the slide movement and prevent withdrawal from the casing by abutment against its wall at the top. A spring 13 on guidepin 14 in the lower end

thereof acts to force the shackle outwardly with a "snap" when released. This swivel or longer arm of the shackle is shouldered or notched as represented at 15 for engagement by a locking member when in inward position with the shorter arm inserted into the casing.

The means shown for locking said shackle in inward position comprises a separate unit fixed in the casing. This unit is formed by a plate 16 secured between opposite walls of the casing as by rivets 17 extending there-through. As viewed from the side (see Fig. 5), said plate has a double S shape and bears against the side portions of the saddle plate in this embodiment. Its upper part carries a marginal flange 16^a against the end of which the lug (12) on the longer arm of the shackle bears to prevent backward swing beyond the point where the shorter arm enters the casing.

In the first bend or accommodating recess therefor centrally of the casing, said plate carries a spring-member 18 engaging the shouldered part of the shackle's longer arm when the shorter arm is entered into the casing, so as to hold and lock it against withdrawal. This spring-member is of hair-pin form and straddles the shackle arm to engage in the notches (15) at opposite sides thereof in this instance. It is provided with a small projection at the loop end fitting into a hole in a lateral extension 16^b of the carrying plate for holding in place. An opposite extension 16^c of the plate is arcuately recessed to provide a lower guide for the shackle arm and serves to lengthen the support for said spring-member.

In the second bend or accommodating recess therefor at the lower end, said plate carries a set of key-guards 19 which are non-movable in this embodiment. These are enclosed by a trough-like plate 20 joined to the carrying plate and holding them against "upset" by jar. A key 21 inserted past said guards through a hole in the bottom of the carrying plate serves to wedge or spread the ends of the spring-member (18) apart to disengage the shackle arm for release.

The key is initially inserted through a guide 22 designed to prevent admission in the

wrong way. This guide is fixed in the bottom of the casing within a recess formed by its laminates. None but a key fitting the lock may open it and the operation will of course be obvious

The described lock is simple and inexpensive to manufacture, but is especially strong and durable by reason of its laminate construction and riveting. It will be noted that the laminates are not employed as key-guards or tumblers, nor as means for anchoring the shackle inside the casing. The described unit of locking means is separate and apart from the casing itself and may of course be modified in construction, as for example by making the key-guards movable or forming some of the parts differently.

In fact, various modifications or changes in construction and arrangement or relation of the component parts may be made without departing from the scope of the invention. The appended claims therefore are not intended to limit the same to the specific construction shown.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A lock casing comprising a plurality of corresponding laminate pieces and a saddle-plate; the pieces being secured in parallel relation sidewise between the side portions of said plate overengaging the same and therewith providing a six sided hollow shell body of which said pieces form the two ends and bottom and the saddle-plate forms the top and opposite sides, and the several parts with provision for a lock-bolt and key entry being pressed and riveted tightly together.

2. In a laminate lock casing construction, a plurality of corresponding laminate pieces fitted together in parallel relation to form the two ends and bottom of the casing and provided with a key-guide opening and a saddle-like plate engaging over the united laminates at opposite sides to provide the opposite faces and top of the casing and provided with openings for a shackle; said laminate pieces being secured together between the two face portions of said plate by binder-rivets extending transversely therethrough.

3. A lock comprising a hollow casing according to claim 1, a shackle adapted to slide and swivel on one arm confined in the casing, and a locking unit including a spring-member acting normally to engage a shoulder of said arm of the shackle and wards for a key insertable to actuate said spring member in release of the shackle; said unit being positioned within the casing separate and apart from the laminates and without coordination therewith and having a part thereof formed to guide the shackle in slide movement.

4. A lock embodying a casing constructed

of a plurality of U-shaped laminates and a saddle plate, the laminates being secured together in faced relation between the spaced side portions of the saddle-plate engaging over the group in an inverse relation thereto; said laminates forming the two ends and bottom of the casing and said plate forming the opposite sides and top of the same; said top and bottom being provided with openings for a shackle and a key-guide.

5. A lock comprising a casing formed by a plurality of U-shaped laminates and a saddle-plate; the laminates being secured together between the side portions of said plate overengaging the group in an inverse relation providing a six sided shell and secured by rivets extending transversely therethrough, a shackle having one arm confined in the casing and its other receivable thereinto adapted to limited slide and swivel movement allowing the non-confined arm to swing free, means independent of the laminates for locking the shackle against slide movement when both arms are in the casing; said means including a spring-member engaging a shouldered portion of the confined arm of the shackle in locked position and movable by wedge action of a key to release the same at will and means also independent of the laminates for guarding the entrance and movement of a key for the wedging action.

6. A lock comprising a casing formed by a plurality of U-shaped laminates and a saddle-plate; the laminates being faced together between the side portions of said plate overengaging the same in an inverse relation and secured by rivets extending transversely therethrough, a shackle having one arm confined to slide and swivel movement in the casing and its other arm adapted to swing free, and means including a spring-member acting to engage the confined arm of the shackle when its other arm is inserted into the casing and movable by action of a key to release the same at will; said means combined with wards for guarding the entrance and action of the key being formed as a unit assembly separate and apart from the laminate parts of the casing and having a portion serving to guide the confined arm of the shackle.

7. A lock comprising a laminate form of casing embodying a plurality of corresponding pieces and a saddle-plate between opposite side portions of which the same are fitted and secured together therewith as a solid unit, a swinging shackle, a member locking the shackle in the casing and means guarding the admission and movement of a key to actuate said member for releasing the shackle; said means being in no part formed nor in any way coordinated with the laminates forming the casing.

8. A lock comprising a casing formed by

a plurality of longitudinally arranged laminates joined together to form a channel-like body, and side cover plates connected to opposite sides of said body to form a hollow casing; a shackle projecting from and slidable in the hollow portion of said casing; key releasable locking means for said shackle within said casing; and ward means independent of said laminates and secured within the hollow portion of the casing to prevent the unlocking of said key releasable means by a key other than a properly fitted key.

In testimony whereof I affix my signature.

JULIUS G. SABO.