C. E. CAMPBELL.

LOCKING RACK.

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1,383,598.

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Fig. 1

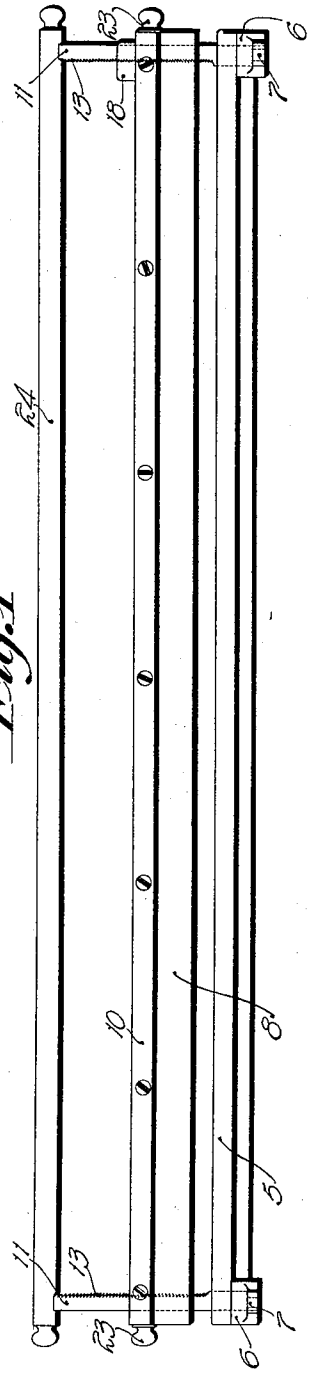


Fig. 4

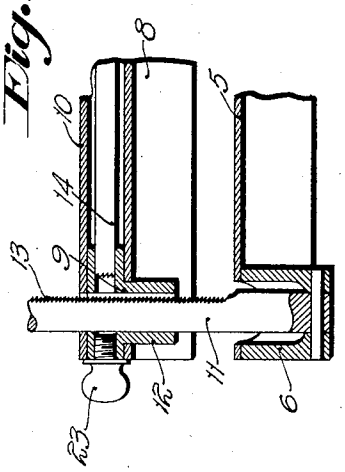


Fig. 2

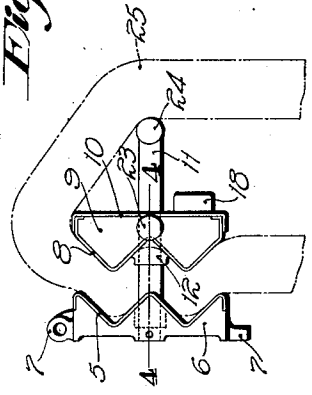
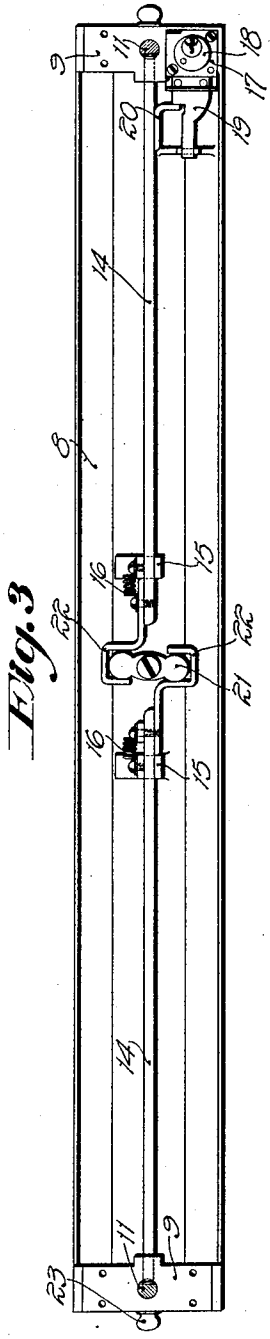


Fig. 3



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LOCKING-RACK.

1,383,598. Specification of Letters Patent. Patented July 5, 1921.

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To all whom it may concern:

Be it known that I, CHARLES E. CAMPBELL, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Locking-Racks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to racks used for supporting clothing or robes, in places where there is danger of theft. The invention is designed particularly for use in connection with automobiles and carriages for the purpose of holding overcoats and lap-robes.

The object of the invention is to produce a rack, of simple and inexpensive construction, which may be locked in engagement with the articles supported thereby, and by which such articles may be held secure against removal so long as the rack is locked.

To the foregoing end the invention comprises, among other features of construction, two relatively movable members between which articles of clothing and the like may be supported and clamped. These members are so formed, on their opposed surfaces, as to bend and hold the fabric of the articles in a tortuous form which renders it difficult to remove the articles by withdrawing them from between the members of the rack, although they are not necessarily subjected to any great or severe pressure by the clamping-members. The invention also comprises various features of construction which render it convenient in operation and adaptable to use with articles varying in number, width and thickness.

Other objects of the invention, and the features of construction by which they are attained, will be set forth in connection with the following description of the illustrated embodiment of the invention.

In the accompanying drawings Figure 1 is a plan-view of a locking-rack embodying the present invention. Fig. 2 is an end-view of the rack, showing the manner in which the articles are held therein. Fig. 3 is an elevation, partly in vertical-section, showing the interior construction of the movable clamping-member of the rack; and Fig. 4 is a partial horizontal section on the line 4—4 of Fig. 2, but on a larger scale than the latter figure.

The invention is illustrated as embodied in a rack comprising two elongated substantially parallel clamping-members. One of these members, which may be described as the "base-member", comprises a strip of sheet-metal 5 which is corrugated longitudinally to provide two channels and an intervening rib, as shown particularly in Fig. 2. The part 5 is fixed, at its ends, to castings 6 which are provided with lugs 7 by which they may be conveniently secured to a stationary support, such, for example, as the back of the forward seat of an automobile or other vehicle, the locking-rack being designed to take the place of the racks commonly used at the location in question.

The other clamping-member, which is movable, comprises a strip 8 of sheet-metal which is corrugated to provide two ribs coinciding with the channels of the base-member. The part 8 is fixed, at its ends, to castings 9, and another strip 10 of sheet-metal is formed to embrace the upper and lower margins of the part 8, being fixed thereto by screws as shown in Fig. 1, while the ends of the part 10 extend to the castings 9, the parts 8, 9 and 10 thus producing a hollow closed member of considerable rigidity in proportion to its weight.

The movable clamping-member is supported on two posts 11, which project horizontally from the ends of the base-member, these posts being fixed in the castings 6 as shown in Fig. 4. The movable member is provided with openings through which the posts pass loosely, and with bearing-sleeves 12 on the castings 9 to provide extended bearings between the parts.

In addition to supporting the movable clamping-member while permitting it to be moved toward and from the base-member, the posts 11 constitute parts of a locking mechanism by which the clamping-members are locked in adjusted relation. For this purpose each post is provided, on its inner

surface, with a series of ratchet-teeth 13. These teeth coöperate with locking-bolts 14 inclosed within the movable clamping-member. At their outer ends the bolts are mounted slidingly in bearings in the castings 9, and are provided with teeth to cooperate with the ratchet-teeth 13, as shown in Fig. 4. Near their inner ends the bolts are slidingly mounted between bearing-lugs 15 fixed to the part 8. Tension-springs 16, attached to the bolts, tend to move them outwardly into coöperative engagement with the posts, and when the bolts are in operative position they act to prevent movement of either end of the movable clamping-member away from the base-member.

To provide for unlocking the movable clamping-member when necessary, a lock-mechanism 17 is inclosed within the movable member, this lock-mechanism being of any ordinary or suitable form, and having a barrel 18 which projects through the front 10 of the movable-member, so that a key may be conveniently introduced into the lock-mechanism. This mechanism is provided with a bolt 19 which is moved inwardly and outwardly by the key, in the usual manner, but the bolt is somewhat modified in form, as shown in Fig. 3, so that it may be used as means for actuating the bolts 14. For this purpose the bolt 19 is provided with a shoulder which engages a lug 20 on one of the bolts 14. When the key is introduced in the lock-mechanism and turned the bolt moves outwardly, that is, to the left as shown in Fig. 3, thus causing the lug 20, and the bolt 14 to which the lug is fixed, to move in a direction to disengage the end of said bolt 14 from the corresponding post.

In order that the other bolt 14 may be moved out of operative position at the same time, the two bolts 14 are connected by a lever 21 pivoted at the middle of the movable clamping-member, the ends of this lever engage yokes 22 fixed to the respective bolts 14. The effect of the lock-mechanism 17, therefore, is to move both of the bolts inwardly and thus unlock both ends of the movable clamping-member simultaneously. When the key is turned in the opposite direction the bolt 19 is retracted, and the springs 16 thereupon act to move the locking-bolts 14 outwardly into operative engagement with the posts.

For convenience in manipulating the movable clamping-member it is provided with knobs 23 at its ends. The outer ends of the posts 11 are connected by a stationary rod 24, which serves to guard the ends of the posts, to strengthen the structure as a whole, and to prevent entire withdrawal of the clamping-member from the posts. The rod 24 also may be used as a supplementary rack for supporting articles which it is not desired to lock on the rack.

The locking-rack above described is used as follows: The article which is to be supported and secured thereby is passed between the two clamping-members, as shown at 25 in Fig. 2, and may be doubled over the movable clamping-member so as to hang thereon. When it is desired to secure the article against removal the movable clamping-member is pressed, at both ends, firmly toward the base-member, with the result that the article 25 is bent to a tortuous form between the corresponding channels and ribs of the clamping-members, and is subjected to a sufficient pressure to retain it securely in place. The movable clamping-member remains locked, in the position to which it has been so adjusted, by the action of the locking bolts upon the posts, and the parts so remain until released by the use of the appropriate key.

While the clamping-members have been described as substantially parallel, it will be understood that slight departures from the parallel position may occur in use, owing to the fact that the movable clamping-member may assume a slightly angular relation to the base-member without cramping upon the posts, and that the locking-mechanism will secure it in any such angular relation owing to the independent action of the locking-mechanism at the two ends of the clamping-members. This is a valuable characteristic of the construction, since it permits a secure clamping pressure to be employed throughout the extent of the clamping-members, regardless of differences in the thickness of the various portions of the article or articles which are to be secured in the rack. It will also be noted that the use of the corrugations in the sheet-metal members 5 and 8 not only provides for holding securely the articles which are placed between the members, but also imparts to them a degree of stiffness which permits the use of comparatively light members consistently with substantial pressure against the articles held between them.

The invention is not limited to the embodiment hereinbefore described and illustrated in the accompanying drawings, but may be embodied in various other forms, within the scope of the following claims.

What is claimed is:—

1. A rack having, in combination, a stationary base; posts projecting from the ends of the base; a rod rigidly connecting the ends of the posts; a bar slidingly mounted, at its ends, upon the posts and movable toward and from the base; means for securing the ends of the bar independently in adjusted position on the posts; and devices formed on the opposing faces of the base and bar to lock an article under pressure in a tortuous form.

2. A rack having, in combination, a base

member arranged to be secured to a wall; a pair of posts mounted at each end of the base member; a bar slidingly mounted on the posts; a series of coöperating corrugations formed on the opposing faces of the base and bar and extending longitudinally of said base and bar; means operable independently to lock the respective ends of said bar to the posts at variable distances from the base; and unitary means located near one end of the bar for unlocking both ends of the bar from the posts simultaneously.

CHARLES E. CAMPBELL.