July 5, 1960 R. M. THORSON 2,943,743

KEY RACK

Filed July 11, 1956 3 Sheets-Sheet 1

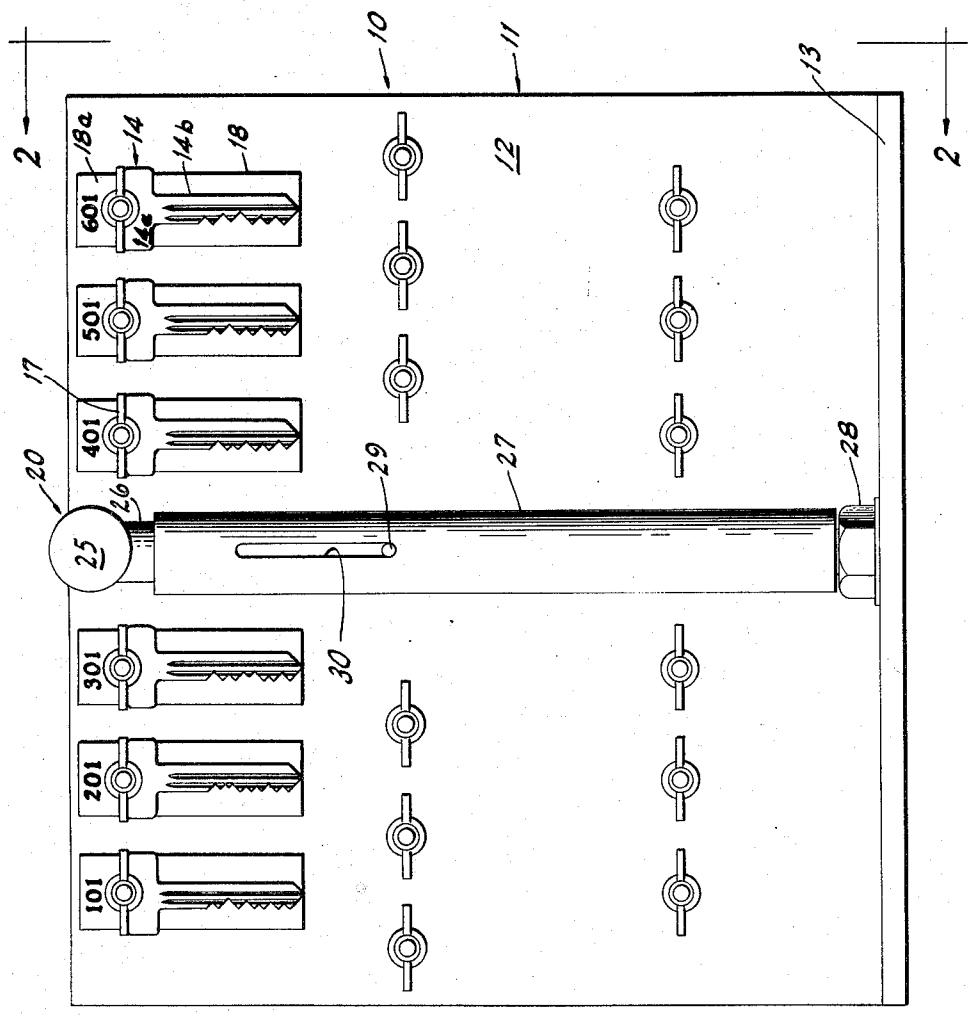


Fig. 1

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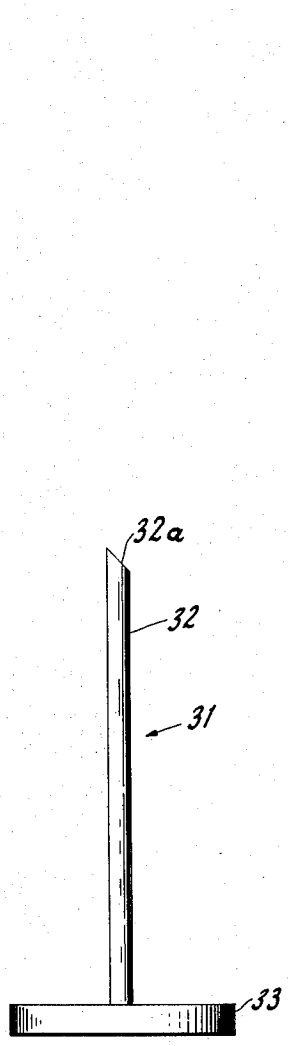


Fig. 3

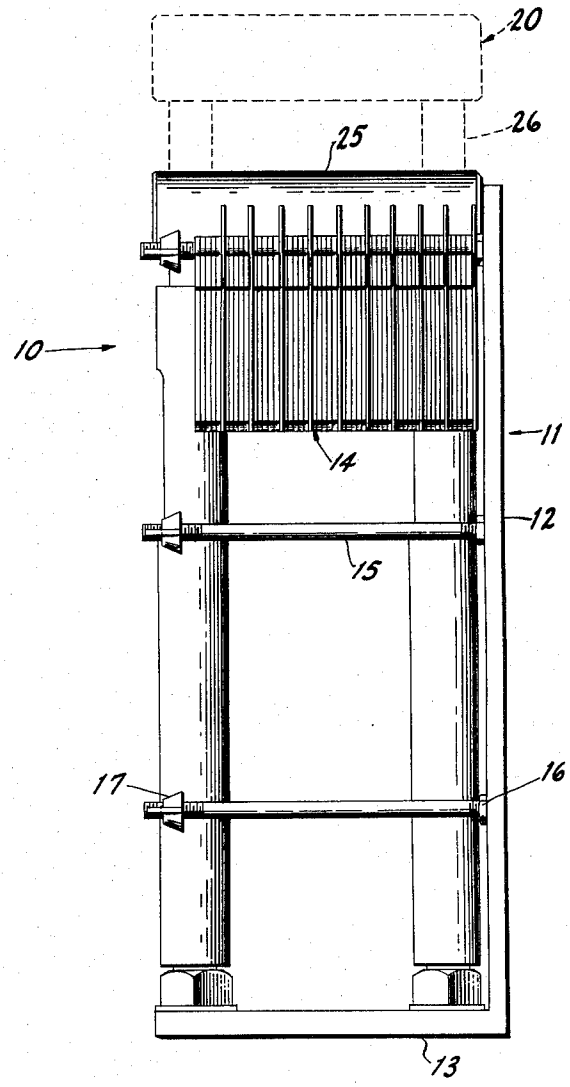


Fig. 2

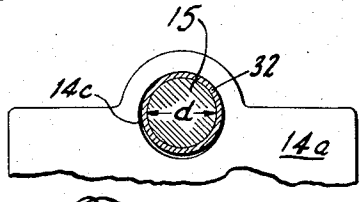


Fig. 4

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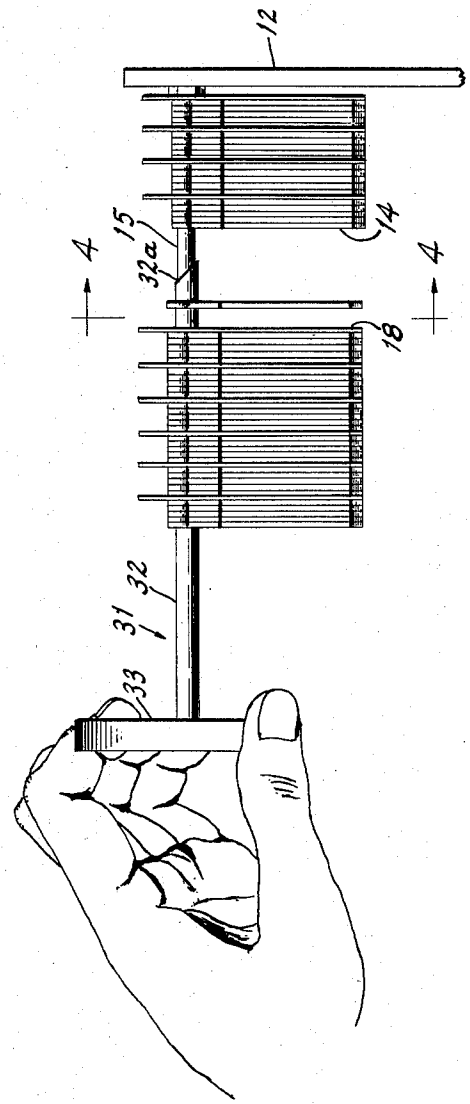


Fig. 5

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KEY RACK

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2 Claims. (Cl. 211—59)

This invention relates to a key rack or key holder. More particularly it relates to a rack for holding a large supply of keys for opening a great number of doors in a large office building, factory, public institution or the like.

The storage of keys about a large office building, factory, public institution or the like presents a problem because of the need for an adequate supply of keys for each of many different doors and locks.

It is desirable that a key storage means maintain a supply of keys in such manner that the keys are readily accessible; that it is easy to find, to detach and to restore any key; and that the storage means be compact in nature.

Heretofore, to my knowledge, no such means has been provided which fulfills all of these requirements. Thus, key racks or key cabinets have been available which have limited capacity, or which have a large capacity but are very large and bulky. Also, some prior key racks have been disadvantageous because of difficult access to the keys.

It is an object of the present invention to provide an improved key storage means.

It is a further object of the invention to provide a key rack or key cabinet which is capable of holding a large supply of keys for many different locks, such means being compact notwithstanding its large capacity and being further characterized by easy access to the stored keys.

These and other objects of the invention will be apparent from the ensuing description and the appended claims.

One form of the invention is illustrated by way of example in the accompanying drawings, in which:

Figure 1 is a view in front elevation of the key rack of the present invention.

Figure 2 is a view in side elevation as seen along the line 2—2 of Figure 1.

Figure 3 is a view in side elevation of the key selector of the invention.

Figure 4 is an enlarged sectional view taken along the line 4—4 of Figure 5.

Figure 5 is a view showing the manner in which the key selector of the invention is employed to select a key.

Referring now to the drawings and more particularly to Figures 1 and 2, the key rack of the invention is generally designated by the reference numeral **10**. It comprises a sturdy, solid frame **11** comprising an upright wall portion **12** and a horizontal base portion **13**. As illustrated in Figures 1 and 2, the frame **11** is made of rather heavy gauge metal. It may, however, be made of sheet metal, wood, plastic or any other suitable material and it need not have the particular shape illustrated. Also, the device may be enclosed in a cabinet if desired, or it may be installed on a wall. In the particular instance shown it is a portable device, as explained in detail hereinafter.

The device is intended to store keys such as shown at **14**, such keys being of a conventional type and each comprising a handle or head or base portion **14*a*** and a stem

or key portion **14*b***. Each of the key heads **14*a*** is formed with a hole **14*c*** (see Figure 4), as is usual in key design. The device may also be employed to store hotel type keys attached to perforated tags.

A plurality of key suspension rods **15** are provided each of which is threaded at its outer end, i.e., to the left-hand end as viewed in Figure 2. The inner end of each of the rods **15**, that is, the right-hand end as viewed in Figure 2 is threaded into or is otherwise affixed to the vertical wall **12** of the frame **11**, and a nut **16** is provided to securely clamp each of the rods **15** in place.

From an inspection of Figure 1 it will be apparent that the rods **15** are preferably staggered. A staggered arrangement facilitates inspection and access. A different arrangement and a different number of rods may, of course, be employed depending upon requirements and personal preferances.

A wing nut **17** is threaded to the outer end of each of the rods **15**, such wing nut serving as a detachable keeper member to hold keys on the rods against accidental displacement.

Separator and identification tags **18** are also provided each of which is formed with a perforation (not shown) so that it will fit easily and slidably over any of the suspension rods **15**. The tags **18** are perforated near but below their tops so that the center of gravity of each tag is below the rod **15** but a tab portion **18*a*** projects above the rod and above the keys **14**. A number or other designation is applied to the upper tab end **18*a*** of each of the tags **18**, such as the numerals "101," "201," etc. shown in Figure 1. It is the purpose of the tags **18** to separate the keys on any given rod **15** into groups, each of which corresponds to some particular room or lock which is indicated by the designation or insignia. It will, therefore, be apparent that the key to any particular room or lock can be very easily and speedily located by inspecting the insignia on the tab portions of the tags **18**.

As mentioned above the particular form of key rack illustrated in the drawings is intended to be portable. To this end a carrier member **20** is provided comprising a cross member or handle **25** to which are fixed vertical rods **26** which are slidable in tubes **27** each of which is threaded to the base member **13** of the frame and is secured in position by means of a nut **28**. Each of the vertical rods **26** is provided with a laterally projecting pin **29** which slides in a slot **30** formed in the respective tube **27**. From an inspection of Figure 2 it will be apparent that the handle **25** is normally in the retracted position shown in Figure 1 and in solid lines in Figure 2. When it is desired to transport the key rack from one location to another, the handle **25** is grasped and lifted by hand. It will rise to the position shown in dotted lines in Figure 2, thus providing clearance for a person's hand. By this means the device can be readily transported from one location to another. When the device is deposited and the handle **25** is released, the rods **26** will drop by gravity into the tubes **27**, hence the handle will not project and will not constitute a bulky projection. The pin and slot engagement provided at **29**, **30** is useful because it limits the travel of the handle **25**.

The device as thus far described provides a very compact, useful, practical key rack, and it can be used as such without any other equipment. Thus, the device as thus far described is capable of storing a large number of keys. The spacer and identification tags maintain the keys in proper groups. The staggered arrangement of the rods **15** facilitates access to the keys and it also facilitates observing the keys and tags and identifying the location of the key or keys desired. The retractable handle is also a convenient feature.

I have provided, however, a further feature which greatly facilitates the selection, removal and replacement of

keys. This feature, which will now be described, adds greatly to the utility of my device.

Referring to Figure 2, if it is desired to select a key which is located between, say, the sixth and seventh tags **18** on a particular rod (i.e., sixth and seventh counting from left to right as viewed in Figure 2), it will first be necessary to remove all of the keys in front of the first six tags and it will then be necessary to restore the keys so removed. Not only will it be necessary to restore the keys removed, but they must be restored in the proper order with the tags **18** located properly.

To facilitate these operations a selector member **31** is provided which comprises a tubular spindle **32** fixed to a flat, relatively heavy base **33**. The outer end **32***a* of the spindle is preferably cut at an angle of about 45° and the metal is preferably tapered to give the tip a knife edge. As will be seen from an inspection of Figure 4, the spindle **32** is tubular and has an inside diameter "*d*" which is greater than the outside diameter of the key suspension rods **15**. However, the outside diameter of the spindle **32** is less than the holes **14***c* in the heads **14***a* of the keys. The purpose of the flat, heavy base **33** is to provide a handle for manipulating the selector member **31** and also to provide a sturdy support for holding the selector member in upright position for ready access and to prevent it from being carried off inadvertently or lost.

Referring now to Figure 5, the manner in which the selector member **31** is used is apparent. Assuming that it is desired to select a key from the group of keys suspended from a particular rod **15** and seated between the sixth and seventh tags **18**, counting from left to right. The base portion **33** of the selector member **31** is grasped by hand, the wing nut **17** on the proper key suspension rod **15** is removed and the open outer end of the tubular spindle **32** is inserted over the end of the rod **15**. Since the outside diameter of the spindle **32** is less than the holes **14***c* in the keys and the holes in the tags **18**, it will be apparent that the tubular spindle **32** can be pushed inwardly to any position desired. The angle at the end **32***a* greatly facilitates threading the spindle through the holes **14***c* in the keys and through the holes in the tags **18**. This is advantageous because these holes are seldom aligned closely. By twisting the base **33**, the spindle is easily inserted to any position desired.

In the specific instance given the spindle is pushed into the position shown in Figure 5 so that the sixth tag and one of the desired keys are impaled on the spindle. It will be apparent that all of the keys and tags to the left of the sixth tag, and the latter tag itself and the desired key will be safely impaled on the spindle **32**. The key or keys desired are now readily accessible and can be removed. At this point another advantageous feature of the selector **31** should be noted. It may be desired to set the selector down for a brief time. The base **33** will hold the spindle **32** upright. The selector will, therefore, serve as a temporary key holder. Then the impaled keys and tags are restored to their proper position by means of the selector member **31**. The latter is then withdrawn, leaving all of the keys and tags on the suspension rod **15** in their proper positions. The wing nut **17** is then restored to secure the keys and tags in place against accidental displacement as, for example, during carrying the device **10** or if the latter is tilted or tipped over accidentally. To restore a key or keys, the same operations are carried out except that a key or keys will be suspended on rather than removed from a rod **15**.

It will, therefore, be apparent that a key container or key rack is provided which fulfills the objects stated above. It is compact yet it has a very large capacity. It supports keys in positions such that they are readily accessible. The spacer means or tags group and separate the keys in lots or bunches, each lot or bunch corresponding to a particular lock or door. The tags serve also as identification tabs to facilitate selection of keys. The wing nuts secure the keys and tags on the suspension rods. The selector element is extremely advantageous because it permits very rapid selection, removal and replacement of keys without disturbing the relative positions of other keys and tags. A quick glance down any row of keys will immediately reveal the number of keys available for any lock or door, hence will inform a person which keys require replenishment. The apparatus is as well suited for hotel type keys with tags attached as to other types of keys.

I claim:

1. Apparatus of the character described comprising a frame and a closely packed array of key suspension rods each having a base end supported by said frame and a free end which is unsupported, said rods being arranged in substantial parallelism to one another and being closely packed to provide a large number of rods in a small space, a substantial proportion of said rods being located in interior positions within the array such that they are less accessible than the exterior rods, each rod having a length great enough to enable it to suspend a large number of keys and having a substantially uniform diameter throughout substantially its entire length such that a tubular member of inside diameter slightly greater than the outside diameter of said rods can telescope with any of said rods and thereby reach substantially to the base end of the rod; said apparatus also comprising a substantial number of keys suspended from each rod, each key having a head portion formed with a suspension hole of greater diameter than said rods, said keys being suspended from said rods by means of said suspension holes; said apparatus also comprising a selector member in the form of a tube, which is open at one end, said tube having an inside diameter greater than the diameter of said rods and having an outside diameter less than the diameter of the suspension holes of the suspended keys.

2. Apparatus of the character described comprising a frame and a closely packed array of key suspension rods each having a base end supported by said frame and a free end which is unsupported, said rods being arranged in substantial parallelism to one another and being closely packed to provide a large number of rods in a small space, a substantial proportion of said rods being located in interior positions within the array such that they are less accessible than the exterior rods, each rod having a length great enough to enable it to suspend a large number of keys and having a substantially uniform diameter throughout substantially its entire length such that a tubular member of inside diameter slightly greater than the outside diameter of said rods can telescope with any of said rods and thereby reach substantially to the base end of the rod; said apparatus also comprising a substantial number of keys suspended from each rod, each key having a head portion formed with a suspension hole of greater diameter than said rods, said keys being suspended from said rods by means of said suspension holes; said apparatus also comprising a selector member in the form of a tube, which is open at one end, said tube having an inside diameter greater than the diameter of said rods and having an outside diameter less than the diameter of the suspension holes of the suspended keys, the open end of said selector tube being cut on a diagonal to the axis of the tube.

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