# United States Patent

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## [54] SELF-RETRACTABLE HANGER


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[51] **Int. Cl.** ..... **A47f 5/08**

[58] **Field of Search** ..... 248/203, 204, 295, 316 A; 70/62, 58; 211/4, 8, 9



[56] **References Cited**

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[57] **ABSTRACT**

A housing having a reciprocally movable hook supported in the housing and under the influence of a spring. A key-actuated lock also influences the position of the hook to extend an angled end of the hook out of the housing. The angled hook end serves as a hanger for items, such as a fire extinguisher suspended on a wall, and, when the extinguisher is removed from the hanger, the hook automatically retracts into the housing so that it cannot again be used until the lock is rotated by the key. A finger is connected with the lock for engaging the hook and extending it from the housing, when the lock is rotated. Also, a pawl is connected with the finger for extending into the path of the hook and preventing the hook from being exposed from the housing, except for the use of a key.


**6 Claims, 5 Drawing Figures**

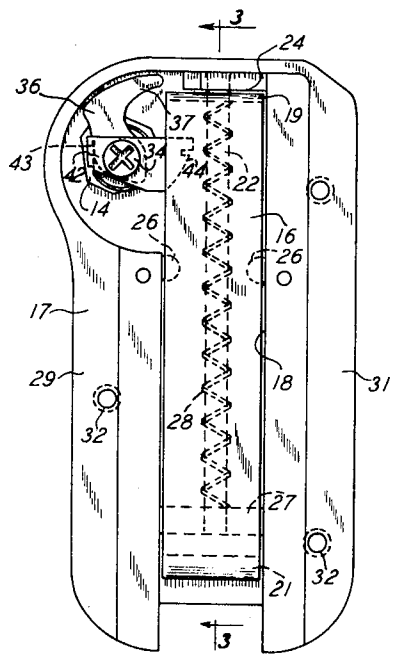


FIG. 1

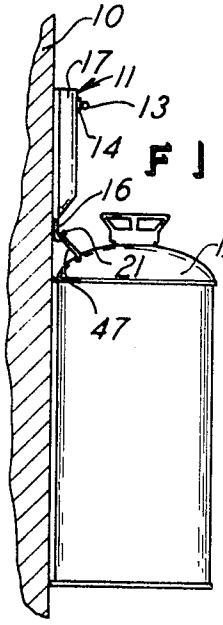



FIG. 2

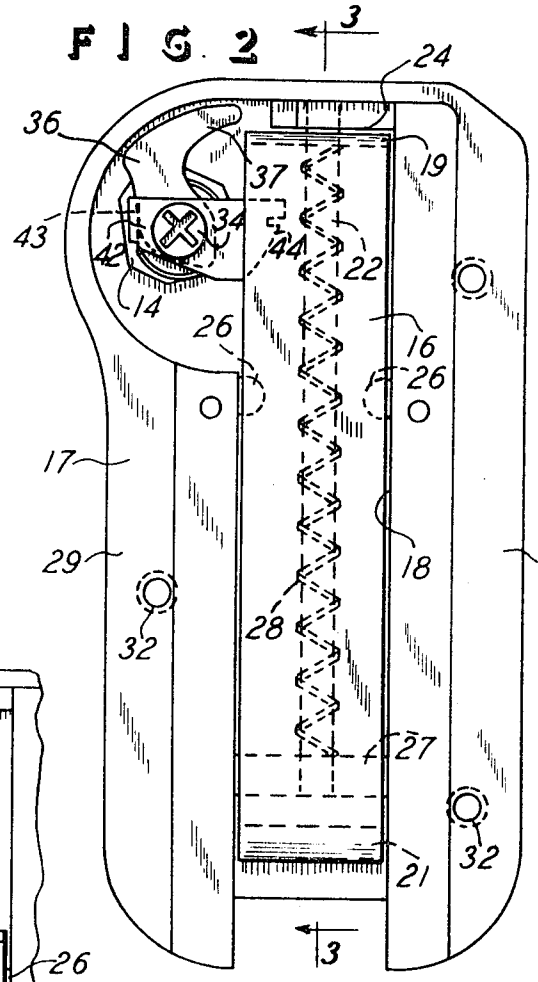
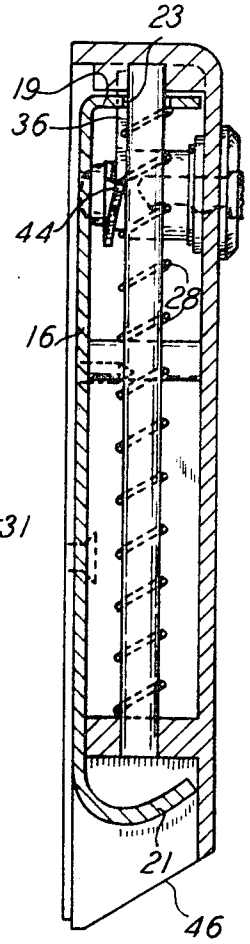



FIG. 3



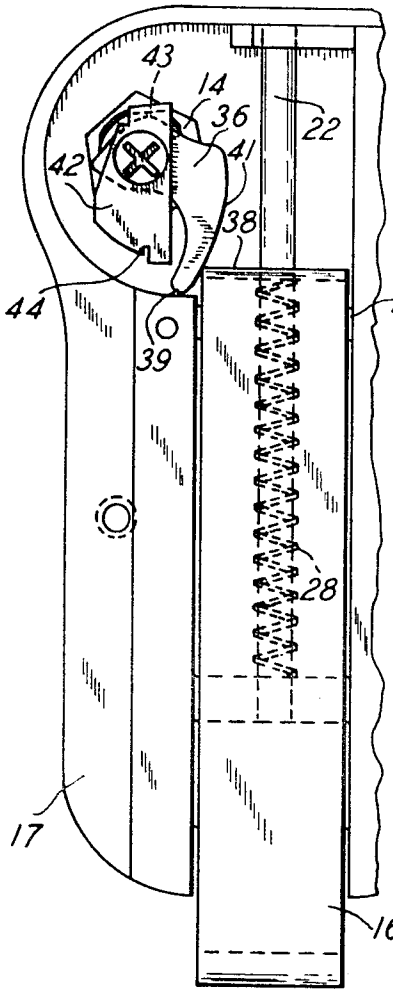




FIG. 5

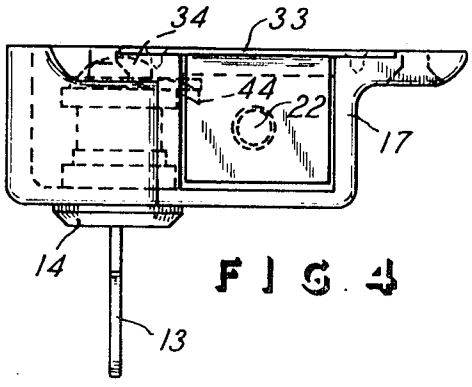



FIG. 4

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# SELF-RETRACTABLE HANGER

This invention relates to a self-retractable hanger, and, more particularly, it relates to a hanger which can be mounted on a wall for suspending items such that when the items are removed from the hanger the supporting hook of the hanger is automatically retracted and the hook cannot again be exposed for use until a key is used to release the hook for exposure. This invention has particular application to suspending a fire extinguisher on a wall, and it will therefore be described in that context.

## BACKGROUND OF THE INVENTION

Self-retractable hangers are already known in the prior art, and such hangers exist for suspension of fire extinguishers and like items. In these prior art structures, the hangers are available for supporting fire extinguishers or other items, such that when the fire extinguisher is first removed from the hook of the hanger, the hook automatically retracts into a housing and cannot again be exposed for use until a key is used to release and expose the hook. In this manner, once a fire extinguisher has been removed from the hanger, such as for emptying the contents in combating a fire, the extinguisher cannot be replaced on the hanger, except by authorized personel who have the key for actuating the lock. Therefore, vandals, inadvertent use of the extinguisher, and like factors cannot jeopardize the primary purpose of indicating that the suspended item has not been initially removed from the hanger.

With more detailed consideration of the prior art hangers, it is also noted that these hangers are of a self-locking or self-actuating nature such that once the item is removed from the hook of the hanger, the hanger retracts and cannot again be exposed until a key is used. However, these prior art hangers are not commonly used in actual practice, and no doubt one reason for their lack of use is that they are complicated and expensive, and they are not wholly suitable and reliable for the intended purpose. One such example of a prior art hanger is shown in U.S. Pat. No. 1,941,112, and, while this shown hanger does utilize a retracting spring and a lock, it does not have a hook which is extendable from the housing, nor is it of a structure which is reliable in the relationship of the sliding parts.

Accordingly, it is the general object of this invention to provide a self-retracting type of hanger for supporting fire extinguishers or the like, and to provide this construction in an improved structure which is also more sturdy and reliable than the hangers known heretofore.

A more specific object of this invention is to provide a hanger which has a self-retracting hook under the influence of a spring and also a lock, such that actuation of the lock will cause the retracted hook to be exposed from the housing for supporting an item suspended thereon. In accomplishing this object, the hook is reciprocally mounted in the housing to move in and out along a controlled path so that, when the item is removed from the hook, the hook will reliably retract into the housing, since the hook is guided in its reciprocal or retracting movement. Still further, the lock is arranged with an arm for engaging the hook to extend the hook from the housing, and a pawl is related to the arm for further assuring that the retracted arm cannot be tampered with and pulled from the housing to an exposed position for rehanging the item without use of the key.

Still further, it is a specific object of this invention to provide a hanger which can be mounted on a wall and have a hook exposed from the housing of the hanger such that the hook is disposed in a position immediately adjacent the wall so that the item suspended on the hook will be suspended in contact with the wall and thereby occupy only a minimum of space.

Other objects and advantages will become apparent upon reading the following description in light of the accompanying drawings.



## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a hanger with a fire extinguisher suspended therefrom.

FIG. 2 is a rear elevational view of the hanger of FIG. 1, but with the rear cover plate removed for exposing the working parts.

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2.

FIG. 4 is a bottom plan view of FIG. 2.

FIG. 5 is a view similar to FIG. 2, but showing the parts in different position, and with part of the housing broken away.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a building wall **10** suitably supporting the hanger **11**, which is the hanger of this invention, and a fire extinguisher **12** is suspended from the hanger **11**. It will therefore be understood that the hanger **11** is suitably mounted on the wall **10** by being bolted or screwed thereto, and the fire extinguisher **12** is available for the fire fighting purpose. The major feature of this invention is that when the extinguisher **12** is removed from the hanger **11**, then the extinguisher cannot be placed onto the hanger **11** without the use of a key **13** which actuates a lock **14** on the hanger **11**. Thus, a movable hook **16** is included as a part of the hanger **11**, and, as soon as the extinguisher **12** is removed from the engaged position with the hook **16**, then the hook **16** is retracted into the hanger housing **17** so that the extinguisher **12** cannot be replaced without the use of the key **13**.

The housing **17** has a cavity **18** which provides a guide track for the reciprocal and sliding hook **16** which has an upper offset portion **19** and a lower hook end or angled end **21**. A post **22** is fixedly mounted in the housing **17**, and the hook offset portion **19** has an opening **23** which receives the post **22** and thereby provides a slide relationship of the hook **16** on the post **22**. The hook **16** can therefore slide between its upper position shown in FIG. **2**, where the hook offset portion **19** will abut the housing upper wall **24**, and the hook **16** can also slide down to where the offset portion will abut the two stope **26** affixed to the housing **17**. Thus, when a heavy item such as the fire extinguisher **12** is hung on the hook **16**, the hook **16** will be pulled downwardly to where the hook portion **19** will rest on the housing stops **26**, and this is the position of the hook **16** as seen in FIG. **1**.

The housing **17** also has a wall **27** which provides a support for the lower end of the post **22**. Further, a compression coil spring **28** is disposed on the post **22** and encircles the post **22** and extends between the hook upper portion **19** and the housing wall **27**, as shown. Still further, it will of course be seen and understood that the housing **17** has side flanges **29** and **31** which contain screw holes **32** for mounting the hanger **11** on the wall **10**.

With the structure as thus described, the hook **16** is closely guided in its sliding or reciprocal movement relative to the housing **17**, and a rear housing cover plate **33** is removably mounted on the back of the housing **17** for enclosing the moving parts seen in FIG. **2** and for further confining and guiding the hook **16**. In this arrangement, the hook **16** is therefore closely guided and is accurately slidable so that it readily moves under the influence of the spring **28** to retract into the housing **17** when the extinguisher **12** is removed from the hook **16**.

The rotatable lock **14** is mounted on the housing **17** and is controlled by the key **13**. A screw **34** is threaded into the lock **14** to rotate with the lock in full response to rotation of the key **13**, in the conventional manner. An arm **36** is also mounted on the lock **14** to rotate with the rotating portion of the lock **14**, and the arm presents a finger **37** which rotates into the path of movement of the hook **16**, so the arm **36** rotates between the two limit positions shown in FIGS. **2** and **5**. Thus, in rotating the lock **14** and therefore the arm **36** from the FIG. **2** position and to the FIG. **5** position, the finger **37** engages the hook offset portion **19** as it contacts the hook upper surface **38** at the finger tip **39**. Thus the finger **36** depresses the hook **16** and

moves it to slightly beyond the position of the hook **16** as seen in FIG. **5**, and the finger **37** then slides beyond the surface **38** and stops in the position actually shown in FIG. **5**. Thus, the hook **16** has its angled end **21** exposed from the housing **17**, as desired. Also, the finger surface **41** is disposed in the path of the hook **16** in the FIG. **5** position, so the hook **16** is held exposed even though the extinguisher **12** is not holding the hook **16** down. With this arrangement, the user can rotate the lock **14** to position the parts as shown in FIG. **5**, and he then need not hold the key **13** with one hand while trying to place the extinguisher **12** onto the hook **16** with the other hand. Instead, the parts will stay in the position shown in FIG. **5** while the key **13** remains in the lock **14**, and the operator can then use two hands to lift the relatively heavy extinguisher **12** and place it onto the hook **16**.

When the extinguisher **12** is placed onto the hook **16**, then the hook **16** is further depressed and moves down to where its offset portion **19** rests on the stops **26**. In this position, the operator can then re-rotate the lock **14** and thus replace the arm **36** to the FIG. **2** position, and the key **13** can now for the first time be removed from the lock **14**. This assures that the arm **36** is placed in its correct upper position of FIG. **2** before the key **13** can be removed. Also, as soon as the extinguisher **12** is removed from the hook **16**, then the spring **28** will cause the hook **16** to be moved upwardly to the retracted position shown in FIG. **2**, as desired.

Finally, a pawl **42** is also associated with the lock **14** and is pivotally related to the arm **36** to be limitly pivotal relative to the arm **36**. That is, the pawl **42** can rotate with the rotation of the lock **14**, as shown in the two positions between FIGS. **2** and **5**, and the pawl **42** can also rotate slightly relative to the lock **14** and also relative to the arm **36**. Thus the pawl **42** has a bent end **43** which overlies the edge of the arm **36** to provide the limited pivotal movement of the pawl **42** relative to the arm **36** in the clockwise direction of rotation of the pawl **42** as seen in FIG. **2**. To limit rotation or pivot of the pawl **42** in the counter-clockwise direction, a tang or offset **44** is provided on the pawl **42**, and this tang is in the plane of the arm **36** to abut the arm **36** as the pawl **42** is rotated in a counter-clockwise direction to a position of abutment with the arm **36**, and FIG. **3** shows the offset tang **44**. That is, the pawl **42** is simply provided with two projecting portions which lie in the plane of the arm **36** to abut the arm **36** and thereby limit pivotal motion of the pawl **42** relative to the arm **36**. In this manner, it will then be understood that, while the pawl **42** can rotate counter-clockwise from the position shown in FIG. **2**, the hook **16** then can be moved up past the pawl **42** and to the position shown in FIG. **2**. However, since the pawl **42** cannot rotate in a clockwise direction from that position shown in FIG. **2**, the hook **16** cannot be pulled downwardly to be exposed from the housing **17** since the pawl end **46** projects into the path of the hook portion **19** to prevent such pulling of the hook **16** from the housing **17**. Pawl portions **43** and **44** are stops.

The hook angled end **21** is disposed parallel with the housing surface **46**, and thus the two portions **21** and **46** provide a desirable angle for entrapping and securing the fire extinguisher handle **47**.

What is claimed is:

**1**. A self-retractable hanger, comprising a housing, a hook reciprocally disposed in said housing and including an angled end exposable beyond and retractable within said housing in accordance with the movement of said hook, a spring in said housing and operative on said hook for retracting said angled end into said housing, a key-actuated lock on said housing and including a rotatable part, an arm operatively connected with said rotatable part for rotating therewith and with said arm extending into the path of movement of said hook for engaging and moving said hook to a position of exposing said angled end beyond said housing, and a pawl connected to said arm and extending therefrom into the path of movement of said hook for engaging said hook and preventing movement of said hook when said lock is not rotated, to thereby prevent exposure of said angled end without actuation of said lock.

**2**. The hanger as claimed in claim **1**, wherein said arm includes a finger extending to a position to rotate across the path of said hook and to an over-center position relative to the central axis of said lock, for holding said hook against the influence of said spring.

**3**. The hanger as claimed in claim **2**, including a stop on said housing and in the path of movement of said hook for limiting the extent that said angled end can be exposed from said housing, said stop being located on said housing and relative to said hook at a position along the path of movement of said hook beyond the over-center position relation of said hook with said arm.

**4**. The hanger as claimed in claim **1**, wherein said housing has a beveled end at the location where said angled end is exposed beyond said housing, and with said beveled end and said angled end being parallel to each other and presenting two spaced-apart inclined surfaces for receiving and suspending an item therebetween.

**5**. The hanger as claimed in claim **1**, wherein said hook includes a portion extending in the direction of the central axis of said lock, said pawl being pivotally mounted relative to said arm for independent movement past said hook portion, and stops on said pawl for limiting pivotal movement relative to said arm and thereby limiting movement of said hook when said lock is in the locked position.

**6**. The hanger as claimed in claim **1**, including a post fixed in said housing, said hook having an offset portion slidable on said post to render said hook reciprocable in said housing, said spring encircling said post and engaging said hook offset portion for spring-urging said hook, and a stop in said housing in the path of movement of said offset portion for limiting exposure of said angled end from said housing.

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