United States Patent

Gilmore

[15] **3,653,277**

[45] **Apr. 4, 1972**

[54] CABLE CONTROL RETRACTION-LOCKUP DEVICE

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[73] Assignee: **American Chain & Cable Company, Inc.,** New York, N.Y.

[22] Filed: **May 13, 1970**

[21] Appl. No.: **36,796**

[52] **U.S. Cl.** **74/502,** 292/336.3

[51] **Int. Cl.** **F16c 1/10**

[58] **Field of Search** ..... 74/502, 503; 292/227, DIG. 14, 292/DIG. 30, 125, 127, 166, 168, 171, 174, 221, 225, 336.3

[56] **References Cited**

UNITED STATES PATENTS

2,126,234	8/1938	Weber	74/502
1,840,508	1/1932	Hinderer	292/174
1,910,102	5/1933	Godfrey	292/171
2,486,098	10/1949	Batterson	74/503
2,729,486	1/1956	Evans	292/174

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Assistant Examiner—P. D. Ferguson

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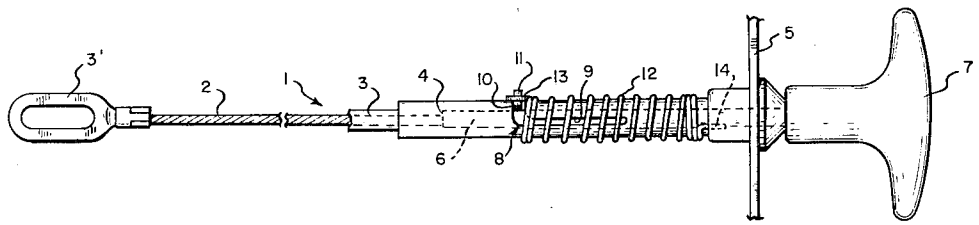
[57] **ABSTRACT**

A retraction-lockup device for a push-pull cable including a housing for supporting one end of the cable, and a spring connected between the cable and the housing for urging the cable into a normally retracted position locked against longitudinal movement.

4 Claims, 3 Drawing Figures



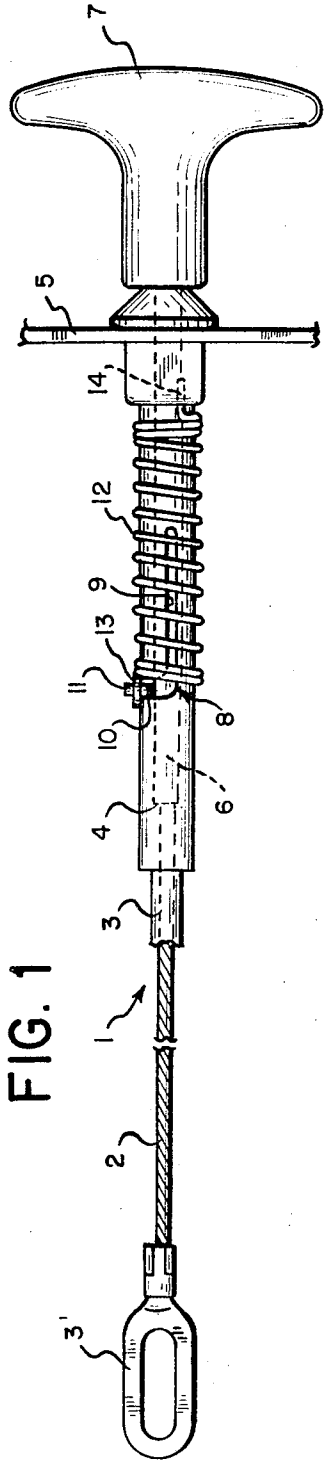


FIG. 1

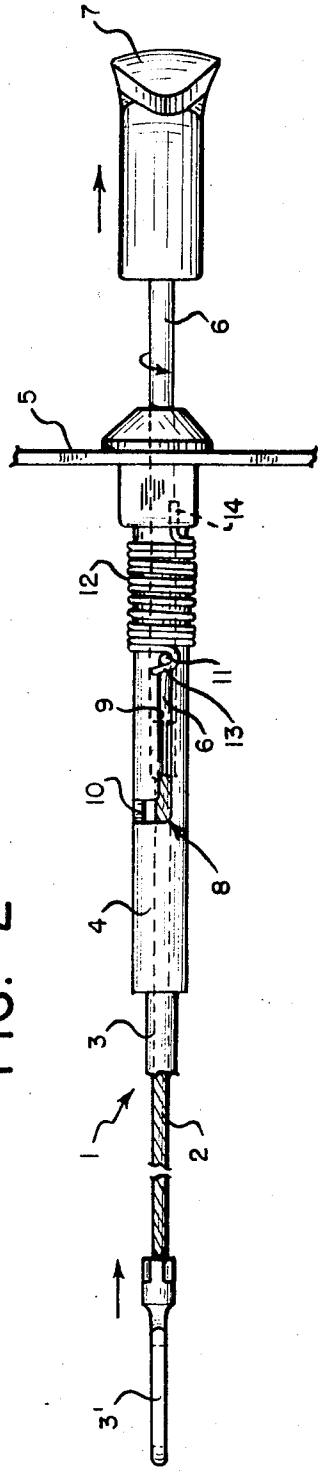


FIG. 2

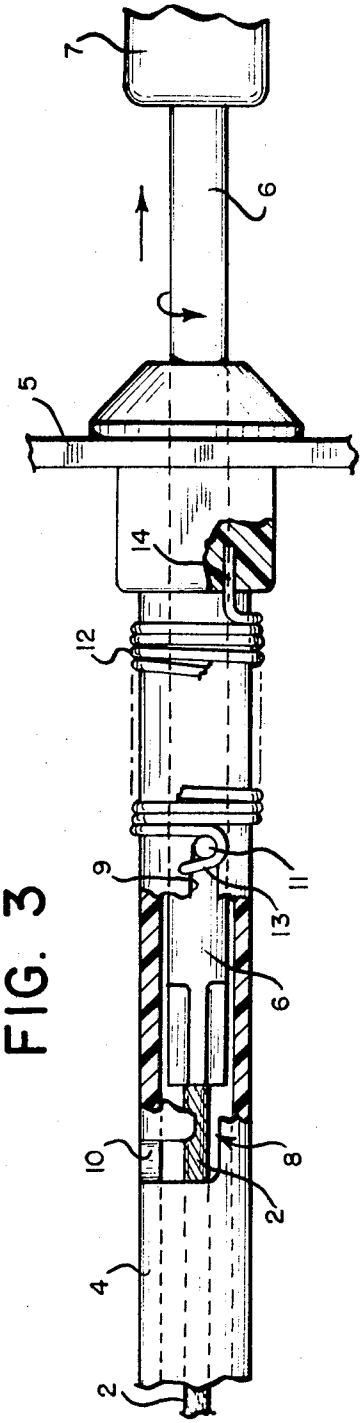


FIG. 3

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CABLE CONTROL RETRACTION-LOCKUP DEVICE

BACKGROUND OF THE INVENTION

Push-pull cables typically include an operating handle connected to the end remote from the device to be operated. Actuation of the device is effected by pushing or pulling the handle. After actuation of the device, the control handle is reset by moving it to its original position. In some a spring may be for automatically returning the control handle to its original position. For reasons of safety, it may be desirable to lock the control handle against accidental movement which would cause actuation of the device to which the cable is connected. For example, in the automotive industry, present interest in safety makes it desirable to prevent accidental opening of the front hood of the automobile by the driver accidentally pulling on the hood release control handle mounted on the dash panel. Typically constructed hood release controls as now included on automobiles do not provide for automatic locking of the hood release control against accidental pulling by the car occupant.

SUMMARY OF THE INVENTION

In accordance with the teachings of the present invention, the conventional push-pull control handle for operating the hood of the automobile is provided with a Kurt J. New retraction-lockup device for automatically returning the control handle to a retracted position after the hood release is purposely operated. In addition, the control handle is automatically retained in a locked position requiring preliminary rotation before it can be pulled to actuate the hood release mechanism.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side view of the push-pull cable control device of the present invention;

FIG. **2** is a view similar to FIG. **1** showing the cable in actuating position; and

FIG. **3** is a partial cross-sectional view of the control device showing the connections of the individual parts.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in the drawings, a conventionally constructed cable **1** comprised of an inner movable element **2** and an outer flexible conduit **3** is connected at one end to a support housing **4**. The other end of the inner element of the cable has a coupling member **3'** fixed to it for connection to the hood release mechanism of the automobile. The support housing **4** for the cable is adapted to be mounted on the dash panel **5** of an automobile in the manner shown.

The end of the inner movable element **2** of the push-pull cable extending into the housing **4** is connected to one end of a coupling rod **6**. The other end of the rod extends out through the other end of the housing and has attached thereto an operating handle **7**. For controlling push-pull movement of the cable, the housing is provided with a guidance slot **8** having a first section **9** extending longitudinally of the cable and a second section **10** extending laterally of the cable. Cooperating with this slot is a lock pin member **11** which is connected at one end to the coupling rod intermediate its ends and extends outwardly through the slot **8**. Finally, a spring **12** is provided for controlling the movement of the cable relative to the housing. This spring is coiled about the housing with one end **13** connected to the lock pin and its other end **14** connected to the housing. The spring is a combined torsion and compression spring which normally urges the lock pin along the first section **9** of the slot **8** to the end which meets with the lateral section **10**. The torsion of the spring operates to urge the pin **11** into the laterally extending section.

In operation, the push-pull cable is actuated to release the hood latch by pulling on the handle against the force of the spring. Before such pulling can be effected, however, the handle must be rotated in a counterclockwise direction and against the torsion forces of the spring **12** to align the lock pin **11** with the longitudinal section **9** of the guidance slot. Upon release of the handle, the spring will automatically expand axially to move the cable and control handle to a retracted position. Once the lock pin reaches the end of the longitudinal section **9** of the guidance slot, the torsion in the spring will automatically move the pin **11** into the lateral section **10**. This, in turn, will lock the handle against subsequent accidental pulling.

I claim:

1. A push-pull cable control retraction-lockup device comprising:

a. a housing supporting one end of said cable for longitudinal movement therein; said cable extending into one end of said housing;

b. a control handle connected to the one end of said cable through the other end of said housing;

c. a guidance slot in said housing, said slot having a first section extending longitudinally of said cable and a second section extending laterally of said cable;

d. a pin member connected to the one end of said cable and extending outwardly of said housing through the slot therein; and

e. a combined torsion-compression spring means having one end connected to said pin member and its other end to the housing, said spring means normally urging said pin along the one section of said slot toward the one end of the housing and into lateral section of said slot.

2. A push-pull cable control retraction-lockup device according to claim **1** wherein:

a. said cable includes a flexible outer conduit attached to the one end of said housing; and

b. an inner movable member connected to said control handle and pin member.

3. A push-pull cable control retraction-lockup device according to claim **2** further including:

a. a coupling rod member for connecting the inner movable member of said cable to the control handle and pin member, the inner member of said cable and said handle being connected to opposite ends of said coupling rod member and said pin member being connected to an intermediate portion thereof.

4. A push-pull cable control retraction-lockup device according to claim **3** wherein:

a. said spring is coiled in surrounding relationship about said housing.

* * * * *

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,653,277 Dated April 4, 1972

Inventor(s) William J. Gilmore

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 25, "with a Kurt J. New retraction-lockup" should read --with a retraction-lockup--.

Signed and sealed this 17th day of October 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents