

[54] **SPRING BIASED PROP FOR A PIVOTED MEMBER**

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[51] Int. Cl.² **B65D 43/24**

[58] Field of Search **217/60 F, 60 G; 296/76, 296/106; 403/166; 248/356, 354 R; 16/72, 190**

[56] **References Cited**

UNITED STATES PATENTS

1,209,029	12/1916	Reese.....	248/354
1,820,950	9/1931	Schulstadt.....	248/356
2,129,338	9/1938	Timmons.....	16/72
2,217,878	10/1940	Walrath.....	16/72
2,253,161	8/1941	Atwood.....	217/60 F

2,535,600	12/1950	Rappl.....	296/76
2,641,795	6/1953	James et al.	16/190
3,117,689	1/1964	Dedic, Sr.....	217/60 F
3,319,993	5/1967	Riley, Jr.	217/60 F
3,827,105	8/1974	Branchaud.....	16/190

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[57] **ABSTRACT**

A prop which is for a pivoted member and which includes inner and outer telescopically interfitting tubular members. A helical spring fits within the tubular members. The opposite ends of the springs are fixedly anchored to the tubular members with the spring serving to urge the tubular members into an extended position when one tubular member is secured to the pivoted member and the other tubular member is secured to a base part to which the pivoted member is hinged.

4 Claims, 8 Drawing Figures

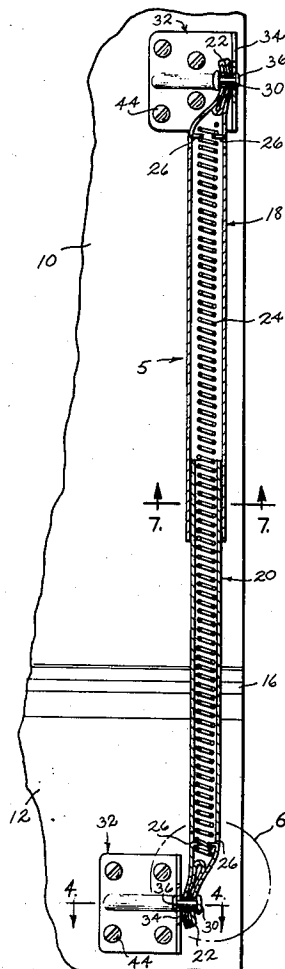


Fig. 1

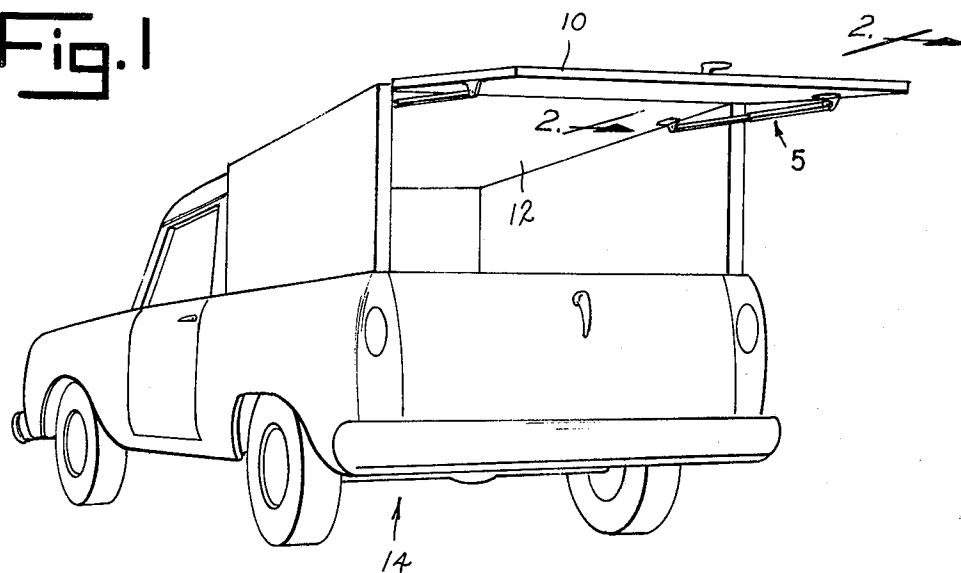


Fig. 2

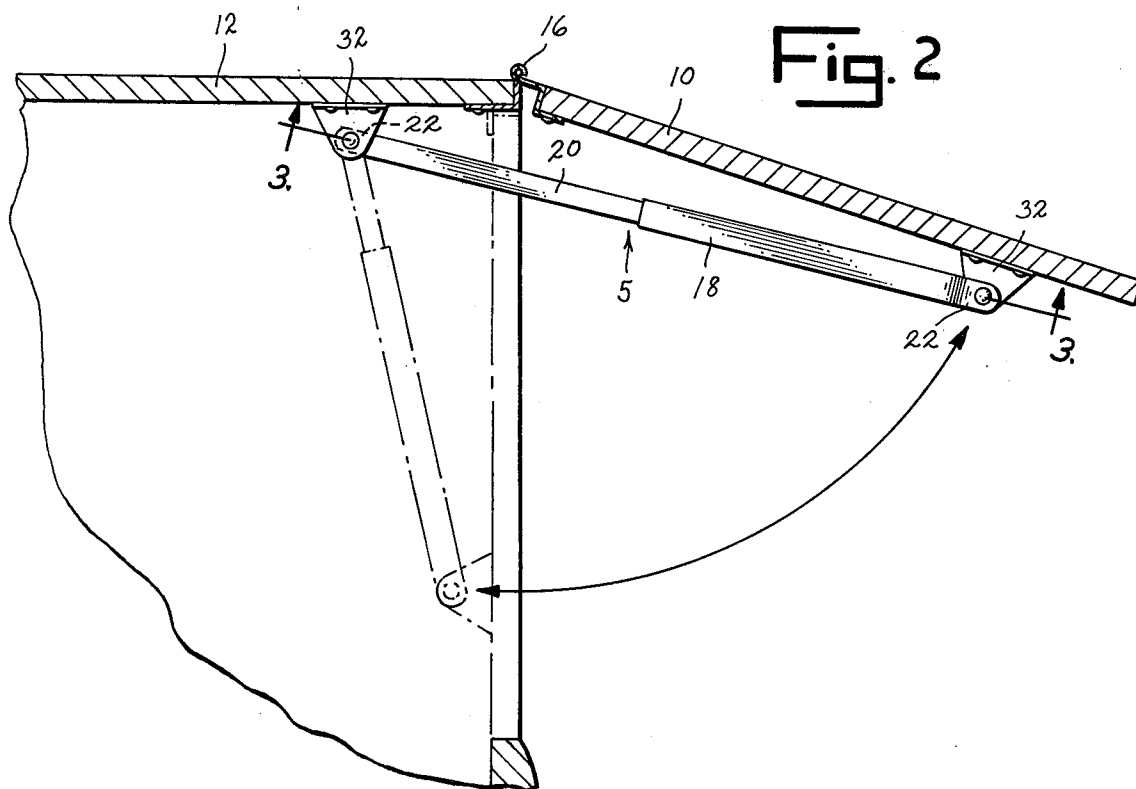


Fig. 3

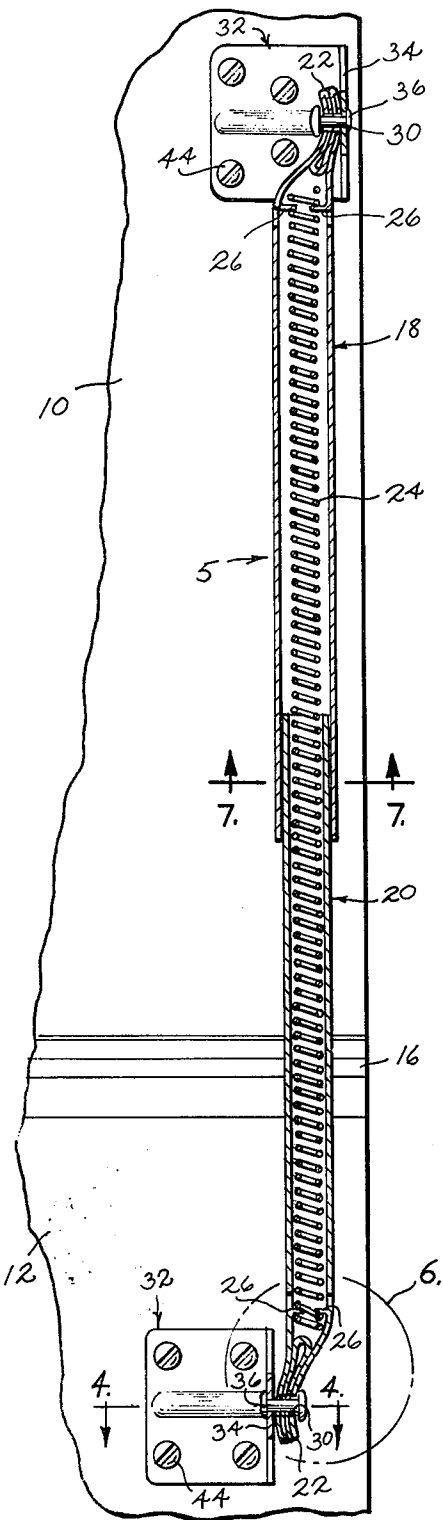


Fig. 4

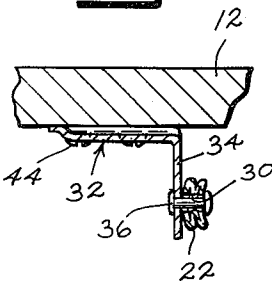
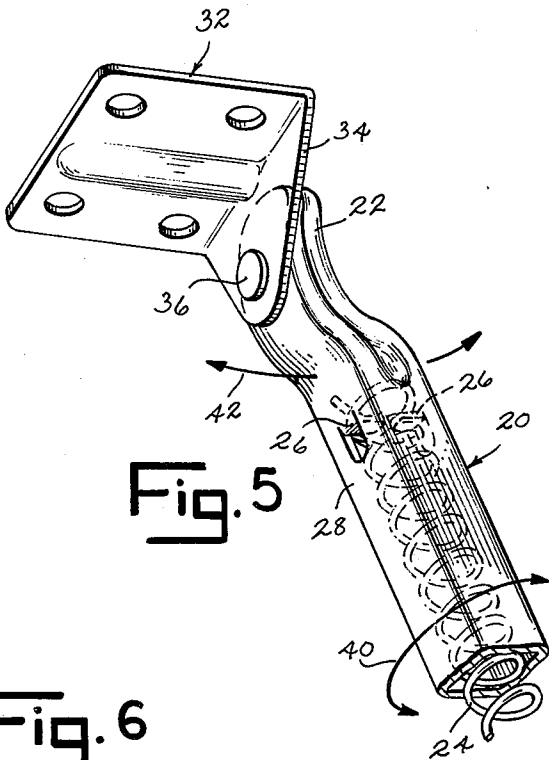


Fig. 5

Fig. 6

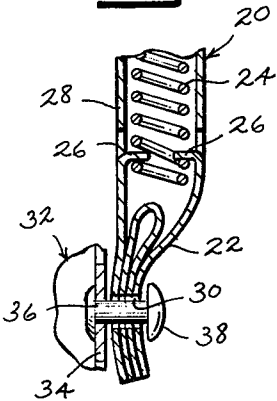


Fig. 7

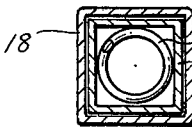
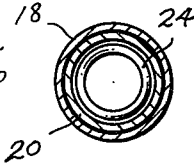


Fig. 8



SPRING BIASED PROP FOR A PIVOTED MEMBER

SUMMARY OF THE INVENTION

This invention relates to a prop for a pivoted member and will have specific but not limited application to a spring biased prop utilized to raise and support a lid, door or similar closure for a vehicle.

The prop of this invention includes inner and outer telescopically interfitted tubular members each having an outer end. A helical spring fits longitudinally within the tubular members and has one end anchored to the inner tubular member and its other end anchored to the outer tubular member. The tubular members are shiftable between retracted and extended positions with the spring therein serving to bias the tubular members into their extended position. The outer ends of the tubular members are pivotally connected between a pivoted member and a base part to which the pivoted member is hinged. The spring within the tubular members is of sufficient strength to raise and thereafter hold the pivoted member in an open position with the tubular members being urged into their extended position.

Accordingly, it is an object of this invention to provide a prop which is collapsible and which is spring biased to urge a pivoted member into a raised or upper position.

Another object of this invention is to provide a collapsible prop for a door or window member.

Still another object of this invention is to provide an economically constructed prop which is for a pivoted member, such as a door, window or gate, and which is of reliable operation.

Other objects of this invention will become apparent upon a reading of the invention's description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a vehicle having one embodiment of the prop of this invention connected thereto for the purpose of supporting the rear door of the vehicle in its raised position.

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1 showing the truck door in its raised position in solid lines and in its closed position in broken lines.

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

FIG. 4 is a fragmentary sectional view taken along line 4—4 of FIG. 3.

FIG. 5 is a perspective view of one end portion of the prop shown disconnected from the vehicle in FIG. 1.

FIG. 6 is a detailed sectional view of that portion of the prop enclosed in broken line 6 of FIG. 3.

FIG. 7 is a cross sectional view taken along line 7—7 of FIG. 3.

FIG. 8 is a cross sectional view of the prop showing the cooperating parts thereof in modified form.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The preferred embodiments illustrated are not intended to be exhaustive or to limit the invention to the precise forms disclosed. They are chosen and described in order to best explain the principles of the invention and its application and practical use to thereby enable others skilled in the art to best utilize the invention.

The embodiment of the prop illustrated in FIGS. 1-7 is designated by the reference numeral 5 and is shown connected between a door 10 and roof 12 of a cap

mounted upon the bed of a pickup truck 14. Door 10 is pivotally connected to roof 12 at its upper edge by a hinge 16. Hinge 16 defines a horizontal pivot axis for the door.

Prop 5 includes an outer tubular member 18 and an inner tubular member 20 which are telescopically interfitted. Tubular members 18 and 20 each have an outer end 22 which is preferably of a flattened, crimped construction. A helical spring 24 fits within tubular members 18 and 20 and extends longitudinally thereof. Each end of spring 24 is connected to a tubular member 18 or 20 inwardly of its outer end 22 by means of a pair of opposed tabs 26. Tabs 26 are formed in the side wall 28 of each of the tubular members and are bent inwardly in an opposing relationship into locking engagement with the coils of spring 24.

Each end 22 of telescopic members 18 and 20 has an opening 30 formed therein. A pair of brackets 32, each having a right angular projecting tab 34, are provided. Each bracket tab 34 has a pivot pin 36 secured to it. Each pivot pin 36 extends through opening 30 in a tubular member end 22 and has a rounded head 38 which prevents separation of the connected tubular member from the pin. Openings 30 in the outer ends 22 of the tubular members are sufficiently larger than the shank of pins 36 so as to permit, as illustrated in FIG. 5, limited twisting movement as indicated by arrow 40 and lateral pivotal movement as indicated by arrow 42, as well as vertical pivotal movement of the tubular members about their connecting pins 36 and relative to brackets 32.

Prop 5 is connected between door 10 and roof 12 of truck 14 by having one bracket 32 secured to the roof and the other bracket 32 secured to the door by screws 44. Brackets 32 are laterally spaced from hinge 16. Tubular members 18 and 20 are shiftable under the influence of spring 24 from a retracted position, shown in broken lines, into an extended position, shown in solid lines in FIG. 2. Spring 24 is of sufficient strength so as to enable it to extend tubular members 18 and 20 and to raise and support door 10 in its open position. When it is desired to close door 10, the door is pushed downwardly causing spring 24 to yield and compress and tubular members 18 and 20 to retract to permit the door to be closed and latched. Spring 24, by being interlocked to tubular members 18 and 20 at its ends, prevents the tubular members from becoming separated during use. The limited universal pivotal movement of each tubular member about its pivot pin 36 permits prop 5 to be installed between hinged members at an angle to the direction of movement of the hinge members. It is to be understood that in some installations prop 5 may be connected between the pivoted door and a side wall or similar support part instead of the roof 12 illustrated in the drawings.

In FIG. 8, tubular members 18 and 20 are shown in circular cross sectional form as distinguished from the square cross sectional form used in the embodiment shown in FIGS. 1-7.

It is to be understood that the invention is not to be limited to the details above given but may be modified within the scope of the appended claims.

What I claim is:

1. A prop for a pivoted member, said pivoted member being connected to a support part by hinge means and being pivotal about a horizontal axis, said prop comprising inner and outer telescopically interfitted

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tubular members, each tubular member having an outer end, a helical spring having opposite ends and fitting longitudinally within said tubular members, means anchoring one end of said spring to said inner tubular member inwardly from the outer end thereof, means anchoring the other end of said spring to said outer tubular member inwardly from its outer end, said tubular members being shiftable telescopically between an extended position wherein said spring is in an expanded state and a retracted position wherein said spring is in a compressed state, means pivotally anchoring one tubular member outer end to said pivoted member spaced from said horizontal axis, means pivotally anchoring the other tubular member outer end to said support part spaced from said horizontal axis, said spring constituting means for urging said tubular members from their retracted position into their extended position and supporting said pivoted member in a raised position, both said spring anchoring means constituting a pair of tab parts formed in said side wall of

each tubular member, each pair of tab parts being bent into the interior of the tubular member in an opposed relationship interlocking with said spring between the turns thereof.

2. The prop of claim 1 wherein each tubular member outer end has a transverse opening formed therein, a pivot pin extending through each opening, a pair of brackets, a said bracket secured to each pivot pin, one bracket connected to said pivoted member, the other bracket connected to said support part.

3. The prop of claim 2 wherein each tubular member outer end is flattened with the transverse opening therein receiving said pivot pin in a freely fitting relationship wherein there is limited universal pivotal movement between said tubular members and their respective connected brackets.

4. The prop of claim 1 wherein said support part includes a side wall, said other tubular member outer end anchored to said side wall.

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