

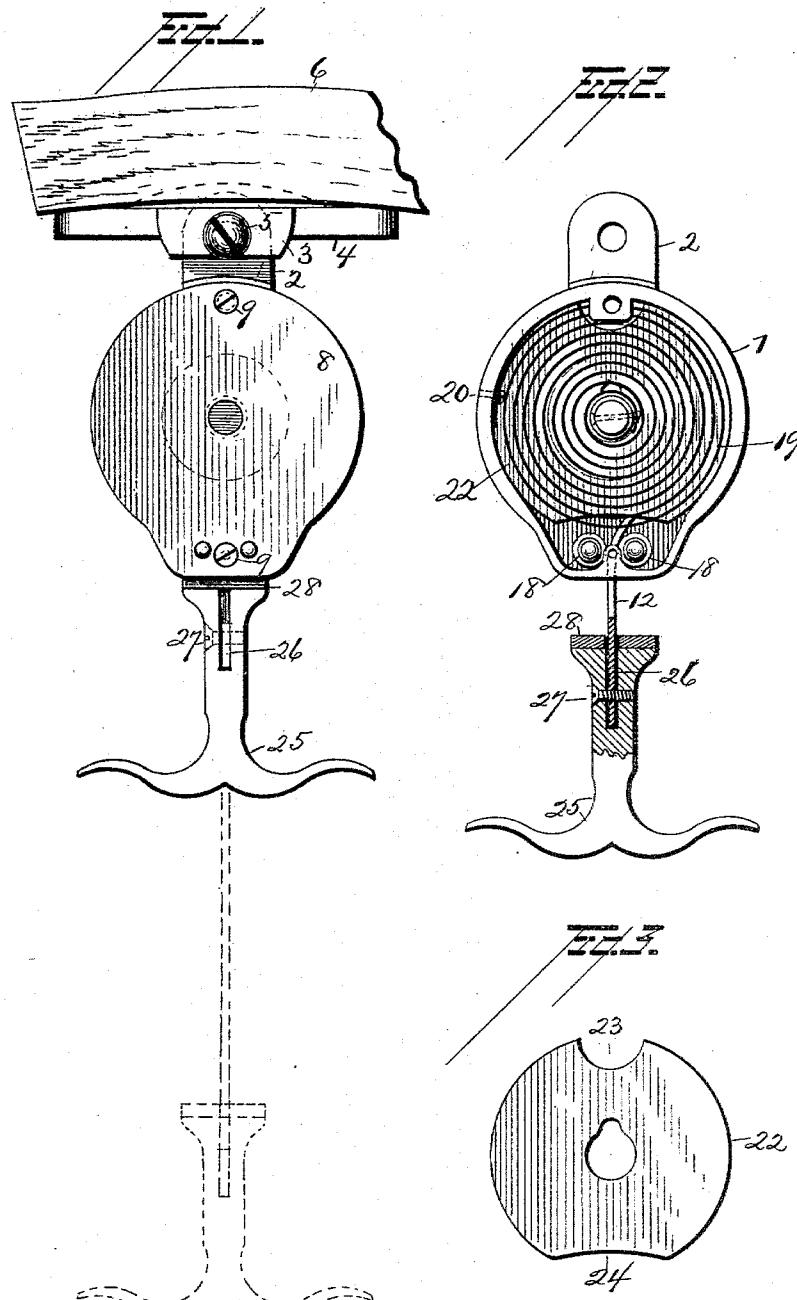
(No Model.)

2 Sheets—Sheet 1.

S. A. FLANIGAN.  
HAND STRAP FOR STREET CARS.

No. 490,191.

Patented Jan. 17, 1893.



Attest:

H. H. Schott  
Alfred T. Sage.

Inventor  
Stephen A. Flanigan,  
by H. G. Henderson,  
Attorney.

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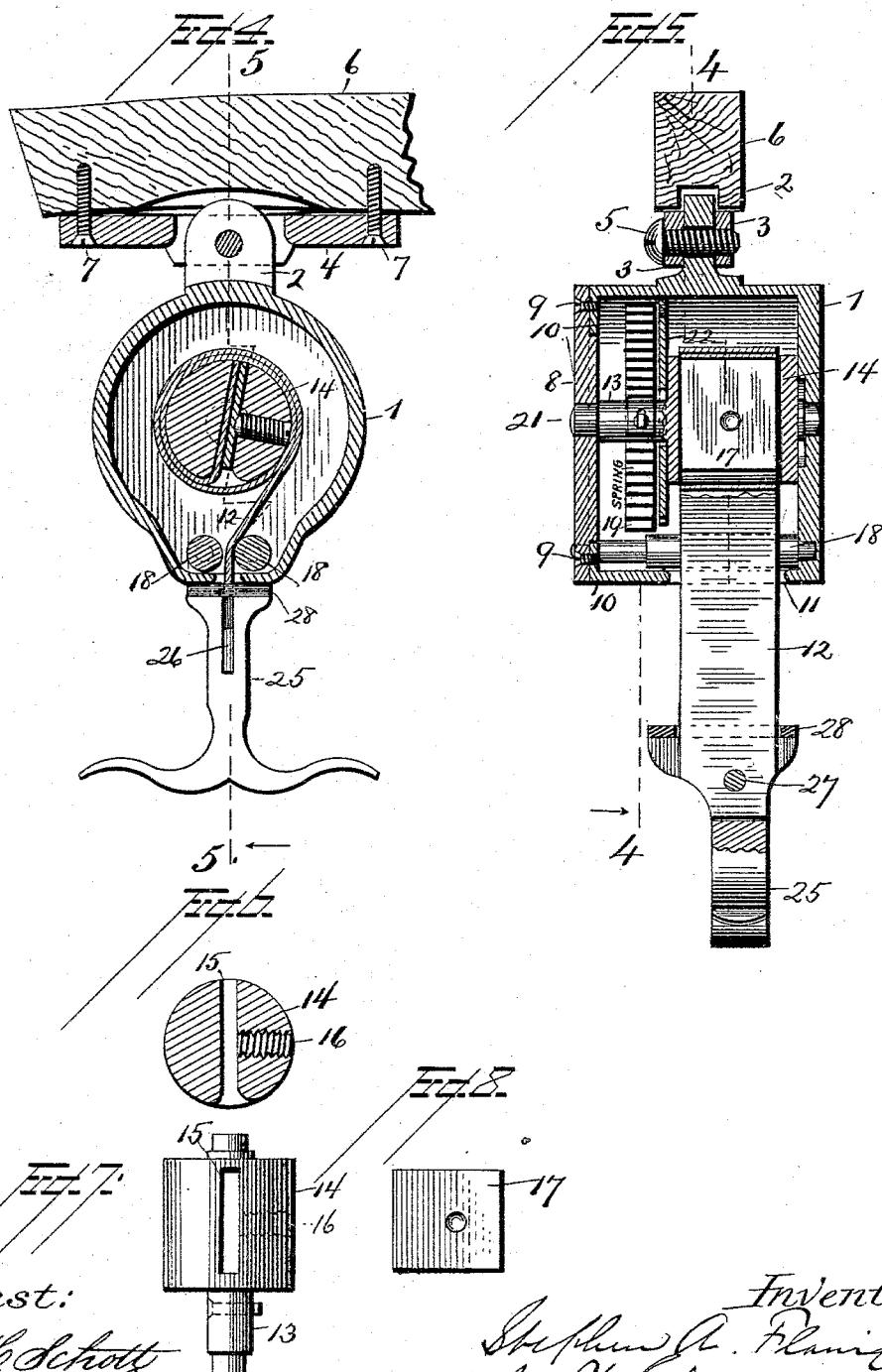
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# UNITED STATES PATENT OFFICE.

STEPHEN ALLEN FLANIGAN, OF WATERVLIET, NEW YORK.

## HAND-STRAP FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 490,191, dated January 17, 1893.

Application filed October 17, 1892. Serial No. 449,125. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN ALLEN FLANIGAN, a citizen of the United States, residing at the town of Watervliet, in the county of Albany and State of New York, have invented 5 certain new and useful Improvements in Straps for Street-Cars and other Conveyances; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

15 My invention relates to straps for street cars and other vehicles usually employed for aiding the passengers in standing upon their feet while the car is in motion when seats cannot be had; and it has for its object, not only 20 to provide an extensible and automatically retractable strap so that it may be drawn down to suit the height of the person using it and which will be retracted when the grasp of the hand thereon is released, but one in 25 which the life of the strap will be prolonged and in which the strap will not bind on any part of the casing or shell containing the same, there being provided means for holding the strap away from the sharp and angular corners and edges of the shell, while at 30 the same time permitting the strap to be drawn in and out of the shell with ease.

It further has for its object to provide a shell or casing that may be adjusted and fixed 35 to hang at any desired angle or vertically when the supporting beam is curved or irregular in shape.

It further has for its object to provide improved means for securing the inner end of 40 the strap to the rotatable shaft or drum contained within the shell or casing so that when necessary the strap may be readily replaced by another and yet securely held to the shaft or drum.

45 It has further for its object to generally improve the construction and the operation of a device of the kind mentioned so that it will be more efficient and satisfactory than under previous constructions.

50 To the accomplishment of the foregoing and such other objects as may hereinafter appear, the invention consists in the construc-

tion and combination of parts hereinafter described and then sought to be particularly defined by the claims, reference being had to 55 the accompanying drawings forming part hereof, and in which

Figure 1 is a side elevation of the device as applied to a cross timber or bar usually found at the top of the car, Fig. 2 is a side view of 60 the device with its face plate removed and parts in section, Fig. 3 is a front view of the division plate which separates the coiled spring from the enlarged part of the drum upon which the strap is wound, Fig. 4 is a 65 vertical section through the device on the line 4—4 of Fig. 5, Fig. 5 is a cross section on the line 5—5 of Fig. 4, Fig. 6 is a cross section through the drum or enlarged portion of the shaft in which the strap is secured and 70 upon which it is wound, Fig. 7 is a plan view of this shaft and drum, and Fig. 8 is a plan of the bearing plate which is pressed 75 against the strap to secure it to the shaft or drum.

In the drawings the numeral 1 designates the shell or case which is usually cast in one piece with the ear 2 at its upper end through which and the lugs 3 of the plate 4 a pin or screw 5 is passed so as to pivot the shell in 80 a manner that will permit it to be adjusted back and forth and secured at the adjustment by tightening the screw 5, the plate 4 being secured to the cross piece 6 by the screws 7 as indicated clearly in Fig. 4 of the 85 drawings. This is for the purpose of having the shell and the handle of the strap to hang vertically and to be secured rigidly in that position. The cross beams of the car-roof in a number of instances are curved and in some 90 cases to a greater extent than others, and as this device is attached to the cross beam and designed to be rigid it would hang obliquely or at an angle to a vertical line unless some means be provided to adjust it to conform to 95 the curvature of the cross beam. By my construction I am enabled to adjust the shell back and forth to the extent necessary to compensate for the curvature and bring the shell and handle to a vertical position and 100 then rigidly secure it in that position. The shell or casing is provided with a removable face plate 8 secured thereto by screws 9 entering lugs 10 formed on the shell or case so

that access may be had to the interior of the shell for the purpose of adjusting the opening parts in place and removing them from the shell when desired. The lower part of the shell or case is formed with a slot or opening 11 for the passage of the strap 12, and within the shell or case is journaled a shaft 13, one end having its bearing in the removable face plate and the other end in the rear wall of the shell or case as clearly illustrated in Fig. 5 of the drawings. This shaft is formed with an enlargement 14 which serves as a drum on which to wind the strap 12. The enlargement or drum is formed with a slot 15 passing transversely through it, and into this slot is passed the inner end of the strap 12 which is secured therein by means of a set screw 16 passed into the enlargement or drum and having its inner end bearing against a plate 17 which slides in the slot 15 and is pressed against the strap 12 by the screw 16 so as to securely clamp the strap to the enlargement or drum. By this construction whenever it is desired to remove the strap for the purpose of replacing it with another it can be readily affected by simply loosening the screw 16 and then removing the plate 17 and drawing out the strap.

In order to prevent the strap 12 from bearing against the edge of the slot 11 through which it passes, and also to hold it in proper position so as to pass with the least friction through the slot as indicated in Figs. 2 and 4 of the drawings, I provide two rollers 18, one located on each side of the slot with their adjacent surfaces extending partially over the slot as indicated in Fig. 4 of the drawings and journaled at one end in the rear wall of the casing and at the other end in the removable face plate, so that they serve to guide the strap, and also to hold it from contact with the shell or casing whereby it is caused to work easier and with less friction than otherwise and to last much longer than would be the case if this construction were not used.

For the purpose of winding up this strap on the drum 14, when the grasp of the hand thereon is released, I employ a coiled spring 19, one end of which is secured to the inside of the shell by the pin or screw 20 and the other end to the pin or hook 21 projecting from the shaft 13 so that as the strap 12 is pulled out the spring is contracted and when the pressure on the strap is released the recoil of the spring will rotate the shaft 13 so as to draw the strap within the shell and wind it up on the shaft. The coil spring 19 is separated from the enlargement or drum 14 by a partition 22 which fits over the shaft 13 and is cut away at its periphery at the two points 23 and 24 so as to pass the lugs 10 and rollers 18 when inserted in place, but this construction

may be greatly varied as the particular construction of this plate constitutes no material part of the invention.

To the outer end of the strap 12, there is secured a finger clasp or handle 25, the handle being formed with a slot 26 to receive the end of the strap which is held therein by the screw 27, and a facing of leather or other material 28 may be secured to the handle next to the shell so as to form a cushion between the handle and the shell when the two parts are brought together.

The device constructed as described is inexpensive in its manufacture, and very efficient in service, and overcomes many objections to constructions heretofore employed in devices of this character, and its several parts accomplish in a very satisfactory degree the several objects hereinbefore set forth.

I have described with particularity the details of construction of the several parts and their combinations, but I do not mean to confine myself to such exact details when the same result can be accomplished by immaterial alterations in the details.

Having described my invention and set forth its merits, what I claim is:—

1. The combination with the laterally adjustable shell containing the extensible strap and means for retracting it, of the ear extending from said shell, a support with which said ear is connected to sustain the shell, and means for securing the shell to its adjustment, substantially as and for the purposes described.

2. The combination with the shell formed with an elongated opening for the passage of a strap, of a rotatable shaft contained within said shell and having the strap connected thereto, a spring acting on said shaft to retract the strap, and guide rollers located on opposite sides of the elongated opening for the passage of the strap and lying on opposite sides of the strap, and free to be rotated by the movement of the strap, substantially as and for the purposes described.

3. The combination with the shell and the strap passing through the opening therein, of the rotatable shaft contained within said shell and formed with a slot in which the inner end of said strap is fitted, a plate within said slot and bearing against the strap, and a set screw for pressing said plate against the strap to clamp it to said strap, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

STEPHEN ALLEN FLANIGAN.

Witnesses:

HENRY GOYETTE,  
WILLIAM DOTY.