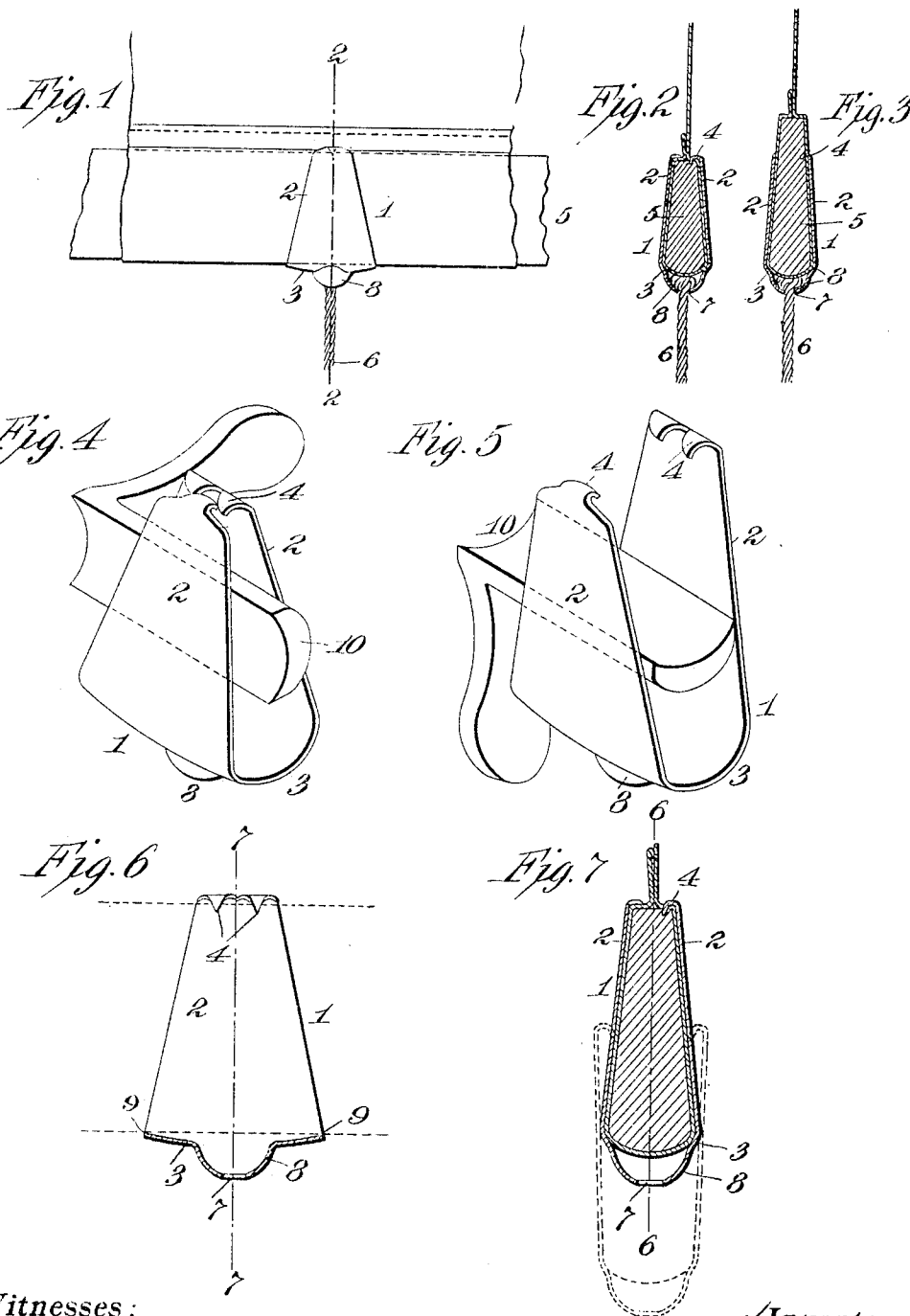


No. 819,064.

PATENTED MAY 1, 1906.

E. F. HARTSHORN.
CORD ATTACHMENT FOR WINDOW SHADES.
APPLICATION FILED FEB. 1, 1904.



Witnesses:

Jas. F. Coleman
John L. Lotich

Inventor
Edmund L. Hartshorn
By Ogden Dyer

Attorneys.

UNITED STATES PATENT OFFICE.

EDMUND F. HARTSHORN, OF NEWARK, NEW JERSEY, ASSIGNOR TO
STEWART HARTSHORN COMPANY, OF EAST NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CORD ATTACHMENT FOR WINDOW-SHADES.

No. 819,064.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed February 1, 1904. Serial No. 191,457.

To all whom it may concern:

Be it known that I, EDMUND F. HARTSHORN, a citizen of the United States, residing in Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Cord Attachments for Window-Shades, of which the following is a specification.

This invention relates to improvements in means for attaching the cord to the slats of window-shades and the like.

The objects of the invention are to provide a device which will rigidly hold the cord in place and which will be cheap to manufacture and pleasing in appearance.

Another object is to provide a device which may be readily attached and will not crack or split the slat.

Another object is to provide a device which may be applied without change to slats of different widths.

A further object is to provide a device which will withstand diagonal strains upon the cord without the need of additional strengthening means.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 represents an elevation of the lower part of a shade with the cord attachment in place. Fig. 2 represents a sectional view thereof on the lines 2 2 of Fig. 1. Fig. 3 is a view similar to Fig. 2, but with the device applied to a wider slat. Figs. 4 and 5 represent perspective views, enlarged, of the clasp, showing the manner of spreading its sides for attachment to the slat. Fig. 6 represents a sectional view of one side of the clasp, taken on the lines 6 6 of Fig. 7; and Fig. 7, an enlarged view in section similar to Fig. 2 of a slat, a portion of a shade, and the clasp applied thereto, showing the manner of attachment.

In all of the several views like parts are designated by the same reference-numerals.

In carrying out my invention I provide a clasp 1, which is adapted to embrace the slat and is formed, preferably, of a single piece of tempered sheet-steel and has the side arms 2 2, which are adapted to straddle the slat. These arms are formed integrally with the curved base 3. The base preferably curves both laterally and longitudinally—laterally so that it will conform to the curve of the lower

edge of the slat and longitudinally for the purpose of imparting greater strength and to add to the appearance of the device. The arms 2 2 are as long as the width of the narrowest slat with which the clasp is to be used, and each is provided at its upper edge with teeth 4, preferably sharpened and bent toward the base 3, as shown. The configuration of these teeth I term "reentrant," and by such designation I mean teeth which are so bent as to point toward the base. These teeth are adapted to engage with the top of the slat, as shown in Fig. 2, or where the slat is wider than the depth of the clasp to engage with the sides of the slat, as shown in Fig. 3. The elastic nature of the clasp will force the sides of the clasp into engagement with the slat and cause the teeth, as in Fig. 2, to engage with the upper side of the slat near the center thereof. The grasp of the clasp upon the slat is increased by forming a single tooth upon one side of the clasp and two teeth upon the other side so arranged that the single tooth will come opposite the separating-space between the two teeth on the other side, whereby the arms will normally be in closer mutual relation than if the teeth were not so arranged. This construction permits the use of the clasp with slats which have very narrow upper edges. The teeth will be further forced into and embedded in the slat by the downward pull of the cord upon the clasp, owing to the configuration of the teeth, as will be understood. When the clasp is applied to a wider slat, as shown in Fig. 3, the arms will not be sufficiently long to allow the teeth to engage with the top of the slat; but the elasticity of the side arms will tend to force the teeth through the shade and into engagement with the sides of the slat.

The cord 6 passes through an opening 7 in the bottom of the clasp and is there knotted, the knot reposing within a cup 8. The cup 8 is preferably formed integral with the clasp and is of sufficient size to contain the knot and at the same time allow the clasp to snugly rest against the bottom of the slat.

When the slat is in position, the edges 9 of the base are adapted to be in engagement with the bottom of the slat, as shown in Fig. 6. When in this position, the teeth 4 are also embedded in the slat, either in the top there-

of, as in Fig. 2, or in the sides below the top, as shown in Fig. 3. The edges 9, engaging with the bottom of the slat, will resist displacement of the clasp by diagonal strains upon the cord, any strains tending to force one or the other of the edges into closer engagement with the slat.

In applying the clasp to a curtain the tool 10, of a crescent cross-sectional shape, is introduced, as shown in Fig. 4, between the side arms 2 2 and given a half-turn, as shown in Fig. 5, thus spreading the side arms apart. The clasp is then applied to the bottom of the curtain and slat, as shown in Fig. 7, and pressed upward until the points 4 are in engagement with the sides of the slat. The tool may then be withdrawn longitudinally and the clasp pushed upward until the edges 9 9 are firmly in engagement with the bottom of the slat and the teeth either in engagement with the top or sides of the slat, as depends upon the width of the latter, the downward turn of the teeth 4 permitting this movement. The teeth will be held in engagement by the elastic nature of the side arms; but as additional security the upper edges of the side arms may be pressed together, if desired, and the clasp will be held permanently in position surrounding the slat.

The clasp may be manufactured in many ways; but I prefer to make it of sheet-steel, which is formed to the desired shape by dies and afterward tempered. Other metals, however, may be used, and the clasp may be made in different ways from that described.

My invention may be modified in many ways—as, for example, a greater number of teeth may be used instead of the three shown, and the clasp may be so arranged that its bottom will not engage with the slat. The device may be also modified by attaching the cord to the clasp in other ways than shown.

Before claiming my invention I desire it understood that in the description and claims

in referring to the "top" and "bottom" of the slat I mean the top and bottom as shown in the drawings; but it is of course understood that the device may be applied to a shade or similar article in which the slat will be at the top or side.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cord attachment, which comprises a clasp formed of a single piece of tempered sheet-steel arranged to fit around and closely grasp the slat and having teeth on its upper edge, the teeth being adapted to engage with the top or sides of the slat as depends upon the width of the latter, the said clasp having a cup at its bottom formed integrally with the clasp and adapted to retain and conceal the knot of the cord.

2. A cord attachment, which comprises a clasp formed of a single piece of tempered sheet-steel arranged to fit around and closely grasp the slat and having teeth on its upper edge, the teeth being adapted to engage with the top or sides of the slat as depends upon the width of the latter, the said clasp having a cup at its bottom which is adapted to retain and conceal the knot of the cord.

3. A cord attachment which comprises a clasp having integral arms of elastic sheet metal with teeth at their upper edges, the arms being bent closer together when removed from the slat than when in place, whereby the teeth will be forced into the slat by the elasticity of the metal, the said clasp having an integral cup for concealing the knot of the cord.

This specification signed and witnessed this 26th day of January, 1904.

EDMUND F. HARTSHORN.

Witnesses:

JNO. ROBT. TAYLOR,
JOHN L. LOTSCH.