

(No Model.)

E. ALEXANDER.
SASH CORD GUIDE.

No. 456,461.

Patented July 21, 1891.

Fig. 1.

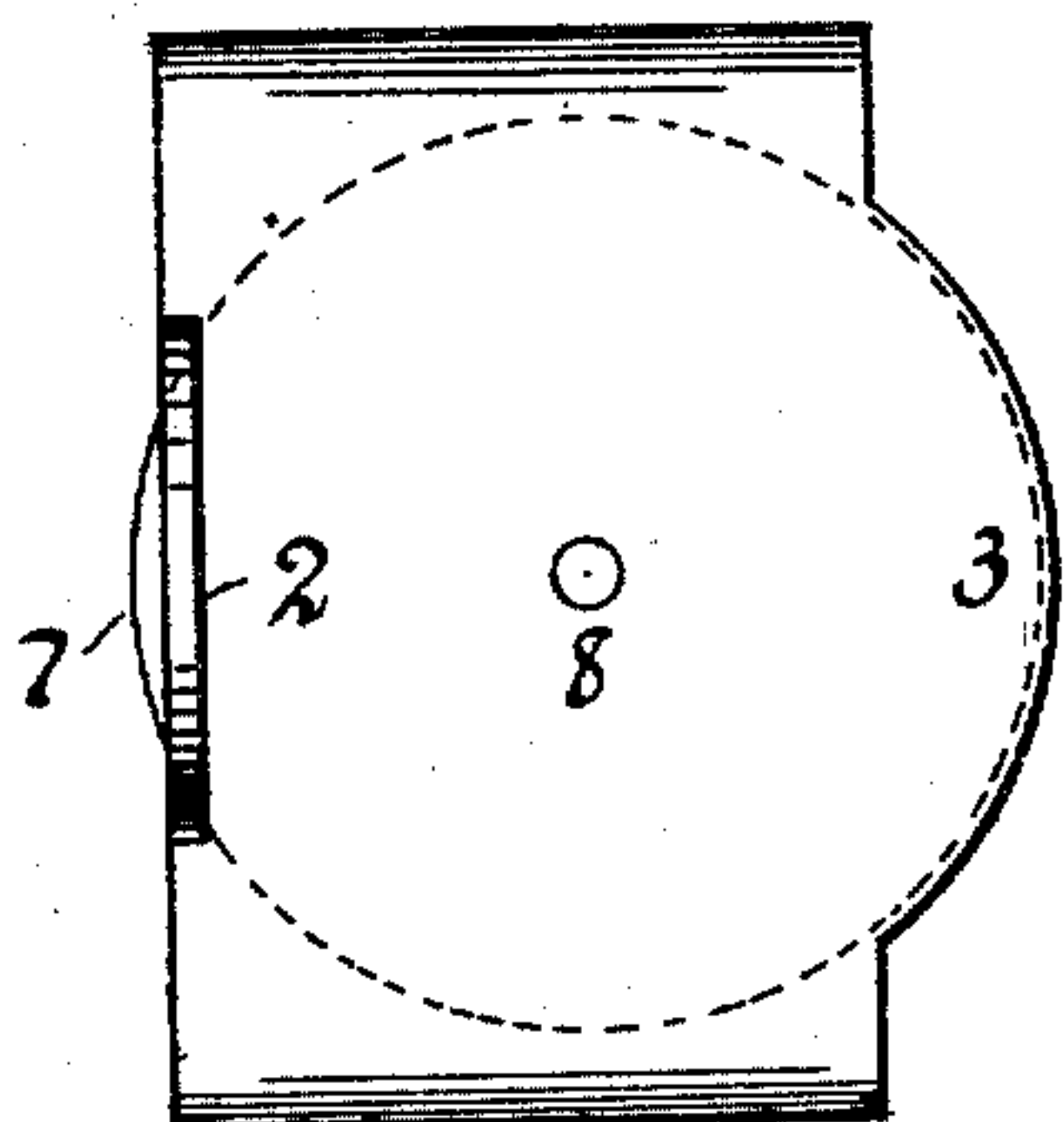


Fig. 2.

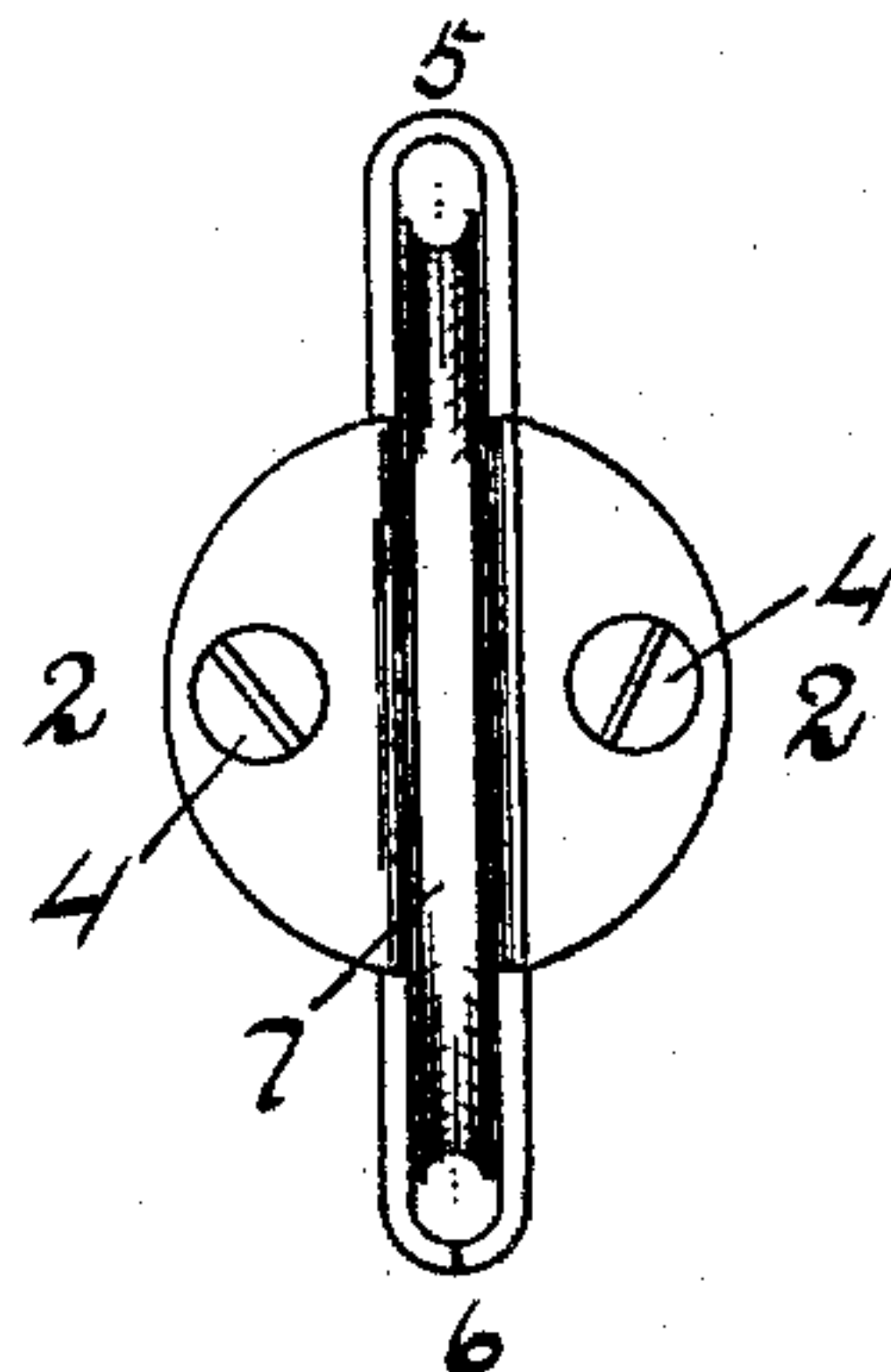


Fig. 3.

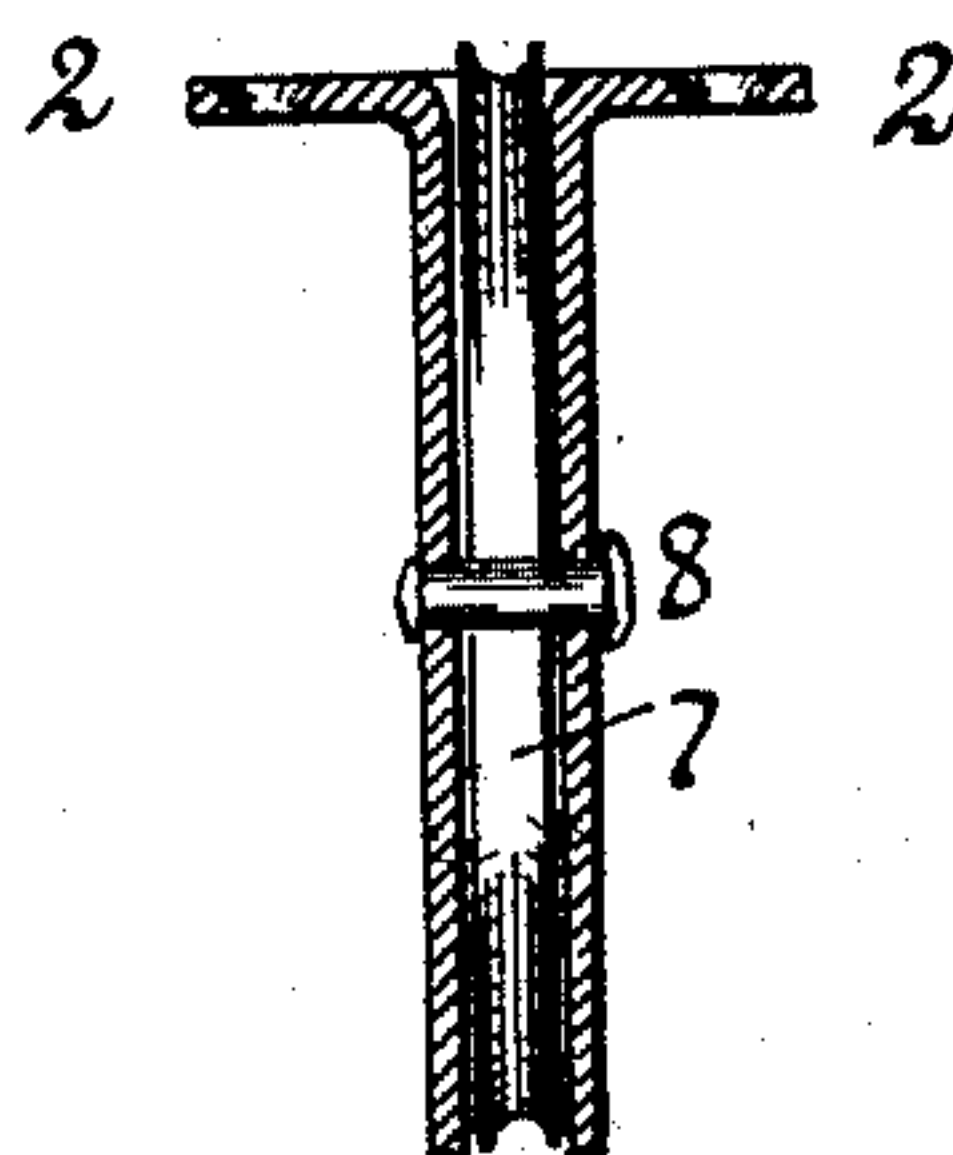
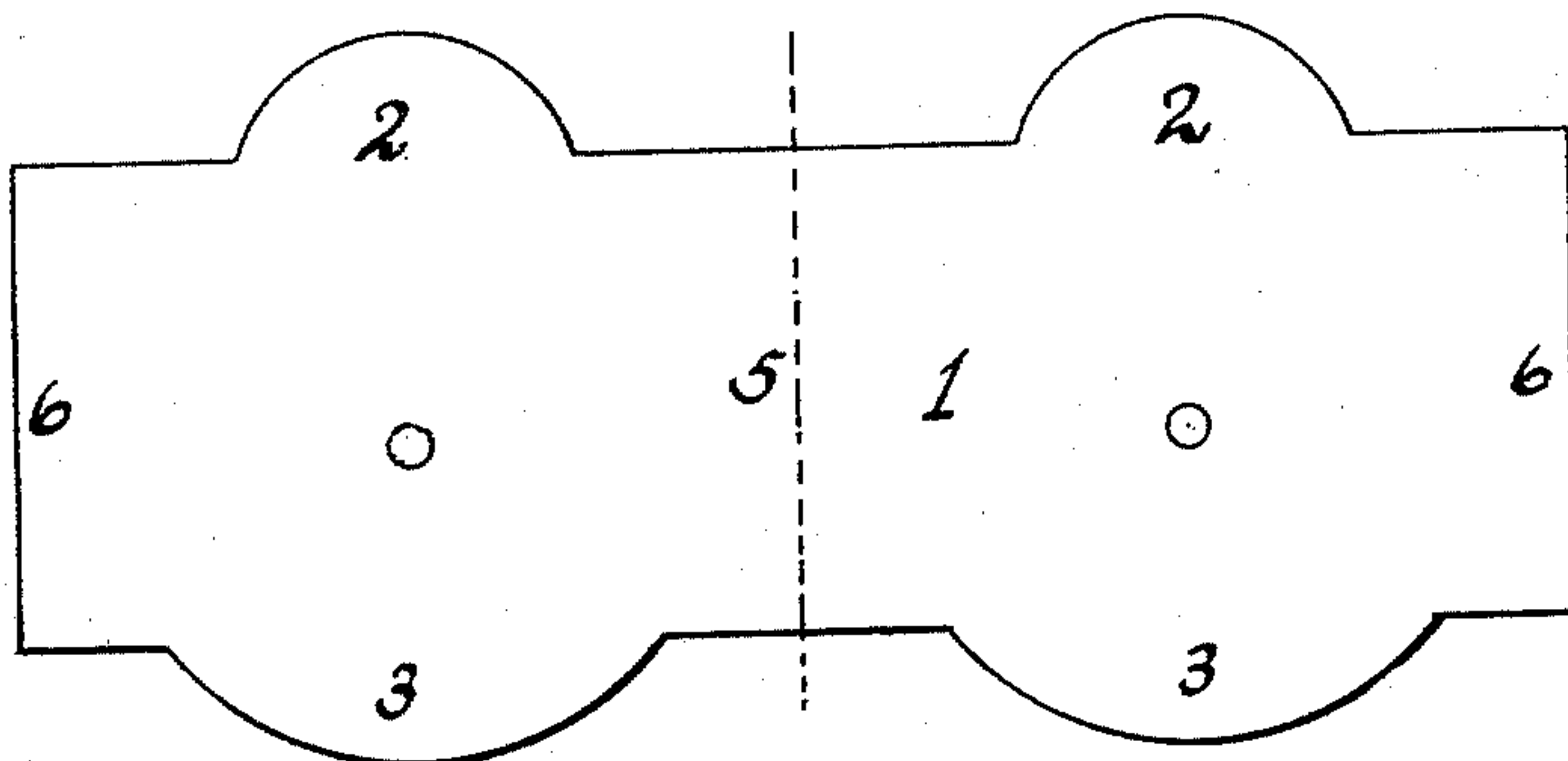


Fig. 4.



Ewin Alexander.

INVENTOR:

WITNESSES:

Geo. M. Norris
Wallace H. H. H. H.

BY *[Signature]* ATTORNEY.

UNITED STATES PATENT OFFICE.

EWIN ALEXANDER, OF LAKE CITY, MINNESOTA.

SASH-CORD GUIDE.

SPECIFICATION forming part of Letters Patent No. 456,461, dated July 21, 1891.

Application filed February 2, 1891. Serial No. 379,928. (No model.)

To all whom it may concern:

Be it known that I, EWIN ALEXANDER, a citizen of the United States, residing at Lake City, in the county of Wabasha and State of Minnesota, have invented certain new and useful Improvements in Window-Pulleys; 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.

This invention relates to improvements in window-sash pulleys; and the object of the invention is to reduce to a minimum the quantity of metal used in the construction of the pulley and sheath, to avoid the weakening of the window-frame by the necessity of cutting a large mortise for the reception of the sheath, and to secure strength, neatness of appearance, and cheapness in the article itself and in its attachment to the window-frame. To this end the pulley and sheath are stamped out of wrought metal and the sheath pressed into proper shape by means of suitable dies. The groove of the pulley may be formed in a lathe. It will be understood that in this manner a sheath and pulley may be constructed with great strength with but little weight of metal, consequently greatly reducing the size of the necessary mortise in the window-frame and the labor of putting in place.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of the sheath with the pulley mounted therein; Fig. 2, a face view of the same; Fig. 3, a section through the center of the pulley and the sheath, and Fig. 4 the blank from which the sheath is formed.

In the drawings, 1 represents the blank from which the sheath or casing is formed, having side projections 2 2 and 3 3 on opposite sides and at equal distances from the middle of the blank. The projections 2 2 are bent over at right angles to the plane of the body of the blank to form flanges, as shown in Figs. 1, 2, and 3, by means of which the sheath is secured to the frame by screws 4 4,

the screws thus being set into the solid wood upon each side of the mortise instead of at each end, as in the common construction. The blank is bent at its middle line, as at 5 in Fig. 4, so that the metal upon each side forms parallel sides for the sheath. The bend at 5 is preferably in a regular curve whose diameter is the width of the sheath, and at each end, as at 6 6, is bent up on a similar curve, as shown in Fig. 2. The pulley 7 is also made from wrought metal, and is mounted between the sides of the sheath by means of a steel pin 8 passing through the sides of the sheath and the pulley. It is intended to use with this pulley a wire cable as a means of support in the place of the cord commonly used to connect the sash with the weight, and hence the thickness of the pulley is only a trifle greater than the diameter of the wire cable of a size necessary to support the weight of the sash, generally not to exceed one-eighth of an inch. The entire thickness of the sheath, and hence the width of the mortise necessary to be cut, need therefore be but a trifle, if any, in excess of one-fourth of an inch, while affording sufficient strength for the support of heavy windows. The projections 2 2, before mentioned, are described from a center at a distance from the edge of the blank equal to one-half the distance apart of the sides or the thickness of the sheath when bent into proper form, so that the peripheries of the flanges formed thereby form opposite arcs of the same circle. The object of this, as well as the regular curvature of the ends or top and bottom of the sheath, will be readily understood, the first to enable a countersink for the flanges to be formed in the frame by the use of an ordinary bit and the latter to enable the ends of the mortise to be formed in the same way, and thus form a secure seat closely fitting the sheath. The extensions 3 3 are described from the center upon which the pulley turns and have the same or a slightly greater radius than the pulley to afford complete protection for the sides of the same without the necessity of making the width of the entire sheath-blank as great as the diameter of the pulley. The latter is so mounted that the bottom of its groove is flush with the face of the sheath.

In putting up it is only necessary to form

the countersink for the flanges with an ordinary bit, bore the ends of the mortise in the same manner, and cut out the balance of the mortise with a saw. The screws, being in
5 line with the middle of the sheath, have a firm hold in the wood at the sides without liability to split the frame or tear out.

By the use of a wire cable as a suspension device the deep grooving of the sash, as when
10 a cord is employed, is avoided.

I claim as my invention—

A sash-pulley sheath formed from a single piece of wrought metal bent in a regular curve at its middle, so as to form two parallel
15 sides at a short distance apart, and hav-

ing its extremities bent inwardly to form a similar curve, and projections formed upon one side of the blank of such form and in such position that when bent back to lie in a plane at right angles to the body of the sheath
20 their peripheries form opposite equal arcs of the same circle, substantially as and for the purpose herein specified.

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

EWIN ALEXANDER.

Witnesses:

JOHN F. MERRILL,
F. W. LANE.