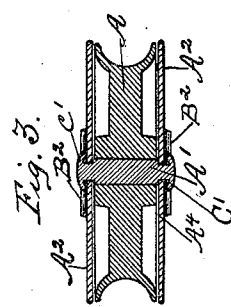
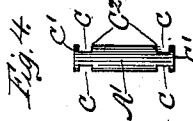
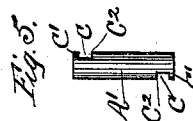
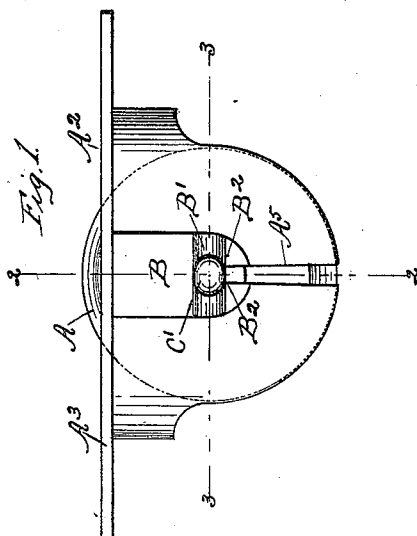
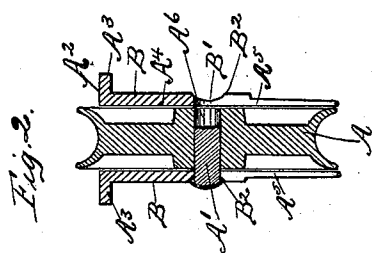


(No Model.)

S. PALMER.
SASH CORD GUIDE.

No. 461,270.

Patented Oct. 13, 1891.



Witnesses:
Frank C. Curtis.
J. H. Mosher.

Inventor:
Stephen Palmer,
by *Geo. A. Mosher*
att'y.

UNITED STATES PATENT OFFICE

STEPHEN PALMER, OF LANSINGBURG, NEW YORK.

SASH-CORD GUIDE.

SPECIFICATION forming part of Letters Patent No. 461,270, dated October 13, 1891.

Application filed June 29, 1891. Serial No. 397,758. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN PALMER, a citizen of the United States, residing at Lansingburg, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Sash-Cord Guides, of which the following is a specification.

My invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 is a view in side elevation of my improved sash-cord guide. Fig. 2 is a central cross-section of the same, taken on the broken line 2 2 in Fig. 1. Fig. 3 is a horizontal section of same, taken on the broken line 3 3 in Fig. 1. Figs. 4, 5, 6, and 7 represent in plan view modified forms of the pulley-pin detached.

My improved device comprises a pulley A, revoluble upon the pin A', fixed in the case A². The case is preferably cast in one piece of metal provided with an attaching-flange A³ on the outer or face end, a chamber A⁴, adapted to receive the pulley, and open-ended slots A⁵, one in each side wall of the case. The outer closed ends of the slots form seats for the ends of the pulley-pin, respectively. The slots extend inwardly from their closed ends, opening at the inner end of the case-walls. The case-walls are thickened, so as to present a raised portion B on their outer surfaces, extending from the attaching-flange inwardly along each side of the open slot. A cross-groove B' is formed in the thickened portion of each case-wall, extending transversely of the slot at its closed end, as shown. Such cross-groove forms a shoulder B² in the thickened portion on each side of the respective slots and between the outer closed end and the inner open end of the same. The pulley is provided with the central aperture A⁶, adapted to receive and loosely fit its supporting-pin A'. The pin is preferably provided at each end with a cross-slot C, forming a head C'. The contracted portions of the pin formed by

the cross-slots are adapted to enter the slots formed in the pulley-case walls.

To secure the pulley within its case, the pin is inserted in the central aperture of the pulley, so that the heads of the pin project from each side of the pulley. The pulley is then inserted in its chamber A⁴ within the case to the position shown in Fig. 2, the contracted portions of the pin being inserted in the open ends of the slots and slid to their seats at the closed ends of the slots to the position shown in such figure. The heads of the pin are then upset or forced down into the cross-grooves B', so as to bear against the shoulders B², formed by such grooves, and hold the pins firmly against the closed ends of the case-wall slots. The shoulders C², formed on the body part of the pin by the cross-slots, bear against the inner surfaces of the case-walls and serve to prevent such walls from being forced nearer together or broken when the heads of the pins are forced down into the cross-grooves B', against the shoulders B².

I am thus able to secure the pulley-pin firmly in the pulley-case without drilling holes therefor in the case, as heretofore practiced, the closed ends of the case-wall slots which are formed in the process of casting the case serving as seats for the pin. It is well known that great care is required in the manufacture of these castings to prevent that degree of case-hardening which makes it impossible to drill through the same, also in drilling holes for the pulley-pin through the case walls to secure perfect alignment.

I am able by my improved method not only to save the expense of drilling and loss of castings on account of hardness, but to produce a better and more uniform article, the only necessary treatment of the castings being to form the shoulders B² in the thickened portions of the case-walls, which can be safely and cheaply done by grinding out depressions with an emery-wheel; or such shoulders may be formed in any known manner and the raised portions B dispensed with, an essential and novel feature being the offsetting shoulder formed on the outer surface of the case adapted to be engaged by a portion of the end of the pin when offset or bent against it. The shoulder is so offset or re-

moved from the slot-walls that a pulley-pin
 inserted through the central-pulley aperture
 and the slots will not engage with the shoul-
 der until a portion of the end of the pin has
 5 been offset or bent to one side sufficiently to
 reach the offsetting shoulder. When desired,
 the pin may have a single slot C on one side
 at each end, as shown in Fig. 5, or the pin
 may have its ends contracted in the form of
 10 a tenon with the contracted portions bifur-
 cated, as shown in Fig. 6, the bifurcate por-
 tions being inserted in the case-wall slots in the
 form shown at the upper end in such figure
 and the bifurcate arms D bent over, as shown
 15 at the lower end in such figure, to engage
 with the shoulders B² on the case-walls. The
 pin may also be made cylindrical throughout
 its length, as shown in Fig. 7, the ends being
 headed or bent over to engage with the shoul-
 20 ders B².

What I claim as new, and desire to secure
 by Letters Patent, is—

1. In a sash-cord guide, the combination,
 with a pulley-case having in each of its side
 25 walls a slot closed at one end and open at the
 other end, of an offsetting shoulder on the
 outer surface of each side wall of the case,
 located between the closed and open ends of

the slot, a pulley-pin located in the slots at
 their closed ends, with offsetting portions of 30
 the ends of the pin in engagement with the
 offsetting case-shoulders, and a pulley revol-
 ubly supported by the pin, substantially as
 described.

2. In a sash-cord guide, the combination, 35
 with a pulley-case having in each of its side
 walls a slot closed at one end and open at the
 other end and a cross-groove at the closed
 end of the slot, of a shoulder formed by a
 cross-groove on the outer surface of each side 40
 wall, located between the closed and open
 ends of the slot, a pulley-pin located in the
 slots at their closed ends, with the ends of the
 pin in engagement with the case-shoulders,
 shoulders on the pin, one near each end, in en- 45
 gagement with the inner surfaces of the case-
 walls, respectively, and a pulley revolubly
 supported by the pin, substantially as de-
 scribed.

In testimony whereof I have hereunto set 50
 set my hand this 25th day of June, 1891.

STEPHEN PALMER.

Witnesses:

GEO. A. MOSHER,
 FRANK C. CURTIS.