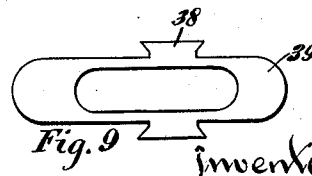
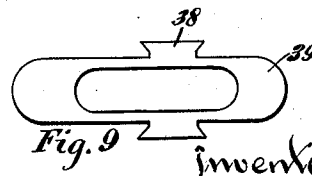
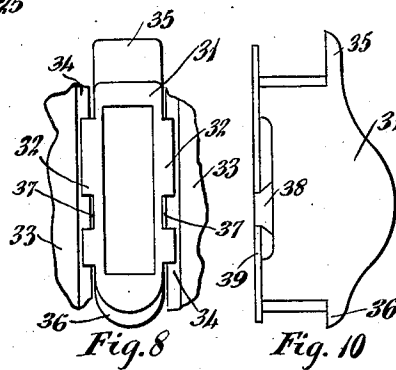
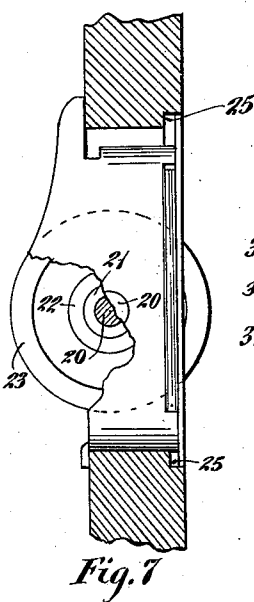
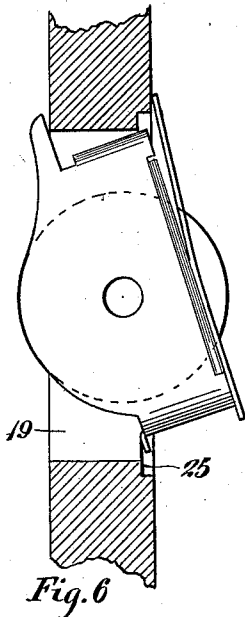
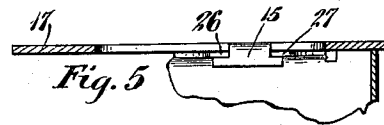
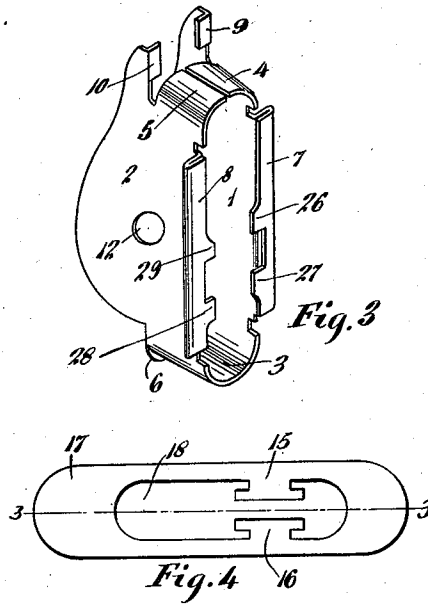
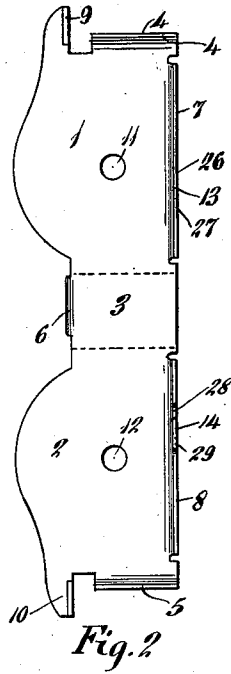
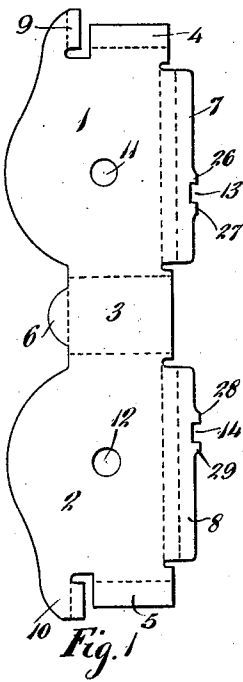


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SASH PULLEY.
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1,029,004.

Patented June 11, 1912.



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SASH-PULLEY.

1,029,004.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed October 14, 1910. Serial No. 587,064.

To all whom it may concern:

Be it known that I, JAMES HALL FOOTE, a citizen of the United States, residing at the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Sash-Pulley, of which the following is a specification.

My improvement relates to sash pulleys, and especially to a type in which the face plate is employed as means for automatically locking the pulley in the frame seat, and the objects of my improvement are to provide a sheave casing that can be routed for with more speed and facility than the forms in general use and will admit of being mounted or dismounted with ease and rapidity in the seat prepared for its reception in the window frame and eliminate the possibility of its accidental dislodgment therefrom, without the use of screws or similar securing devices, by providing the casing with means whereby it may become self securing therein. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:—

Figure 1, is a plan of the blank from which the top, bottom, sides and rigid extensions of the casing are formed. Fig. 2, is a plan of the same blank partially formed. Fig. 3, is a perspective view of the blank after it has gone through the final forming operation. Fig. 4, is a plan of the blank from which the face plate is formed. Fig. 5, is a section on the dotted lines 3—3, of Fig. 4, and a broken out section of the casing, showing the notched tongue as finally bent down and attached to the casing. Fig. 6, shows a vertical section through the frame seat in the pulley stile of a window frame, prepared for its reception, and a side elevation of the casing with face plate attached complete and having a sheave mounted in it, showing the face plate sprung out in the position it assumes when the pulley is beginning to enter the frame seat. Fig. 7, is a similar view showing the pulley finally mounted, with the face plate sprung back against the front of the casing in normal position and wholly within the front edge of the walls of the rout or mortise forming the frame seat. Fig. 8, is an elevation of a part of the pulley stile across the rout forming the frame seat showing the ledge formed by enlarging the inside dimensions of the rout at the front, and a front elevation of my casing in one of its cast forms

and in this instance arranged to receive the attaching members of a sheet metal face plate. Fig. 9, is a plan of the blank from which is formed the face plate. Fig. 10, is a side elevation of a cast casing with the face plate attached.

Similar numerals refer to similar parts throughout the several views.

1 and 2, represent the sides of the casing and parts of the blank from which they are formed, 3, the bottom and part of blank from which it is formed, 4 and 5, the top end parts of the blank from which it is formed, 6, the rear extension at the bottom of the casing and part of the blank forming it, 7, and 8, the extensions at the front of the casing and parts of the blank forming them, 9, and 10, the rear extensions at the upper end of the casing and parts of the blank forming them, 11, and 12, the holes punched for the rivet which supports the sheave and passes through both sides of the casing, 13, and 14, the recessed openings cut for the reception of the notched tongues 15 and 16, of the face plate 17,—18 the central opening formed in the face plate for the passage of the sheave and cord,—19, the rout or mortise forming the seat for the casing in the pulley stile of a window frame, the inside dimensions of which are enlarged for a slight depth at the front,—20, the rivet that passes through the sides of the casing and a sleeve 21, which projects just beyond the edge, on each side of the hub 22, of the sheave—25, the face of the countersunk ledge or offset formed by enlarging the inside diameter of the rout forming the frame seat for the casing—26 and 27, 28 and 29, slight projections forming fingers that embrace the narrow portion of the bent down tongues 15 and 16, of the face plate by passing through the notched out keyways on each side of these tongues.

In forming my sheet metal casing, a blank is first cut as outlined in Fig. 1, with rivet holes punched in it as shown at 11 and 12, this blank is then passed through forming dies that bend down the part 6, at right angles upon the dotted line at its base, bend the forward portions of the parts 9 and 10 up at right angles at the point indicated by dotted lines in each, bend the parts 4 and 5 up on a curve of ninety degrees upon the dotted line at the base of each, and bend parts 7 and 8 down at right angles upon the dotted line at their respective bases and

up again upon the dotted lines midway between their front edges and respective bases and fold them over against themselves, when the blank will be found to have assumed the shape shown in Fig. 2, as a final operation the blank is then placed in a suitable forming die and the portion 3 between the horizontal dotted lines is curved into a half circle which forms the bottom and bends up the sides of the blank parallel to each other and with the rivet holes registering opposite one another into the form shown in Fig. 3, which illustrates my sheave casing complete with the exception of the face plate, in order to form which a blank is cut as outlined in Fig. 4, having a central opening 18, and extending into this opening, tongues 15 and 16, having notches or key-ways cut in their sides; this blank is then placed in a forming die and the tongues 15 and 16 are bent down at right angles so as to assume the position shown in Fig. 5. Having thus formed my casing and face plate, I connect them together by means of the recessed openings with the projecting fingers, above and below them, of the casing and the downwardly or inwardly bent notched tongues of the face plate, by causing them to interlock with each other, as shown in Fig. 5. This may be easily accomplished by placing the face plate upon the front of the casing, entering the notched tongues between the side walls of the casing at a point above the projecting fingers 26 and 29, of the casing and pushing the face plate down toward the bottom of the casing, this action spreads or springs the sides of the casing outwardly enough to let the tongues pass down until the narrow members connecting them to the face plate are opposite the recessed openings 13 and 14, of the casing when the side walls of the casing spring back or are pushed back and the narrow parts of the tongues become embedded in these recessed openings, and the fingers bordering the openings pass into the key-ways cut out of the sides of the tongues of the face plate, thereby causing the face plate and the casing to become interlocked; a sleeve around which the sheave is intended to turn is then passed through the hub, the sheave placed in the casing, a rivet run through one side of the casing, passed on through the sleeve and out on the other side of the casing, when it is riveted up. The sleeve is long enough to extend a fraction beyond the side faces of the sheave, so that in riveting the sides of the casing can be drawn up tight against the ends of the sleeve without interfering with the free revolution of the sheave around it.

From the above description it will be readily understood that after the rivet has been secured in place, the sides of the casing can no longer spread apart and that

therefore the face plate has become permanently attached and an integral part of the casing.

The manner of use, in connection with a window frame constructed of wood, is as follows; a frame seat is routed in the pulley stile with a bit of less diameter, for a short distance back from the point, than that of the shank, so that the seat can be routed with the desired offset at the front, in one operation and without diminishing or increasing the travel of the bit, thus effecting a very large saving in time and labor over the manner of routing for the pulleys in general use, which necessitates two operations involving a long and a short travel for the bit. My pulley is then slipped into the frame seat, as illustrated in Fig. 6, by passing the upper end through the rout so that the upper rear extension of the casing can pass up behind the pulley stile, and slightly springing out the face plate at the upper end so that it can slide up on the front or face of the pulley stile far enough to allow the rear extension at the lower end of the casing to pass back over the bottom of the rout forming the frame seat until it can slip over the edge at the back of the pulley stile and allow the casing to slide down until its bottom comes to a bearing on the bottom of the mortise forming the frame seat, when it reaches this position the upper end of the face plate springs back against the front of the casing again thus automatically embedding itself wholly within the front walls of the rout or mortise and securely locks the pulley in the frame seat, in the position shown in Fig. 7, forward movement being arrested by the upper and lower extensions of the casing which impinge against the rear surface of the supporting framework, backward movement being arrested by the front extensions which impinge against the surface of the ledge or offset 25, at the front, and upward movement being prevented by the face plate which constitutes a strut interposed between the casing and the surrounding framework.

In order to remove the pulley from the frame all that is necessary is to pull out the face plate at the top, raise the pulley up in the mortise until rear extension 6, can pass forward, pull the lower end toward you and lift it out.

While I have shown here a form of sheet metal casing embodying the features of my invention, which broadly stated, result in the production of a sheave casing provided with members so disposed as to constitute in themselves means for detachably securing the casing in the frame seat, it is obvious that the same result could be attained in a variety of ways involving substitutions and changes in material and form as well

as in the number of parts employed, without in the least departing from the spirit or scope of my invention, and I have shown one such variation in Figs. 8, 9, and 10, in which the pulley casing takes the form of a casting 31, a front elevation of which is shown in Fig. 8, with its front extensions 32, resting against the offset 34, in the front of the frame seat in a broken out elevation 33, of a part of the pulley stile across the rout forming it. 35, is the rear extension at the upper end and 36, that at the lower end. 37 indicates openings left in the front extensions 32, for the attaching members 38, of a sheet metal face plate 39, which are dovetailed into them as shown in Fig. 10, which is a side elevation of the casing with the face plate attached. Fig. 9, is a plan of the blank from which this face plate is formed.

An infinite number of other variations, as above stated, can be resorted to, the face plate itself can constitute the front extension of the casing which can be cast with the face plate an integral part of it, or it can be cast with the rear extensions only and a separate face plate forming the front extensions attached, none of which would be in the smallest degree a departure from my invention.

Having clearly described same, I therefore claim broadly,

1. A sash cord pulley embodying a sheave bearing casing having upwardly and downwardly extending projections on its inner side adapted to seat against the inner face of the window framing and laterally extending flanges on its outer side adapted to seat against the outer side of the window framing, said flanges extending upwardly a less distance than the said end projection, whereby the casing may be inserted in the framing in an inclined position and seated by a bodily downward movement with the projections in engagement with the framing.

2. A sash cord pulley embodying a sheave bearing casing having upwardly and downwardly extending end projections on its inner side, the upwardly extending projection being longer than the downwardly extending projection, and laterally extending flanges on front of the casing extending upwardly a less distance than the end projection, whereby the casing may be inserted in an inclined position and seated by a bodily downward movement with the projections and flanges on opposite sides of the window framing.

3. A sash cord pulley embodying a sheave bearing casing having rigid upwardly and downwardly extending end projections integral therewith on its inner side, the upwardly extending projection being longer than the downwardly extending projection and laterally extending flanges on the front

of the casing intermediate the ends of the casing, whereby the casing may be inserted in an inclined position and seated by a bodily downward movement with the projections and flanges against the inner and outer sides of the window framing.

4. A sash cord pulley embodying a sheave bearing casing having rigid projections on its inner side for seating against the inside of the window framing to prevent outward movement of the casing and flanges on the outer side for preventing inward movement of the casing, and a face plate connected with the outer side of the casing and extending laterally beyond the edges of the casing to engage the window framing and holding the casing seated.

5. A sash cord pulley embodying a sheave bearing casing having rigid top and bottom projections on its inner side, and a face plate of resilient material, secured to the casing, at a point remote from one end, whereby the end of said face plate may be sprung away from the casing for inserting the sheave bearing casing in the window framing.

6. A sash cord pulley embodying a sheave bearing casing having rigid window frame engaging projections for preventing both inward and outward movement of the casing, and a resilient face plate secured to the casing at a point remote from one end and adapted to seat in the outer face of the window frame for holding the casing against vertical movement.

7. A sash cord pulley embodying a sheave bearing casing having rigid top and bottom projections on its inner side adapted to seat against the inner face of the window framing, the upper projection being longer than the lower projection, and a resilient face plate secured to the outer side of the casing at a point remote from the end opposite the longer projection, whereby the end of the face plate may be sprung away from the casing to permit of the insertion of the casing in an inclined position.

8. A sash cord pulley embodying a sheave bearing casing having rigid top and bottom projections on its inner side with outwardly directed faces in substantially the same plane and adapted to seat against the inner side of the window framing, and laterally extending flanges on the front of the casing extending upwardly a less distance than the upwardly extending projection, whereby the casing may be inserted in an inclined position and seated by a bodily downward movement in the framing.

9. A sash cord pulley embodying a sheave bearing casing having rigid top and bottom projections on its inner side adapted to seat against the inner face of the window framing, and laterally extending flanges on the front for seating against the outer side of

the window framing, and an outwardly yielding face plate connected with said casing and extending laterally beyond the casing to close the aperture in the window framing and by coöperation with said framing hold the casing against vertical movement.

10 10. A sash cord pulley embodying a sheave bearing casing having top and bottom projections on its inner side adapted to seat against the inner face of the window framing, a resilient face plate, and interlocking projections on the face plate and casing respectively located at a point remote from
15 one end of the face plate whereby the end of the face plate may be sprung away from

the casing to facilitate the insertion of the pulley in its seat in the framing.

11. A sash cord pulley embodying a sheave bearing casing having rigid top and bottom projections on its inner side adapted to seat against the inner face of the window framing, and laterally extending flanges on its front side, the upper ends of said flanges being below the end of the top projection, whereby the casing may be inserted in an inclined position, and a face plate secured to the casing and overlying said lateral flanges.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."