

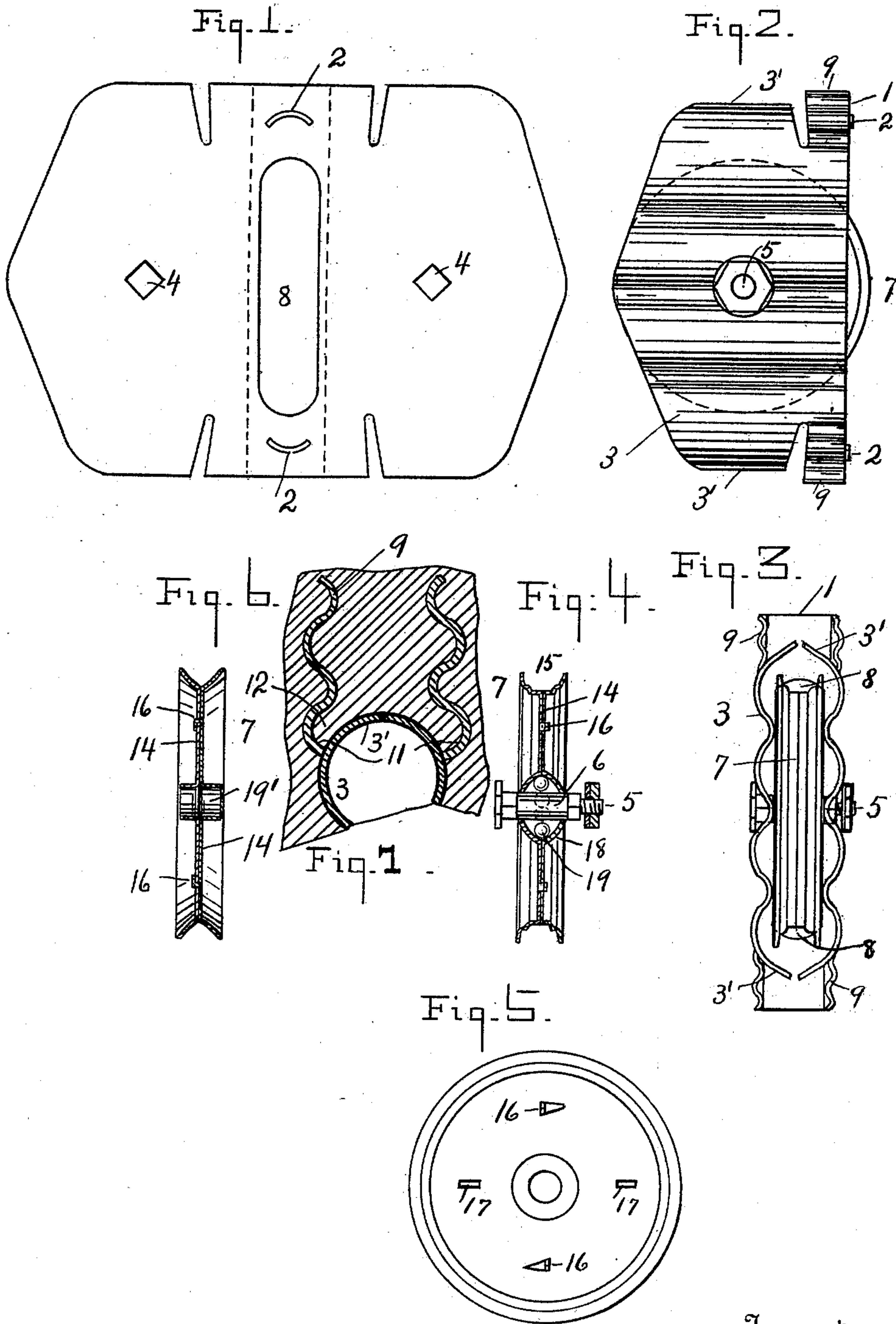
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C. H. OCUMPAUGH.  
SASH PULLEY.

(Application filed Apr. 29, 1897.)

(No Model.)



Witness

C. M. Catlin  
E. A. Jones

Inventor

C. H. Ocumpaugh  
By Ruf. R. Barlow  
Attorney



# UNITED STATES PATENT OFFICE.

CHARLES HERBERT OCUMPAUGH, OF ROCHESTER, NEW YORK.

## SASH-PULLEY.

SPECIFICATION forming part of Letters Patent No. 619,212, dated February 7, 1899.

Application filed April 29, 1897. Serial No. 634,332. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES HERBERT OCUMPAUGH, a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sash-Pulleys; and I do hereby 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 pertains to make and use the same.

The invention relates to sash-pulleys, and has for its objects to increase the strength, durability, and security of the pulley and of its case and to provide for securely attaching the case and also for attaching the pulley chain or cord to the sash and generally to improve the device.

The invention consists in the construction hereinafter described and pointed out.

In the accompanying drawings, Figure 1 is a blank suitable for forming a sash-pulley case. Fig. 2 is a side elevation of a pulley-case and pulley. Fig. 3 is a rear elevation of the same. Fig. 4 is a central section of a pulley suitable for a chain and having ball-bearings. Fig. 5 is a side elevation of a pulley, the sides being similar. Fig. 6 is a similar view of a pulley suitable for a cord, rope, or wire and having a center bearing to fit a pivot. Fig. 7 is an enlarged sectional detail.

Numeral 1 denotes the face of a sheet-steel pulley-case, and 2 are strengthening-ribs for the case, preferably curved as shown.

3 denotes the corrugated sides of the case, having their upper and lower edges 3' bent inwardly above and below the pulley to fit the ends of the case-securing recess.

4 denotes openings for the angular ends of the rivet or shaft 5, which has a cylindrical intermediate part or pivot 6, adapted to support a rotating pulley 7, the edge of which extends slightly through a slot 8 in the face of the case.

9 denotes corrugated spurs, case-securers, or anchors adapted to be forced into the wood at points beyond the ends of the recess that receives the case. This can be bored out, as usual, and the corrugated face fitted therein, as before practiced. The curved end parts 3' of the case will be fitted in the curved ends of said recess by being bent substantially as indicated in Fig. 3, and then further bent or

sprung into the recess. Being made of steel they will help to hold the case in its seat by their pressure in a direction parallel to the face of the case, and they constitute transverse case-retaining springs.

The case-securers or spurs 9, which extend beyond the recess, are driven into the wood and are made corrugated, whereby their tendency to split the wood is decreased, and preferably the first corrugation will be situated near or at the recess, as indicated at 11 in Fig. 7, whereby the metal is turned away or back from the end of the case-recess to leave a thicker angle or edge 12 of wood. This edge is further supported against splitting off by the springs 3'. The corrugations increase the holding power of the securers 9 and the springs 3' cooperate by supporting the edge 12 against said securers. The corrugations, which are much finer than those made in the case sides to fit bit or auger holes, run lengthwise of the spurs and add to their strength to enable them to be driven into wood without bending, and for a similar reason they are made much shorter than the case sides, and the face-plate is also strengthened to provide for driving in the spurs, as will be explained.

The corrugations of the metal are held by those in the wood in such manner as to directly obstruct the removal of the case in an oblique direction, as when one end of the case is pulled outwardly, the other remaining stationary. In such case the end being moved outwardly would have a curved path and its progress would be opposed by the corrugations. Further, these corrugations provide that the securers must be driven into the wood, it being impracticable to make saw-kerfs for them, as practiced heretofore, partly because of the convenience of the method and also because sheet-metal face-plates have proved too weak to endure blows necessary for driving. To remedy this defect, ribs, corrugations, or reinforcements 2 are provided. These not only stiffen the face generally, but protect and strengthen it at points that receive blows necessary to drive the anchors 9 into the wood. A curved form adds to their efficiency both as mere stiffeners and also as heads to receive hammer-blows.

The pulley is made from two similar disks of steel or other suitable metal. These when



stamped or otherwise formed are provided with flat annular parts 14, surrounded by exterior outwardly-curved annular parts 15. The parts 14 of each disk have pins or projections 16, formed by punching out or cutting and bending small pieces of the disk, preferably of triangular form, the base of the triangle being left uncut, whereby it is connected integrally with the disk. The lugs in each disk are bent, part in one direction and part in the other, the disks being duplicates in this and other respects, and the respective lugs 16 and holes 17 being so situated and arranged that each lug can be passed through a corresponding hole and clenched upon the opposite side of a disk.

The described form of disk provides that each may be formed by the same dies.

To provide for the use of a ball-bearing, the central part 18 of each disk is made concavo-convex and of proper dimensions to receive and centrally hold balls 19 around a shaft 5, as shown in Fig. 4. In Fig. 6 a sleeve to receive the shaft is represented as consisting of two tubular parts 19', formed integrally one with each disk.

It is not new to provide a pulley-case with corrugated sides to fit a recess in the wood and provided with corners to cut the wood, and such matter is not claimed. It is characteristic of the present improvement that the securers are corrugated and that the ends of the case are prolonged and bent toward each to constitute expanding linings for the ends of the recess, which serve not only to aid in retaining the case in the recess, but support the wood against any tendency to split when the corrugated case-securers are driven into the wood. These have a sharp penetrating edge adapted to be readily driven into soft or hard wood irrespective of the direction of the grain, and when so driven its abrupt corrugations interlock with the wood and hold it firmly together. The corrugations not only greatly strengthen the securers or spurs, but they greatly increase their holding power in the wood and are themselves more extensively supported and strengthened than were no corrugations used, and, further,

as the corrugations cut the wood on curved lines they are much less liable to split it. An additional advantage of the corrugated form is that the first corrugation next the recess turns the metal away from the edge of the wood, giving to the latter a greater thickness, which advantage is supplemented by the retaining-springs. It should also be noted that the corrugations specially increase the holding power of the securers in the direction of the pull of the sash-cord in addition to the simple increase of friction.

Having described my invention, what I claim is—

1. A sash-pulley case made of a single piece of sheet metal having spurs 9, corrugated at right angles to the face-plate to be driven into wood, the first corrugation entering the wood transverse to the length of the case, said corrugations being adapted to obstruct any oblique movement of the case and also to provide increased friction and to obviate splitting the wood, substantially as described.

2. A sash-pulley case made of a single piece of sheet metal having spurs 9, corrugated at right angles to the face-plate to be driven into wood, the first corrugations entering the wood transverse to the length of the case, said corrugations being adapted to obstruct any oblique movement of the case and also to provide increased friction and to obviate splitting the wood, and a face-plate between the spurs having hammer-receiving and plate-strengthening devices, substantially as described.

3. In a pulley-case, a face-plate having at right angles to its face connected parts adapted to be driven into the wood and provided with stiffening corrugations in its face adjacent said driven parts, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES HERBERT OCUMPAUGH.

Witnesses:

E. C. HEMPFL,  
C. HERBERT CLARK.