(No Model.)

H. BURNHAM.

SPLIT PULLEY.

No. 422,568. Patented Mar. 4, 1890.

Fig 1

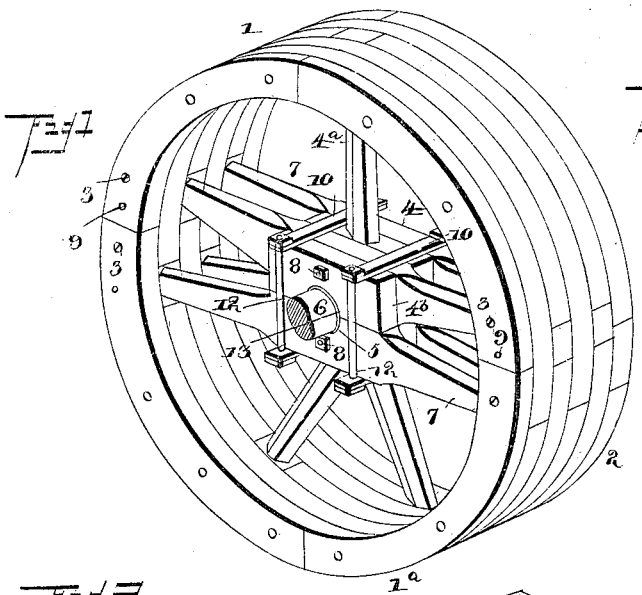


Fig 3

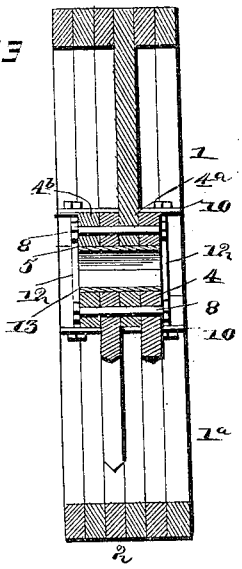


Fig 2

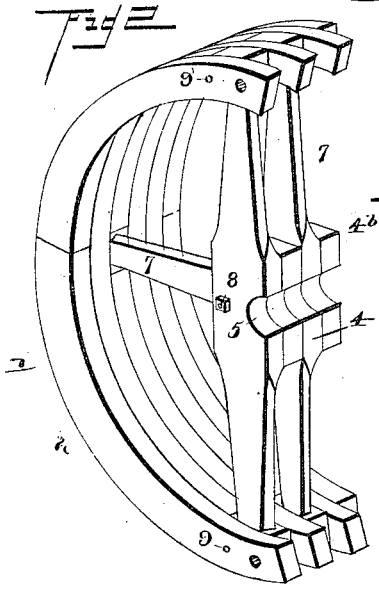


Fig 4

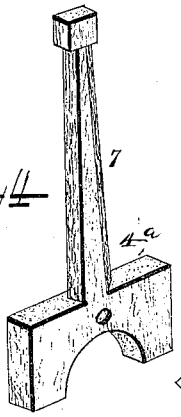


Fig 7

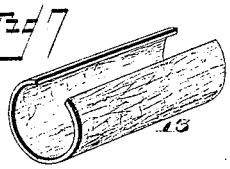


Fig 5

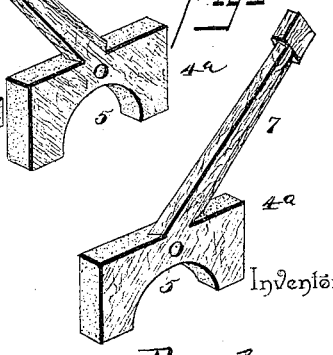
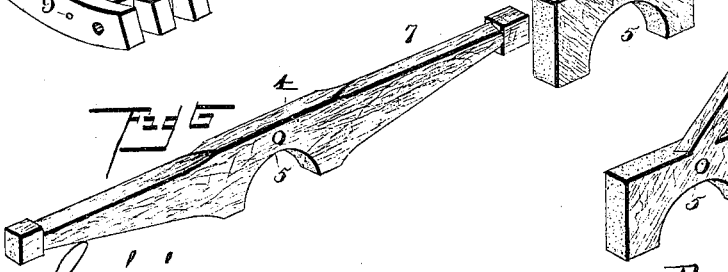


Fig 6



Witnesses

John Smith

Wm. Bagger

By his Attorneys,

C. A. Snow & Co.

Inventor

Hiram Burnham

UNITED STATES PATENT OFFICE.

HIRAM BURNHAM, OF BURNHAMS, NEW YORK.

SPLIT PULLEY.

SPECIFICATION forming part of Letters Patent No. 422,568, dated March 4, 1890.

Application filed October 4, 1889. Serial No. 326,000. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BURNHAM, a citizen of the United States, residing at Burnhams, in the county of Chautauqua and State of New York, have invented a new and useful Split Pulley, of which the following is a specification.

This invention relates to split pulleys, and it has for its objects to provide a split pulley in which the hub as well as the rim and spokes shall be constructed of wood and in a very strong, durable, and economical manner.

The invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of my improved split pulley, showing the same equipped with different kinds of spokes. Fig. 2 is a perspective view showing one half of the pulley separated from the other half. Fig. 3 is a transverse sectional view of the pulley. Figs. 4, 5, and 6 are detail views showing various forms of spokes. Fig. 7 is a detail view of the bent wood bushings.

Like numerals of reference indicate like parts in all the figures.

The halves or sections 1 1^a of my improved split pulley are each composed of layers of segmental or curved strips 2 2, every other one of which projects beyond the ends of the intermediate ones, so as to form lap-joints, thus enabling the meeting ends of the sections 1 1^a to be securely connected by means of transverse bolts 3. The segmental strips 2 2 are to be connected together in any suitable manner by means of bolts, glue, or in any convenient well-known manner.

The hub of the pulley is composed of two series of blocks 4 4^a, as shown in Figs. 1 and 3 of the drawings, which are of a thickness equal to that of the strips 2, of which the sections of the rim are composed. These blocks are provided in their inner or meeting faces with semi-cylindrical recesses 5 to receive the shaft 6. The spokes 7, which are formed integrally with the blocks 4 and 4^a, may extend from the sides of said blocks either radially or obliquely to the rim of the pulley, as shown respectively in Figs. 4 and 5 of the drawings, or a single block may have two spokes extending from its ends to the rim of the pulley, as shown in Fig. 6. It is obvious that in either case the construction should be such that the grain of the wood will run longitudinally through the spokes in order to insure the requisite degree of strength. The spokes are to be formed with sharp or beveled edges, so as to present the least possible resistance to the atmosphere, thus avoiding an objection common to most pulleys which are provided with wooden spokes.

In the make-up of the hubs several blocks without spokes may also, when desired, be employed for the purpose of properly spacing the blocks having the spokes, or for making each semi-hub of the proper width. One such block is shown at 4^b.

The blocks 4 and 4^a, composing each of the semi-hubs, are to be connected by transverse bolts 8, which bind them firmly together. In small pulleys it may be found sufficient to use hubs in which the spokes extend from the ends of the blocks, thus running transversely across the pulley parallel to each other; but in larger pulleys, I propose in addition to these to use spokes extending radially and obliquely from the hub, in order to brace all parts of the circumference of the rim. Specimens of the several types of spokes herein described have been shown in Figs. 1 and 2 of the drawings.

For the reception of the outer ends of the spokes, which are made of a thickness equal to that of the strips 2, composing the rim, the said strips are arranged with sufficient spaces between their meeting ends to accommodate the ends of the spokes. The latter are then firmly secured in the rim by means of bolts, pins, or plugs 9 extending transversely through the latter.

Adjacent to the outer sides of the blocks composing the semi-hubs, and transversely across the latter, are placed plates or clips 10, having perforated ends to receive the bolts 12, which serve, in addition to the bolts 3, to connect the sections 1 and 1^a of the pulley together, but more especially to clamp the pulley tightly upon the shaft 6 in position for operations. To fit the pulley upon the shaft, in case the latter is of too small diam-

eter to fit the recesses 5 in the hub-sections, I interpose bushings 13 of bent wood or veneer, which may be cut very thin or of any desired thickness, and which are sufficiently flexible to be very easily and accurately fitted, and which, moreover, have the very important advantage of being sufficiently elastic to bind very firmly upon the shaft, thereby enabling the pulley to be very easily mounted with sufficient rigidity to prevent it from slipping.

The operation of my invention and its advantages will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. My improved split pulley is very simple and inexpensive in construction, and at the same time it will be found to possess the important qualities of strength, lightness, and durability in a very extraordinary degree. This I consider due to the fact that the spokes are made integrally with the hub, whereby joints are avoided which are easily strained and put out of shape, the strain in my improved pulley being direct from the shaft to the rim. I also avoid the use of castings, which are not only easily broken, but which tend to injure the wooden parts with which they come in contact, and with the sole exception of bolts and clip-plates my improved pulley is manufactured wholly of wood. The clip-plates are used to avoid piercing, and thus weakening the wood.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a split pulley, the blocks composing the semi-hubs, said blocks being arranged in layers and having spokes formed integrally therewith and extending from their ends and radially and obliquely from their sides with the grain of the wood running longitudinally through said spokes, substantially as and for the purpose set forth.

2. In a split pulley, the blocks composing the semi-hubs, said blocks being arranged in layers and having spokes formed integrally therewith and extending from their ends and radially and obliquely from their sides with the grain of the wood running longitudinally through said spokes, in combination with the rim composed of segmental strips of wood of equal thickness to the blocks composing the hubs and spokes, the ends of said spokes being fitted and secured between the meeting ends of the strips forming the rim, substantially as set forth.

3. A split pulley comprising the rim-sections composed of segmental strips having lap-jointed meeting ends connected by transverse bolts, the semi-hubs composed of layers of wooden blocks connected by transverse bolts and having semi-cylindrical recesses in their meeting faces, the spokes formed integrally with said blocks and having their outer ends fitted between the meeting ends of the strips forming the rim-sections, the clip-plates arranged adjacent to the outer sides of the blocks forming the hub-sections transversely across the latter, and the connecting-bolts, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HIRAM BURNHAM.

Witnesses:
THOMAS CRANE,
E. J. BADGER.