W. J. LEE.

COTTER PIN RETAINER.

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1,368,989.

Patented Feb. 15, 1921.

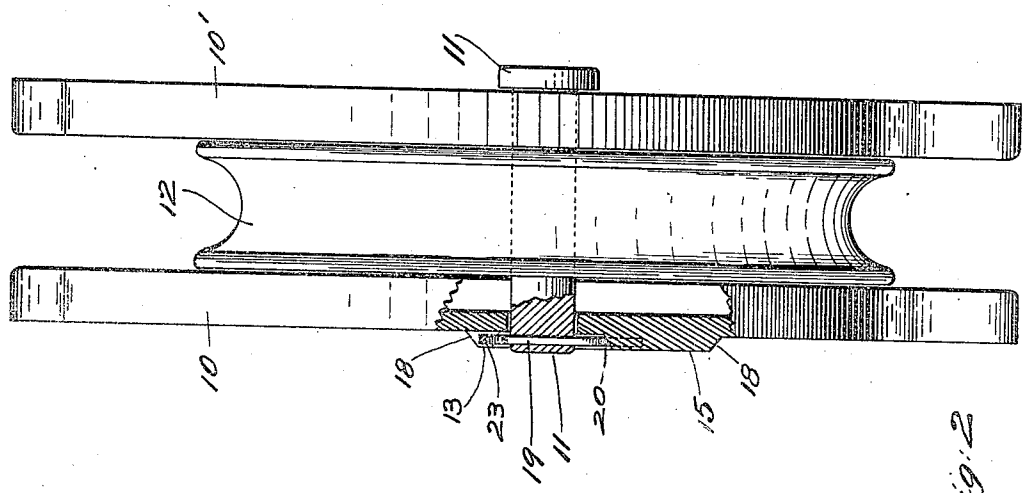


Fig. 2

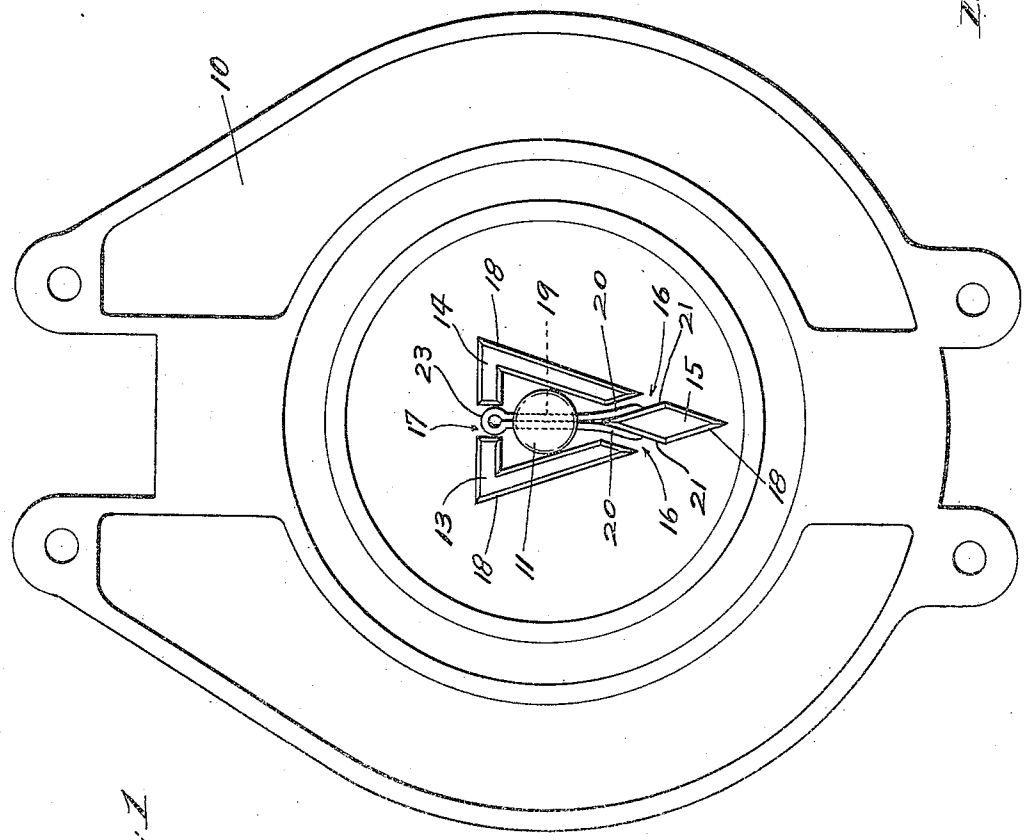


Fig. 1

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COTTER-PIN RETAINER.

1,368,989. Specification of Letters Patent. Patented Feb. 15, 1921.

Application filed June 21, 1920. Serial No. 390,628.

To all whom it may concern:

Be it known that I, WILLIAM J. LEE, a citizen of the United States, residing at the city of Easton, county of Northampton, and State of Pennsylvania, have invented a certain new and useful Cotter-Pin Retainer, of which the following is a specification.

This invention, generally stated, relates to pulley-blocks and has more especial relation to means for maintaining a cotter-pin in proper relation with respect to a sheave-pin.

Heretofore it has been customary in pulley-blocks employing a cotter-pin for sheave-pin retention, to utilize check-pins, check-washers and the like. In order to use a check-pin it is necessary to drill a sheave-pin prior to its insertion within a pulley-block. When check-washers are employed it is necessary to carry the same in stock the disadvantage of which is apparent. In each instance an additional operation is called for thus increasing the cost of manufacturing a pulley-block.

The primary object of the present invention is to do away with the aforesaid practice of manufacture and provide cotter-pin retaining means for pulley-blocks in which no additional operation is required for effecting the retention of a cotter-pin and in which the cost of installation of such means is negligible. A further object is to provide cotter-pin retention means in which a sheave-pin is maintained against rotary movement as well as against relative endwise shifting and in which the cotter is held against movement in any direction. With these and other objects in view the invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which:

Figure 1, is a view in side elevation of a pulley-block provided with cotter-pin retaining means embodying features of the invention and

Fig. 2, is an end view thereof partly in section.

For the purpose of illustrating my invention I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the drawings 10—10′ designates the shell of a pulley-block which may be of any desired type, and 11 designates a conventional sheave-pin upon which is mounted a sheave 12. The shell part 10 is apertured to receive an end of the sheave-pin. Surrounding the sheave-pin opening is a boss of the general configuration of an inverted triangle. This boss is made up of a plurality of spaced parts 13, 14 and 15. The parts 13 and 14 are reversely disposed and are 7-shaped. The diamond-shaped part 15 is so spaced below the parts 13 and 14 that guide-ways 16 are present between the adjacent rims thereof. The space between the adjacent ends of the 7-shaped parts forms a guide way 17. In practice the above described boss is formed integral with the shell of a pulley-block although obviously this is not essential and the parts 13, 14 and 15 may comprise separate pieces suitably secured to the pulley block, for instance by screws. The parts 13, 14 and 15 are shown as being beveled at 18 in order to provide a finished appearance, although this is not essential. In practice, with a sheave and sheave-pin in proper position, a cotter-pin 19 is driven through the usual opening in the sheave-pin. As the legs 20 of the cotter-pin come in contact with the upper rims 21 of the diamond-shaped part 15 said legs are spread apart, the diverging ends entering the guide-ways 16. The head 23 of the cotter-pin has entered the guide-way 17 during this operation. By such practice the cotter-pin is locked to place by the mere application of sufficient force to drive the same through the sheave-pin. As the head and spread legs of the cotter-pin are both held in guide-ways and the cotter-pin cannot move in any direction and the sheave-pin is not only held-relatively, against endwise movement but is held against movement around its axis when a sheave is operating, the advantage of which is readily apparent.

While the above description, for illustrative purposes, has been restricted to a pulley-block, to which the cotter-pin retainer is admirably adapted, obviously the latter is applicable to other devices in which cotter-pins are employed.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

What I claim is:—

In a pulley-block construction the combination of a shell having a sheave-pin opening therethrough, a boss upon the outer face of said shell and surrounding said opening said boss being cut away flush with the said face of the shell to receive the head of a cotter-pin and being further cut away flush with the face of said shell to receive and spread the legs of a cotter-pin, said boss as thus cut away forming a diamond-shaped portion below said opening and forming oppositely disposed 7-shaped portions upon opposite sides of said opening, the said portions forming an inverted-tri-angular-shaped boss, a sheave-pin, and a cotter-pin passing through said sheave-pin said cotter-pin lying wholly within the confines of said boss.

In testimony whereof I have hereunto signed my name.

WILLIAM J. LEE.