Sept. 26, 1944. J. H. FLYNN 2,359,026

PULLEY BLOCK

Filed March 30, 1942

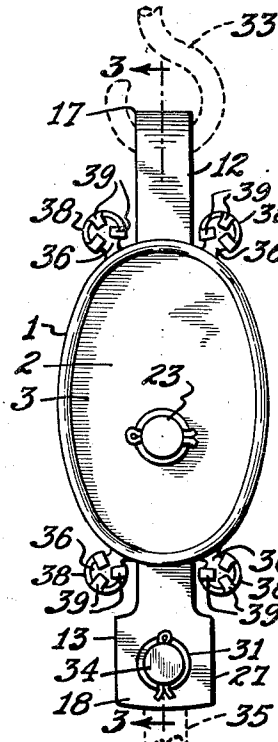

FIG. 1.

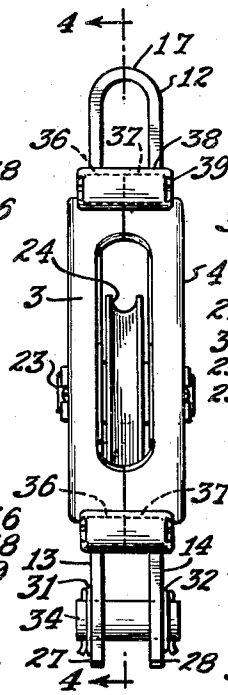

FIG. 2.

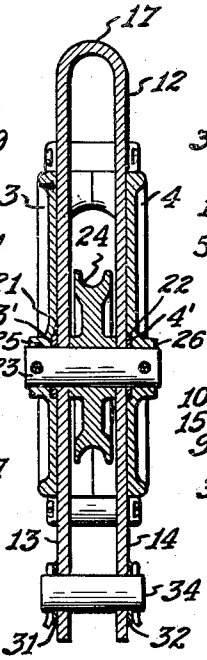

FIG. 3.

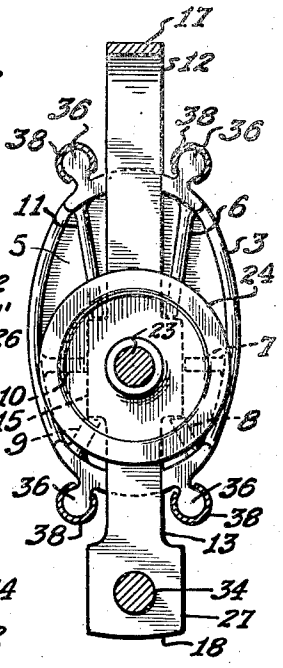

FIG. 4.

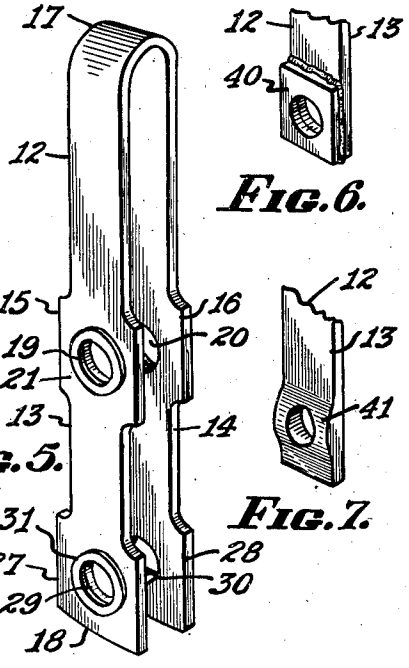

FIG. 5.

FIG. 7.

FIG. 6.

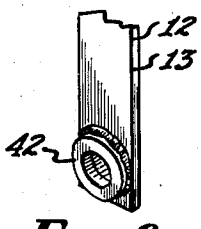

FIG. 8.

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PULLEY BLOCK

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3 Claims. (Cl. 254—192)

The invention relates particularly to the strap of pulley blocks utilized in ships' riggings, blocks and tackles, and the like.

Great hazards are presented when, in the operation of lifting heavy weights, the strap of a pulley block breaks and allows the weight to fall from the pulley block. The said strap is received through the block and usually has fixed to its upper end a hook, and to its lower end a becket which comprises a bolt received through holes in the lower ends of the strap and supporting a thimble. In the ordinary type of pulley blocks, the hook which is fixed to the upper end of the strap may be considerably stronger than the lower end of the strap whereby, although the hook will not break, the thimble and bolt received in the holes in the lower ends of the legs of the strap, or the spindle carrying the pulley wheel, may break away the metal at the location of the holes thereby permitting the load to separate from the pulley block and accidentally fall.

Therefore, an important object of the invention is to provide a simple, and practical pulley block having efficient means to reinforce the branches or legs of the pulley strap at the locations which carry the pulley wheel spindle, the bolt and thimble and which support the weight being lifted.

The invention consists in the combination of the elements, arrangement of parts and in the details of the construction and particularly the structure which increases the normal strength of a pulley block strap, as hereinafter claimed.

In the drawing:

Fig. 1 is a side elevational view of a pulley block of the single sheave type;

Fig. 2 is an end elevational view of the same;

Fig. 3 is a section taken on line 3—3 in Fig. 1;

Fig. 4 is a section taken on line 4—4 in Fig. 2;

Fig. 5 is a perspective view of a strap utilized in the pulley block of the single sheave type;

Fig. 6 is a perspective view of a modification of the invention with parts broken away;

Fig. 7 is a perspective view of another modification of the invention with parts broken away; and

Fig. 8 is a perspective view of another modification of the invention with parts broken away.

The preferred construction of the invention is exemplified in combination with the pulley block 1 which has a block body 2 formed from a strong suitable material such as aluminum, iron, steel, Bakelite, fibre and the like, or may be stamped from metal or other suitable material.

The body 2 comprises the cheeks 3 and 4 each of which is formed similar to the other and has a hollow inner side 5 on the inner side of which are the ribs 6, 7, 8, 9, 10 and 11.

Received between the cheeks 3 and 4 is the U-shaped strap 12 having the downwardly extending legs or branches 13 and 14 having the lugs or ears 15 and 16 formed thereon intermediate the upper curved end 17 and lower end 18 of the strap. In the ears are the holes 19 and 20 around which are the washers 21 and 22, welded to the outside of the legs 13 and 14 and being received in the recesses 3' and 4' in the shells 3 and 4.

The spindle 23, on which the pulley wheel 24 is rotatably mounted, is received in the holes 19 and 20, and through the washers 21 and 22 and through the holes 25 and 26 in the shells 3 and 4.

At the lower ends of the legs 13 and 14 are the lugs or ears 27 and 28. The holes 29 and 30 are in the lugs and the washers 31 and 32 are welded to the outer sides of the legs. The ears 15 and 16 are positioned between the inner ends of the ribs 6, 7, 8, 9, 10 and 11 which tends to retain the ears in fixed position with respect to the shells 3 and 4. Also, the washers 21 and 22 are in the recesses 3' and 4' in the inner sides of the shells.

A hook 33 is located in the loop at the upper end of the strap 12. A bolt 34 is received in the holes 29 and 30, of the strap 12 and supports a thimble 35.

Formed on the upper and lower ends of the shells 3 and 4 are the lugs 36 and 37 over which are received the sleeves 38 which have the fingers 39 bent in contact with the outer ends of the lugs whereby the shells 3 and 4 are retained in fixed relation with each other, and the washers 21 and 22 are retained in the recesses 3' and 4'.

In Figs. 6, 7 and 8 are shown modifications of the invention in the form of reinforcements to the lower ends of the legs 13 and 14.

In Fig. 6 the reinforcing rectangular washers 40 are welded to the outer sides of the lower ends of the legs 13 and 14 for the purpose of increasing the normal strength of the lower portions of the legs 13 and 14 which has the bolt 34 and thimble 35 therein for support alone.

In Fig. 7 is shown a protrusion 41 which is integrally formed on the outer side of each of the legs 13 and 14 of the strap. And in Fig. 8 is shown a circular washer 42 which is welded to the outer side of each leg 13 and 14 of the strap 12.

An advantage of the invention is that the lugs 27 and 28, and the washers 31 and 32 shown in

Figs. 1 to 5 inclusive reinforce the lower ends of the legs 13 and 14 of the strap 12, and the washer 40, shown in Fig. 6, the protrusion 41 shown in Fig. 7, and the washer shown in Fig. 8 also reinforces the lower ends of the legs of the strap, whereby the bolt 34 and thimble 35 is enabled with safety to carry a much greater load than where the bolt 34 and thimble 35 is carried in the usual holes made in the lower ends of the legs of the straps without compensating for the lost strength resulting from making holes in the metal.

Another advantage of the invention is that the washers 21 and 22 are received in the recesses 3' and 4' in the shells 3 and 4, and also the lugs 15 and 16 are in contact with the inner ends of the ribs 6, 7, 8, 9, 10 and 11, whereby the strap is retained in fixed position notwithstanding unusual or excessive strain of a load on the bolt 34 and thimble 35.

It is understood that changes and modifications in the embodiment of the invention, such as its size, the materials used and the like, as disclosed herein, can be made within the scope of what is claimed without departing from the spirit of the invention, as other expedients may readily suggest themselves to persons familiar in the art to which the invention appertains.

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

1. A pulley block construction consisting of a body and comprising a pair of shells and a substantially U-shaped metal strap having legs having lugs extending from the side edges thereof at the lower ends thereof, said legs having holes therein adjacent said lugs, said legs having lugs extending from the side edges thereof intermediate their upper and lower ends and being positioned between said shells, ribs formed on the inner surfaces of said shells, the last mentioned lugs being positioned between said ribs for the purpose of retaining said strap in fixed position with respect to said shells, each of said shells having recesses in its inner side, each of said legs having projections received in said recesses, said ribs and said projections being adapted to retain said strap in a predetermined position, means to retain said shells and said strap in fixed relation with one another, and means received through said holes in said legs of said strap to support weight.

2. A pulley block construction consisting of a body and comprising a pair of shells and a substantially U-shaped strap having legs having lugs extending from the side edges thereof, said legs having holes therein adjacent said lugs, and being positioned between said shells, ribs formed on the inner surfaces of said shells, said lugs being positioned between said ribs for the purpose of retaining said strap in fixed position with respect to said shells, each of said shells having recesses in its inner side, each of said legs having projections received in said recesses, said ribs and said projections being adapted to retain said strap in a predetermined position, means to retain said shells and said strap in fixed relation with one another, and means received through said holes in said legs of said strap to support weight.

3. A pulley block construction consisting of a body and comprising a pair of shells and a strap having legs having lugs extending from the side edges thereof, and holes in the legs adjacent the lugs, and being positioned between said shells, ribs formed on the inner surfaces of said shells, said lugs being positioned between said ribs for the purpose of retaining said strap in fixed position with respect to said shells, each of said shells having recesses in its inner side, each of said legs having projections received in said recesses, said ribs and said projections being adapted to retain said strap in a predetermined position, means to retain said shells and said strap in fixed relation with one another, and means received through said holes in said legs of said strap to support weight.

JOHN H. FLYNN.