Aug. 1, 1950 P. VAN H. SERRELL 2,517,249

COMBINED FRONT AND SIDE SHACKLE BLOCK

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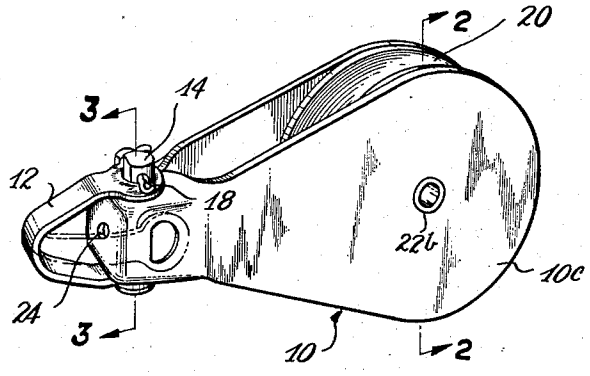


Fig. 1

Fig. 6

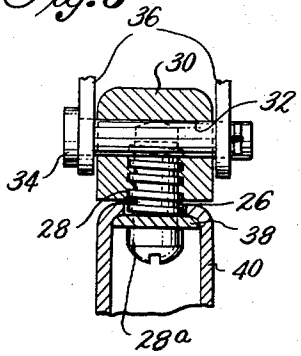
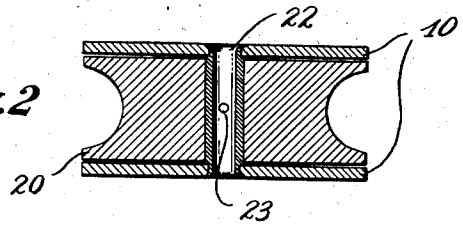


Fig. 2



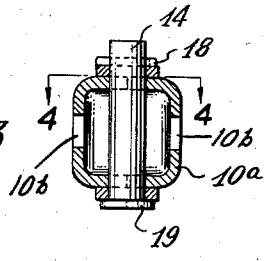


Fig. 3

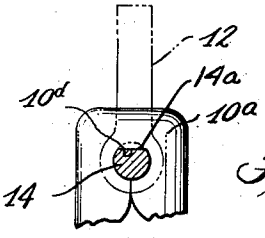


Fig. 4

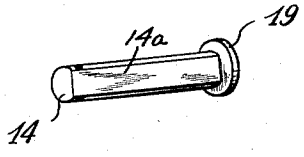


Fig. 5

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COMBINED FRONT AND SIDE SHACKLE BLOCK

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5 Claims. (Cl. 254—195)

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My invention relates to blocks used in hoisting tackle and particularly to blocks fitted with shackles, enabling it to be mounted with the sheave either in line with a hook or eye to which the block is secured, or traversely thereto, by arranging the holes for the shackle pin at right angles through the end of the side plates or shell of the block. The described construction has the advantage over a swivel block that the line running through the block cannot become fouled by twisting of the block as may happen when using new line, while enabling the sheave in the block to be arranged in the direction of travel of the line.

Blocks of the type described are available in which the holes for the shackle pin are provided in a tang or solid piece of metal positioned between side plates forming the shell of the block, thus adding to the weight of the block and to the number of parts of which it is comprised with consequent increase in cost of manufacture.

It is an object of this invention to provide a shackle block comprising a minimum of parts while maintaining the flexibility of installation of the type of shackle block referred to.

It is a further object of the invention to provide a shackle block which may be manufactured in a minimum number of operations, but which produces a block of a high degree of accuracy of the parts.

It is yet another object of the invention to provide a shackle block of the type described, of lighter weight for the same load carrying capacity than has hitherto been attained.

Another object of the invention is to provide a process of producing shackle blocks in a minimum number of operations but with a better utilization of material than has been heretofore possible.

Under certain conditions a swivel block is of advantage and accordingly a further object of the invention is to provide a swivel block utilizing the one piece shell construction previously referred to with supplementary parts of simple yet rugged construction.

The invention is illustrated in the accompanying drawings in a form at present deemed preferable by me.

In the drawings:

Fig. 1 is a perspective view showing the tackle block of my invention, and

Fig. 2 is a section of the line 2—2 on Fig. 1;

Fig. 3 is a section on the line 3—3 on Fig. 1;

Fig. 4 is a section on the line 4—4 on Fig. 3;

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Fig. 5 is a perspective view of the shackle pin drawn to a larger scale, and

Fig. 6 is a fragmentary section through the head portion of the block, showing a modification thereof providing a swivel block.

In the drawings, the numeral 10 indicates a one piece shell formed integrally with a rectangular head section 10*a*, which is provided with aligning holes 10*b* formed in opposite sides. In order to secure a straight transfer of force between the shackle 12 and shackle pin 14 placed in the holes and the sheave 20 supported in the side plates 10*c* of the shell, a pair of walls of the head section 10*a* are arranged to lie substantially in the plane of the corresponding side plate 10*c*.

The shackle 12 is mounted on the ends of the pin 14 projecting from the side of the head portions of the block. The provision of holes in sides of the head at right angles to one another enables the block to be aligned with the direction of the line running through the block without necessitating the use of a swivel and the attendant danger of the line becoming fouled by twisting together as may happen when using a new line.

In Figs. 4 and 5, a construction is shown which may be utilized should the block be intended for heavy loads, in which case the sheet material, of which the shell is formed, might wear around the holes in which the shackle pin is arranged, in view of the heavy loads imposed at this point. As shown in Fig. 4, the holes may be punched or broached to provide a flat 10*d*, and the shackle pin 14 is ground on one side to a corresponding flat contour 14*a*. The shackle pin is thus prevented from rotating in the hole, but sufficient cylindrical surface is left at the end of the pin to afford an adequate bearing surface for the shackle 12 which is preferably of heavier material than the shell of the block, thus wear on the edges of the hole is avoided, and is taken by the heavier metal of the shackle and pin. The shackle pin may be retained in position by a cotter pin 18 positioned in a hole drilled in through the ends of the pin, or as shown in Fig. 5, the pin may be provided with a head at one end.

The sheave 20 may be positioned by placing the pivot pin 22 in position therein and bringing the side plates apart sufficiently to enable the pin to be positioned in holes drilled to receive the ends of the pin. The side plates may then be brought into parallelism and the ends of the pin riveted or spread into secure engagement with the side plates as indicated at 22*b*. In all forms

of the block I prefer to drill the sheave pin axially as indicated at **23** to provide for lubrication of the sheave which turns on the pin, a radial hole being drilled through the pin on the low pressure side to lead lubricant to the bearing of the sheave on the pin.

The shell of the block and the head portion are perfectly formed from a single piece of metal blanked to the proper shape and the head formed by a drawing operation.

It is to be noted that the form of the head provides a very rigid member, in the form of an open sided box, the walls being held in properly spaced relation by the top wall, which is integral with the walls forming the side plates and with the walls extending at right angles to the side plates of the block.

In Fig. 6 the locating hole **24** shown in Fig. 1 is reamed out as indicated at **26** to receive a screw **28** which is threaded into a block of metal or swivel base **30**. A hole **32** is drilled through the block for a clevis pin **34**, the hole being drilled to intersect the screw **28** threaded into the block and thus the screw is securely held against loosening in the block when the clevis pin **34** is inserted in bore **32**.

A yoke **36** is mounted on the clevis pin **34** in a similar manner to that described with reference to the form of the invention shown in Fig. 1.

Preferably a wear plate **38** is interposed between the head **28***a* of the screw and the head portion **40** of the block shell.

While I have described and illustrated preferred forms of the invention, it is to be understood that various changes and modifications may be effected by those skilled in the art without departing from the scope of the invention as indicated by the attached claims.

I claim:

1. A tackle block comprising in combination an integral shell formed to provide parallel side plates and a head of rectangular cross-section joining said plates at corresponding ends thereof, a pivot pin mounted on said plates, a sheave borne by said pin between said plates, said head having formed therethrough pairs of relatively right angularly related clevis pin receiving apertures and a clevis pin selectively mounted in one pair of said apertures, and a shackle carried by said clevis pin.

2. A tackle block as set forth in claim 1, in which the head is formed by the right angular bending of the side plates so as to form a four sided boxlike enclosure in which the apertures are formed.

3. A tackle block comprising in combination a single, integral stamping formed to provide a pair of spaced parallel side plates and a four sided boxlike head, two parallel sides of which are formed by the abutment of inturned portions of said side plates, clevis pin apertures formed in said head, a sheave pin borne by said side plates and a sheave mounted on said sheave pin and enclosed by said plates.

4. A tackle block as set forth in claim 3 in which the clevis pin apertures are formed by indentures in the abutting inturned edges of said side plates.

5. A tackle block comprising: a shell formed of an integral piece of sheet metal and having correspondingly formed spaced side plates and a head bent from and connecting said side plates with spaced sides and a connecting end web and also bent to provide opposite side portions for closing the spaces between said sides of the head, and a sheave rotatably mounted between said side plates and a clevis selectively pivotally secured to said head on an axis parallel with or at right angles to the axis of said sheave.

PETER VAN HORNE SERRELL.

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