

Aug. 14, 1945.

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2,382,449

SNATCH BLOCK

Filed April 3, 1944

2 Sheets-Sheet 1

FIG. 5.

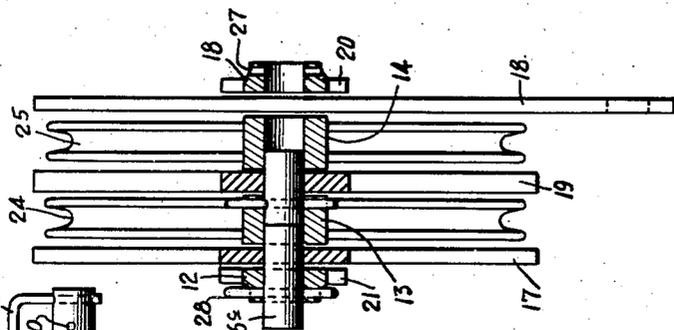


FIG. 2.

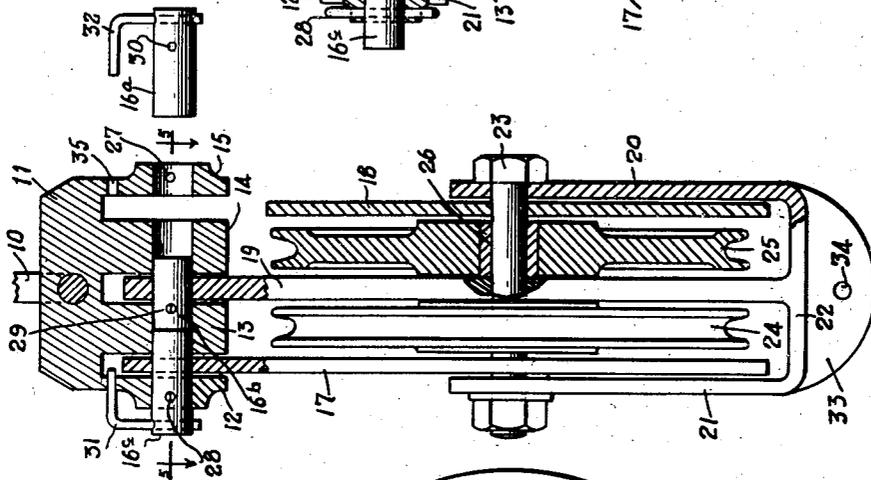
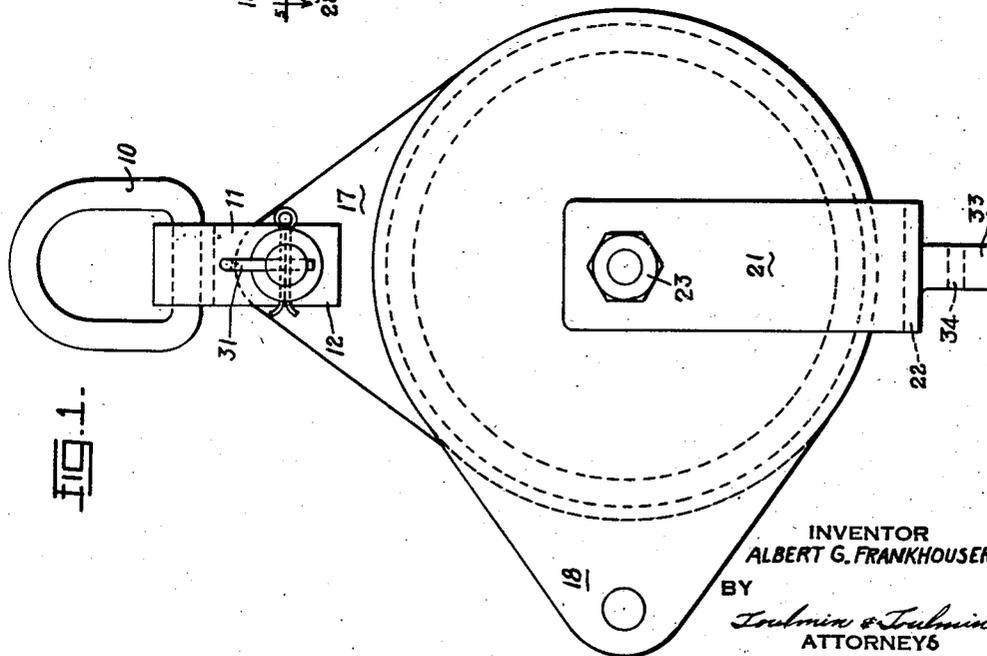


FIG. 1.



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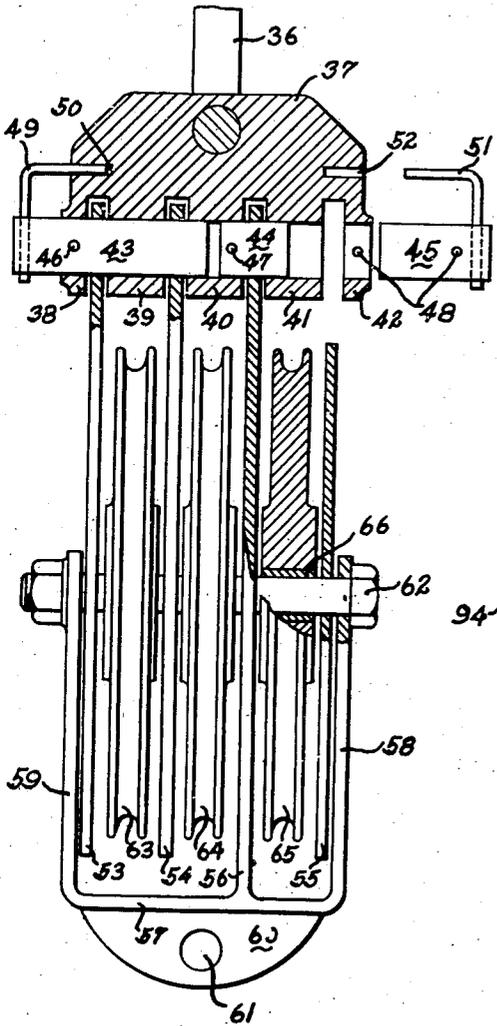
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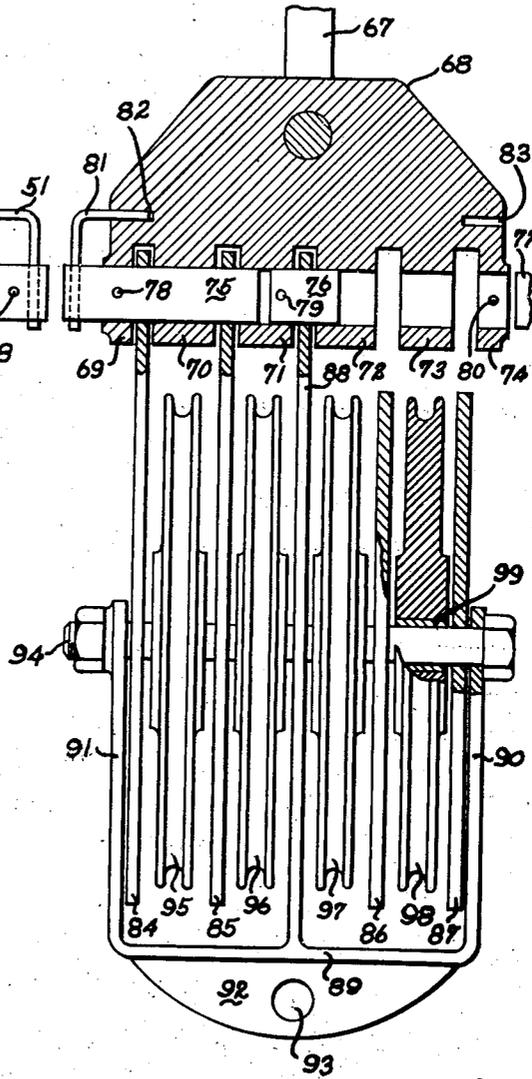
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2 Sheets-Sheet 2

**FIG. 3**



**FIG. 4**



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# UNITED STATES PATENT OFFICE

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## SNATCH BLOCK

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Application April 3, 1944, Serial No. 529,329

6 Claims. (Cl. 254—193)

This invention relates to snatch block, and more particularly deals with an improved type of snatch block wherein one or more ropes or cables may be replaced by opening the block while under full load.

The present invention will be fully understood from the following description taken in connection with the annexed drawings wherein:

Fig. 1 is a side elevational view of the block of the present invention with one side plate lowered to give access to a sheave.

Fig. 2 is an end elevational view, partly in cross-section, of the block of Fig. 1.

Fig. 3 is an end elevational view, partly in cross-section, of a block similar to that of Fig. 2 but provided with three sheaves or pulleys.

Fig. 4 is an end elevational view, partly in cross-section, of a block similar to that of Fig. 2 and Fig. 3 but provided with four sheaves or pulleys; and,

Fig. 5 is a view taken along the line 5—5 of Fig. 2.

Referring now to the drawings, and more particularly to Fig. 1, 10 is a top ring attached to a hanger 11. As will be noted from Fig. 2, the hanger 11 comprises a fork having four prongs denominated 12, 13, 14 and 15. It will be noted that a three-piece insert comprising the pieces 16a, 16b and 16c is positioned across said prongs 12, 13, 14 and 15 in an opening provided therefor. In Fig. 2 the piece 16a of the insert is shown withdrawn from the opening where it fits.

The block of Fig. 1 and Fig. 2 further comprises side plates 17 and 18 and a center plate 19 which with portions or arms 20, 21 and 22 forms a trident or shell. The upper portion of the dividing plate 19 is suspended from the prongs 13 and 14 of the hanger 11 by the piece 16b of the insert positioned in said hanger, and the lower portion of the dividing plate 19 is joined with the portion 22 which is itself joined with the portions 20 and 21 which are suspended from a bolt 23. The bolt 23 acts as a bearing for the sheaves 24 and 25. As will be noted from the sheave 25 which is shown in cross-section, each sheave is provided with a bushing 26 which acts as a bearing surface.

The prongs 12, 13 and 15 are provided with an opening shown as 27 adapted to receive a cotter pin such as shown as 28 in the insert piece 16c and as 29 in the insert piece 16b. Each of the insert pieces 16a, 16b and 16c is provided with an opening shown as 30 in insert piece 16a which is in register with the opening 27 in the corresponding prong of the hanger 11. The in-

sert piece 16c is provided with a pin 31 and the insert piece 16a is provided with a pin 32 adapted to be used as a handle for removing the respective insert piece from the corresponding prong of the hanger 11 when it is desired to do so and after removal of the cotter pin passing through the corresponding prong and insert piece. Attached to the portions 20, 21 and 22, and forming an integral part thereof, is an ear 33 provided with an opening 34 adapted for suspending or guying the block. The pin 32 is adapted to fit into the opening 35, and the pin 31 is adapted to fit in a similar opening in the prong 12.

Referring now to Fig. 3, 36 is a ring attached to a hanger 37 which comprises a plurality of prongs 38, 39, 40, 41 and 42. The prongs 38, 39, 40, 41 and 42 are drilled in alignment to receive an insert comprising the insert pieces 43, 44, 45. The insert portion 43 is held in position with respect to the prong 38 by a cotter pin passing through the opening 46, the insert portion 44 is held in position with respect to the prong 40 by a cotter pin passing through the opening 47 and the insert piece 45 is held in position with respect to the prong 42 by a cotter pin passing through the opening 48. The insert piece 43 is provided with a pin 49 adapted to fit into an opening 50 on the hanger 37, and the insert portion 45 is provided with a pin 51 adapted to fit into the opening 52 on the hanger 37.

The end plate 53 and the dividing plate 54 are suspended from the insert piece 43, and the side plate 55 is suspended from the insert piece 45. The dividing plate 56 is suspended from the insert piece 44 which in turn is suspended from the prongs 40 and 41 of the hanger 37. The dividing plate 56 joins a portion 57 having side members 58 and 59 and an ear portion 60 provided with an opening 61. The side members 58 and 59 are united by a bearing bolt 62 on which the sheaves 63, 64 and 65 are mounted and adapted to rotate. As will be noted from the sheave 65 which is shown partly in cross-section, the sheaves are provided with a bushing 66 which acts as a bearing surface.

Referring now to Fig. 4, 67 is a ring attached to a hanger 68 provided with a plurality of prongs 69, 70, 71, 72, 73 and 74. The prongs 69, 70, 71, 72, 73 and 74 are drilled in alignment and are adapted to receive an insert comprising insert pieces 75, 76 and 77. The insert piece 75 is provided with an opening 78 juxtapositioned with a similar opening in the prong 69 adapted to receive a cotter pin, the insert piece 76 is

provided with an opening 79 juxtapositioned with a similar opening on the prong 71 adapted to receive a cotter pin, and the prong 74 is provided with an opening 80 juxtapositioned with a similar opening (not shown) on the insert piece 77 adapted to receive a cotter pin.

The insert piece 75 is provided with a pin 81 adapted to fit into an opening 82 on the hanger 68, and the insert piece 77 is likewise provided with a pin (not shown) adapted to fit into the opening 83 in the hanger 68. The pin 81 in the insert piece 75 and the corresponding pin (not shown) in the insert piece 77 are adapted for use as a handle in removing the corresponding insert pieces when it is desired to do so.

The side plate 84 and the dividing plate 85 are suspended from the insert piece 75 which in turn is suspended from the prongs 69, 70 and 71 in the hanger 68. The dividing plate 86 and the end plate 87 are suspended from the insert piece 85 which is in turn suspended from the prongs 72, 73 and 74 of the hanger 68. The dividing plate 88 is suspended from the insert piece 76 which is in turn suspended from the prongs 71 and 72 of the hanger 68. The lower portion of the dividing plate 88 joins a member 89 provided with side members 90 and 91 and an ear portion 92 provided with an opening 93. The side members 90 and 91 are suspended from a bolt 94 which forms the bearing for the sheaves 95, 96, 97 and 98. As will be noted from sheave 98 which is shown partly in cross section, the sheaves are provided with a bushing 99 which serves as a bearing surface.

In Fig. 2, a two-sheave block is shown in position to receive a rope or cable while under full load. As will be noted, the side plate 18 has been lowered by removing the insert piece 16a after removing the cotter pin which passed through the opening 27 on the prong 16 and the opening 30 on the insert piece 16a. It will be noted that the full load is being carried by the insert pieces 16b and 16c resting on the prongs 12, 13 and 14 of the hanger 11.

In Fig. 3, a three-sheave block is illustrated in position to receive a rope or cable over the sheave 65. The side plate 55 is shown in lowered position with the insert piece 45 removed. It will be noted that the full load is being carried by the members 57, 58, 59 and 56, the latter being supported by the insert piece 44 resting on the prongs 40 and 41 of the fork 37.

In Fig. 4 is illustrated a four-sheave block in position to receive ropes or cables over either or both of sheaves 97 and 98. The side plate 87 and the dividing plate 86 are shown in lowered position with the insert piece 77 removed. It will be noted that the full load is being carried by the members 89, 90, 91 and 88, the latter being suspended from the insert portion 76 resting on the prongs 71 and 72.

Obviously in Fig. 3 a portion of the load is also being carried by the end plate 53 and the dividing plate 54 hanging on the insert piece 43 which rests on the prongs 38, 39 and 40 of the hanger 37. Likewise in Fig. 4 a portion of the load is being carried by the end plate 84 and the dividing plate 85 suspended from the insert piece 75 which rests on the prongs 69, 70 and 71 of the hanger 68.

Those skilled in the art will understand that the snatch block of the present invention represents marked and substantial improvement over snatch blocks hitherto known and used. It is

possible with the snatch block of this invention to replace a rope or cable easily and rapidly without releasing or relieving the load on the block.

It will be also understood that while there have been described herein and illustrated in the annexed drawings certain embodiments of this invention, it is not intended thereby to have this invention limited to or circumscribed by the specific details of construction, arrangement of parts, materials or dimensions illustrated or described, in view of the fact that this invention is susceptible to modifications according to individual preference and conditions without necessarily departing from the spirit of this disclosure and the scope of the appended claims.

I claim:

1. In a snatch block, a hanger having depending prongs forming first and second slots therebetween, a shell having spaced arms of different lengths, the end of the longer arm lying within said first slot, a sheave and a side plate journaled between the arms of said shell, said plate having a portion lying within said second slot, and a two-section pin passing through aligned holes in said prongs, longer arm and plate portion and having the adjacent ends of said sections lying within the hole in said prong between said slots.

2. In a snatch block, a hanger having depending prongs forming first and second slots therebetween, a shell having spaced arms of different lengths, the end of the longer arm lying within said first slot, a sheave and a side plate journaled between the arms of said shell, said plate having a portion lying within said second slot, and a two-section pin passing through aligned holes in said prongs, longer arm and plate portion and having the adjacent ends of said sections lying within the hole in said prong between said slots, said plate and sheave being journaled on a common pivot and said plate lying between said sheave and the shorter arm of said shell.

3. In a sheave block, a hanger having prongs defining adjacent first, second and third slots, a shell having a center plate with its end within said second slot and upstanding first and second arms on opposite sides of said plate, a plurality of sheaves, means journaling at least one sheave between said plate and one said arm and the remaining sheaves between said plate and the other said arm, side plates pivotally connected to the respective arms and having portions within said first and third slots respectively, and a multi-part pin passing through aligned holes in said prongs and plates, the adjacent ends of said parts lying within the hole in said prongs.

4. In a sheave block, a hanger having spaced prongs defining a central and two side slots, a shell comprising a center plate and arms spaced from and upon opposite sides of said plate, said plate extending into said central slot, a plurality of sheaves, common pivot means journaling at least one sheave between said plate and one arm, and the remaining sheaves between said plate and the other arm, side plates on said pivot means each adjacent a respective arm, each said side plate normally extending into a respective side slot in said hanger, there being aligned apertures in said prongs and plates, and a pin comprising separate central and end sections, passing through said apertures, the meeting ends of said central and said end sections lying within the apertures in the prongs defining said central slot.

5. In a snatch block, a hanger having consecutive spaced first, second, third and fourth

slots, a shell having a central plate extending into said third slot and upstanding arms spaced upon opposite sides of said central plate, side plates extending into said first, second and fourth slots, respectively, pivot means extending through said arms and plates, three sheaves journaled on said pivot means, each lying between an adjacent pair of plates, there being aligned holes in said hanger and plates, and a pin comprising separate central and end sections and having their adjacent ends within the hole in said hanger, upon respective opposite sides of said third slot.

6. In a four-fold snatch block, a hanger having prongs defining a plurality of spaced slots therebetween, a shell having a central plate ex-

tending within a central one of said slots and upstanding parallel arms on opposite sides of said plate, auxiliary plates each extending into a respective one of said slots on opposite sides of said central slot, four sheaves, a pivot pin passing through said arms, sheaves and all said plates, each sheave lying between a corresponding pair of plates and each end plate lying adjacent a respective arm, and a pin having separate consecutive parts passing through aligned holes in said hanger and plates, contiguous ends of said parts lying within the hole in said hanger on opposite sides of said central slot.

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