

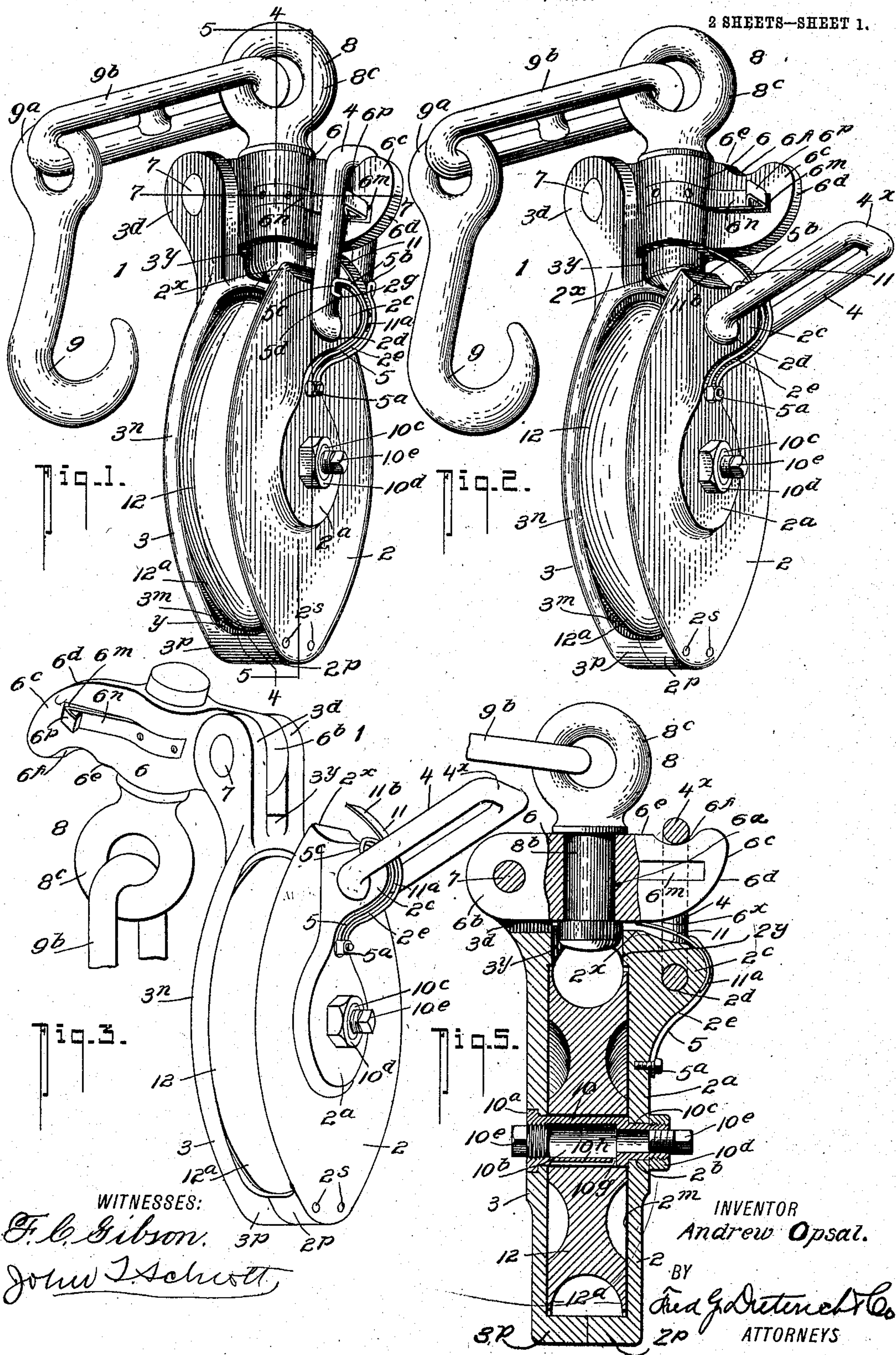
No. 806,562.

PATENTED DEC. 5, 1905.

A. OPSAL.  
SNATCH BLOCK.

APPLICATION FILED JAN. 9, 1905.

2 SHEETS—SHEET 1.



WITNESSES:  
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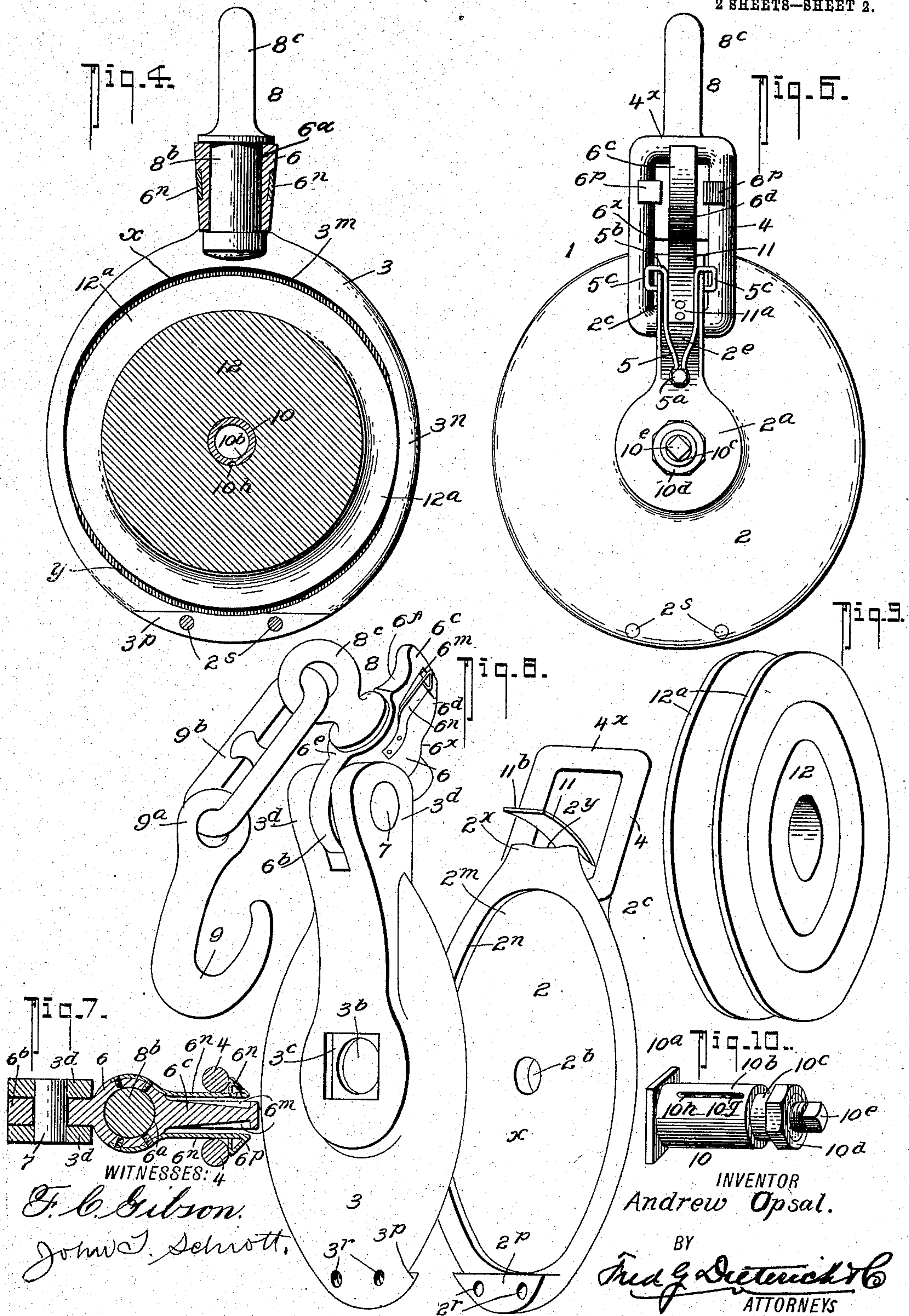


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WITNESSES: 4  
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# UNITED STATES PATENT OFFICE.

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## SNATCH-BLOCK.

No. 806,562.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed January 9, 1905. Serial No. 240,380.

*To all whom it may concern:*

Be it known that I, ANDREW OPSAL, residing at Kelso, in the county of Cowlitz and State of Washington, have invented certain new and useful Improvements in Snatch-Blocks, of which the following is a specification.

My invention relates to certain new and useful improvements in snatch-blocks and the like, and more particularly seeks to provide a device of this character of a very simple and economical construction and which will readily serve its intended purposes.

The invention also seeks to provide a device of this character which is more particularly adapted for use in handling lumber, logs, and the like.

Generically the invention comprehends a peculiar design or construction of sheave-block wherein means are provided for readily and easily removing or replacing the rope on the pulley and also wherein means are provided for protecting the pulley-rims and at the same time allowing for wear on the pulley-spindle, as well as providing means for reducing the friction between the pulley and the block.

With other objects in view which will be hereinafter apparent the invention also includes certain novel construction and arrangement of parts, all of which will be first described in detail and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention ready for use. Fig. 2 is a similar view, parts being shown in another position. Fig. 3 is a perspective view showing the block ready for removing or replacing the rope on the pulley. Fig. 4 is a longitudinal section on the line 4 4 of Fig. 1. Fig. 5 is a vertical cross-section on the line 5 5 of Fig. 1. Fig. 6 is a side elevation of the block. Fig. 7 is a horizontal section on the line 7 7 of Fig. 1. Fig. 8 is a detail perspective view of the sides of the block separated. Fig. 9 is a similar view of the pulley. Fig. 10 is a similar view of the pulley spindle or pin.

Referring now to the accompanying drawings, in which like characters of reference indicate like parts in all the figures, 1 designates the block which comprises the side plates 2 and 3, each of an oval or elliptical shape.

The plate 2 is provided with an enlargement 2<sup>a</sup>, which is centrally apertured, as at 2<sup>b</sup>, to receive the spindle or pin 10, hereinafter again referred to. Merging with the enlargement 2<sup>a</sup> and located near the top of the side plate 2 is an ear 2<sup>c</sup>, which extends at right angles to the plate 2 and is provided with a transverse aperture 2<sup>d</sup>, through which the link 4 passes.

2<sup>e</sup> designates a groove on the peripheral edge of the ear 2<sup>c</sup>, in which the locking-spring 5 is held, and this spring is secured, as at 5<sup>a</sup>, to the enlargement 2<sup>a</sup> and has its free ends bent over at right angles, as at 5<sup>b</sup>. These ends terminate in a U-shaped member 5<sup>c</sup> 5<sup>c</sup>, the free ends 5<sup>d</sup> 5<sup>d</sup> of which pass into bores 2<sup>e</sup> 2<sup>e</sup> of the ear 2<sup>c</sup>. The U-shaped portions of the springs 5 serve as catches for the link 4 to hold it locked in its normal position. (See Fig. 1.)

The plate 2 has its inner face countersunk, as at 2<sup>m</sup>, to form an oval chamber surrounded by an oval rim 2<sup>n</sup> for the purposes presently to appear.

2<sup>p</sup> designates a spacing-lug integrally formed with the plate 2 at its lower extremity, and the said lug 2<sup>p</sup> is apertured, as at 2<sup>r</sup> 2<sup>r</sup>, to receive the securing-screws 2<sup>s</sup> 2<sup>s</sup>, as shown. Diametrically opposite the lug 2<sup>p</sup> the plate 2 is provided with an upwardly-extending portion 2<sup>x</sup>, which merges with the ear 2<sup>c</sup> and which on its inner face has a semicircular depression 2<sup>y</sup> for the purposes presently explained. The plate 3 is similarly formed as the plate 2, and it is likewise provided with a spacing-lug 3<sup>p</sup>, having threaded apertures 3<sup>r</sup>, alining with the apertures 2<sup>r</sup>, to receive the threaded ends of the screws 2<sup>s</sup>. The plate 3 is also countersunk, as at 3<sup>m</sup>, to form an oval chamber surrounded by an oval rim 3<sup>n</sup> of precisely the same form and size as that of the plate 2.

3<sup>b</sup> designates an aperture in the plate 3, which has a square countersunk portion 3<sup>c</sup> to receive the square head 10<sup>a</sup> of the pin 10, whose cylindrical body portion 10<sup>b</sup> passes through the aperture 3<sup>b</sup> and abuts the plate 2, while its reduced portion 10<sup>c</sup> passes through the aperture 2<sup>b</sup> in the plate 2 and is securely held in position by the nut 10<sup>d</sup>, as shown. The pin 10 is hollow and has its ends closed by the screw-plugs 10<sup>e</sup> 10<sup>e</sup>, thereby forming an oil-receiving chamber from which the oil is also



passed to the pulley-wheel 12, through the aperture 10<sup>g</sup> and the grooves 10<sup>h</sup>.

Extending upwardly from the plate 3, diametrically opposite the lug 3<sup>p</sup> and in alignment with the projection 2<sup>x</sup> of the plate 2, is a pair of extending ears 3<sup>d</sup> 3<sup>d</sup>, between which the cross-head 6 is pivotally held on the pin 7. (See Fig. 1.) The inner face of the extending portion of the ears 3<sup>d</sup>, where the said ears join the plate 3, is provided with a groove 3<sup>y</sup>, similar to the groove 2<sup>y</sup>, between which grooves 2<sup>y</sup> 3<sup>y</sup> the head 8<sup>a</sup> of the swivel-pin 8 rests. The pin 8 has a shank 8<sup>b</sup>, which passes through the bore 6<sup>a</sup> of the cross-head 6 and terminates in a ring 8<sup>c</sup>, through which and the eye 9<sup>a</sup> of the hook 9 the link 9<sup>b</sup> is passed. The cross-head 6 also includes an ear 6<sup>b</sup>, by means of which and the pin 7 it is pivotally joined with the ears 3<sup>d</sup> 3<sup>d</sup>, and the said cross-head 6 is provided with a finger 6<sup>c</sup>, having a curved edge 6<sup>d</sup> and the grooves 6<sup>f</sup> in its upper edge 6<sup>e</sup>, which receive the link 4 when the parts are in the normal or locked position.

6<sup>m</sup> 6<sup>m</sup> designate grooves in the side faces of the cross-head 6, in which the spring members 6<sup>n</sup> 6<sup>n</sup> are held. These spring members 6<sup>n</sup> 6<sup>n</sup> are secured to the cross-head 6 at one end and have their other ends provided with latch portions 6<sup>p</sup> 6<sup>p</sup> to hold the link 4 in its locked position.

11 designates a spring member secured at one end to the lug 2<sup>c</sup>, as at 11<sup>a</sup>, and has its free end 11<sup>b</sup> engaging the under edge 6<sup>x</sup> of the finger portion 6<sup>c</sup> of the cross-head 6 to hold the said cross-head 6 with its finger portion away from the plate 2, so that when the link 4 is in its locked position and resting with its upper portion 4<sup>x</sup> in the grooves 6<sup>f</sup> the said spring 11 will hold the finger 6<sup>c</sup> tightly against the portion 4<sup>x</sup> of the link 4 to prevent the said link 4 from getting loose and riding out of the groove 6<sup>f</sup>. It should be understood that to release the cross-head from engagement with the link 4 it is only necessary to press outwardly on the said cross-head to relieve the tension of the spring 11, when the link can be thrown off.

The pulley 12 is rotatable on the pin 10 between the plates 2 and 3 with its flanges 12<sup>a</sup> 12<sup>a</sup> in the countersunk chamber portions 2<sup>m</sup> 3<sup>m</sup>, so that the oval rims 2<sup>n</sup> 3<sup>n</sup> protect the flanges 12<sup>a</sup> 12<sup>a</sup> of the pulley, and thereby prevent the rope or cable from wearing on or getting between the sides of the plates 2 and 3 and the sheave or pulley 12, and also prevent the pulley from breakage. By providing the countersunk portions 2<sup>m</sup> 3<sup>m</sup>, of oval shape, spaces *x* and *y* are formed at the top and bottom of the block to prevent friction in case the pin 10 becomes worn and at the same time to allow anything which would come in between the pulley or sheave and the sides of the block to pass out.

So far as described it will be seen that I have provided a very simple, easily-operable, and durable snatch-block which can be easily and cheaply manufactured and which will effectively serve its intended purposes.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete construction, operation, and many advantages of my invention will be readily understood by those skilled in the art to which it appertains, and I desire to say that many slight changes in the detail construction and arrangement of parts may be made without departing from the invention or the scope of the appended claims.

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

1. A device of the character described, comprising a pair of plates, a pulley mounted therebetween, a cross-head hingedly secured to one of said plates, said cross-head having a finger, a link carried by said second plate to engage said cross-head finger, and means carried by said second plate for locking said link in position with respect to said finger.

2. A device of the character described, comprising a pair of plates, a pulley mounted therebetween, a cross-head hingedly secured to one of said plates, said cross-head having a finger, a link carried by said second plate to engage said cross-head finger, means carried by said second plate for locking said link in position with respect to said finger, said means comprising a spring member carried by said second plate.

3. A device of the character described, comprising a pair of plates, a pulley mounted therebetween, one of said plates having projecting lugs, a cross-head hingedly secured to said plate between said lugs, said cross-head having a finger, a link carried by said second plate to engage said cross-head finger, means carried by said second plate for locking said link in position with respect to said finger, said means including a spring member carried by said second plate, as set forth.

4. A device of the character described, comprising a pair of plates, a pulley mounted therebetween, a cross-head hingedly secured to one of said plates, said cross-head having a finger, a link carried by said second plate to engage said cross-head finger, means carried by said cross-head to lock said link in position with respect to said finger, means for holding said finger against said link when the link is in its locked position.

5. A device of the character described, comprising a pair of plates, a pulley mounted therebetween, a cross-head hingedly secured to one of said plates, said cross-head having a finger, a link carried by said second plate to engage said cross-head finger, means carried by said cross-head to lock said link in position



with respect to said finger, means for holding said finger against said link when the link is in its locked position, said last-named means including a spring member secured to the

5 second plate and engaging said cross-head.

6. In a device of the character stated, a pair of plates having oval countersunk chamber portions facing each other, a pulley having rims held between said plates with its rims in

10 said countersunk portion, said plates having spacing-lugs at the bottom, a spindle passing through the plate and the pulley, all being arranged substantially as shown.

7. In a device of the character described, a

15 pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having upwardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a

20 body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-pin passing through said cross-head body por-

25 tion and terminating in a swivel-head, said swivel-head being held between said plates, said plates each having grooved portions to re-

ceive said swivel-head, substantially as shown.

8. In a device of the character described, a pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

30 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-

35 pin passing through said cross-head body portion and terminating in a swivel-head, said swivel-head being held between said plates, said plates each having grooved portions to

40 receive said swivel-head, a link carried by said second plate for engaging and resting in said cross-head finger-groove, substantially as shown.

9. In a device of the character described, a pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

45 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-

50 pin passing through said cross-head body portion and terminating in a swivel-head, said swivel-head being held between said plates, said plates each having grooved portions to

55 receive said swivel-head, a link carried by said second plate for engaging and resting in said cross-head finger-groove, and means for holding said link locked in position with respect to said finger.

10. In a device of the character described, a pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

60 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-

pin passing through said cross-head body por-

tion and terminating in a swivel-head, said 65 swivel-head being held between said plates, said plates having grooved portions to receive said swivel-head, said second plate having a lug extending at right angles thereto, a link

pivotally connected to said lug, said link adapted 70 to engage and lock with said finger, substantially as shown.

11. In a device of the character described, a pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

75 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-

80 pin passing through said cross-head body portion and terminating in a swivel-head, said swivel-head being held between said plates, said plates having grooved portions to receive

85 said swivel-head, said second plate having a lug extending at right angles thereto, a link piv-

otally connected to said lug, said link adapted to engage and lock with said finger, and means for locking said link in engagement with said

finger.

12. In a device of the character described, a 90 pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

95 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and a finger, said fin-

100 ger having a transverse groove in its upper edge, a swivel-pin passing through said cross-head body portion and terminating in a swivel-

105 head, said swivel-head being held between said plates, said plates having grooved portions to receive said swivel-head, said second plate hav-

ing a lug extending at right angles thereto, a link pivotally connected to said lug, said link adapted to engage and lock with said finger, and means for locking said link in engagement with said finger, said means including a

spring member secured to said lug and engaging said link.

13. In a device of the character described, a 110 pair of plates, a pulley-wheel rotatably mounted therebetween, one of said plates having up-

115 wardly-projecting ears, a cross-head fulcrumed between said ears, said cross-head including a body portion and terminating in a swivel-head, said swivel-head being held between said plates, said plates having grooved portions to receive said swivel-head, said second plate having a lug extending at right angles thereto, a link pivotally connected to said

120 lug, said link adapted to engage and lock with said finger, and means for locking said link in engagement with said finger, said means including a spring member secured to said cross-head and engaging said link, and a separate means for holding said finger in engage-

125 ment with said link.

14. In a device of the character described, a pair of plates, a pulley-wheel rotatably mount-



ed therebetween, one of said plates having upwardly - projecting ears, a cross - head fulcrumed between said ears, said cross-head including a body portion and a finger, said finger having a transverse groove in its upper edge, a swivel-pin passing through said cross-head body portion and terminating in a swivel-head, said swivel-head being held between said plates, said plates having grooved portions to receive said swivel-head, said second plate having a lug extending at right angles thereto, a link pivotally connected to said lug, said link adapted to engage and lock with said finger, and means for locking said link in engagement with said finger, said means including spring members secured to said cross-head and engaging said link, and a supplemental spring secured to the second plate-lug and engaging

said finger to press it upwardly, substantially as shown and described. 20

15. A device of the character stated, comprising a pair of plates, a pulley mounted therebetween, a cross-head hingedly secured to one of said plates, said cross-head having a finger, said second plate having a lug, a link carried by said second plate-lug to engage said cross-head finger, means carried by the second plate-lug for locking said link in position with respect to said finger, and means carried by the second plate-lug for forcing the cross-head upwardly substantially as shown and described. 25 30

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Witnesses:

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