

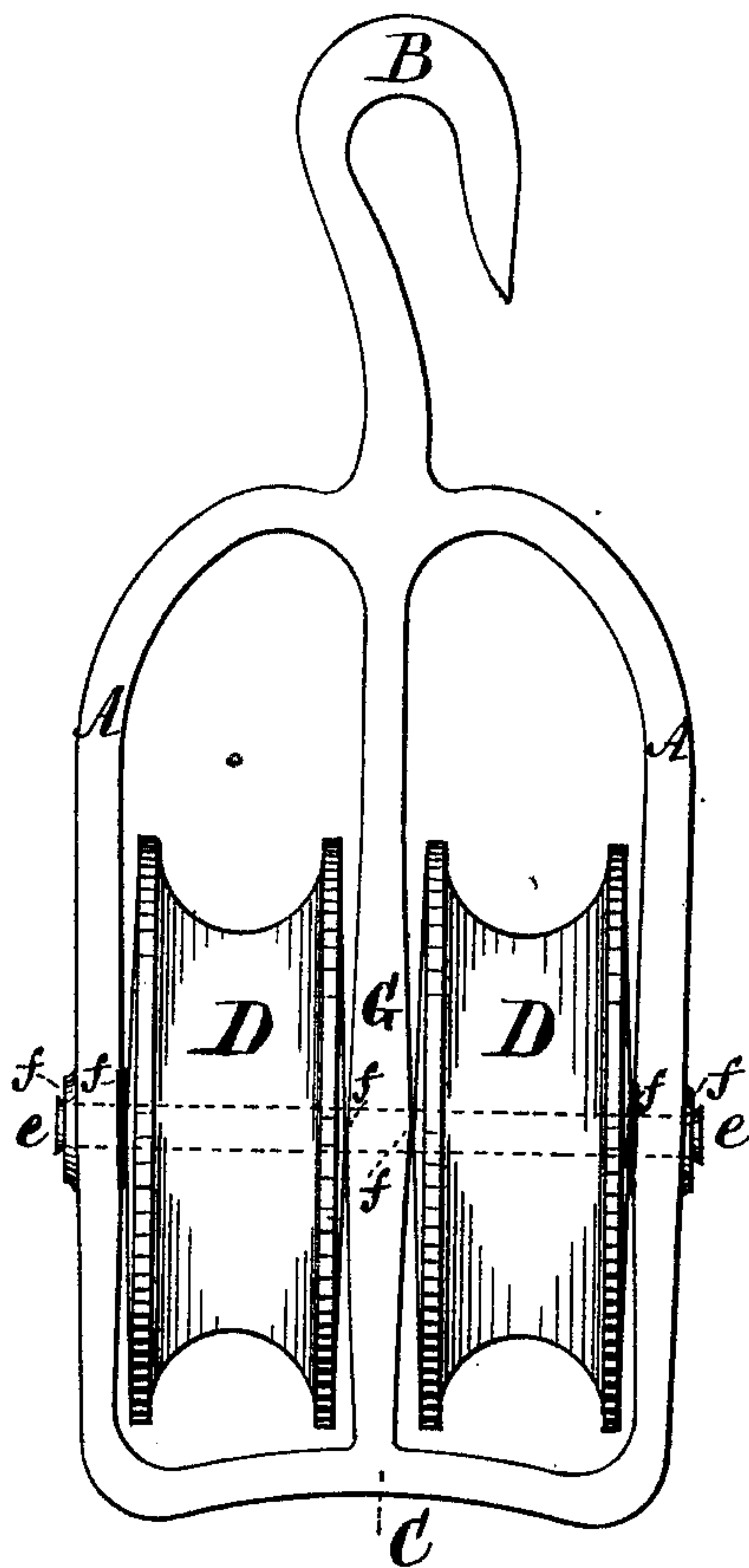
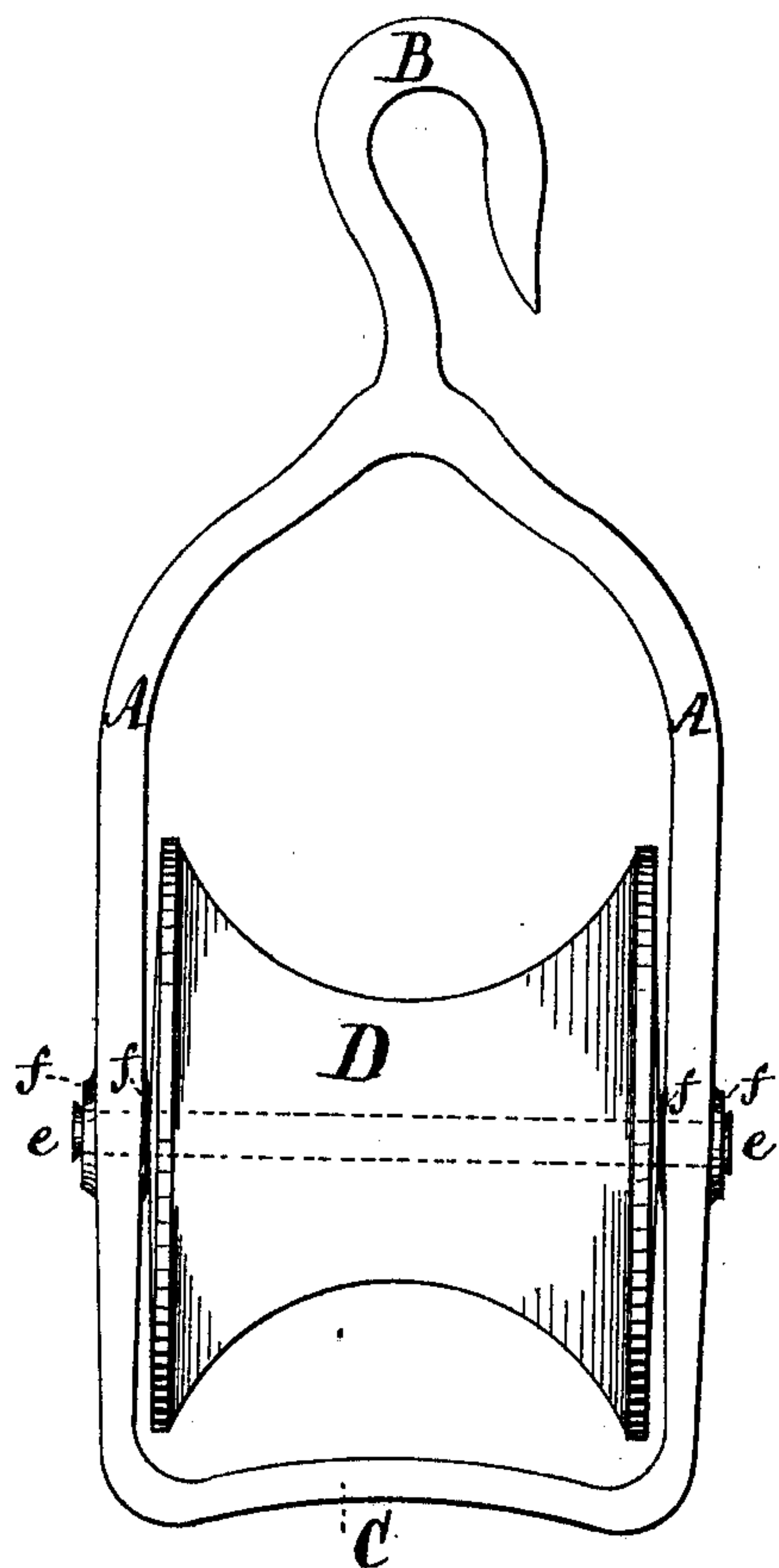
J. MANNING.
Pulley Block.

No. 197,152.

Patented Nov. 13, 1877.

Fig. 1.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH MANNING, OF NEW YORK, N. Y., ASSIGNOR TO RICHARD W. MANNING, OF SAME PLACE.

IMPROVEMENT IN PULLEY-BLOCKS.

Specification forming part of Letters Patent No. **197,152**, dated November 13, 1877; application filed September 1, 1877.

To all whom it may concern:

Be it known that I, JOSEPH MANNING, of New York city, in the county of New York and State of New York, have invented a new and useful Improvement in Pulley-Blocks; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which the invention appertains to make and use the same.

My invention consists in a novel construction of a pulley-block, whereby strength, lightness, and durability are secured, and several advantages are obtained, as hereinafter particularly described and set forth.

In carrying out my invention, the pulley-block is made of metal, preferably cast-iron, which is afterward made malleable. In form and general outline it somewhat resembles a vertically-elongated stirrup, and it is provided with a hook for suspending it or attaching it to a support, the hook being cast in one piece with the block. The upper portion of the stirrup-like block or shackle is arched in such form as to give it the greatest strength and allow ample space for the passage of a knot or other projection or inequality in a rope; and the lower portion, corresponding with the foot-piece in a stirrup, constitutes a brace for strengthening it. The block or shackle, the suspending-hook, and the brace are all cast in a single piece. The wheel or pulley may be made of wood, metal, or any other suitable material. It is arranged to revolve around a shaft, the ends of which have their bearings in two opposite sides of the block or shackle, some distance above the lower end thereof. The block or shackle may be arranged to carry two or more wheels or pulleys. When arranged for two, the block is provided with an additional strengthening-brace, extending longitudinally from the middle of the arched upper portion down to the middle of the transverse brace, and cast in one piece therewith. This auxiliary brace gives additional strength to the block or shackle, and also furnishes an additional bearing for the shaft around which the two wheels or pulleys revolve.

The accompanying drawings illustrate the manner of carrying out my invention.

Figure 1 represents a block carrying a sin-

gle pulley. Fig. 2 represents a block carrying two pulleys.

A represents the stirrup-like block or shackle, B the suspending-hook, and C the transverse brace, all made in a single piece of metal. The upper portion of the block is arched, as shown, so as to be capable of sustaining an intense strain, and also to allow the passage of a knot or other protuberance on a rope passing over the wheel or pulley D. The transverse brace C, forming the lower end or side of the block or shackle, is slightly curved upward, as shown. The pulley D revolves around a shaft, *e*, the ends of which have their bearings in the sides of the block A, and are secured by upsetting the metal in the usual way. At the points where the ends of the shaft *e* rest, the metal of the block A is thicker than the remaining portions, so as to form enlargements or bosses *f* on both the inner and outer surfaces of the sides of the block. The outer bosses afford greater facility for hammering down the ends of the shaft *e*, and the inner bosses receive all the friction of the sides of the pulley D, while both the inner and the outer bosses increase the strength of the block at those points without adding materially to its weight. If the sides of the block or shackle A were not connected by the transverse brace C, when a severe strain was brought to bear upon the pulley, the tendency would be to cause the sides of the block to spring outward, and allow the pulley and its shaft to slip out of place; but such an accident is rendered impossible by the use of the transverse brace in my invention. By forming the brace C with a slight upward curve, as shown in the drawing, the liability of breakage is lessened.

The hook B, as a suspending device, possesses an advantage over a ring, because said hook may be made to engage with a ring as well as with a hook or a nail, while a ring or eye, as a suspending device, could not be made to engage with another ring or with a taut rope or a bar.

By the construction herein described I avoid the necessity of providing ribs or webs on the surfaces of the block or shackle for the purpose of strengthening the metal.

When the block or shackle is intended to

carry two pulleys it is made in the form shown in Fig. 2, in which G represents a bar or strip of metal, cast in one piece with the block A, and extending from the upper portion, under the hook B, down to the transverse brace C, midway thereof, thus strengthening the transverse brace, and the entire block or shackle furnishing an additional bearing for the shaft *e*, and serving to guide and to keep separate the two ropes passing over the pulleys D D.

I am aware that a patent has been granted for a pulley and block in which the pulley is made of wood, and the block or shackle consists of a forked piece of metal, strengthened by ribs or webs, the pulley-shaft having its bearings in the ends of the branches of the fork.

The advantage of my invention over the above consists in the superior strength obtained by means of the transverse brace without the necessity for the ribs or webs; and

also in the small amount of friction, owing to the bosses *f*, as hereinbefore described.

In my invention the sides of the block or shackle are smoothed and rounded, so as to be of oval form in their cross-section; and by this means I avoid cutting or wearing of the rope as it passes over the pulley.

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

The metal pulley-block or shackle A, having the arched enlargement in the upper portion above the wheel, and the upwardly-curved connecting and strengthening brace C in the lower portion, and provided with the bearing-bosses *f*, and the suspending-hook B, all cast in one piece, as herein shown and described, for the purpose set forth.

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Witnesses:

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