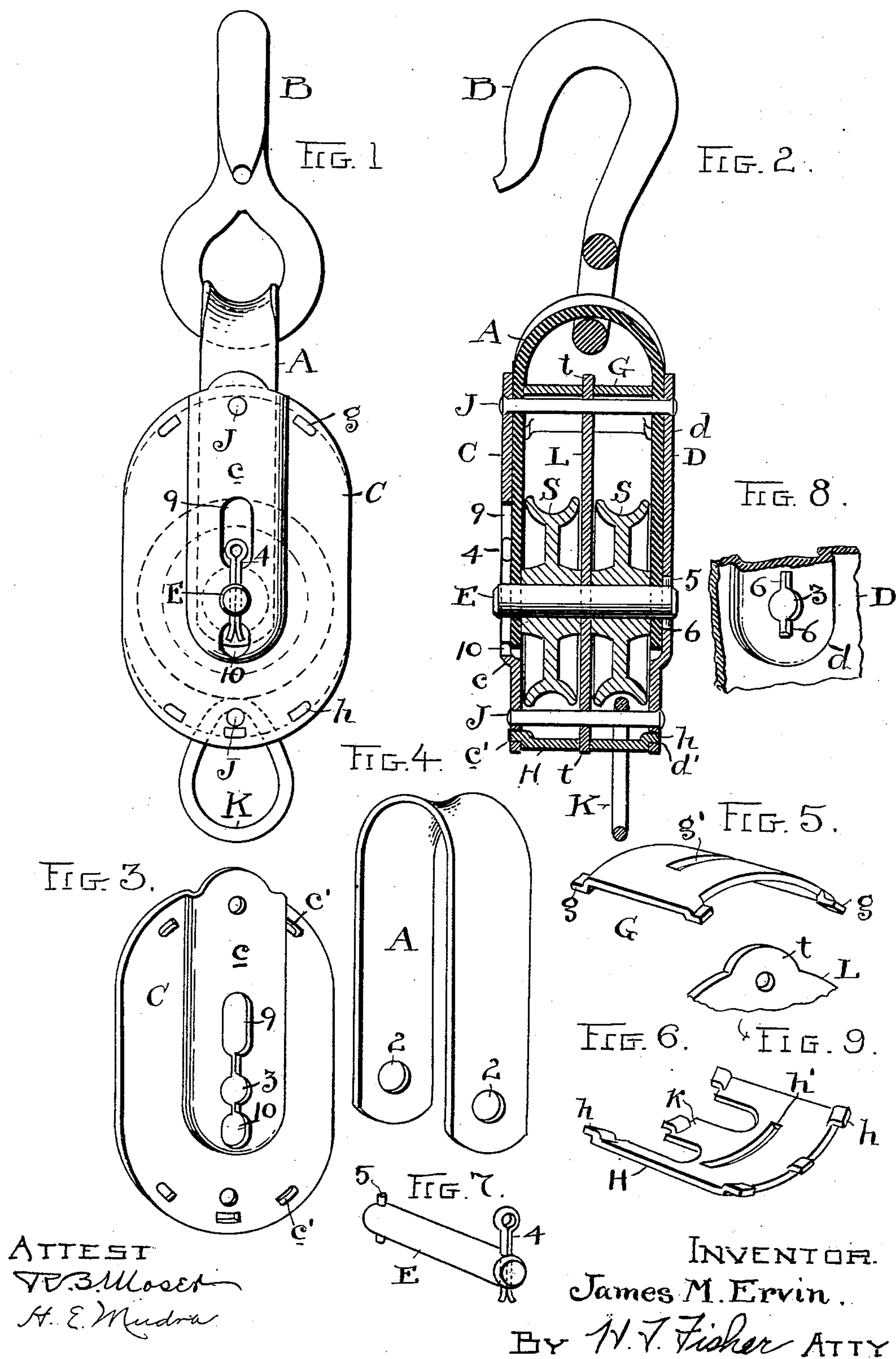


Patented July 2, 1901.

(Application filed Mar. 14, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

JAMES M. ERVIN, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND
BLOCK COMPANY, OF SAME PLACE.

TACKLE-BLOCK.

SPECIFICATION forming part of Letters Patent No. 677,446, dated July 2, 1901.

Application filed March 14, 1901. Serial No. 51,067. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. ERVIN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tackle-Blocks; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to tackle-blocks; and the invention consists in a tackle-block having the construction, combination, and arrangement of parts substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my new and improved tackle-block. Fig. 2 is a central vertical sectional elevation thereof. Fig. 3 is a perspective side elevation of the cheek-plates seen at the front, Fig. 1. Fig. 4 is a perspective elevation of the strap or yoke alone. Fig. 5 is a perspective plan view of the upper bridge or brace plate, and Fig. 6 is a similar view of the lower bridge or brace plate. Fig. 7 is a perspective view of the sheave-bolt, and Fig. 8 is a perspective elevation of the middle portion of the cheek-plate at that side of the block. Fig. 9 is a detail view showing a portion of the middle plate and tongue thereon.

The construction of block thus shown is such that it can be made by what may be termed a "cold" process instead of the hot process always heretofore required to produce sheet-metal or steel-plate blocks of the kind to which this invention relates.

There are material disadvantages as well as considerable incidental expenses attending the making of sheet-metal blocks when their construction is such as to render heating of the metal necessary before the desired shape of the parts can be obtained as compared with my manufacture, wherein each part is cut and shaped without heating. Of course this material difference in the method of manufacture renders necessary somewhat radical differences in the shape of parts as well as in the manner of connecting them up; but, notwithstanding, I am thereby enabled to produce a strictly sheet-metal block which

possesses at least all the advantages of other sheet-metal blocks of the best make now on the market and with considerable saving of expense in manufacture, because no heating of the metal is required to get the parts ready for manufacture. The block thus shown and made comprises a strap or yoke A, formed from a piece of strap metal of a suitable width and thickness and rounded somewhat from the under side in its bent portion at its top to make a rounded engaging surface for hook B.

The cheek plates or pieces C and D are preferably flat and straight between their ends lengthwise, with the exception that each plate or piece has an offset portion *c* and *d*, respectively, struck from the body of the plate centrally from the top down past its middle portion and adapted to receive strap A. The depth of said offset or depression on the inside is about equal to the thickness of the metal of the strap, so that a substantially flush surface is afforded on the inside between the strap and the adjacent surface of the cheek-plates to form smooth side bearings or sheaves S. Corresponding holes 2 are formed in the ends of strap A, which match with holes 3 in the cheek-pieces, and sheave-pin E passes through these holes and is secured therein by cotter-pins 4 and 5, respectively. It will be noticed in Figs. 2 and 8 that cheek-plate D is provided with short slots 6 above and below pin-hole 3 and open thereto, in which cotter-pin 5 is lodged and hidden from the outer surface of the cheek-piece, thus making a substantially flush smooth surface over the outside of the sheave at this point and forming an engagement for the cotter-pin to prevent sheave-pin E from turning. The slots 6 are the full depth of the cheek-plate and rest against strap A. At the other side the cheek-piece is recessed or cut out to form openings 9 and 10 above and below pin-hole 3, and opening 9 is long enough to allow cotter-pin 4 to be inserted and removed when shaft E is in working position, and the said pin is retired from the outer surface of the cheek-piece in said openings, as shown. This construction affords practically smooth outer surfaces on both sides of the tackle-block and gives all the

advantages of a large sheet-surface on both sides, while the weight and wear come wholly on yoke or strap A. The outer edges of both cheek-pieces are preferably turned or curved outwardly somewhat; but this is rather more fanciful than material and is not essential to my invention and is therefore not thus shown. The bridge plates or pieces G and H, respectively, likewise are formed out of sheet metal, as is also the center or division plate L, and plates G and H are bowed somewhat to conform to the curved or rounded shape of the ends of the cheek-plates and engage with said plates, as shown, having ears or lugs *g* and *h*, respectively, at their edges to lock in and through corresponding slots or holes *c'* and *d'* in the cheek-plates wherein they are riveted. Tie-bolts J, top and bottom, further bind the sides and all parts of the block together, and the upper of said bolts passes also through yoke or strap A at both sides, while both bolts pass through the extremities of middle plate L within the bridge-pieces. The said middle plate is fashioned with a short tongue *t* at each end, which enters slot *g'* on plate G at its upper end and slot *h'* in plate H at its lower end. The lower bridge or brace piece or plate is fashioned at one side and center with a tongue *k*, over or around which is engaged the becket K before the parts are assembled.

The sheaves S are located on opposite sides of division-plate L, but come wholly within the edges of the cheek-pieces, and there are no harsh or sharp edges or corners at any points.

I have described the cheek-pieces as substantially flat, except as they may have slightly outwardly turned edges and are depressed lengthwise at their center from the inside to a point below the sheave-pin to receive strap A; but even the stock that is thrown out into rib or swell *c* is flat across the back of said rib from edge to edge, and the rib is straight from end to end.

It will be noticed that, excepting the two tie-rods J, top and bottom, the block is knit together by the bridge plates or pieces G and H. These pieces have the novel features of lugs *h* and *h*, which extend through the cheek-plates and are riveted firmly upon the outside of said plates. This avoids the usual curling of such plates at their transverse edges to receive and hold tie-rods, and which curling can only be done by heating the plates. My plates are struck up cold, as already described, and a single plate at top and bottom can be used with one or more division-plates, whereas when said plates are made the old way separate ones must be used for each side of a division-plate. Another distinctly novel feature is the slotting of the plates for the cotter-pins confining the sheave-pin. Heretofore when cotter-pins have been used with sheet-metal cheek-plates the plates have had to be bent outward into real cheek formations, giving the concavo-convex form to the plate, hitherto common, in order to enable an

inwardly-struck depression to be formed to receive the cotter-pins. My cheek pieces or plates are not "cheeked" or rounded outwardly in this way, but are flat at all points, and especially where they receive the cotter-pins, and hence I cut out the metal for these pins and form through openings in the plates in which said pins are laid. Likewise as to the construction of the lower bridge-plate with its finger *k* for receiving the becket K, the said plate being cut out on both sides of said finger to make room for the becket, and yet having a finger or stem with abundant strength for all purposes. The division-plate is centered in slots *h'* and *g'* in the two plates G and H. Altogether this is a new construction of bridges and one that readily yields to cold diework, thus enabling me to greatly cheapen the manufacture of the block, while I hold up the character thereof as compared with the best metal-plate blocks on the market.

In large sizes the strap or yoke may run through to the bottom of cheek-pieces, and, if preferred, the same kind of slots for the cotter-pins may be made on both sides, so as to us a single die for both.

What I claim is—

1. In tackle-blocks, a block having side plates with open eyes to receive the ends of the sheave-pin, said plates having a flat surface about said eyes and slots cut through the plates about said eyes to receive the cotter-pins, substantially as described.

2. A tackle-block having sheet-metal side plates, said plates being straight and flat at both sides from end to end and having each a straight, flat depression centrally on its inside from the top down past the middle of the plate, an eye through said depressed portion and open slots entering said eye, substantially as described.

3. A tackle-block having sheet-metal side plates straight and flat from edge to edge transversely except a central straight and flat swell midway between the sides of the plates and extending from their top downward, said swell being on the outside of each plate and flat from edge to edge and having an open eye for the sheave-pin and slots entering said eyes to receive the cotter-pins, and holes at the ends of the said plates through which they are tied together, substantially as described.

4. In tackle-blocks, a set of sheet-metal side plates with holes laterally through their ends, and bridge-plates between the ends of said side plates having lugs at their outer edges engaged in and riveted about the said holes in the side plates, substantially as described.

5. A tackle-block having side plates with depressions of equal depth and width their entire length centrally in said plates from the top of the plates downward centrally thereof, a yoke-shaped strap resting at its sides in said depressions and a sheave-pin through said strap and plates and a bridge-piece hav-

ing edges resting against said strap and plates and lugs on said edges extending through said plates and riveted thereupon, substantially as described.

- 5 6. A tackle-block having sides with flat depressions lengthwise at their center, a yoke-shaped strap with flat sides in said depressions, a sheave-pin engaged through said strap and sides, bridge-plates having lugs at
10 their edges riveted upon said sides and a division-plate engaged in slots in said bridge-pieces, substantially as described.

7. A tackle-block having side plates and a

strap, and bridge-plates connecting said block at its ends, the said bridge-plates having lugs located in the side plates and the lower bridge-plate constructed to engage the becket directly thereupon, substantially as described. 15

Witness my hand to the foregoing specification this 2d day of February, 1901. 20

JAMES M. ERVIN.

Witnesses:

R. B. MOSER,
H. E. MUDRA.