

(No Model.)

G. LANE.
TACKLE BLOCK.

No. 567,032.

Patented Sept. 1, 1896.

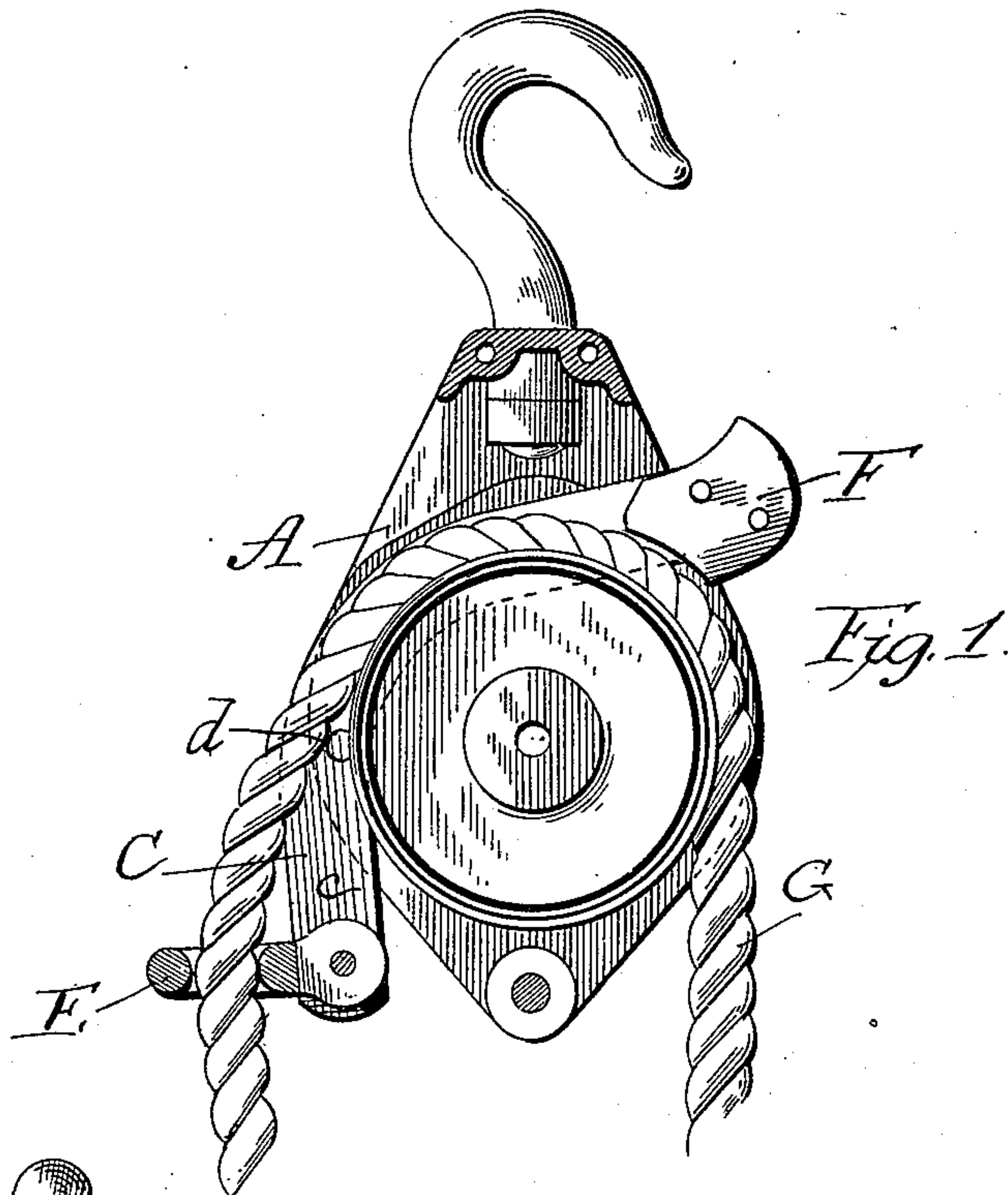


Fig. 1.

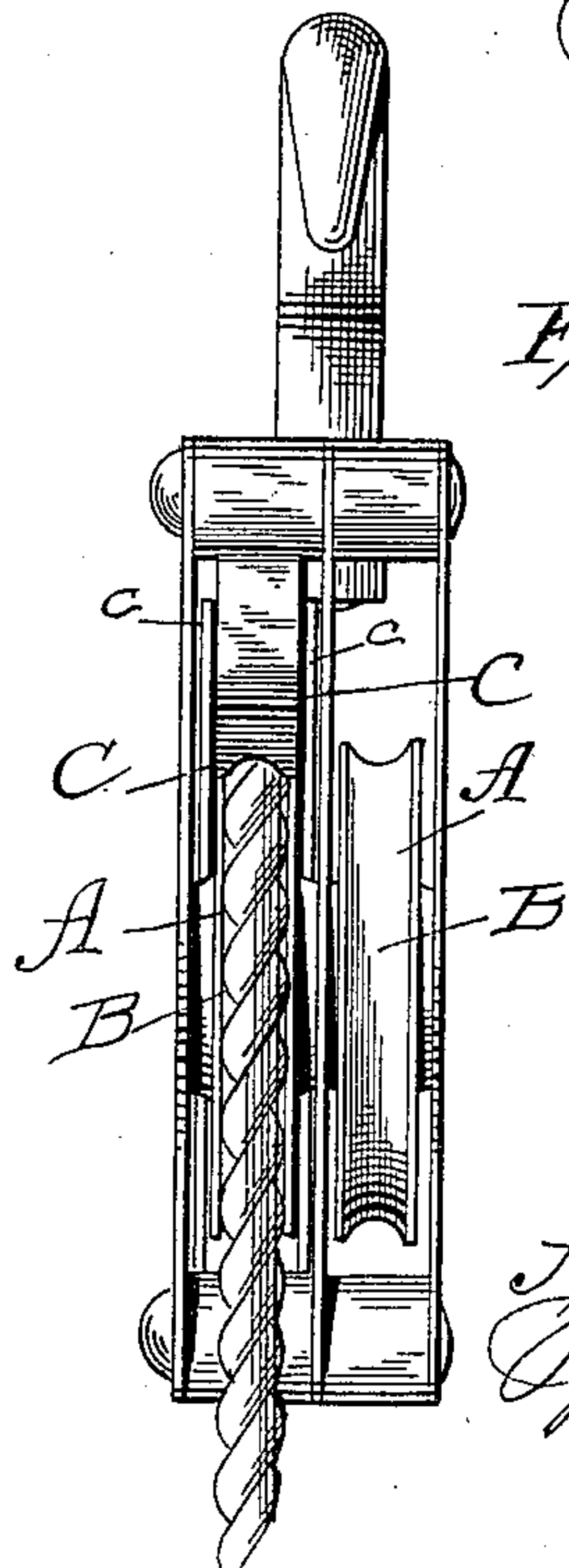


Fig. 2.

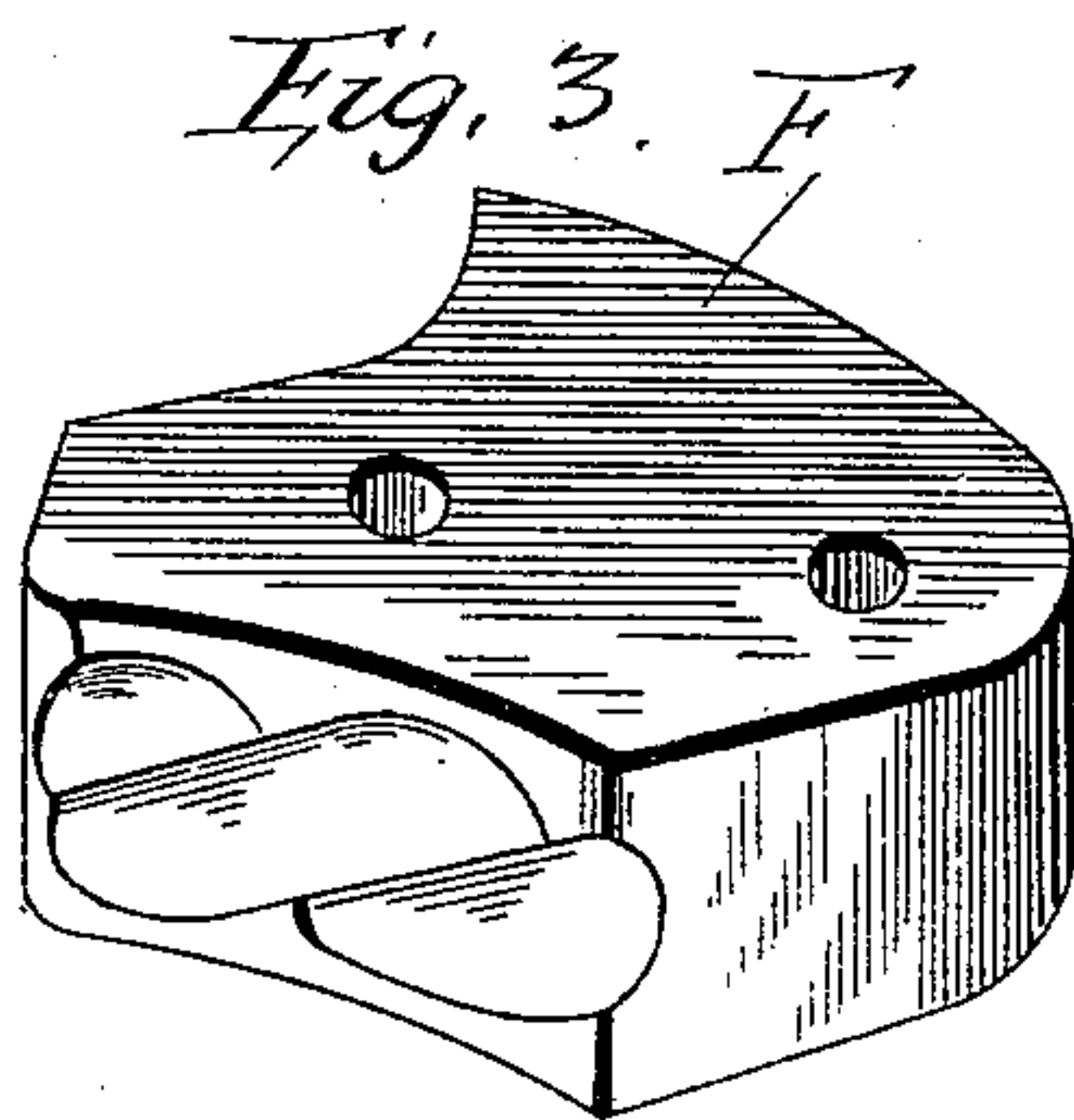


Fig. 3. F

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UNITED STATES PATENT OFFICE.

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TACKLE-BLOCK.

SPECIFICATION forming part of Letters Patent No. 567,032, dated September 1, 1896.

Application filed June 6, 1896. Serial No. 594,587. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LANE, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Tackle-Blocks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to tackle-blocks, and is an improved locking device for such blocks. It belongs particularly to that class of locking devices for the rope which are operated by the rope itself without the use of the check-cord. Such devices have heretofore been known, operating upon the same general principle, such, for example, as that shown in Letters Patent of the United States No. 48,034, of 1865, in which the clutch or lock is operated by changing the direction of the rope directly pulled upon.

The objects which I have sought to accomplish by a simple construction and arrangement of a single locking-piece are as follows: I have constructed and arranged the locking-lever so that it is adapted to be used with a concave gripping-piece fitted to the curve of the rope upon the sheave, since this form of gripping-piece is better adapted to hold the rope and is less liable to cut the strands. Further, I have sought so to construct the lock that it may be brought into action or released by a slight movement and may be held out of engagement with certainty, and so also that ordinarily the lock may act by gravity when the block is in the ordinary vertical position. It will also act by the movement of the rope in any position. I have also so constructed the lever or arm which carries the locking-piece that it is adapted to fit without inconvenience within the ordinary block and that it can be so pivoted as to give movement on a large curve to the locking-piece.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows a block in side elevation with the side in part broken away. Fig. 2 is an edge view of the same. Fig. 3 is a detail view of the gripping-block.

In the drawings is shown a tackle-block A, provided with sheaves B, all of ordinary construction. The locking-lever C is formed of

two side pieces *c*, made of thin curved-metal bars fitted to move in between the sheave and the walls of the block on each side of the sheave. These side pieces are pivoted at *d* to the walls of the block upon one edge thereof and approximately on a horizontal line with the pivot of the sheave. From this point the curved bars extend downward in a position shown in full lines in Fig. 1, in which position the locking-piece is engaged with the rope and the downwardly-extending end is approximately in vertical lines, the block being suspended in normal position. In this downwardly-extending end is a loop or guide E, fitted to permit the rope to pass down through it to the hand of the operator. The other end of the locking-lever is longer and extends beyond the edge of the sheave and carries, fixed between the ends of the side bars, the locking-piece F. This is concaved both transversely and longitudinally to fit the rope on the block when the locking-piece is down in the normal position. (Shown in the full lines of Fig. 1.) In this position the side bars are dropped in the space on each side of the sheave, and this end of the lever is in approximately horizontal position.

The form of the face of the gripping-piece F where it comes in contact with the rope is made by placing a piece of the rope in position around the pulley and while in that position taking an impression of its external portions or surface. This impression is used in forming the pattern. The result is that the surface of the gripping-piece absolutely fits the surface of the rope not only as to the curve produced by the pulley, but also the spiral surface of the rope itself. This wide distribution of pressure between surfaces that fit each other makes an absolutely sure lock without damage to the rope.

The guide E is placed in such a relative position to the other parts that when the block is hung with the load suspended and the position of the operator is close to the load the hoisting-rope extending through the guide will hold the lock out of the way of the rope, and said hoisting-rope will be just perceptibly bent out of a straight line from the pulley inwardly to the hand of the operator. If the block be used by the operator standing in the position described, the action of the block is

precisely similar to that of a block without lock, that is, it is a free hoist. If, however, it is desired to hold the load, the operator takes a step or two backward away from the load and the pulley and then releases the hoisting-rope, thus causing the lock to act. In other words, the lock is inactive or otherwise, according to the angle the hoisting-rope makes with a line drawn through the centers of the two blocks constituting the set. If the angle is less than a given amount, the lock remains inactive; if more than the given amount it is operative.

This construction and principle of action permit the block to be used in many positions without interfering with the lock. For example, the lock, being moved in both directions by the rope, may be operated even if the block is in a horizontal position, or in a position reversed to that shown in the drawings; but while the lock acts through the forcible movement of the rope when the block is in position it may be permitted to operate by gravity when the block is in the ordinary position shown in the drawings, and by reason of the greater safety of gravity action is highly advantageous.

The distance between the pivot and the locking-block permits the action of gravity

to a greater degree, and also permits the better adjustment or bearing of the block throughout the whole extent of its face upon the rope.

I claim—

In combination with a tackle-block, and its pulley, an arm pivoted to the block at one side of the pulley and having one end extending from the pivot downward and its other end extending over the pulley to the other side of the block, a gripping-piece carried by the arm and a loop or eye at the end of the downwardly-extending part, said loop being adapted to receive the hoisting-rope and to be moved toward or from the pulley by lateral movement of the hoisting-rope toward or from the pulley, whereby the gripping-block may be positively set against or released from the rope by the lateral movement of the free part of the same, whether the draft be vertical or horizontal substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE LANE.

Witnesses:

G. H. SHERMAN,
W. J. LANE.