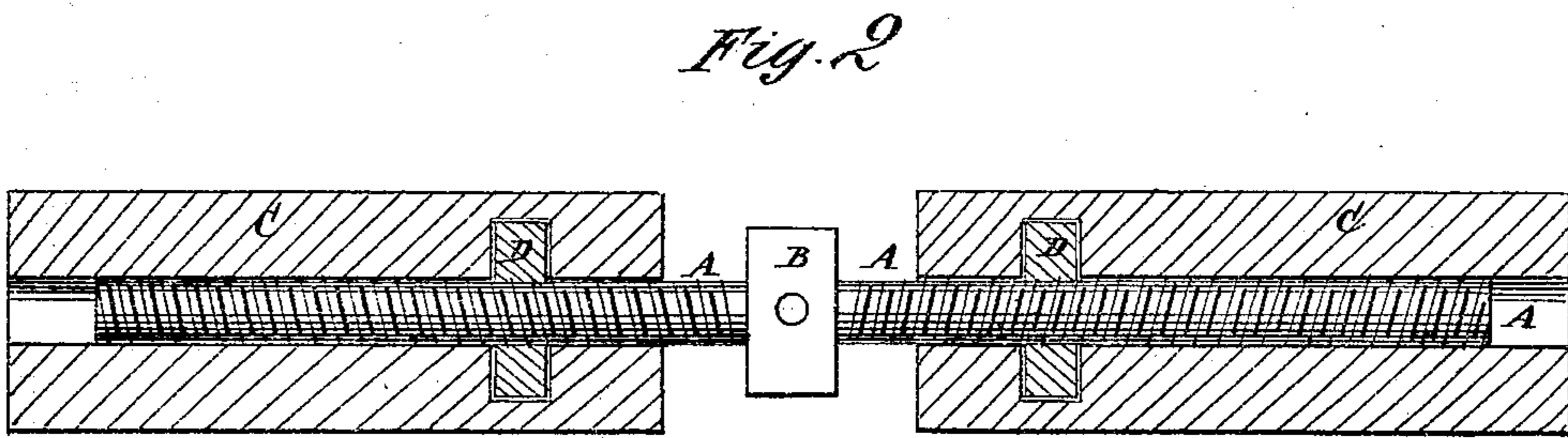
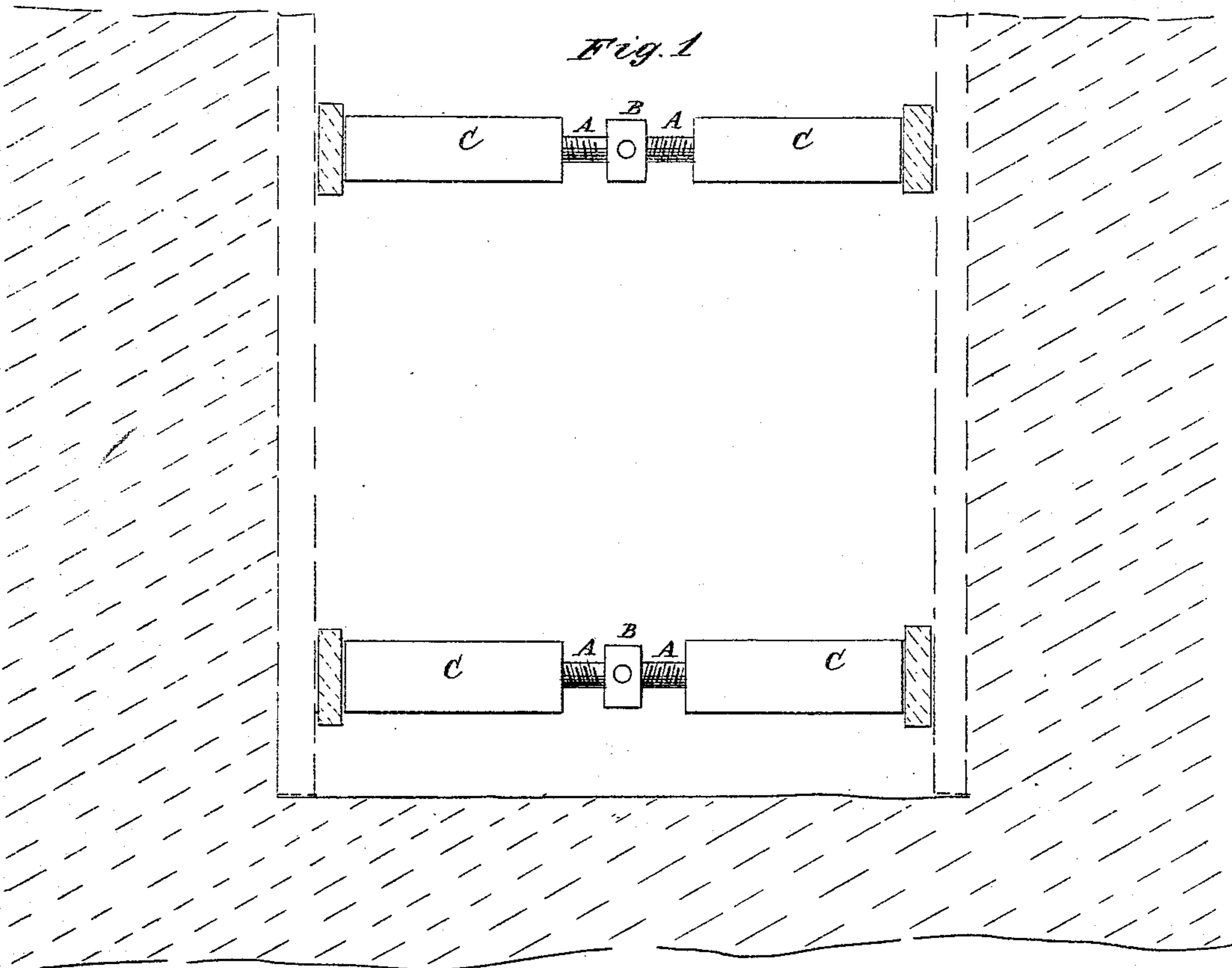


S. G. McKERNAN.

Extensible Braces for Supporting Trenches.

No. 145,116.

Patented Dec. 2, 1873.



Witnesses:

*A. W. Almqvist*  
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# UNITED STATES PATENT OFFICE.

SAMUEL G. MCKIERNAN, OF PATERSON, NEW JERSEY, ASSIGNOR TO  
MCKIERNAN & FINNEGAN, OF SAME PLACE.

## IMPROVEMENT IN EXTENSIBLE BRACES FOR SUPPORTING TRENCHES.

Specification forming part of Letters Patent No. **145,116**, dated December 2, 1873; application filed  
September 6, 1873.

*To all whom it may concern:*

Be it known that I, SAMUEL G. MCKIERNAN, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Adjustable Braces for Sewer-Trench Sheathing, &c., of which the following is a specification:

Figure 1 is a side view of two of my improved braces, illustrating their use. Fig. 2 is a detail longitudinal section of one of the braces.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish improved adjustable braces for supporting the sheathing of sewer-trenches, and other trenches and excavations, which shall be so constructed that they may be readily adjusted to the width of the trenches, and to enable them to be readily put in and taken out, and which may be used an indefinite number of times without injuring them or the timber that forms the sheathing, and which shall at the same time be simple in construction and convenient in use.

The invention consists in improved adjustable braces, formed by the combination of the right-and-left screw-rod and the perforated wooden blocks, provided with metallic nuts near their inner ends, with each other, to adapt them for use for supporting the sheathing for trenches and other excavations, as hereinafter fully described.

A is a rod, having a right screw-thread formed upon one end, and a left screw-thread upon its other end. To the center of the rod A is rigidly attached a block, B, having holes formed in it to receive the lever by which the screw-rod is turned.

The rod A may be formed, if desired, in two parts, the adjacent or inner ends of said parts being rigidly and firmly attached to the block B.

C are two blocks of wood, perforated longitudinally to receive the ends of the screw-rod A, and in which, near their inner ends, are

secured metallic nuts D, into the screw-threads of which the screw-threads of the rod A fit. The nuts D may be inserted in mortises formed in the side of the blocks C, and the mouths of which are then plugged up.

In using the adjustable braces, when the sheathing-boards are placed upright, cross-boards are placed at suitable distances apart for the outer ends of the blocks C to rest against. The adjustable braces also enable the sheathing-boards to be applied in the following manner: When the trench has been sunk to a depth a little more than the width of a sheathing-board, a board is placed horizontally against each side of the trench, and the said boards are supported by a suitable number of braces. The trench is then sunk to a depth equal to the width of another board, and another board is placed beneath the first one upon each side of the trench, and secured by braces, and so on until the trench has been sunk to the required depth.

In filling up the trench the lower board upon each side is removed, and so much of the trench is filled up. The next upper board upon each side is then removed, and that portion of the trench is filled, and so on until the entire trench has been filled.

In this way a great amount of time and labor is saved, and the workmen are fully protected from being injured or bruised by the falling in of the sides of the trench.

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

The adjustable brace for supporting walls of trenches, &c., composed of the wooden tubes C C, provided with internal nuts D, and the right-and-left screw, arranged as shown and described, to operate as specified.

SAMUEL G. MCKIERNAN.

Witnesses:

C. MCKIERNAN,  
JOHN H. GOETSCHNIS.