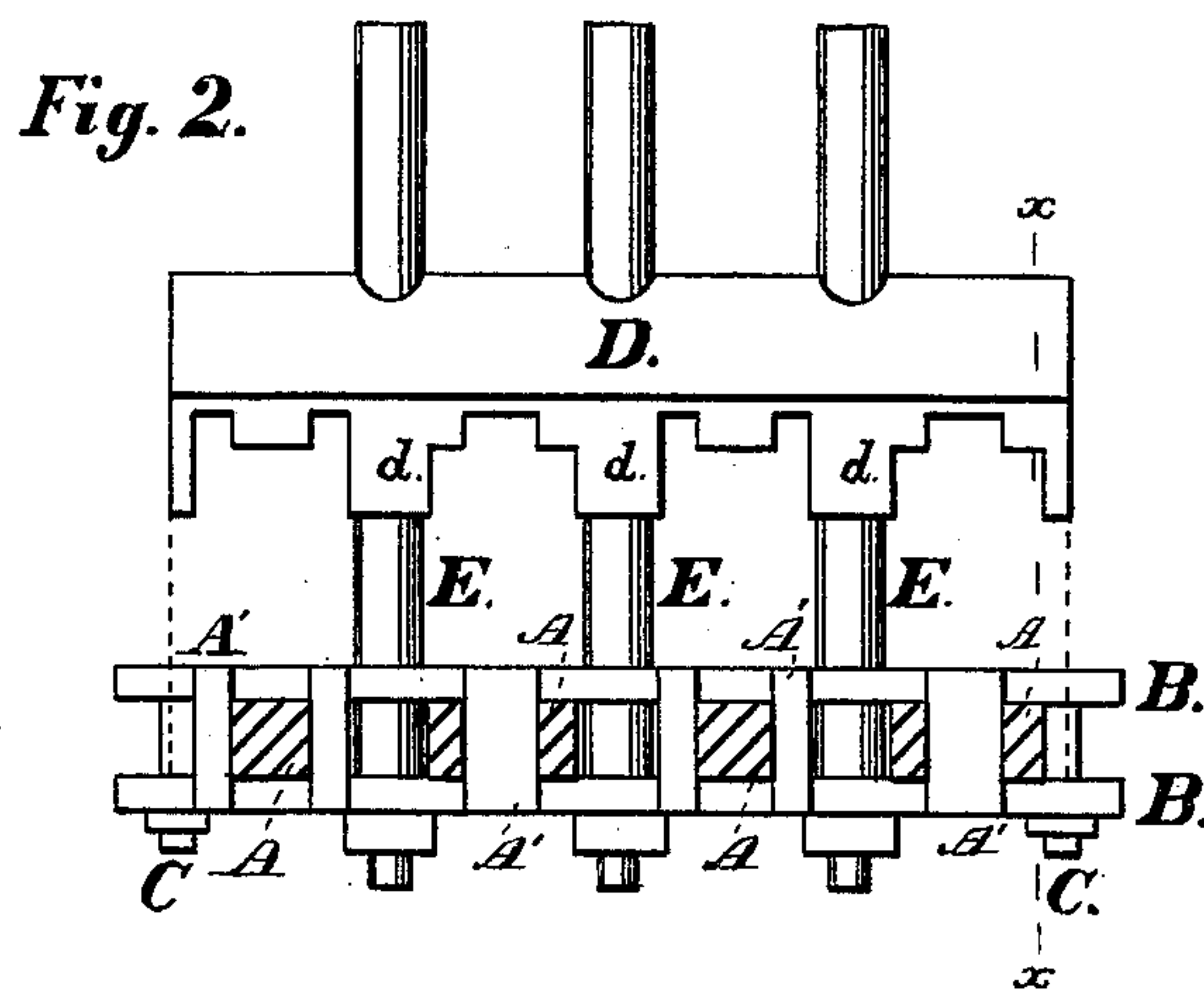
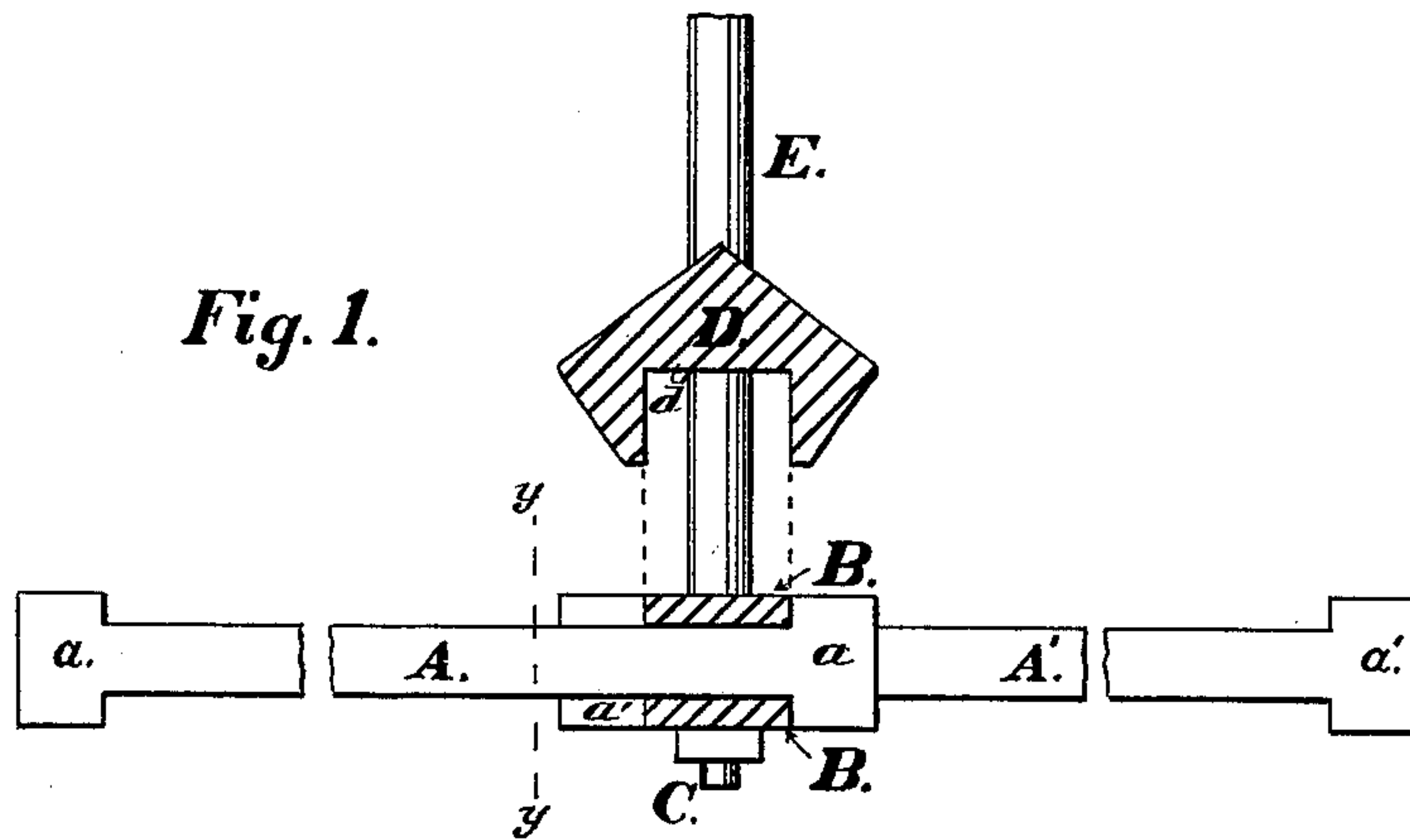


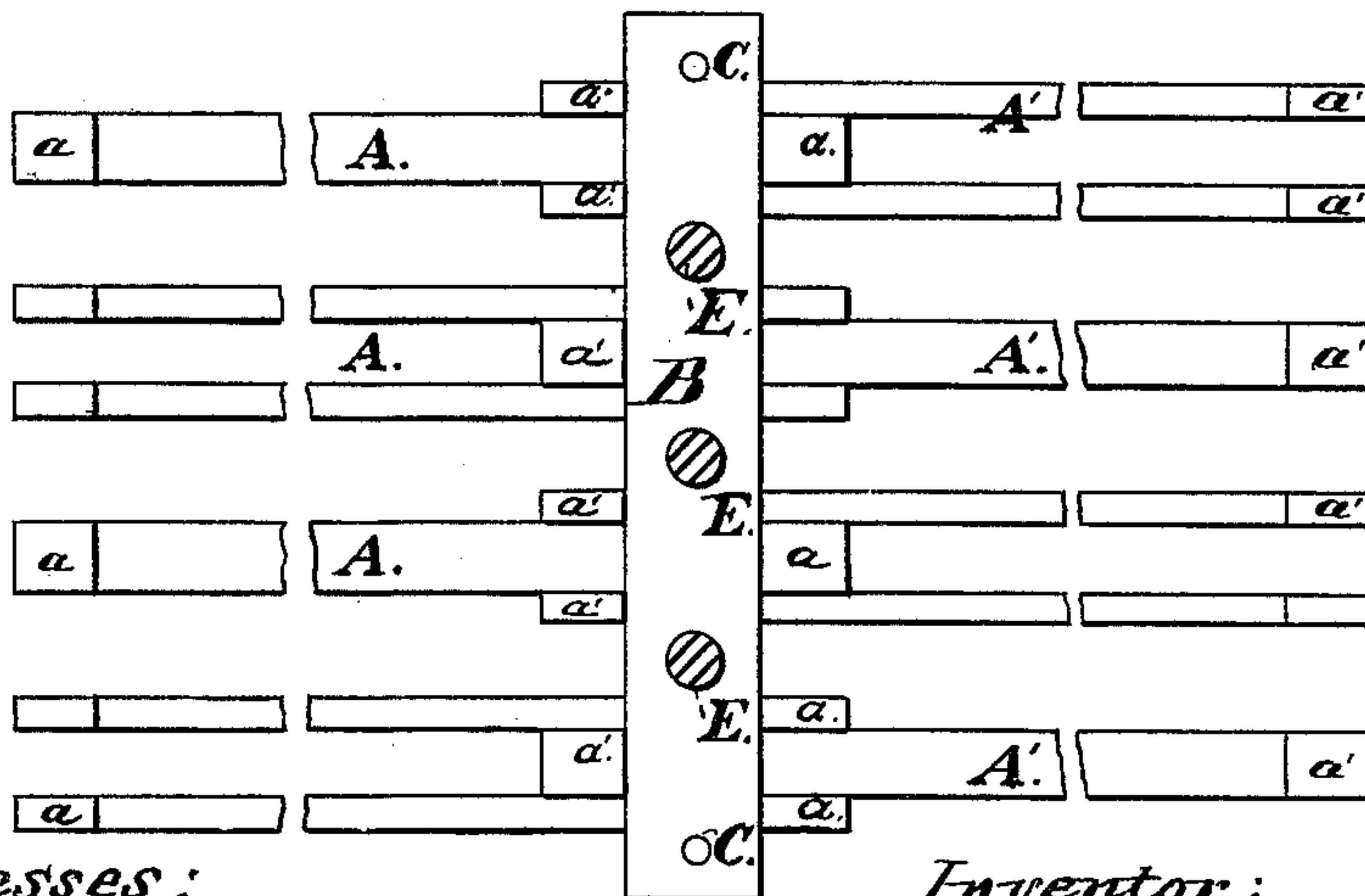
T. RUICK.  
BRIDGE JOINTS.

No. 188,678.

Patented March 20, 1877.



**Fig. 3.**



Witnesses:

Wallace Sigerson  
John W. Collins

Inventor:

Thomas Ruick,  
by Chas. S. Moody,  
his atty.

# UNITED STATES PATENT OFFICE.

THOMAS RUICK, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO HENRY S. HOPKINS, OF SAME PLACE.

## IMPROVEMENT IN BRIDGE-JOINTS.

Specification forming part of Letters Patent No. **188,678**, dated March 20, 1877; application filed  
September 5, 1876.

### *To all whom it may concern :*

Be it known that I, THOMAS RUICK, a resident of the city of St. Louis, State of Missouri, have made a new and useful Improvement in Bridge-Joints, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, making part of this specification, in which—

Figure 1 is a sectional elevation, taken on the line *x x* of Fig. 2, the angle-block being raised from its bearing; Fig. 2, an end elevation, taken on the line *y y* of Fig. 1, the angle-block being raised; and Fig. 3, a top view of the joint, the angle-block being removed.

Similar letters refer to similar parts.

My improved joint is not only a strong, durable construction, readily made and easily put together, but its various parts are so disposed that the strain upon the truss acts to bind them together in such manner as to prevent any movement of one part of the joint upon another part thereof.

Referring to the annexed drawing, *A A A'* represent chord-bars. They are similarly provided with heads *a a a'*. In forming the chord the bars in the various strings are arranged to lap—that is, the bars of one panel lap upon the bars of the adjacent panel, as shown in Figs. 1 and 3, and so as to bring the inner ends of the heads of one set of bars, *A A*, beyond the inner ends of the heads of the opposing set of bars *A' A'*. Cross-plates *B B* are then arranged, respectively, above and beneath the chord, and in the spaces contained between the inner ends, respectively, of the opposing sets of bars. The plates *B B* are somewhat longer than the width of the chord, and at both ends, and just outside the chord, are fastened together by means of bolts *C C*. By this the chord is clamped vertically and horizontally, and the chord-bars locked longitudinally. So far as the tensile strain is concerned, the cross-plates *B B* alone, without the bolts *C C*, serve to tie the chord-bars together. *D* represents an angle-block, whose upper surface is of the usual shape, but having at either end a series of projections, *d d d*, extending downward between the chord-bars, and operating as packing-blocks. The angle-block, at its under side *d'*, is shaped suitably

to fit down upon the cross-plate *B*. The usual vertical rods *E E E* pass through the angle-block and both cross-plates. The chord is readily formed by lapping the chord-bars sufficiently for the cross-plates to be placed in position, and then drawing the bars out again against the plates, and fastening the latter together by means of the bolts *C C*. The angle-block is then placed in position, and the truss erected. The longitudinal strain locks the chord-bars and cross-plates together in a horizontal direction, and the vertical strain binds the bars and plates firmly to each other in a vertical direction.

While I prefer a bar in the form of a flat plate, as shown, I do not desire to be confined thereto. In some instances a round bar may be used to advantage, and with such a bar the head *a* may extend all around the bar, projecting laterally as well as vertically. In all cases it is preferable that the cross-plate be shaped to conform to the bar, and when round bars are used the plates are shaped out to come partly around the bars. Care, however, must be taken not to let the plates extend so far around the bars as to meet and touch each other, for in such case the plates bear upon each other, and the vertical strain of the truss would be transmitted from one cross-plate directly to the other cross-plate, and not indirectly through the chord-bars; and instead of clamping the latter tightly, they would be left loose to work upon the plates, causing wear, and ultimately destroying the chord.

The vertical rods, if desired, may be substituted for the bolts *C C*, and the tie-rods may be either vertical or inclined, according to the character of the truss; also, in some constructions, the upper cross-plate *B* may be formed in one piece with the angle-block above.

I am aware that chord-bars, having enlarged ends and arranged to lap, have been contained within a single slotted head or plate; but such a construction, even if new with me, would not answer my purpose, it being essential that the parts composing the joint be so disposed that the vertical strains be transmitted through the chord-bars.

What I claim is—

1. The herein-described bridge-joint, con-



sisting of the bars A A A' A', having the heads *a a a' a'*, the cross-plates B B, arranged, respectively, above and beneath the chord, but not bearing upon each other, and the bolts C C, combined and operating substantially as described.

2. The combination of the bars A A A' A', cross-plates B B, arranged as described, bolts C C, and angle-block D, having the projections *d d d*, substantially as described.

3. The combination of the bars A A A' A', cross-plates B B, arranged as described, angle-

block D, with or without the projections *d d d*, and rods E E E, substantially as described.

4. The combination, in a bridge-joint, of the chord-bars A A A' A', provided with heads *a a a' a'* and the cross-plates B B, arranged as described, substantially as and for the purpose set forth.

THOS. RUICK.

Witnesses:

CHAS. D. MOODY,  
JOHN W. COLLINS.