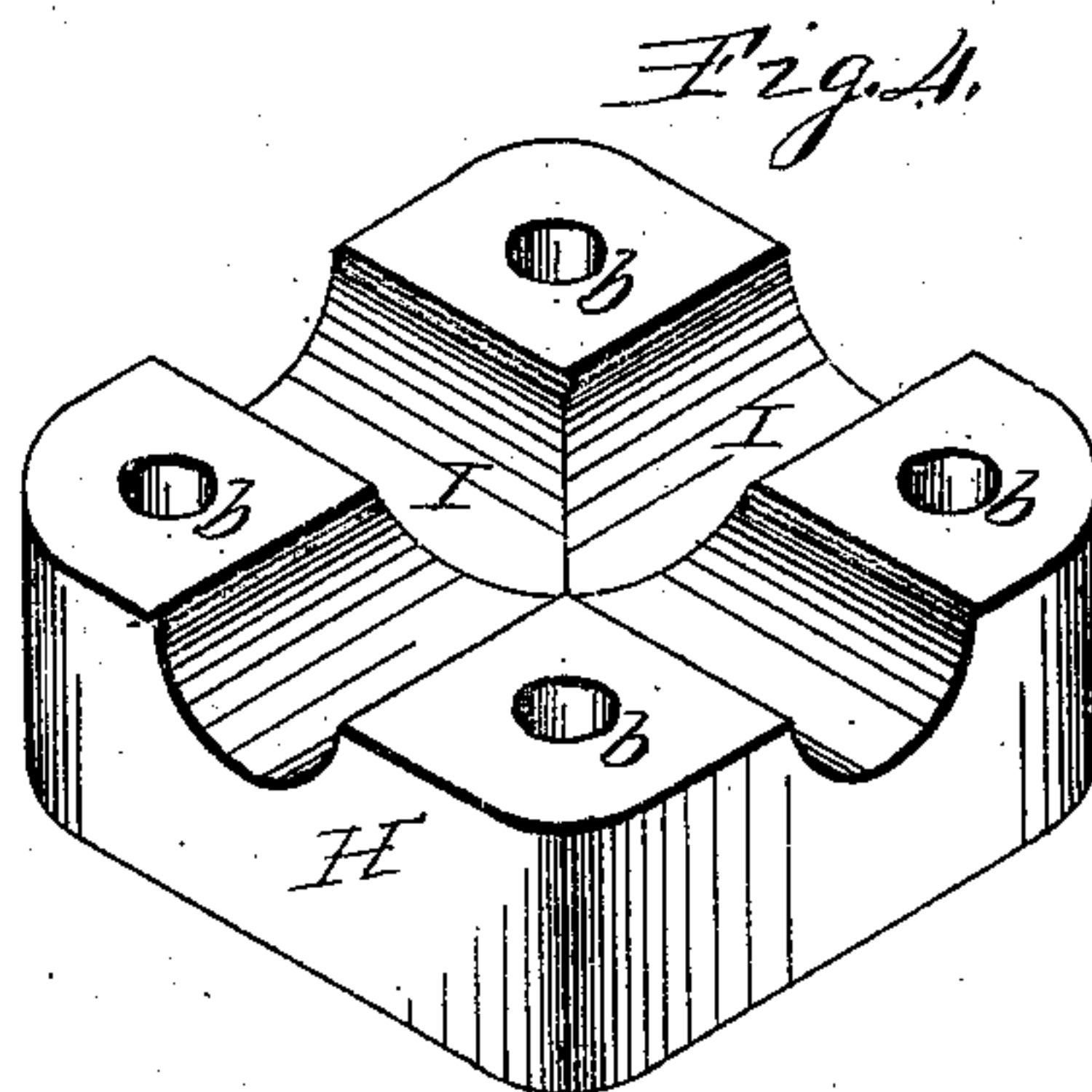
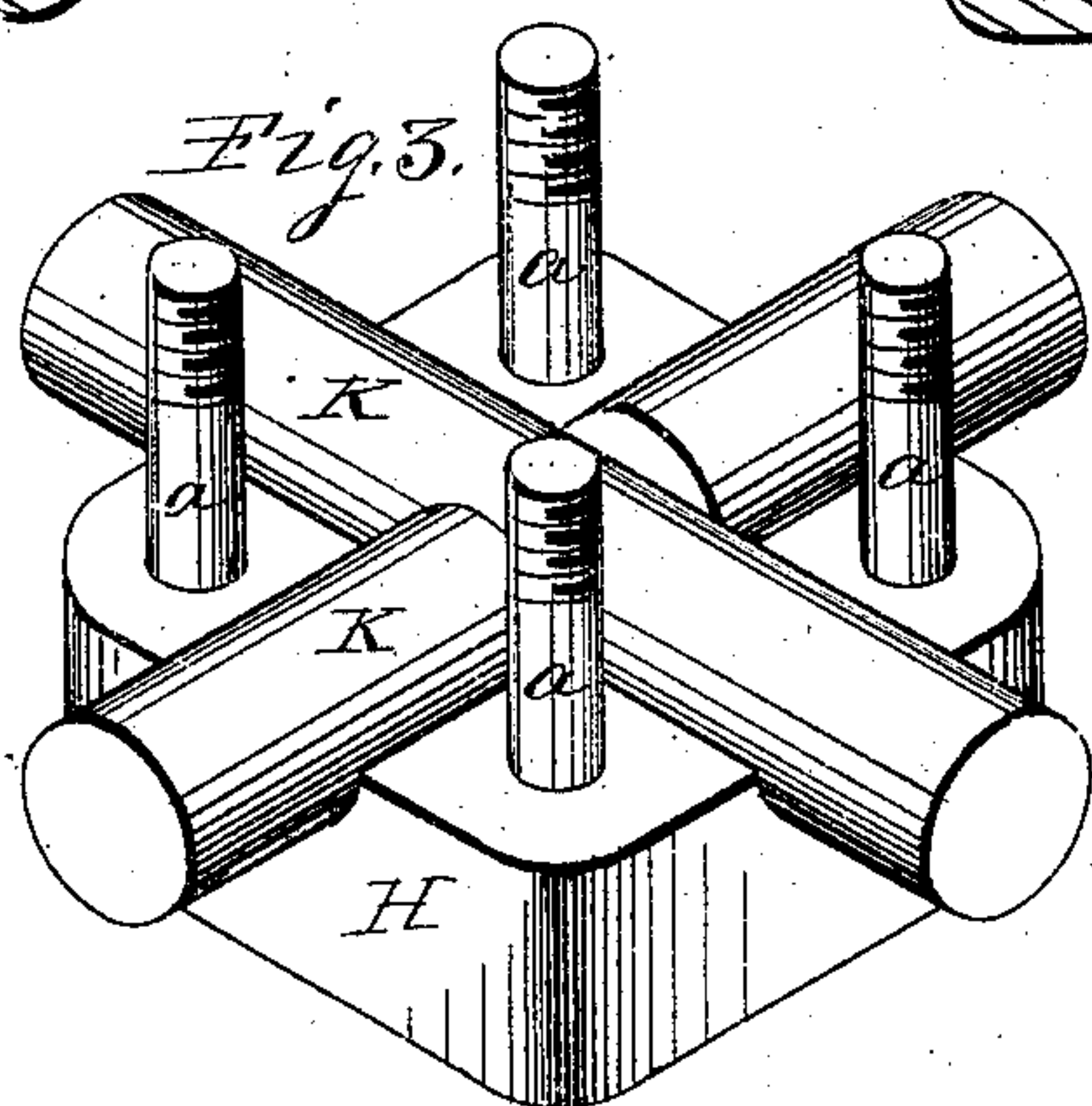
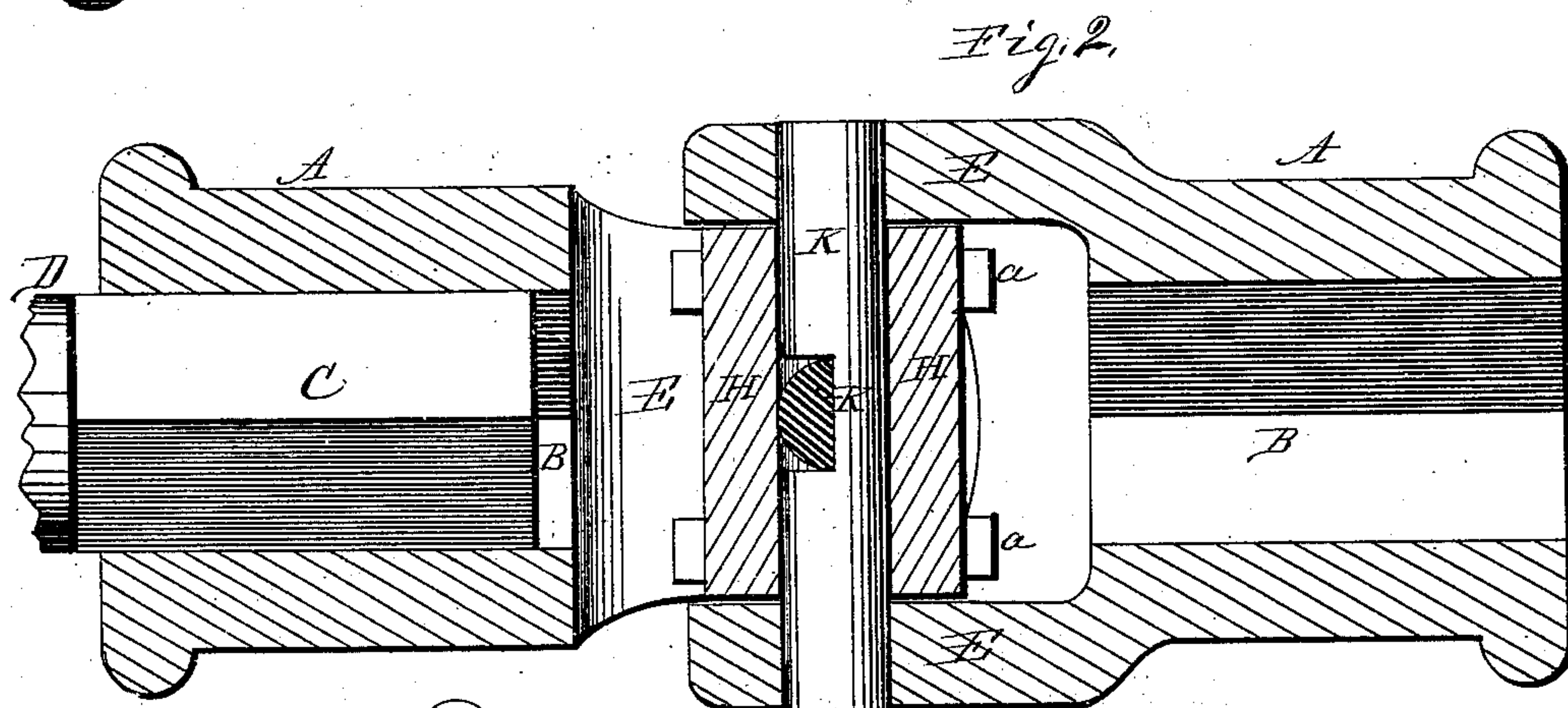
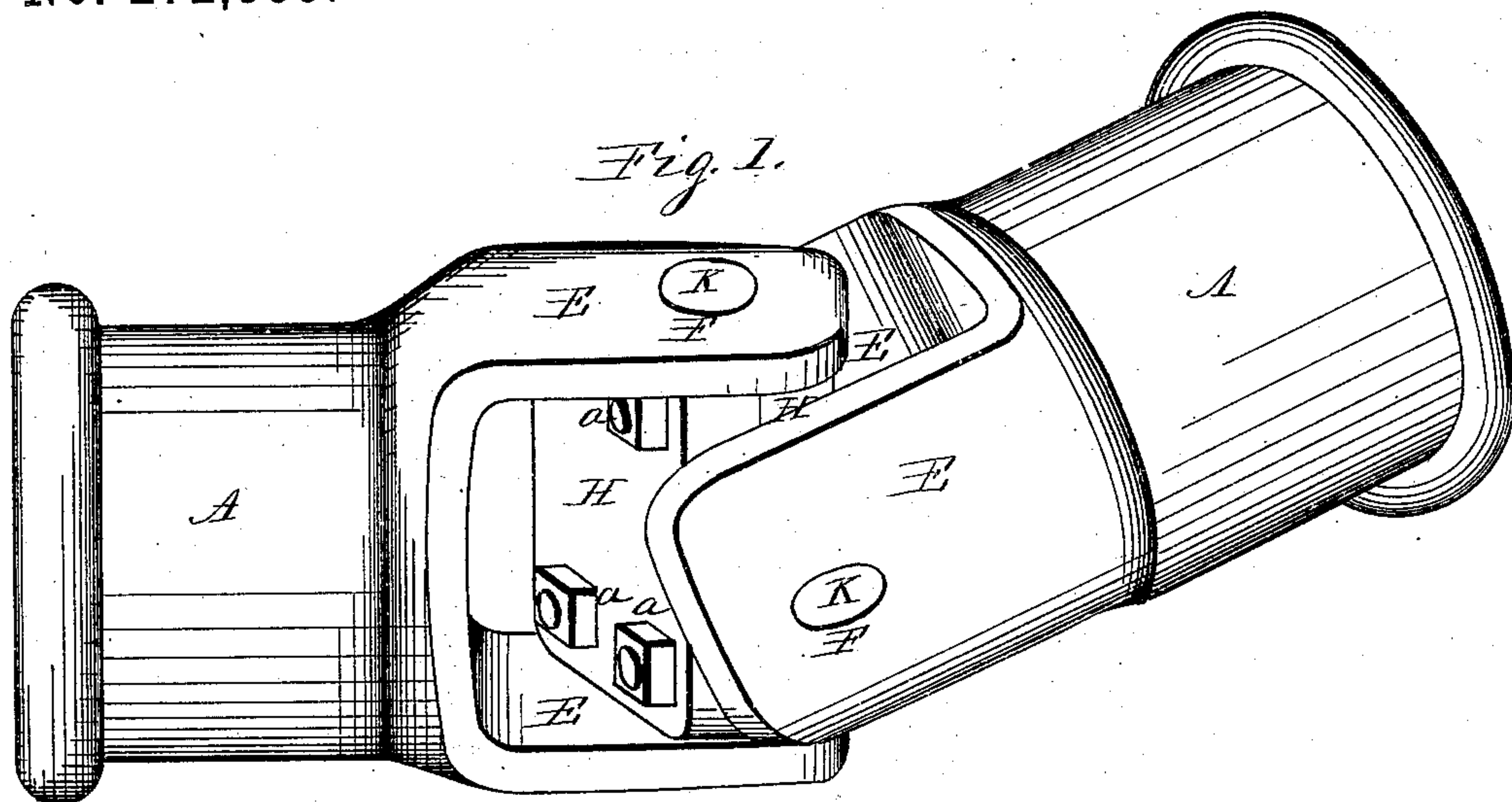


(No Model.)

C. SHUMAN.  
UNIVERSAL JOINT COUPLING.

No. 272,339.

Patented Feb. 13, 1883.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHARLES SHUMAN, OF ROCKFORD, ILLINOIS.

## UNIVERSAL-JOINT COUPLING.

SPECIFICATION forming part of Letters Patent No. 272,339, dated February 13, 1883.

Application filed August 19, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SHUMAN, a citizen of the United States, residing in the city of Rockford, county of Winnebago, and State of Illinois, have invented new and useful Improvements in Universal-Joint Couplings, of which the following is a specification.

My invention relates to universal-joint couplings employed mainly in connecting shafting out of line or tumbling-rods to thrashing-machines, and other like purposes requiring a flexible connection; and its object is to produce a safety universal-joint coupling of reliable construction at a small cost. To this end I have designed and constructed the coupling represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of my improved coupling. Fig. 2 is a longitudinal central section. Fig. 3 is an isometrical representation of one-half of the central connecting-block with the transverse bars in place therein. Fig. 4 is an isometrical representation of one-half of the center block with the transverse bars omitted.

The shaft-heads of my improved coupling represented in the accompanying drawings consist of the cylindrical portions A, of suitable dimensions, provided with an axial opening, B, to receive the end portion of the shaft. These openings in this instance are rectangular in section, adapted to receive the rectangular end portion, C, of the shaft D. These shaft-heads are provided with arms E, projecting from opposite sides of one end thereof. These arms are provided with transverse holes F, to receive the end portions of suitable transverse bars.

At H are represented like halves of a two-part cubical block of suitable dimensions to enter freely between the arms E of the shaft-heads. The contiguous faces of these like halves H are provided with semicircular grooves I, crossing at right angles centrally over the face of the blocks, parallel with the sides thereof. The diameter of these semicircular grooves is substantially the same as the diameter of the holes F in the side arms of the shaft-heads.

At K are represented cylindrical bars having a diameter such as to freely enter the grooves I in the like halves H of the cubical block, and also the holes F in the side arms, E, of the shaft-heads. These cylindrical bars

K are centrally notched or gained on each other at the point of their crossing in such a manner as to lie in substantially the same plane, and in such a manner as to produce a lock to prevent endwise movement of the bars. These bars are designed to enter the semicircular grooves I in the contiguous faces of the two-part cubical block, as shown in Fig. 4, and the two parts of the cubical block, being placed together, embrace the bars, and the parts of the block are fixed to each other by means of screw-bolts a, passed through holes b, prepared in the corner portions of the block to receive them, and the projecting ends of the bars are designed to enter the holes F in the side arms of the shaft-heads.

In connecting the parts to produce the joint the bars are placed in the holes of the side arms of the shaft-heads, and the semi portions of the two-part cubical block are then placed between the side arms, one portion thereof in each shaft-head, in such a manner as to receive the bars in the semi-grooves in the blocks. The heads are then placed together in such a manner that the bars shall cross each other at right angles, having their notched centers engage each other, and the bars enter the grooves in the blocks. In this position the parts are fixed to each other by means of the screw-bolts which are passed through the corner portions of the blocks, producing a reliable safety universal-joint coupling having a smooth exterior, and in which I dispense with the outer annular rings and outer casings usually employed in producing safety-couplings.

In this construction I have placed the transverse bars in the same plane, which requires the central notching to be produced to the center; but they may be employed in such a manner as to pass each other in the usual manner; but in such construction means must be employed to prevent endwise movement. These bars, however, may be so placed as to nearly pass each other, in which instance a slight notching or bending of the bars will serve to prevent endwise movement.

I claim as my invention—

1. The combination, with the transverse bars, of a two-part block having its contiguous faces grooved to receive the bars, substantially as and for the purpose set forth.

2. The combination, with the transverse bars

fitted to prevent endwise movement, and with a two-part block grooved to embrace the bars, of screw-bolts to connect the parts, substantially as and for the purpose set forth.

- 5 3. The combination, with the shaft coupling heads, of transverse bars to enter the holes in the side ears of the coupling-heads, and a two-part cubical block adapted to enter between the side ears, said two-part block grooved on

its contiguous face sides to receive the trans- 10  
verse bars, and fixed to each other by screw-bolts to prevent endwise movement of the bars, substantially as and for the purpose set forth.

CHARLES SHUMAN.

Witnesses:

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