

(No Model.)

T. COOPER.

DRAW BRIDGE, TURN TABLE, &c.

No. 350,528.

Patented Oct. 12, 1886.

Fig. 1.

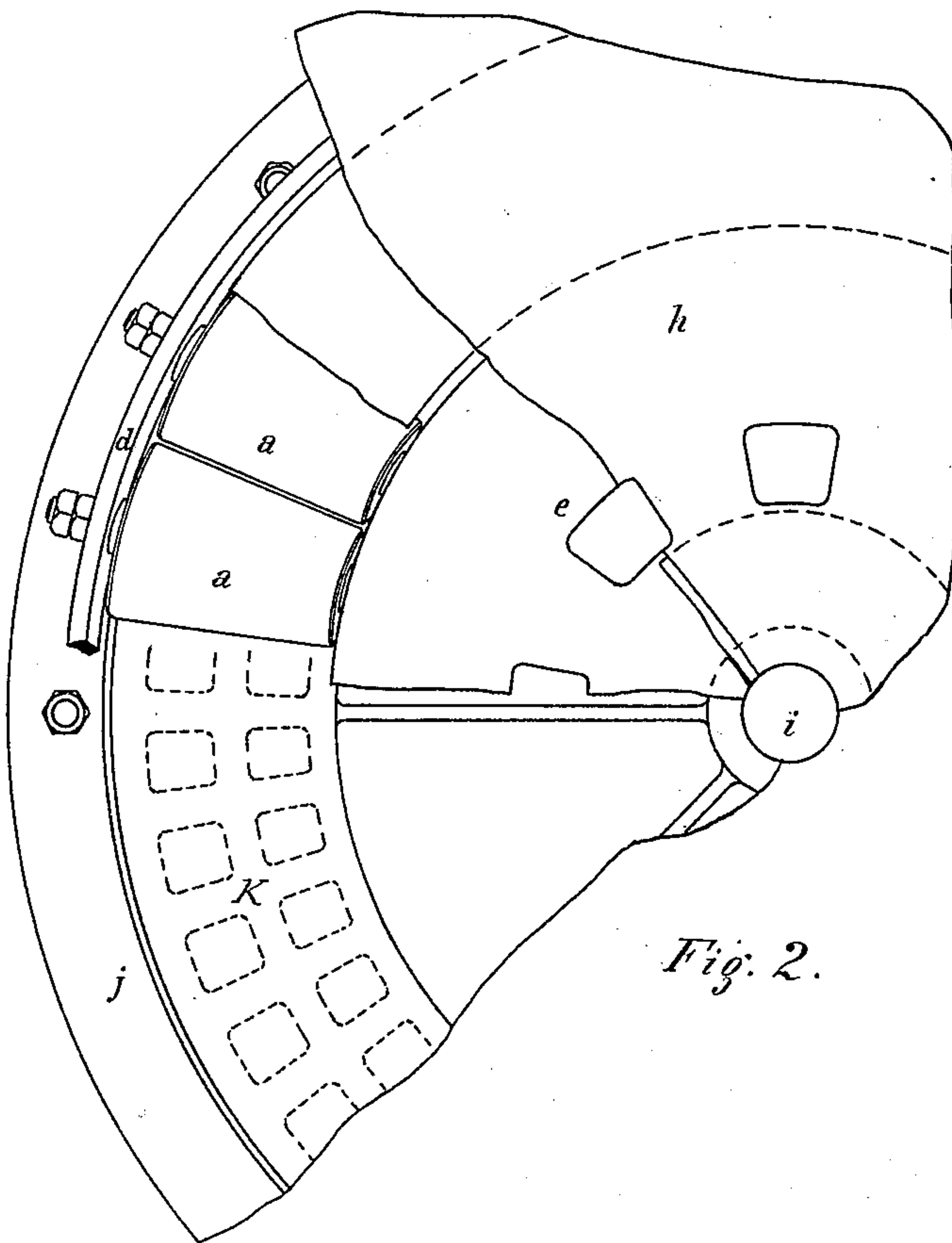
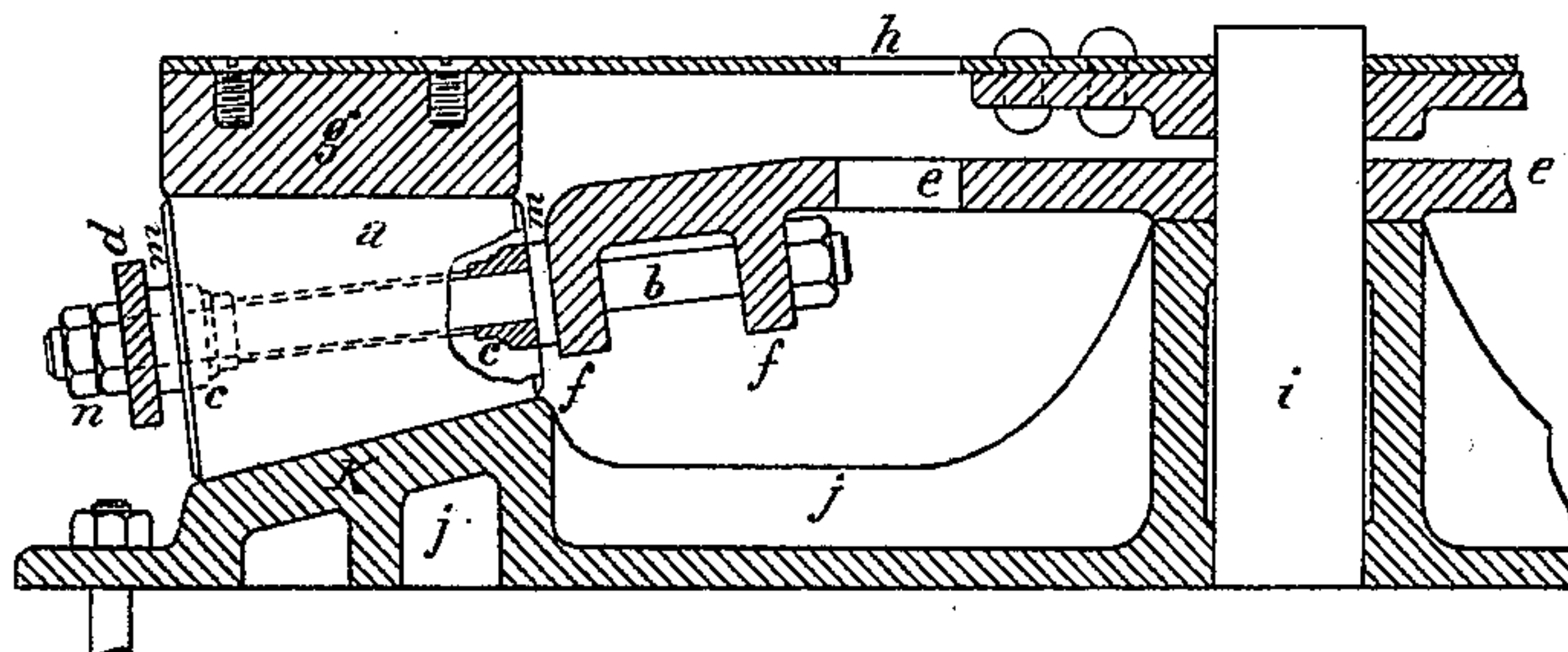


Fig. 2.

WITNESSES:

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DRAW-BRIDGE, TURN-TABLE, &c.

SPECIFICATION forming part of Letters Patent No. 350,528, dated October 12, 1886.

Application filed March 19, 1886. Serial No. 195,794. (No model.)

To all whom it may concern:

Be it known that I, THEODORE COOPER, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented a new and useful Improvement in Center-Bearing Draw-Bridges and Turn-Tables, which invention or improvement is fully set forth and illustrated in the following specification and accompanying drawings.

The object of the invention is to simplify the construction, to diminish the friction, to insure the efficiency, and to cheapen the cost of the centers of that class of draw-bridges more properly termed "swing-bridges" or "turn-tables."

The invention consists of the parts and combination of parts constituting the mechanism hereinafter described and claimed.

In the accompanying drawings, Figure 1 shows a half cross-section of the turn-table or similar structure; Fig. 2, a portion of the same in plan, each figure broken so as to illustrate the coned bearing-wheels with their axles, guide-rings; and top and bottom bearing-plates all truly centered about a common shaft inserted in the base-casting.

In said figures the several parts are indicated by letters, respectively, as follows:

The letter *a* indicates the coned bearing-wheels, *b* the axles of said wheels, and *c* the axle-bushings.

The letters *d* and *e*, respectively, indicate the outer and inner guide-rings, the lugs *f* holding the axles *b* in radial adjustment.

The letter *g* indicates the top bearing-plate, having centralizing arms or web *h*, and *i* the central guiding-shaft.

The letter *j* indicates the base-casting having the lower bearing-track, *k*.

The bridge, turn-table, or similar structure rests upon and its whole weight is supported by the top bearing-plate, *g*. Such structure may be attached to said plate in any manner considered best for each particular case. Its weight may also be distributed over the top bearing-plate in any desired manner. The bearing-wheels, preferably, should be inclined, as shown in Fig. 1, so that the upper bearing-plate may be made flat or without any coning, thus cheapening the construction and providing for an automatic adjustment horizon-

tally of the moving structure without cramping the wheels and increasing the friction. The axles of the wheels are held radially by being secured in such direction by the lugs *f* on the inner guide-ring, *e*, and by the bearings in the outer guide-ring, *d*. Said axles and outer guide-ring are so fitted that by means of the filling-washers *m* and the nuts *n* at the outer ends of the axles each wheel can be accurately adjusted to a uniform bearing. The moving part of the structure and the circular nest of coned wheels are accurately guided about the same central shaft, *i*, by means of the webs *h* and *e*. The base-casting, preferably made in one piece, rests firmly and truly upon any selected foundation. The lower bearing-track, *k*, the hub for the central shaft, *i*, and the bottom surface of the base-casting *j* can be accurately faced and bored in the lathe or similar machine, so as to insure a true relation between these several surfaces.

While the arrangement of parts shown may be considered as an improvement upon the "Parry Friction-Box," it is a new invention, and differs from methods heretofore in use for swing-bridges, turn-tables, and similar structures in the following-named particulars: First, the parts are all placed beneath the structure, thus avoiding all high castings and suspension devices; second, the parts are all freely open to inspection while either in motion or at rest, thus enabling any irregularities to be discovered, proper adjustments to be made, and any defective parts removed and replaced with the greatest facility; third, from the location of the parts below the structure great latitude is obtained for the selection of the best dimensions of the wheels and their radial distance from the center; fourth, the greater accessibility of all the working-surfaces to be tool-finished in the ordinary appliances or machines in the machine-shop; fifth, from the horizontality of the top bearing-surfaces a perfectly-accurate means is obtained for setting the working parts truly before placing the structure thereon; sixth, for locomotive turn-tables, the better attainment of the self-balancing of the locomotive-engines of different classes and different conditions of loading, by so proportioning the diameter of the centers that the various positions of the center of gravity of the several engines will always fall

within its periphery, thus avoiding the need of trailing wheels at the ends of said turntables.

Having thus fully described my said improvement as of my invention, I claim—

In combination with a swing-bridge, turntable, or similar rotating structure, a base-casting provided with a central guide-shaft, and having a coned track at or near its periphery, and a nest of coned wheels on said track having their top surfaces lying in a hori-

zontal plane and held truly radial by fixed axles secured to inner and outer guide-rings, as *d e*, all combined and arranged beneath said structure, whereby all suspension devices may be dispensed with, and girders carried on top, substantially as and for the purposes set forth.

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Witnesses:

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