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Patented Sept. 19, 1899.

H. RABE.  
AUTOMATIC GRIP BRAKE.

(Application filed Jan. 19, 1899.)

(No Model.)

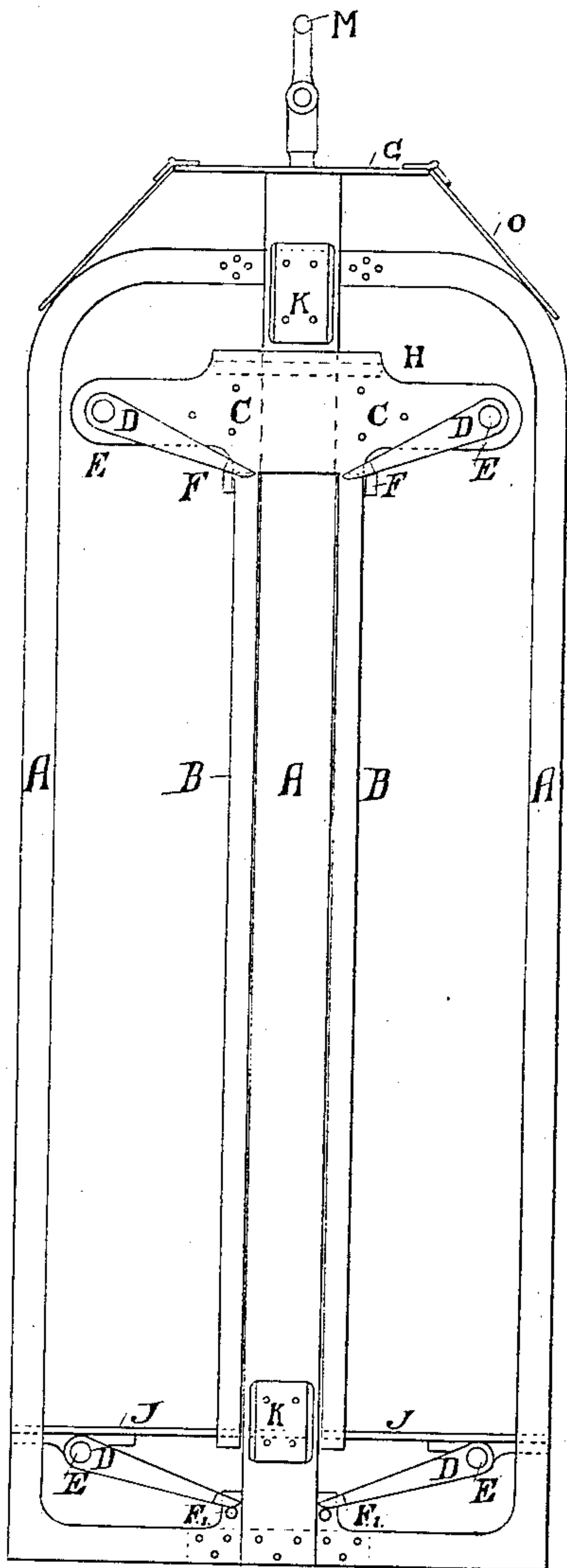


FIG. 1.

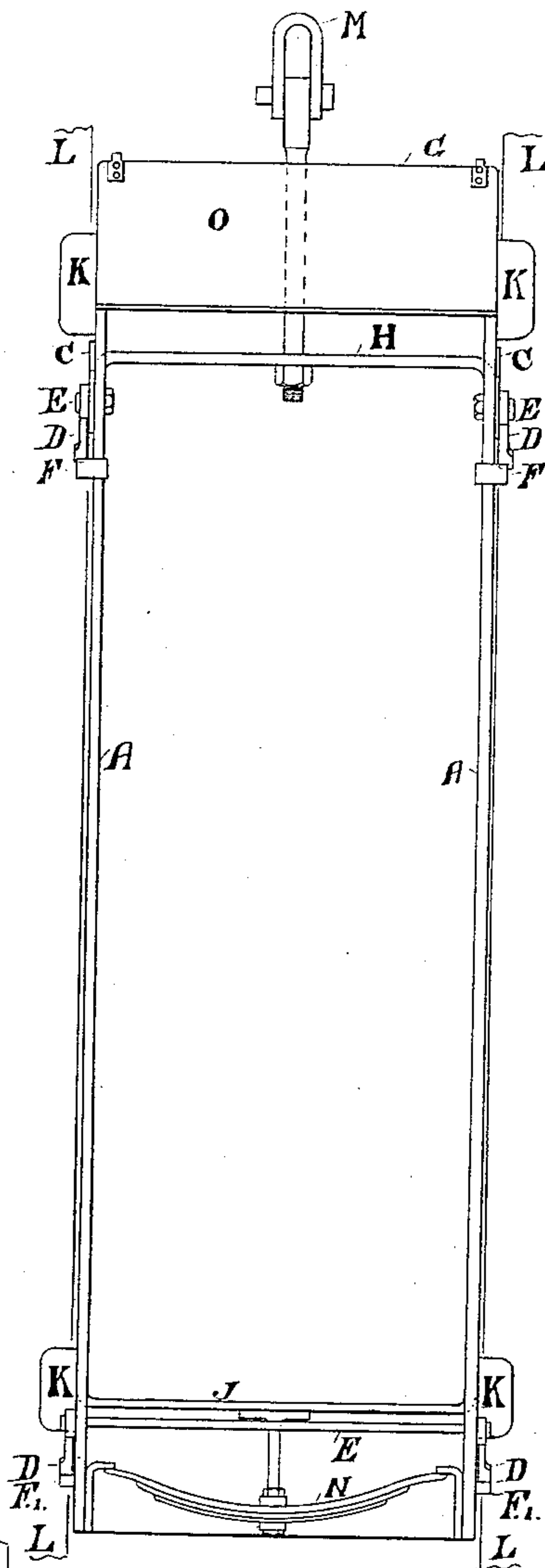


FIG. 2.

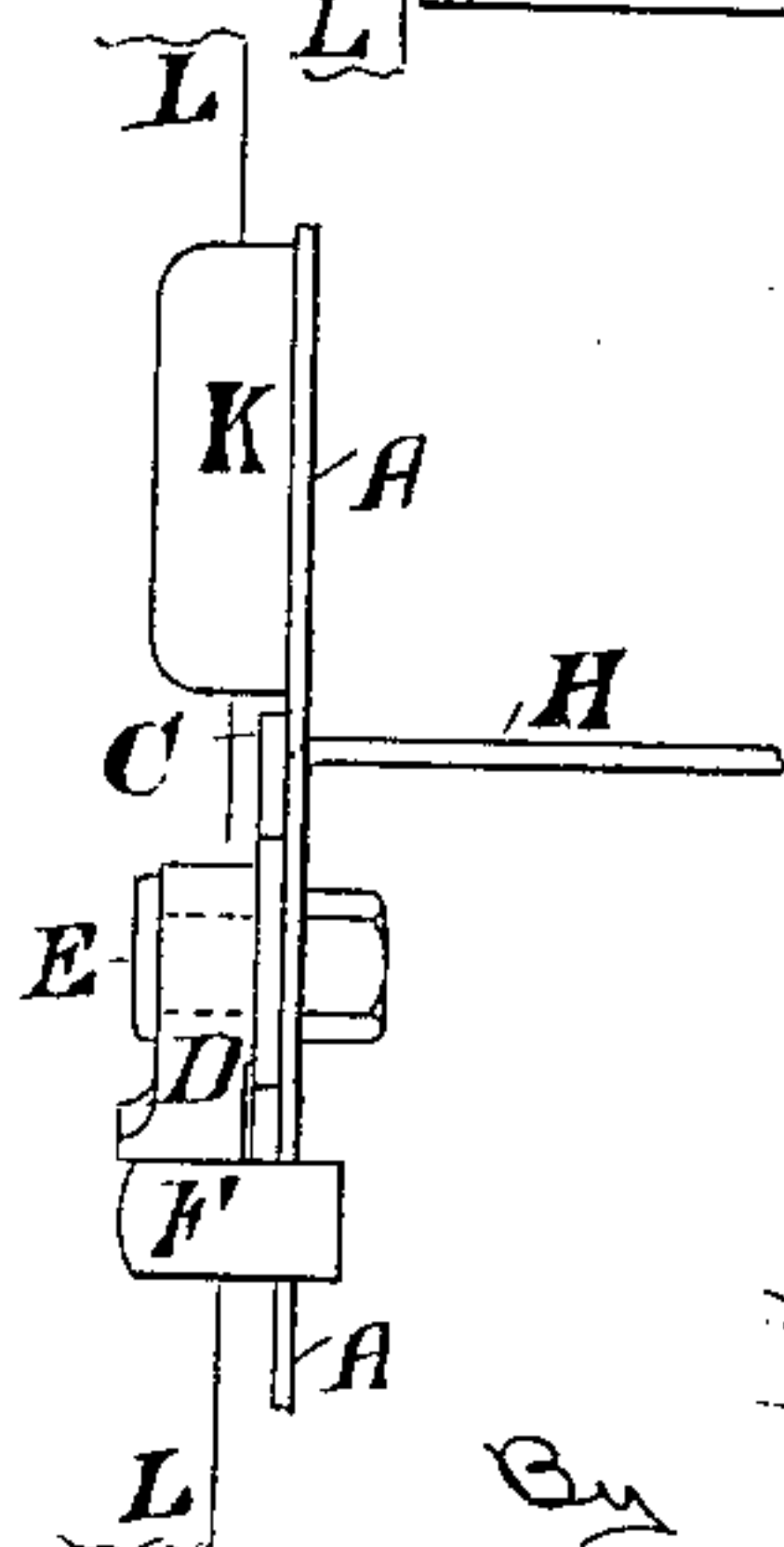


FIG. 3.

Witnesses  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC GRIP-BRAKE.

SPECIFICATION forming part of Letters Patent No. 633,485, dated September 19, 1899.

Application filed January 19, 1899. Serial No. 702,700. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY RABE, mine manager, a subject of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, and a resident of Thames, in the provincial district of Auckland and Colony of New Zealand, have invented a certain new and Improved Automatic Grip-Brake, of which the following is a specification.

10 This improved side grip-brake is intended to secure complete freedom from accidents where cages or lifts are used, either in mines or buildings, by preventing them from falling should the haulage rope or chain break or 15 the tension of the same be suddenly released.

The invention consists of the construction, combination, and arrangement of parts, which will be hereinafter more fully described and 20 claimed.

The accompanying drawings show three figures, which fully illustrate the invention.

Figure 1 is a side elevation of the cage. Fig. 2 is a front elevation of the cage. Fig. 3 25 is an end elevation of upper part of cage.

25 The different parts of the cage are: A, outer or auxiliary part of frame of cage; B, inner or haulage part of frame of cage; C, cross-plates connected to upper portion of inner part B for carrying arms or dogs; D, 30 arms or dogs; E, spindles which hold upper ends of arms or dogs D; F, projections on which upper arms or dogs D rest; F', bolts on which lower arms or dogs D rest; G, top plate of outer part A with bonnet connected 35 thereto; H, top plate of inner part B; J, bottom of inner part B; K, shoe attachments to outer part A for adjusting cage to guides; L, guides; M, hook or shackle for connecting haulage rope or chain to top plate H of inner 40 part B; N, springs beneath and attached to bottom J, and O bonnet connected to top plate G.

The cage necessary to give effect to the arms or dogs D, so as to make them grip the 45 sides of the guides L, is made with an outer and an inner part, (marked on the drawings, respectively, A and B,) the inner part B being so adjusted to the outer part A that it will move slightly up and down it, according as 50 the haulage rope or chain connected to the top plate H of the inner part B by the hook or shackle M is tightened or slackened. The

upper portion of the inner part B has two cross-plates C riveted or otherwise connected to it, and on the outer extremities of these 55 cross-plates C arms or dogs D are hung and held at their broader ends, two on each cross-plate, by spindles E, while their lower ends, which are wedge-shaped, rest on projections F and point toward the guides L. The pro- 60 jections F (shown in the drawings) are formed by a piece of iron being riveted to the inside of the outer part A and turned over around the edges of the inner part B, but so as not to touch them. The lower ends of the inner 65 part B hold the bottom J, and to the sides of this bottom J, at or near its outer extremities, four arms or dogs D, two on each side, are hung and held at their broader ends by spindles E, while their lower ends, which 70 are wedge-shaped, rest on bolts F' and point toward the guides L. These bolts F' are fastened to the lower ends of the outer part A. Beneath and to the bottom J two springs N are so connected that when the haulage 75 rope or chain slackens or breaks, so as to relieve the tension, they draw down the bottom J, and with it the inner part B and the cross-plates C, before the outer part A moves, whereby the lower ends of the eight arms or dogs 80 D are made to grip the sides of the guides L, being prized thereto by the projections F and the bolts F', on which they respectively rest. The sides of the guides L may have racks fitted onto them for the arms or dogs D to catch in 85 when gripping, if so desired. Cleats may be fastened to the outer part A about two inches above the bottom J, or the shoes K can be so fastened to the outer part A as to prevent the inner part B rising too high or being 90 drawn out from the outer part A when the haulage rope or chain is tightened. The spindles E are fastened to the cross-plates C and to the bottom J by any suitable means which will allow the arms or dogs D to turn 95 on or with them. When the haulage rope or chain is tightened, the inner part B is drawn up and the arms or dogs D are taken off the guides L, and the cage is free to go up or down as required. 100

Iron or other suitable metal is used in the construction of the cage, and the arms or dogs D are made of solid metal sufficiently strong to stand the strain put upon them. No



measurements are given, as they will vary according to the sizes of the cages.

The foregoing description of the construction of a cage is given to show that it must  
5 be so made in two parts that one part will have for a short period of time a greater falling velocity than the other part, and thereby cause the arms or dogs D to act and grip the guides L, as already shown; but so long as  
10 this effect can be obtained in the manner described the inventor does not confine himself to the particular form of cage here illustrated, except as defined by the claim.

Having fully described my invention, what  
15 I desire to claim and secure by Letters Patent is—

In an elevator, a cage or car comprising a frame made up of two relatively movable

parts, A and B, cross-plates C secured to the part B outside the cage, on opposite sides 20 thereof, a hoisting rope or cable attached to the part B, and a spring N for drawing the part B downward independently of the part A when the hoisting-rope breaks or slackens, in combination with the guides L, the dogs D 25 pivoted at their outer ends to the plates C, projecting inwardly therefrom and adapted to engage the guides L on opposite sides thereof, and projections F secured to the part A and extending transversely thereof for sup- 30 porting the inner free ends of said dogs, as and for the purpose set forth.

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Witnesses:

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