

(No Model.)

J. S. MACFARLANE.

THREAD TENSION DEVICE FOR SPINNING FRAMES.

No. 459,947.

Patented Sept. 22, 1891.

Fig. 2.

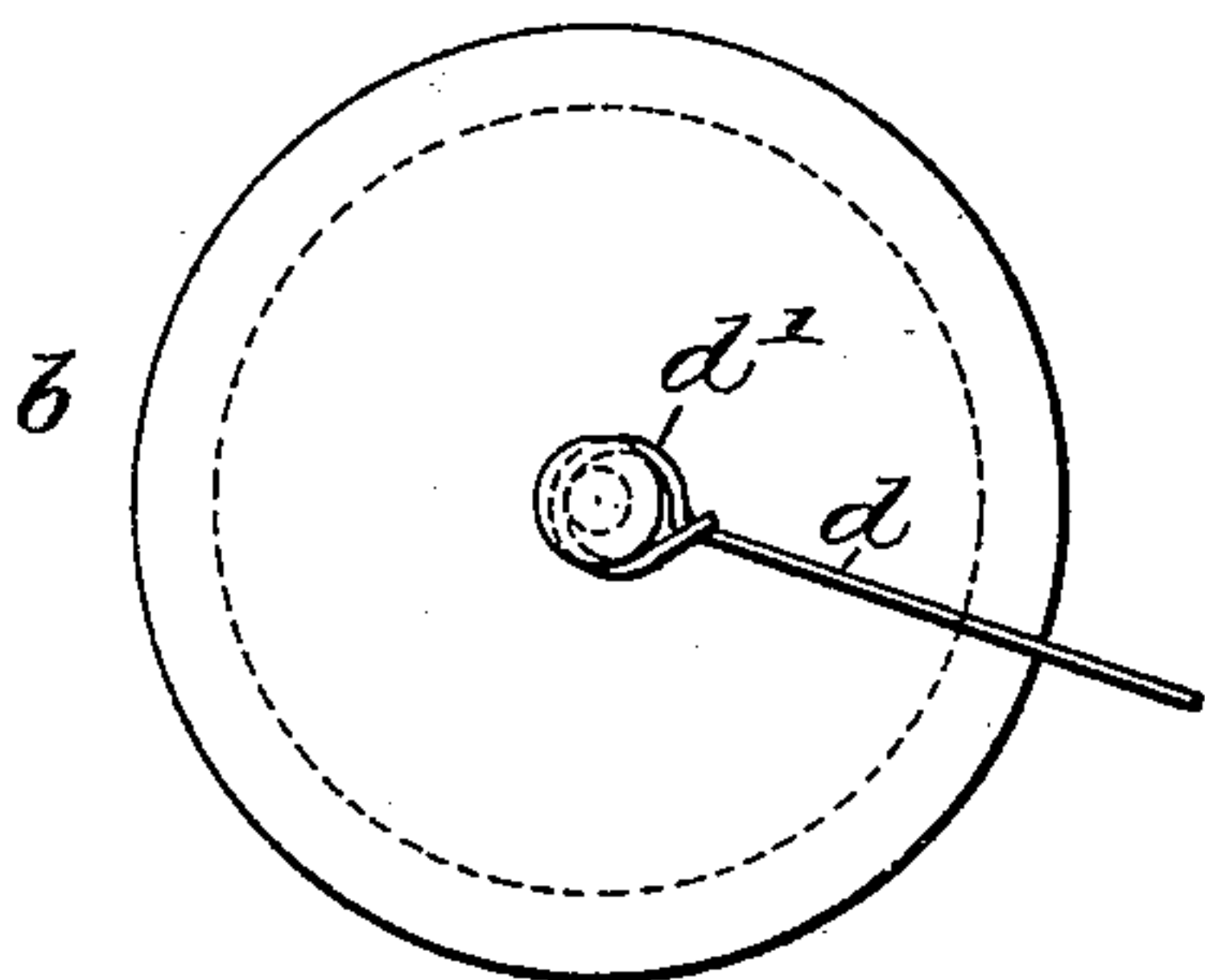


Fig. 1.

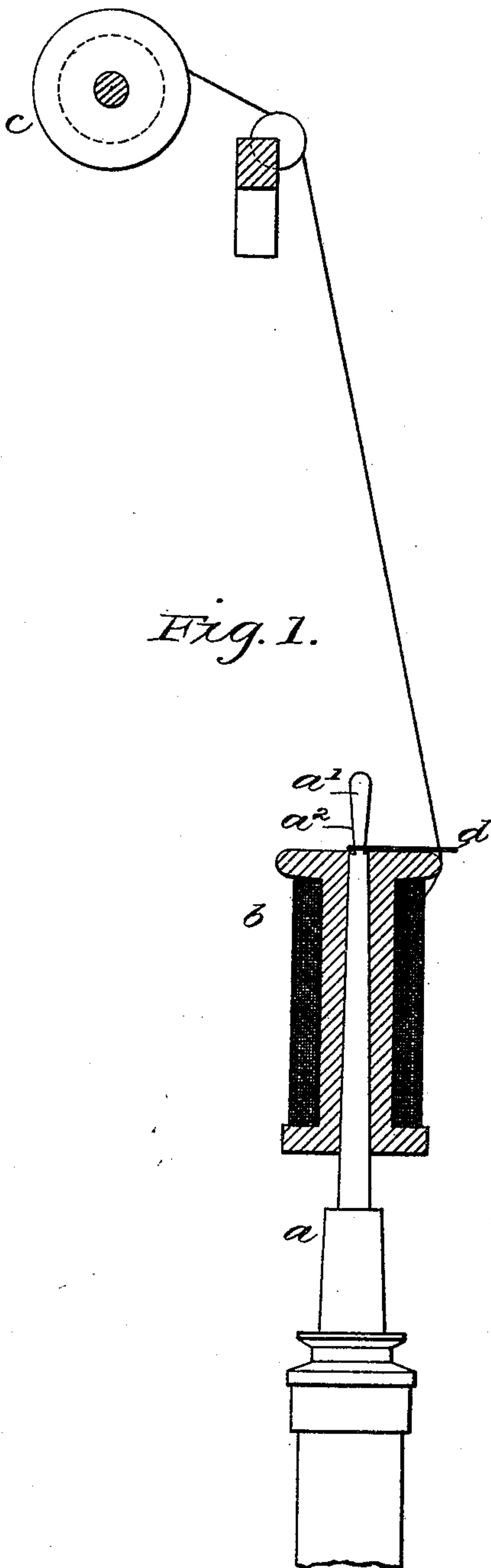
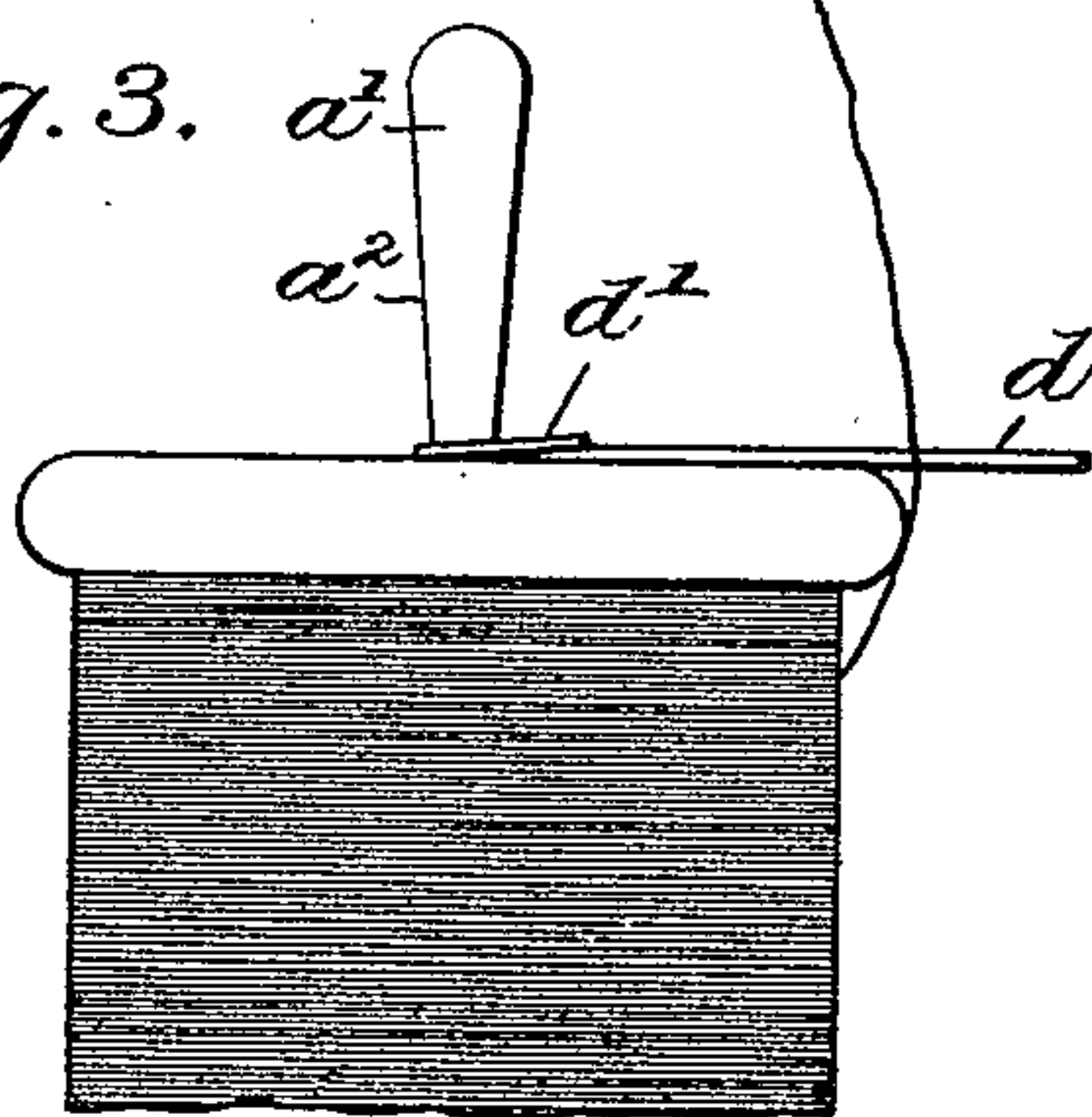


Fig. 3.



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JAMES S. MACFARLANE, OF CHAPLIN, CONNECTICUT.

THREAD-TENSION DEVICE FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 459,947, dated September 22, 1891.

Application filed March 21, 1891. Serial No. 385,853. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. MACFARLANE, of Chaplin, in the county of Windham and State of Connecticut, have invented certain new and useful Improvements in Thread-Tension Devices for Spinning-Frames, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a simple, compact, and easily-operated device by the use of which a more delicate and positive tension may be put upon the thread in spinning, the same device serving as a very effectual preventer of kinking as the thread passes over, and it is particularly adapted for use with a single thread the first time over, and on silk-spinning machinery.

My invention consists in the details of the arrangement of the drag and its connected parts, and in their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view in side elevation showing the relative arrangement of the bobbins of a silk-spinning frame, the bobbin being shown in section. Fig. 2 is a detail top view of the lower bobbin, showing the drag. Fig. 3 is a detail view in side elevation of part of the bobbin, showing the drag on enlarged scale.

On the ordinary form of spinning-frame and with the use of the old devices a thread is carried from the lower bobbin through or over a guide and tension device, the tension being adjusted by taking one or more turns of the filament about the upright portion of the guide, and the thread then passes onto the receiving-bobbin, usually mounted horizontally on the frame; but owing to the great speed at which the bobbins are rotated there is danger of kinking of the thread as it passes from the lower to the receiving bobbin, and it is difficult to arrange the proper degree of tension to compactly wind the thread upon the receiving-bobbin, and owing to the outlay and loss of time involved in stopping the machine, and consequent upon the kinking of the thread as the machine stops, it is customary to band up only once a week.

By the use of my invention a very delicate

and positive tension upon the thread is obtainable and at the same time all kinking of the thread or filament is absolutely prevented.

In the accompanying drawings, the letter *a* denotes a spindle on a spinning-frame, on which is supported a bobbin *b* in an upright position, the bobbin fitting, in the usual manner, upon the blade of the spindle, the latter being driven by the usual appliances. The single-thread organzine with which this bobbin is loaded is unwound therefrom and upon the receiving-bobbin *c* in the operation of the machinery, and upon the top of the lower bobbin is supported a drag *d*, that consists, preferably, of a single piece of wire having a loop *d'*, that slips over the end of the spindle-blade *a'*, that forms a pivot for the drag. It is not essential to my invention that this pivot should be formed by the end of the spindle; but it is preferably so formed on account of the convenience of such construction. The pivot is formed with a reverse taper *a''*, so that the drag which is rapidly revolving about this center shall always tend to remain close down upon the top of the bobbin on which it normally rests. The inward slope of the reverse taper provides an effective and simple means for retaining the drag at a desired level.

The thread *e* passes up from the bobbin back of the drag which opposes the unwinding of the filament with a force depending upon the weight of the drag and the frictional resistance due to the contact of the drag with the top surface of the bobbin. These drags are preferably made of a piece of wire having a loop *d'*, formed by a simple bend of the wire, and they are made of different sizes of wire and of different lengths, depending upon the degree of tension desired and the size of the thread.

I have found by extended use of this device that a much larger quantity of silk can be wound on a given size of receiving-bobbin than when the old form of tension device is used, and that in addition to its function as a tension-regulator the drag serves as an absolute preventive of the kinking of the organzine as it is unwound from the bobbin. It is of great advantage in connection with this invention to have the delivery-bobbin *b* made

with the lower flange b' less in diameter than the upper flange b^2 , as the former affords an exact gage by means of which an operative can determine when the bobbin has been
5 wound sufficiently full for use. As the under surface and the flange at its edge is curved and rounded, it is difficult for an operative to determine or judge by the location of the thread or filament on the flange just when the
10 bobbin has been filled to a degree that best adapts it to be used on the spinning-frame.

When it is desired to change the tension of any given bobbin, it may be done by changing the drag, different sizes of which are supplied for this purpose; but for ordinary uses
15 on single-thread organzine a uniform size of drag made of practically the same diameter of wire and of a uniform weight will be found to meet all the requirements.

20 By the use of my invention I have found it possible to stop the spindles at any time without any chance of loss through kinking of the filaments from any cause.

I do not limit myself to the specific construction of the drag or to the use of the spindle-blade as a pivot. 25

I claim as my invention—

1. In combination with a bobbin, a pivot having a reverse taper, and a drag having in one end a loop surrounding the pivot and an
30 arm extending beyond the periphery of the top of the bobbin upon which the drag rests, all substantially as described.

2. In a spinning-frame, in combination with a spindle having near its upper end a reverse
35 taper, a bobbin supported on said spindle, and a drag composed of a piece of metal formed to shape with a loop adapted to engage the pivot, and an arm extending beyond the periphery of the top of the bobbin upon
40 which the drag is normally supported, all substantially as described.

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Witnesses:

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