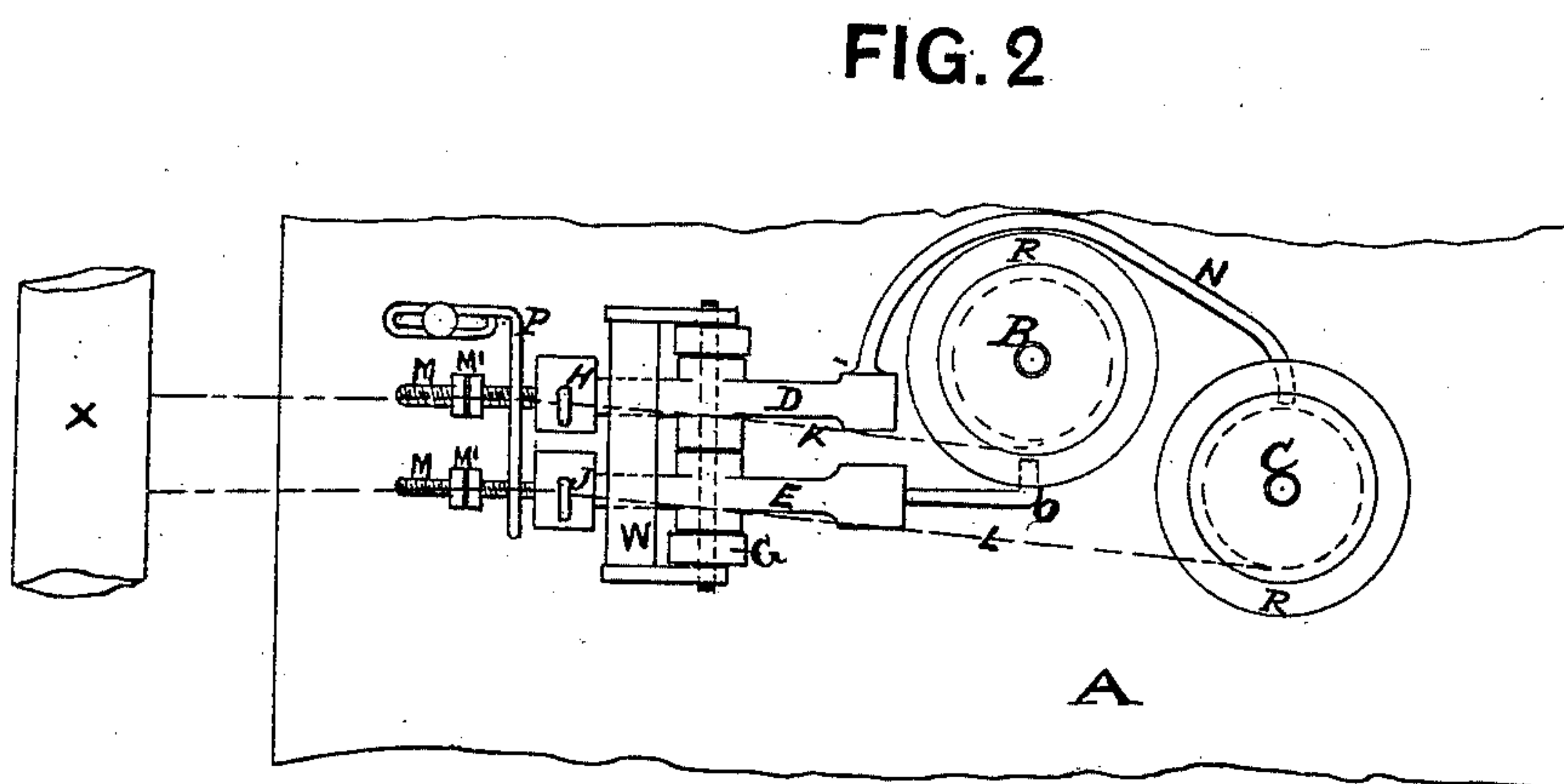
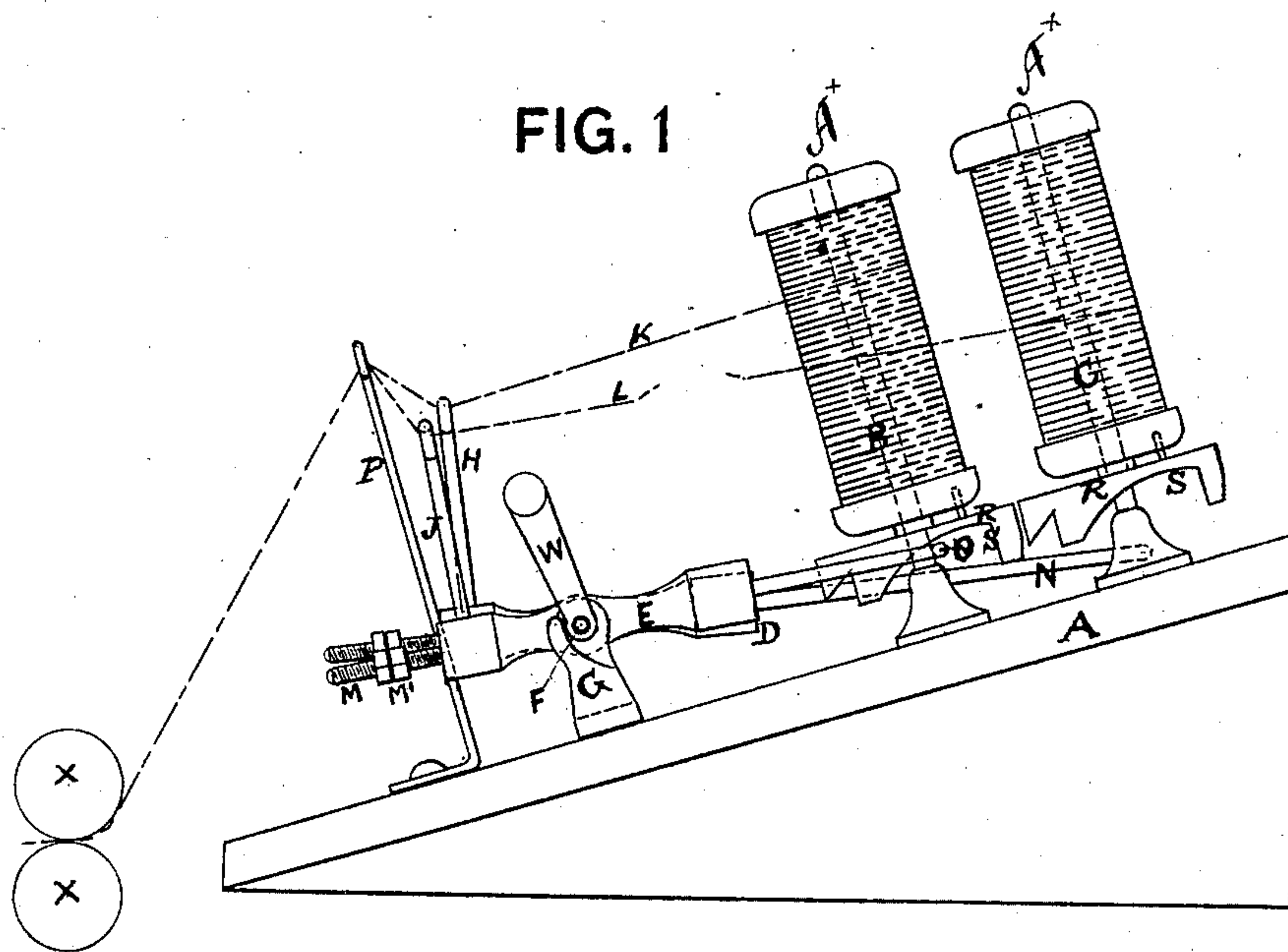


W. GARNETT & T. SMITH.  
 Apparatus for Preventing Waste in Spinning.  
 No. 232,021.                      Patented Sept. 7, 1880.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WALTER GARNETT AND THOMAS SMITH, OF HALIFAX, ENGLAND.

## APPARATUS FOR PREVENTING WASTE IN SPINNING.

SPECIFICATION forming part of Letters Patent No. 232,021, dated September 7, 1880.

Application filed January 27, 1880. Patented in England September 22, 1879.

*To all whom it may concern:*

Be it known that we, WALTER GARNETT and THOMAS SMITH, both of Halifax, in the county of York, England, have invented certain Improvements in Apparatus for Preventing Waste in the Spinning, Twisting, and Roving of Fibers, of which the following is a specification.

The object of our invention is to prevent waste in spinning, twisting, and roving frames for twofolds when an end is down or bobbin run out by breaking the other thread, and so preventing it running to waste.

Figure 1 is a side elevation of our invention. Fig. 2 is a plan view of Fig. 1.

A is a stand or frame carrying the bobbins B and C on spindles  $A^x A^x$ . D and E are two balance-levers pivoted or hinged at F in bearings G, the levers D and E carrying the guides H and J for the threads K and L, the levers D and E at their one end having screws M and lock-nuts M', which act as balance and regulating weights, their other ends terminating in fingers N and O, the finger N of the lever D coming under the ratchet-plate carrying bobbin C, the thread L of the bobbin C passing under the guide J of the other lever, E, thence over the carrier P, and to the drawing-rollers X X, the finger O of the lever E coming under the ratchet-plate carrying bobbin B, the thread K of the bobbin B passing under the guide H of its opposite lever D, thence over the carrier P, and to the drawing-rollers X X.

The spindles  $A^x$  below the bobbins B C

have loose ratchet-plates R, pins on the ratchet-plates fitting into holes in the bobbins, the plates on their under sides having recesses S, or pins or projections constituting ratchets, and the levers D and E are made of such weight (heaviest at the guide end) that the threads K and L passing under the guides H and J (so long as they are entire or tight) keep the finger ends N O of the levers clear of the ratchets R, that support the bobbins B and C; but so soon as either of the threads breaks its lever tilts and engages with the ratchet of the opposite bobbin, stopping it. The drawing-rollers X X, continuing their rotation, break the thread.

An arm, W, hinged on the same pivot as the levers, when thrown backward, falls on and holds down the finger ends while piecing up.

The levers, fingers, and guides may be constructed in one piece of metal.

We claim as our invention—

The combination of the levers D and E, having screws and lock-nuts M M', fingers N and O, and guides H and J, with the spindles  $A^x$ , having the ratchet-plates R for carrying the bobbins B and C, and with the pivoted arm W for counteracting the weights M M', substantially as herein shown and described.

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