

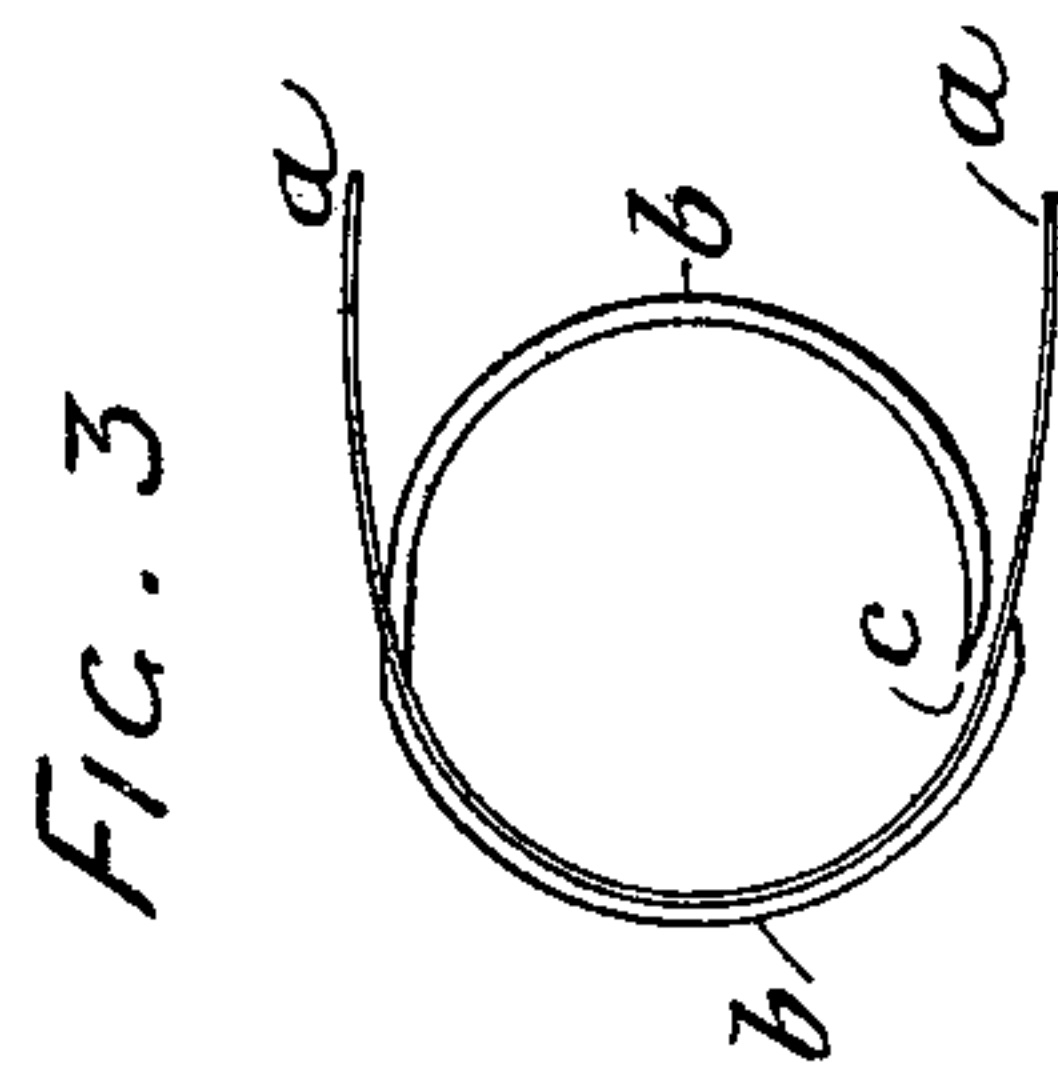
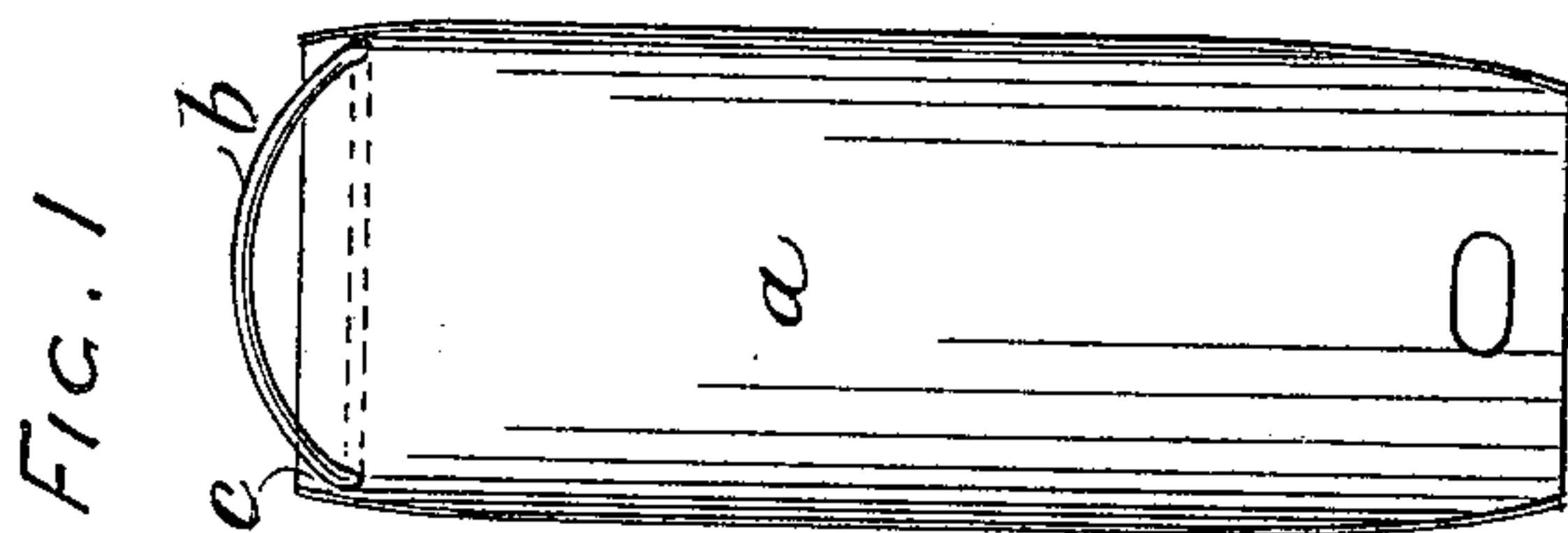
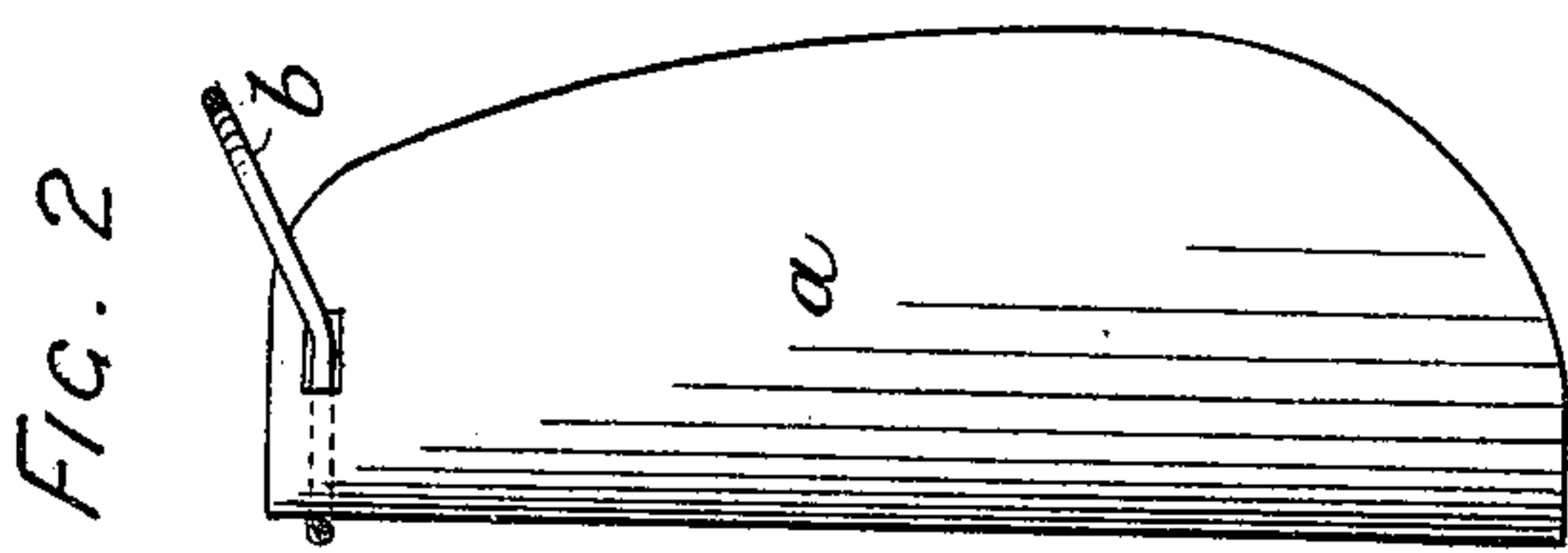
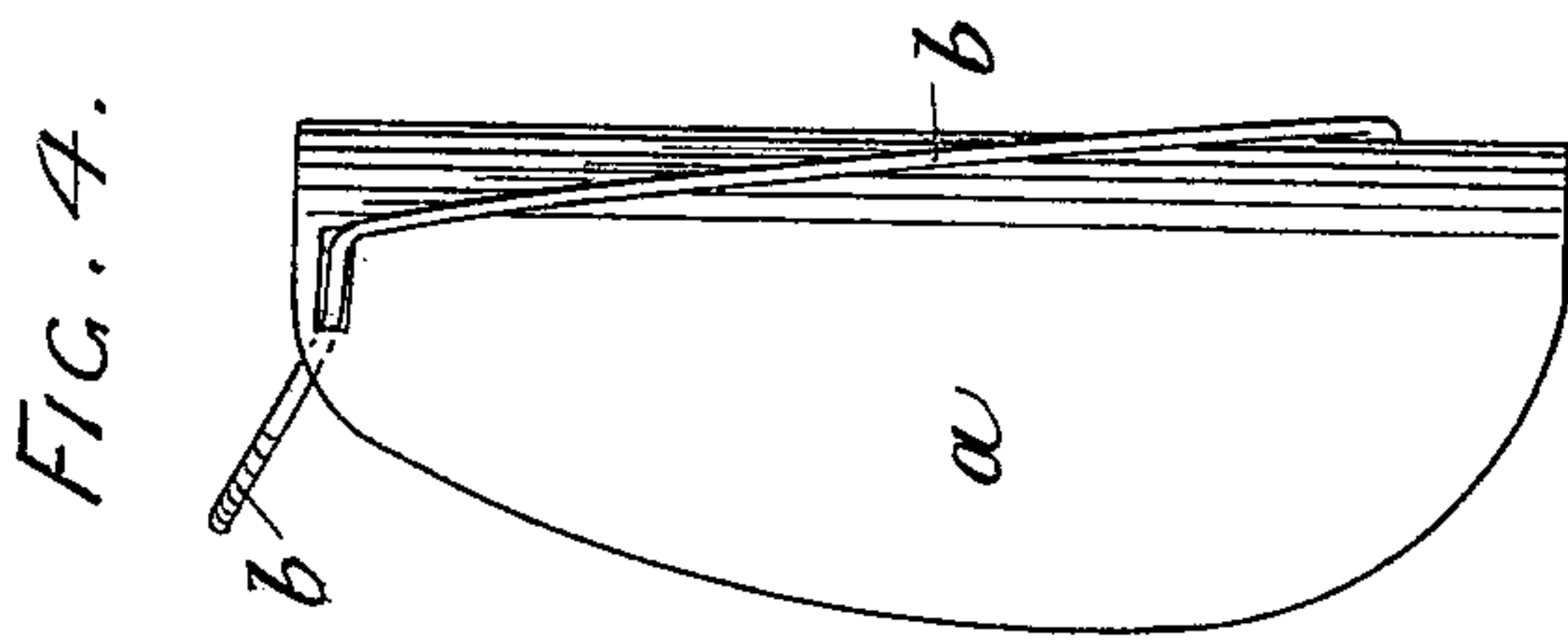
No. 645,931.

Patented Mar. 27, 1900.

T. ASHWORTH.
YARN CONTROLLER.

(Application filed Feb. 20, 1900.)

(No Model.)



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

THOMAS ASHWORTH, OF URMSTON, ENGLAND, ASSIGNOR TO JOHN SHAW GAUNT, OF MANCHESTER, ENGLAND.

YARN-CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 645,931, dated March 27, 1900.

Application filed February 20, 1900. Serial No. 5,908. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ASHWORTH, a subject of the Queen of Great Britain and Ireland, residing at Urmston, near Manchester, in the county of Lancaster, England, have invented new and useful Improvements in or Applicable to Frames for Spinning and Doubling Fibrous Substances, of which the following is a specification.

10 This invention relates to frames for spinning and doubling fibrous substances, the object of the invention being to prevent the "ballooning" of the yarn as it is being wound onto the spindle, spool, or tube, and also in 15 the event of a thread breaking to prevent the end from flying out and becoming entangled with the adjacent threads.

The manner in which my said invention is to be performed or carried into practical effect 20 will be readily understood on reference to the annexed sheet of drawings, marked with letters of reference corresponding with those in the following explanation thereof.

25 Figure 1 on the drawings is a front view, Fig. 2 a side elevation in section, and Fig. 3 a plan view, of an antiballooning shield made according to my improvements. Fig. 4 is a side elevation showing a slight modification of the same.

30 The invention consists principally in the combination, with a curved shield of sheet metal or other suitable substance *a*, which extends around the sides and back of each spindle, spool, or tube, and thus isolates each 35 one from its next adjacent ones, of a wire ring *b*, attached to the top part of such shield and of such a diameter that it will not allow the thread to "balloon" out to any great extent. The curved metal shields *a* are each 40 intended to be attached by a bolt or other-

wise to a bar or shaft extending from end to end of the frame and so mounted on brackets or otherwise that the bar or shaft can be rocked so as to tilt all the shields backward, so as to be out of the way during doffing. The 45 rings are split, with one end overlapping, so as to leave an opening at *c*, through which the thread can be passed into the center, and they are attached to the top of the shields *a* at such a height that when they are rocked 50 over backward for doffing the said rings will just clear the tops of the spindles. Before starting the frame afresh after doffing, the bar or shaft is caused to rock forward, so as to bring all the antiballooning shields and 55 their rings back again into working position.

Instead of making the top ring *b* from a piece of wire bent up into the form of a ring, with the ends overlapping, as shown on Figs. 1, 2, and 3, I prefer to pass one end of the 60 wire through a hole in the shield *a* and solder it to the back at the lower part and bend the other around the front, with its end nearly touching the inside of the shield *a* at the opposite side, as shown at Fig. 4. 65

I claim as my invention—

The combination with a curved antiballooning shield of metal or other suitable substance, extending around the sides and back of each spindle spool or tube, of a wire or other 70 split ring fixed thereto at or near the top thereof substantially in the manner and for the purposes hereinbefore set forth.

In testimony whereof I have signed my name to this specification in the presence of 75 two subscribing witnesses.

THOMAS ASHWORTH.

Witnesses:

JNO. HUGHES,
J. ERNEST HUGHES.