

(No Model.)

C. H. CHAPMAN.
SPINNING RING AND TRAVELER.

No. 491,526.

Patented Feb. 14, 1893.

Fig. 1

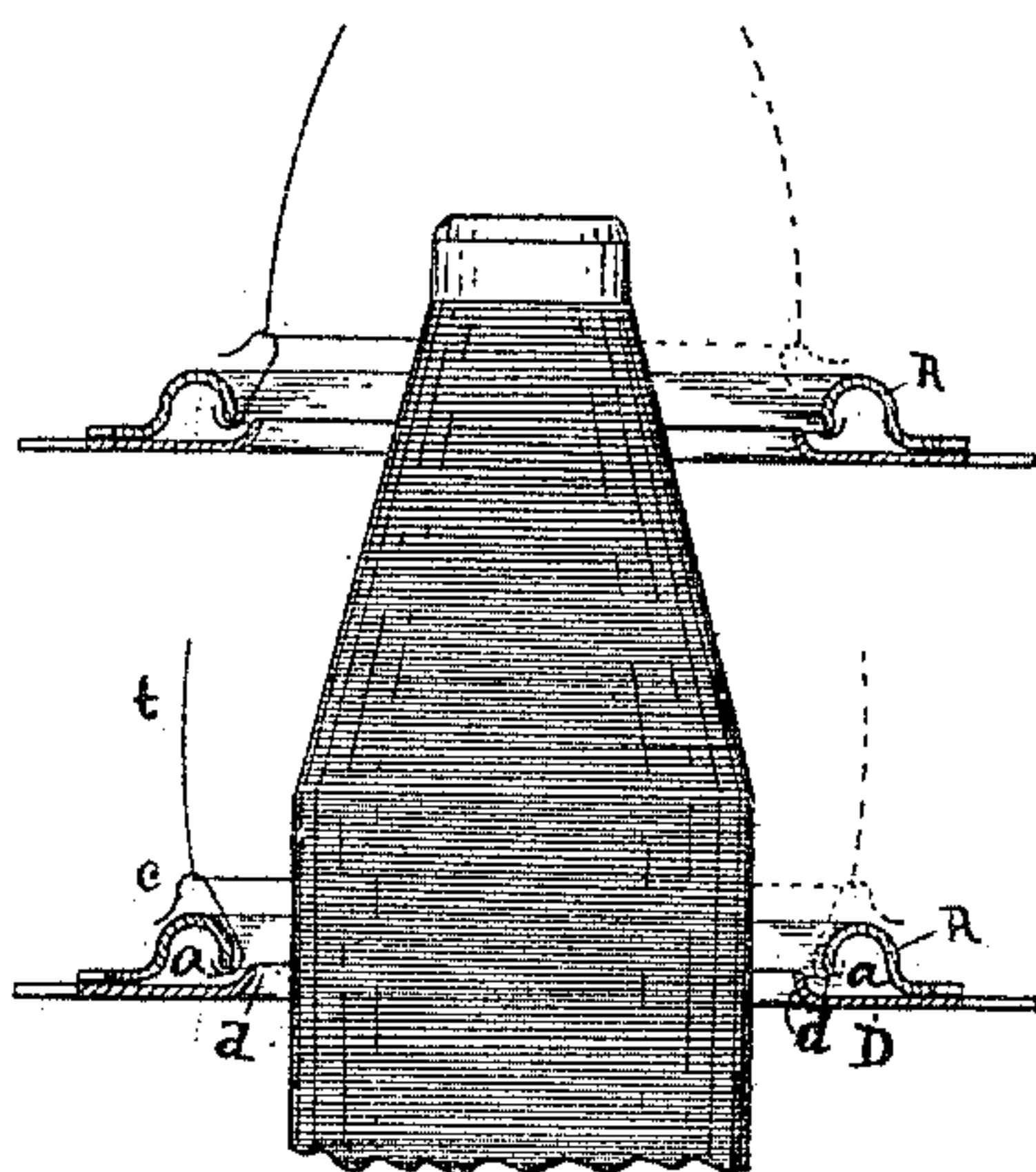


Fig. 2

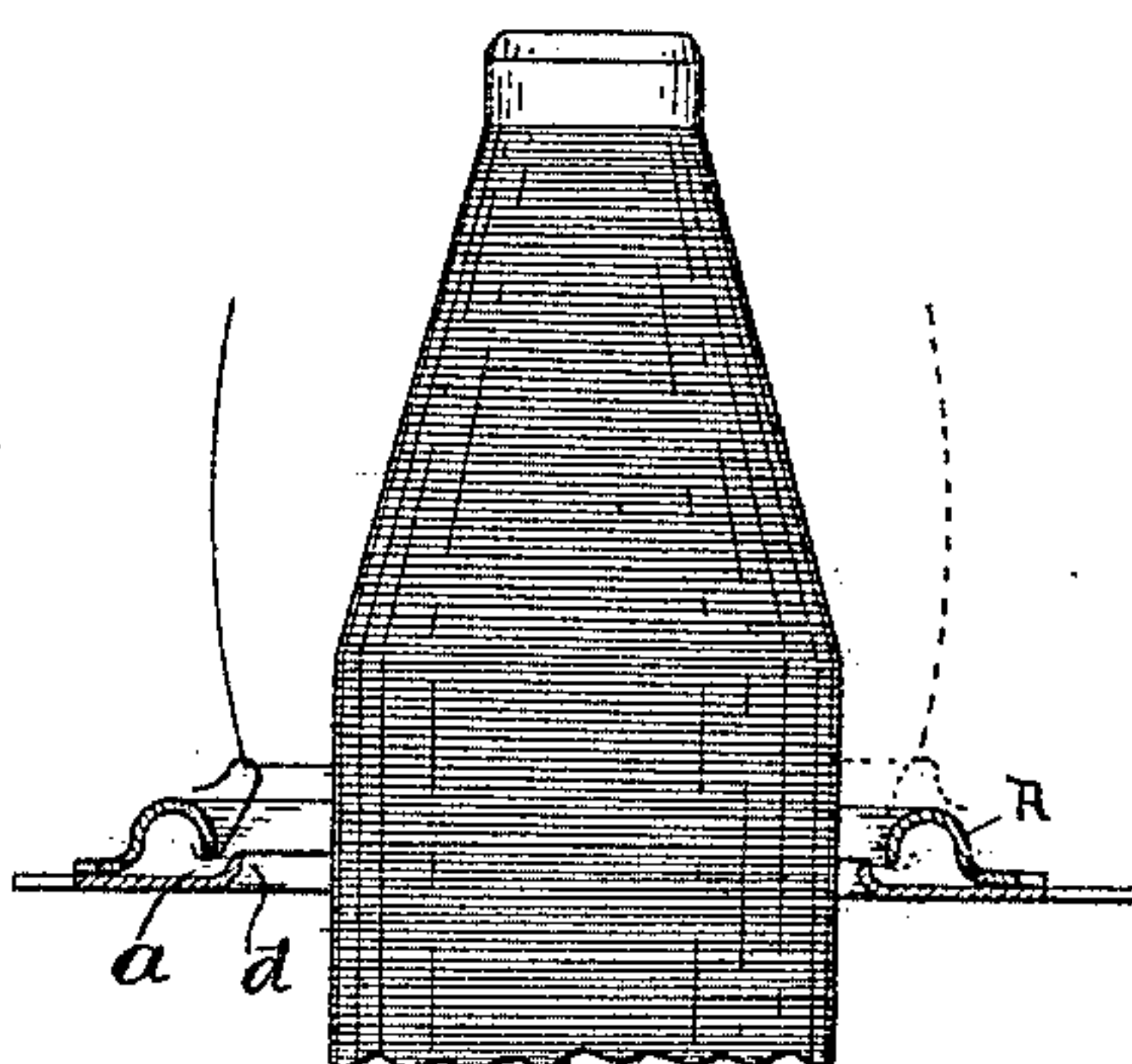


Fig. 5

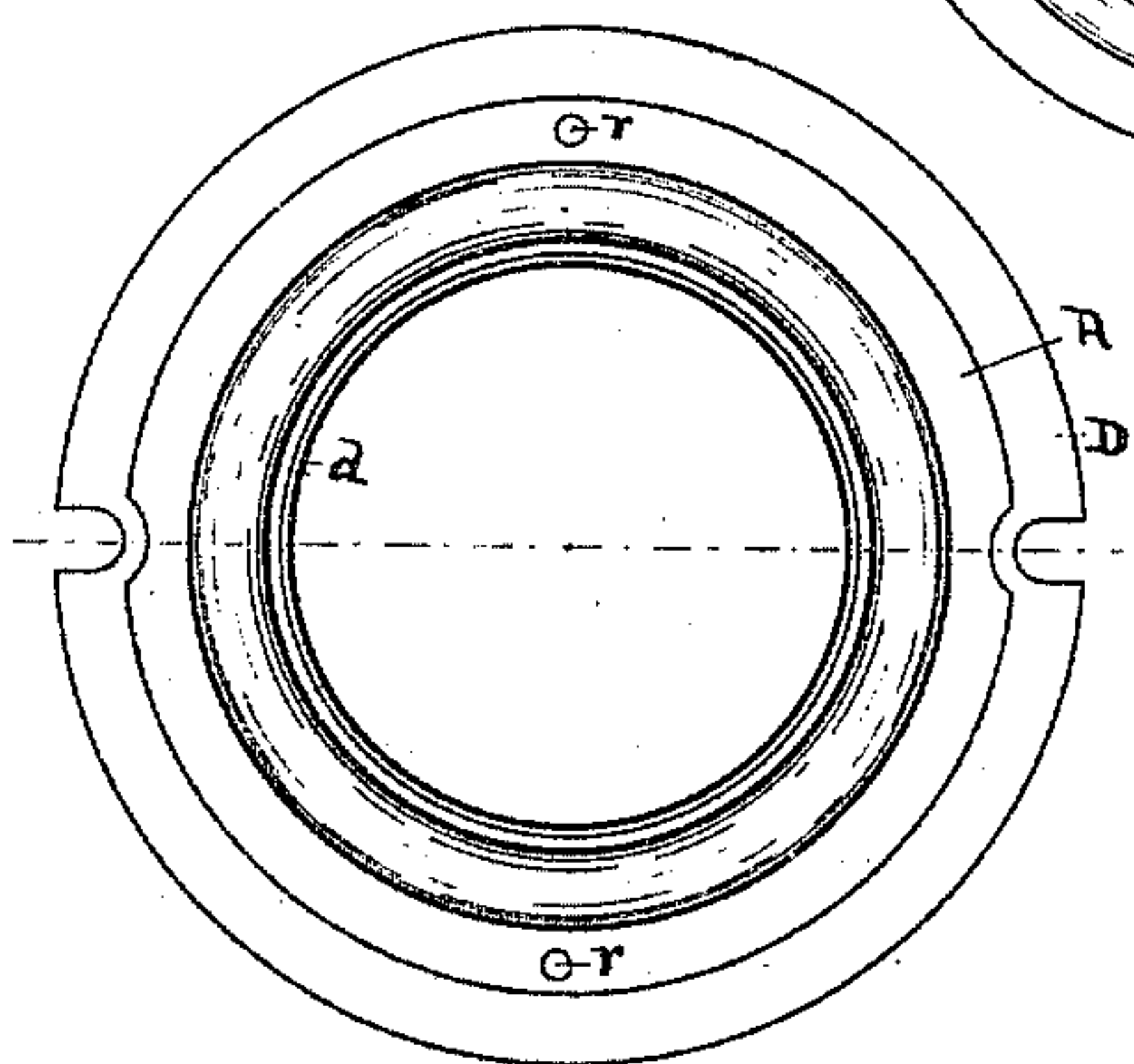
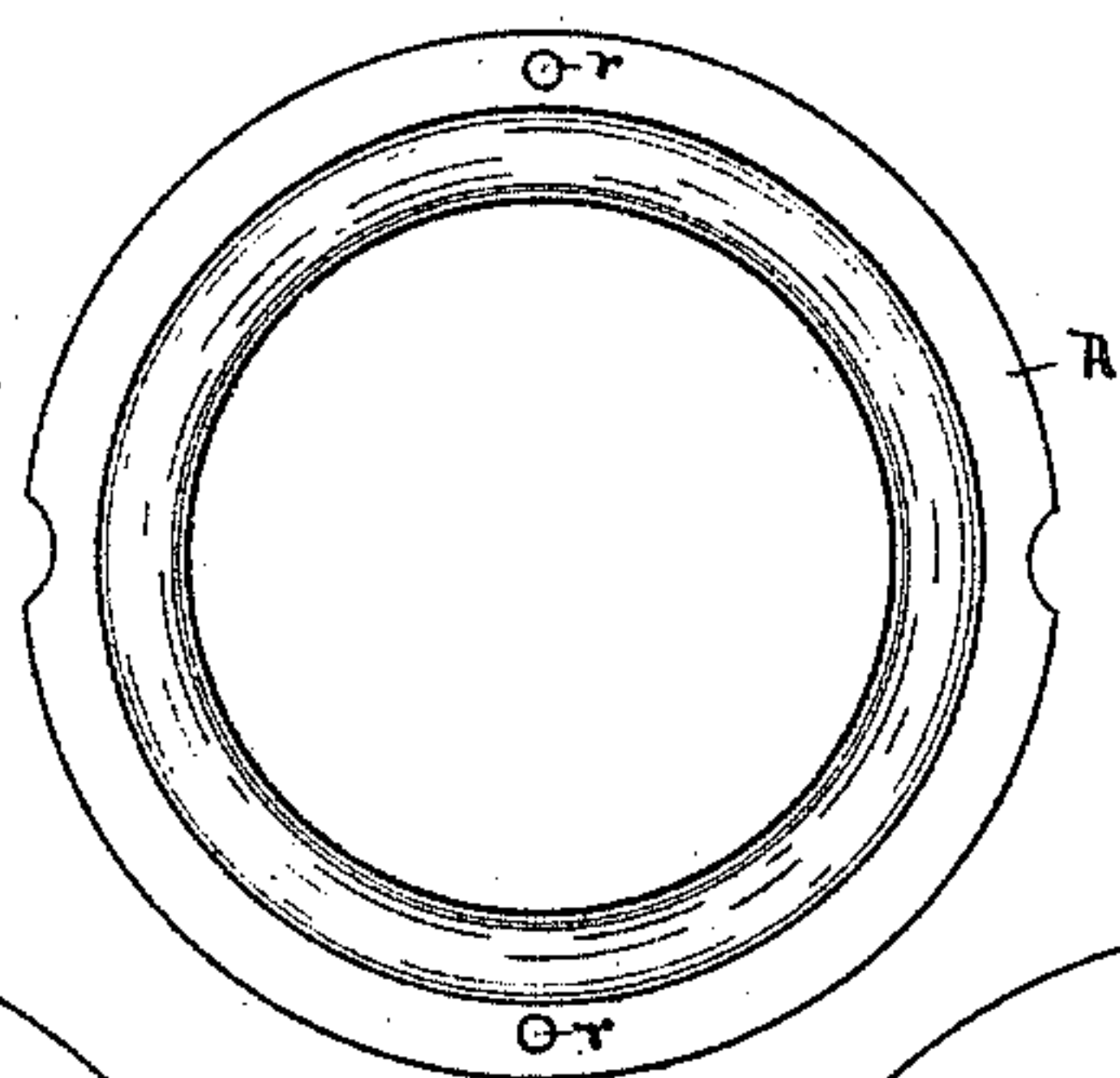


Fig. 3

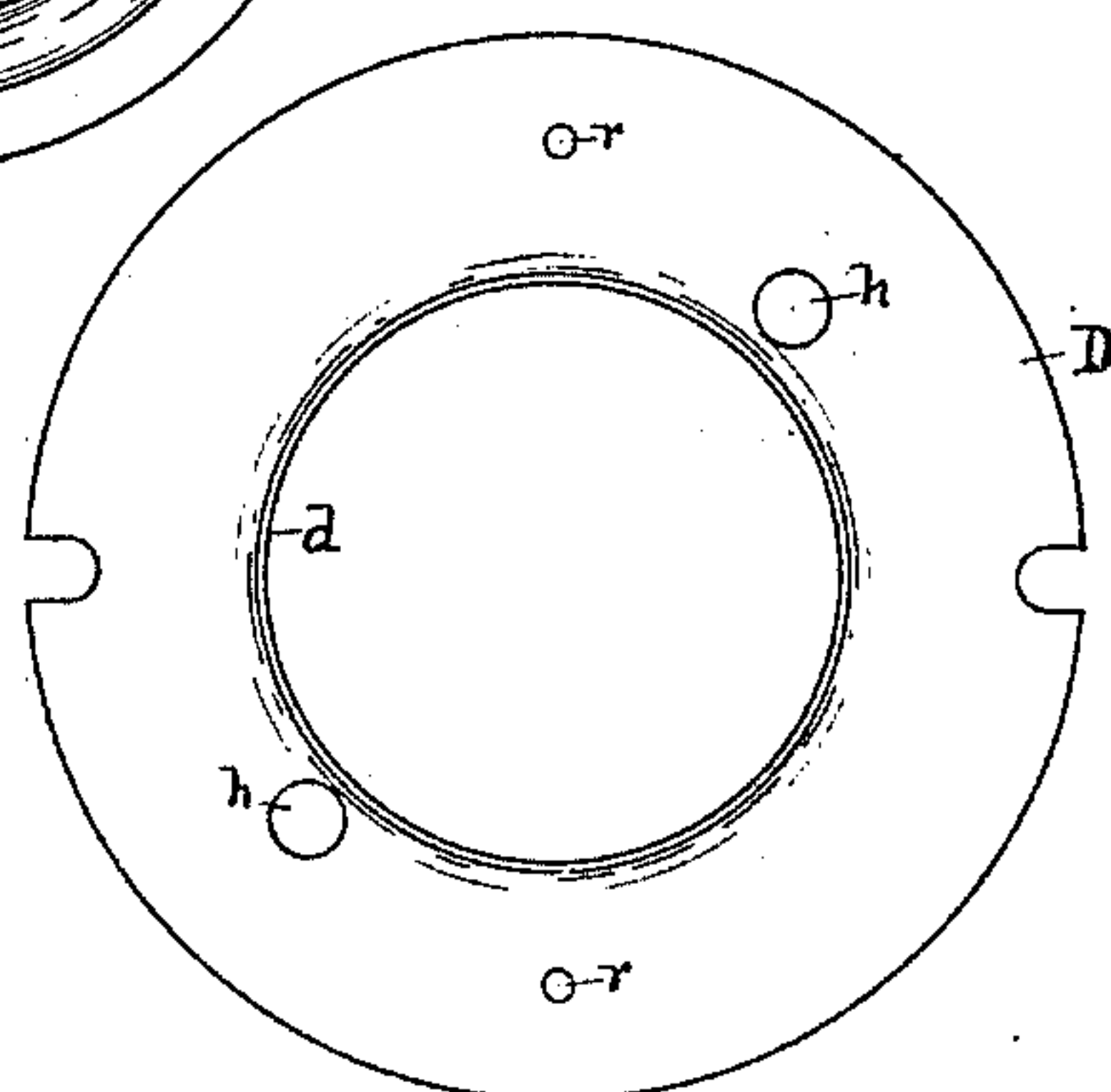


Fig. 4

Witnesses:

William Brown
James R. Gray

Inventor.

Charles H. Chapman

UNITED STATES PATENT OFFICE.

CHARLES H. CHAPMAN, OF GROTON, MASSACHUSETTS.

SPINNING-RING AND TRAVELER.

SPECIFICATION forming part of Letters Patent No. 491,526, dated February 14, 1893.

Application filed November 19, 1885. Renewed July 7, 1890. Serial No. 357,953. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. CHAPMAN, a citizen of the United States, residing at Groton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Spinning-Rings and Travelers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention has for its object to provide a construction which shall serve to overcome or equalize the variation in the tension upon the yarn due to the drag of the traveler. This variation in the tension is mainly due to two causes. The first and principal one is from the well known fact that in ring spinning, with the ring and traveler constructed as heretofore, the tension upon the yarn is much greater when winding upon the small diameter of the empty bobbin than when winding upon the large diameter of the full bobbin. The reasons for this are well understood by all practical spinners. The second cause for such variation is the fact that the ring and bobbin are rarely concentric with each other. This variation in the tension from whatever cause is a serious defect and not only occasions many breakages but renders the yarn weak and uneven. My invention aims to overcome this defect and consists essentially in attaching the traveler of peculiar construction to the ring of novel formation by one end only as hereinafter particularly set forth and claimed, whereby the detached end of the traveler which engages the yarn shall be free to swing in or out in relation to the bobbin as the tension increases or diminishes. This movement of the traveler is controlled entirely by the yarn and the position of the detached end of the traveler will always be at that point in relation to the bobbin at which the outward swell or centrifugal force of the yarn will be neutralized or balanced by the inward tension upon the yarn from the drag of the traveler.

Referring to the drawings Figure 1 is a central sectional elevation, showing the ring, traveler, bobbin and yarn: the ring being shown in two positions as when winding upon the full and empty parts of the bobbin. Fig. 2 is a like view showing the ring as eccentric to

the bobbin. Fig. 3 is a top view of the ring and holder; Fig. 4 a top view of the holder detached and Fig. 5 a top view of the ring detached.

In Fig. 1 the ring A is shown as formed from sheet metal pressed or struck up to form the semi-circular race *a*. The lower end of the traveler *c* engages this race and is held in place and retained in proper position by means of the flange or lip *d* formed on the holder D as shown. The upper end of the traveler engages the yarn *t* and is free to move in or out in relation to the bobbin as the tension upon the yarn may require. When the yarn is winding upon the full part of the bobbin the tension will be light and the traveler will be carried out by the centrifugal force to the position shown on the lower ring in Fig. 1. When the yarn is winding upon the empty bobbin the increased tension will overcome the centrifugal force and the traveler will be drawn in as shown on the upper ring in Fig. 1. Should the ring be out of center, that is eccentric to the bobbin, the upper detached end of the traveler will take the positions shown in Fig. 2. That is, the detached end being controlled by the yarn will run concentric with the bobbin and a uniform tension will be maintained. The ring is attached to the holder by means of the rivets *r. r.* and the holder is attached to the ring rail in the usual manner. The holes *h. h.* formed through the holder as shown in Fig. 4 are located directly under the semi circular ring race and serve to allow the escape of dirt and dust which might otherwise accumulate and interfere with the traveler.

Prior to my invention a traveler has been designed to engage a ring of peculiar form by one end, and to have a certain extent of movement thereon to adapt the tension to the increasing size of the bobbin, but so far as I am aware in all such devices either the ring or the traveler itself would not admit of sufficient play of the traveler toward the bobbin to fully accomplish the desired object, hence uniformity of tension or self-adaptation of the traveler to the progress of the work were, if not impossible, still not practicable to such a degree as to be entirely satisfactory.

My traveler has entire freedom of motion upon the ring toward and from the bobbin,

and insures the proper tension throughout the winding of the cop. The obtaining of this freedom of motion is largely due to the peculiar construction of the ring, and I may here
5 remark that the ring and its holder are most readily, accurately and cheaply made by striking them up by dies from sheet metal. The lip *d* of the holder while serving to retain the traveler in the race is so short as not to in-
10 terfere with the motion of the same in any direction. The cast holders and rings so far as I know do not have this short lip *d*, but all have a high lip with the ring below its upper level, and hence the traveler is restricted
15 in its movement.

Having thus described my invention what I claim is—

1. The ring A constructed of sheet metal with the single rounded and downwardly
20 curved portion as shown, combined with the holder D having the upturned flange *d* projecting inwardly beyond the ring, as set forth,

whereby the traveler is held to the ring by one end only and allowed to swing vertically toward and from the center of the ring, substantially as specified. 25

2. The traveler ring constructed with the single rounded and downwardly curved portion or lip, and the holder having the upturned flange *d* projecting inwardly beyond the ring, 30 combined with the double-hook shaped traveler secured to the ring by one end only and having its free end adapted to engage the yarn and swing freely toward and from the bobbin as demanded by the tension of the yarn, substantially as described. 35

In testimony whereof I have hereunto affixed my hand in the presence of two subscribing witnesses.

CHARLES H. CHAPMAN.

Witnesses:

JAMES R. GRAY,
WILLIAM BROWN.