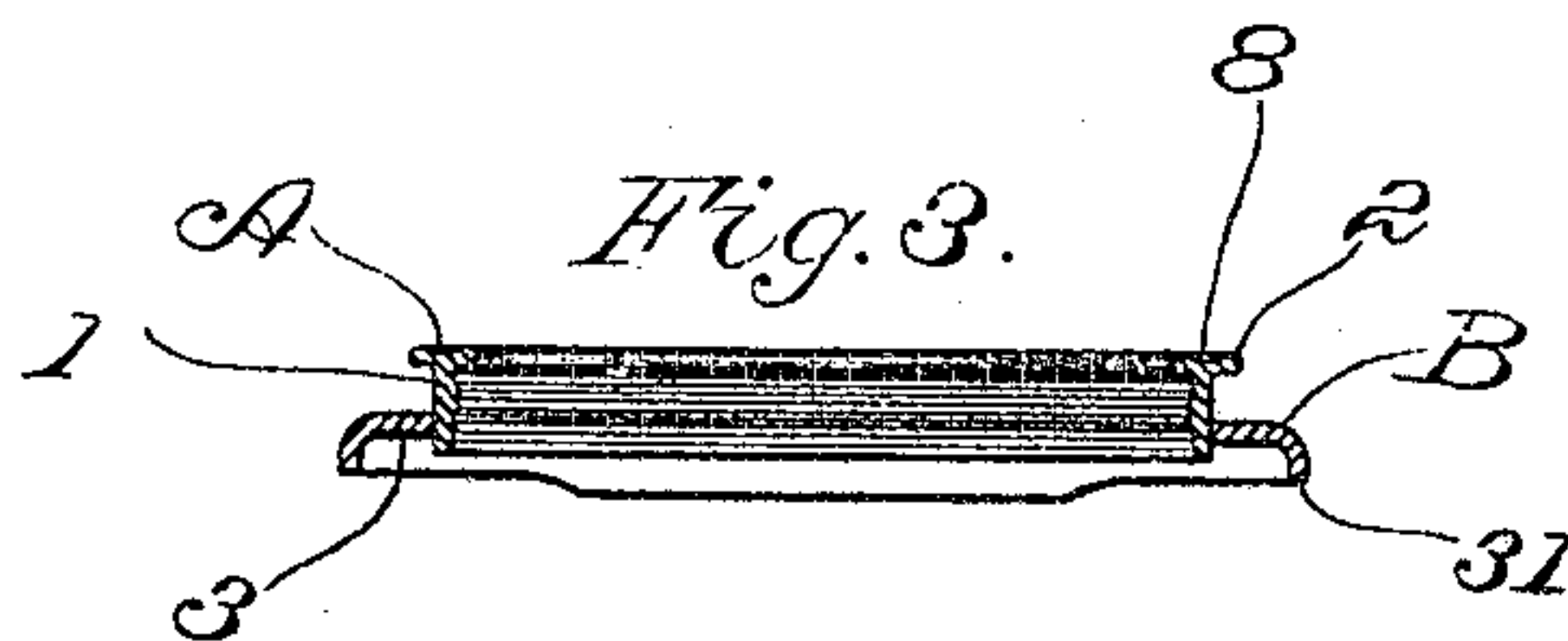
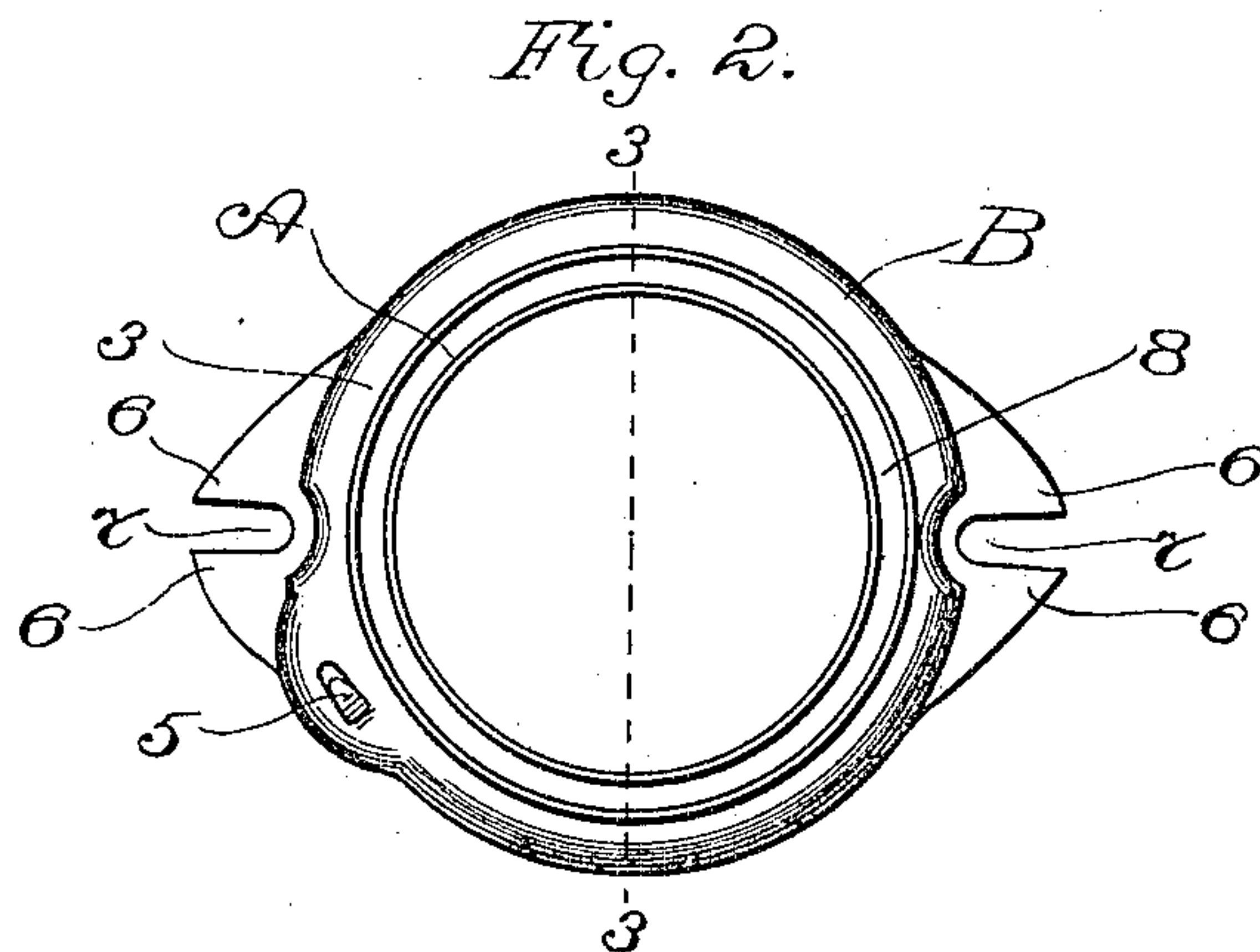


No. 837,406.

PATENTED DEC. 4, 1906.

L. T. HOUGHTON.
SPINNING RING AND HOLDER.
APPLICATION FILED DEC. 28, 1896.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS T. HOUGHTON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO CHARLES F. RANDALL, OF BOSTON, MASSACHUSETTS.

SPINNING-RING AND HOLDER.

No. 837,406.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed December 28, 1896. Serial No. 617,211.

To all whom it may concern:

Be it known that I, LEWIS T. HOUGHTON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spinning-Rings and Holders, of which the following is a specification, reference being had therein to the accompanying drawings.

As is well known, spinning-rings commonly are formed of steel and in the course of their manufacture are hardened, which is effected by customary steel-hardening processes. The operation of hardening takes place after the rings have been turned or otherwise given the desired shape. Frequently while undergoing the hardening process the rings spring or warp out of true. This renders them more or less defective and is injurious in the operation of spinning.

One object of the present invention is to provide a spinning-ring holder of improved character which shall be fitted especially to compel the ring that is applied thereto to assume a truly circular shape and at the same time shall possess various practical advantages over other forms of holders heretofore in use.

Another object of the invention is to provide an improved construction of spinning-ring which shall be less likely than the forms of rings heretofore in use to remain sprung or warped out of shape after the hardening operation.

Another object of the invention is to provide a spinning-ring of such construction as to facilitate the restoration of the ring to truly circular form during the use thereof in case it should have become sprung or warped out of shape.

The invention first will be described fully with reference to the accompanying drawings, after which the distinguishing characteristics thereof will be particularly pointed out and distinctly defined in the claims at the close of this specification.

In the accompanying drawings, Figure 1 shows in side elevation a spinning-ring and a holder therefor both embodying my invention. Fig. 2 is a view in plan showing the parts which are represented in Fig. 1. Fig. 3 is a view in section on the line 3 3 of Fig. 2.

A designates the spinning-ring, which is shown in the drawings. B is the holder for the

said ring. The ring A has a cylindrical body 1 and is provided with a flange 2 at the upper end thereof only—that is to say, the lower end of the said ring is made without a flange. The holder B has a central hole therethrough to receive the lower part of the body of the ring. This hole is made of exactly the same size in diameter as the exterior of the lower part of the body of the ring, or it may be a little smaller than the said exterior. The holder is formed around the said hole with a flat web 3, which is made of considerable width in order to secure enough tensile strength to prevent the holder from being sprung or distorted by expansion when the lower end of the body of the ring is forced into the central hole of the holder. The said web 3 is provided with a depending flange 31 (here shown at the outer edge thereof) to give stiffness vertically so as to prevent the holder from buckling when the body of the ring is forced into place in the central hole of the holder. 5 is a traveler-clearer consisting of a spur or projection which extends upwardly from the flat web 3 adjacent to the path of movement of the traveler. (Not shown.) At opposite sides of the holder on the said depending flange 31 are formed projecting lugs 6 6, each pair of the said lugs having a slot 7 between them, the slots 7 7 and lugs 6 6 serving in customary manner to cooperate with the screws by means of which the holder is secured to the ring-rail of a ring-spinning frame. The described construction holds the flat web 3 elevated above the surface of the ring-rail and affords opportunity for ventilation and for cleaning the inner side of the ring without it being necessary to remove either the cop or the spindle. The holder may be made in any suitable manner, as by casting; but preferably I form it of sheet metal by stamping it or striking it up therefrom.

The ring A having been shaped and hardened, it is inverted and pressed down onto a form to true it, the form operating to take all spring out of the ring and hold it perfectly true. Then while the ring is held in a perfectly true state the holder is forced onto the body of the ring, the ring and holder together afterward being dislodged from the form aforesaid. The central hole of the holder B is made truly circular, and, as stated above, is made of exactly the same size in diameter

as the exterior of the body of the ring or a little smaller in diameter than the said exterior. Moreover, the tensile strength of the metal of the holder is greater than the tendency of the ring to spring out of true. Consequently after the ring has been forced onto the form aforesaid and been brought thereby into a true state and after the holder has been forced onto the body of the ring, as above mentioned, and the two have been dislodged from the form the holder operates by compression upon the body of the ring to maintain the ring in truly circular form.

The springing and warping of the spinning-ring out of truly circular shape in the course of the hardening process is due chiefly to the existence of flange 2, and the difficulty which is encountered in the endeavor to bring the ring back into true shape is due thereto also. This flange stiffens the ring, as will be obvious, rendering difficult any change of form thereof in the endeavor to rectify irregularities. The internal strains which are incident to the heating and cooling of the ring as it is being tempered differ or vary in the inner and outer portions of the flange, and to this difference is due largely the warping of the ring. With the object in view of rendering the inner portion of the flange of the ring independent of the outer portion thereof in a slight degree, so as to permit the said portions to expand or contract in a measure independently of each other, I rabbet or groove the flange 2, as at 8, or in equivalent manner. The flange itself, however, remains substantially plane-faced, as shown, since I find this form preferable in practice, although it is not necessary in all cases that the outer and inner portions of the flange should be formed on one level. This affords to the inner and outer portions of the flange a certain capacity for independent adjustment to internal strains which relieves and very much lessens the tendency of the ring to become sprung or warped out of its truly circular shape as it cools. This grooving or rabbeting also confers upon the

ring a certain slight degree of flexibility or elasticity which facilitates the operation of compressing the same into shape in the holder.

I claim as my invention—

1. The improved spinning-ring consisting essentially of the thin cylindrical body having at the upper end thereof the substantially plane-faced flange 2 forming rims which project interiorly and exteriorly from the said body, and grooved or rabbeted to permit the inner and outer portions of such flange to expand or contract in differing ratio and obviate the tendency of the ring to become sprung or warped out of shape.

2. The combination with a ring comprising essentially the thin cylindrical body having at one end thereof a plane-faced flange 2, forming rims which project interiorly and exteriorly from the said body, and having the said flange grooved or rabbeted to permit the inner and outer portions of such flange to expand or contract in differing ratio and obviate the tendency of the ring to become sprung or warped out of shape, of the inelastic and unyielding holder having a circular hole within which the body of the said ring is compressed firmly and held in circular form.

3. The holder having the hole there-through to receive the body of the ring, and the flat web encircling the said hole and having width to secure tensile strength to prevent the holder from being sprung by the ring, and also formed with the depending flange 31 provided with lugs for attaching the said holder to the ring-rail, the said flat web being elevated above the surface of the ring-rail to afford opportunity for ventilation and for cleaning the inner side of the ring.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS T. HOUGHTON.

Witnesses:

CHAS. F. RANDALL,
WILLIAM A. COPELAND.