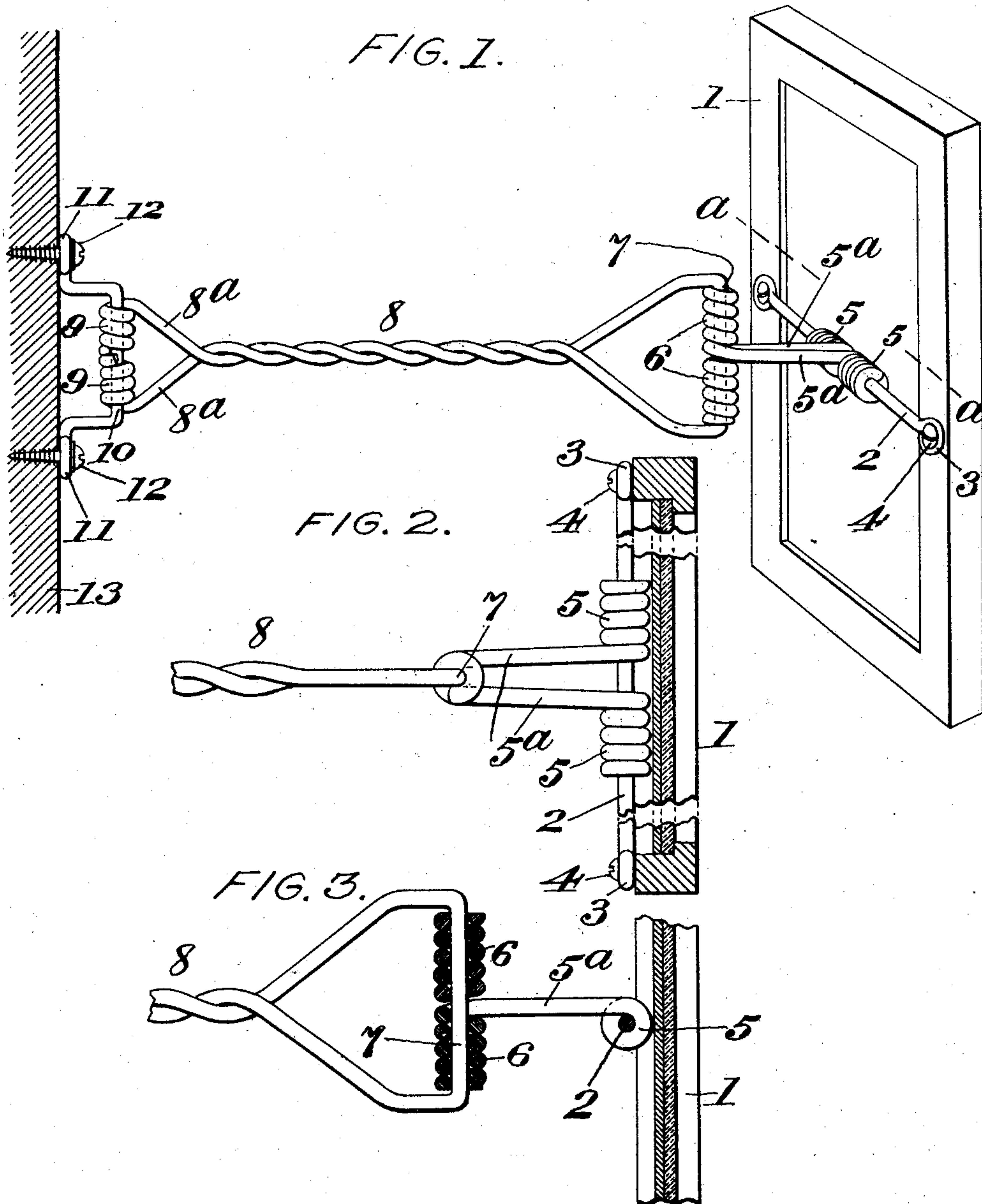


R. D. JONES, JR.
HINGE JOINT.
APPLICATION FILED JUNE 13, 1908.

906,892.

Patented Dec. 15, 1908.



Witnesses:
Homer Bradford.
Norma Keiser

Inventor:
Rankin D. Jones Jr.,
by John Elias Jones,
his attorney.

UNITED STATES PATENT OFFICE.

RANKIN D. JONES, JR., OF CAMEO, COLORADO.

HINGE-JOINT.

No. 906,892.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed June 13, 1908. Serial No. 438,314.

To all whom it may concern:

Be it known that I, RANKIN D. JONES, Jr., a citizen of the United States of America, and a resident of Cameo, in the county of Mesa and State of Colorado, have invented certain new and useful Improvements in Hinge-Joints, of which the following is a specification.

This invention relates to hinge-joints, particularly to those adapted to the uses of the universal type, the object being to provide a device that is held under automatic gripping strain without the use of set-screws or other similar take-up devices.

The invention consists in a hinge joint or bearing comprising an axis or shaft and a spring coiled around said axis or shaft in frictional, torsional contact or engagement therewith, such axis or shaft being adapted to support an object either perpendicular, horizontal, or inclined at an angle, and said spring having an extension adapted to form a bracket or a hanging support.

Other important features of the invention will be fully hereinafter described and particularly pointed out in the claims.

In the accompanying single sheet of drawings, forming a part hereof, Figure 1 is an elevation, partly in perspective, showing the invention as applied to use in connection with a framed mirror or picture, which latter is supported at the outer end of a bracket or extension arm, also containing the invention and attached to a side-wall, the latter being shown in section; Fig. 2, a fragmentary plan view of the invention, showing the framed mirror or picture in transverse section, taken on the dotted-line *a, a*, of Fig. 1; and Fig. 3, a fragmentary elevation of the invention, taken centrally through said framed mirror or picture and showing the improved axial-bearing mounted horizontally on the back thereof and the improved axial-bearing arranged vertically and provided at the outer end of the said wall extension arm or supporting bracket.

In these views, 1 indicates a framed mirror or picture, and 2, a transverse rod preferably of stiff wire of circular cross-section and provided with eyes 3, 3 at either end for the engagement of fastening-screws 4, 4 entering the back of said mirror frame.

A pair of spirals 5, 5, is mounted on the rod 2 and with the spirals suitably spaced, side by side, as best shown in Fig. 2. The rod 2 forms a shaft which has a drive-fit in said

spirals, through which it is passed lengthwise and placed under torsional, frictional strain or tension for the automatic holding of the said mirror or picture in the desired position placed by the hand. The said rod 2 and pair of torsion-springs mounted thereon comprise a frictional-hinge-mounting for said mirror or picture, or other object rigidly secured or placed upon the said rod to adapt it to being readily and firmly held at the desired angle, or arranged and held either horizontally or vertically.

Each of the spirals 5, 5 has an arm 5^a projecting rearwardly therefrom, such arms being each wound into vertical spirals 6, 6, one spiral 6 being disposed or extending upwardly and the other downwardly, as best seen in Figs. 1 and 3. The spirals 6, 6 are in vertical alinement and the straight vertical portion constructed at the outer end of a bracket-arm 8 is passed through the hollow axial center of said spirals 6, 6, with a drive-fit like unto the horizontal rod 2 in the spirals 5, 5, to provide for a like torsional, frictional grip or strain.

The bracket-arm 8 is formed of a single length of wire bent midlength to form said vertical portion 7 and then having, preferably, a double twist therein the greater part of its length toward its rear end where the two ends of the wire diverge at 8^a, 8^a and such ends then formed into vertical spirals 9, 9, as best seen in Fig. 1. The spirals 9, 9 are wound or disposed toward each other and, through their hollow axial center, is passed the vertical portion 10 of a wire wall-bracket whose opposite ends are formed into eyes 11, 11 that are engaged by screws 12 for fastening the entire device, under swinging, torsional tension, in place on the wall 13. The vertical portion 10 of the wall-bracket has a drive-fit in the spirals 9, 9, like unto the pintle parts 2 and 7 in the spirals 5 and 6, respectively, to provide for a frictional, torsional grip or strain at the inner end of the bracket-arm 8.

The presence of the torsion hinge-joints at the opposite ends of the bracket 8, both of which are in vertical or perpendicular array and the presence of the other torsion hinge-joint which is in horizontal array on the back of the mirror or picture, together provide for the swinging of the said mirror or picture in an arc horizontally, centered at the inner end of the bracket-arm and, also, in another, but a lesser arc horizontally, centered at the

outer end of said bracket-arm, and, also, of upwards of three hundred degrees, or almost a complete circle, vertically, and making it extremely convenient to arrange said mirror
5 or picture in almost every conceivable position to suit the height, sight and convenience of the user and observer.

It is obvious that, instead of using the three torsional hinge-joints already referred
10 to and shown in Fig. 1 of the drawings, a single torsional-hinge could be provided on the mirror or picture, with the extension-arms 5^a, 5^a attached to a supporting device of any kind to suit the desired purpose, or said single torsion-hinge device on the mirror or pic-
15 ture could be used with either one of the other two torsional-hinge devices on the bracket-arm, all to suit the desired purpose of the user.

20 It is obvious that, instead of using the torsion-hinge device in connection with a mirror or a picture, it could be used in supporting incandescent electric lamps, desk telephones and numerous other objects to adapt them
25 to the ready convenience of the user and without necessity of any material change in the construction shown in the drawings.

I claim:—

1. A hinge-joint comprising an axis or
30 shaft rigidly held to an object for adjustable support of the latter, a spiral of two or more turns wound upon said shaft in frictional, torsional-contact therewith and having a supporting-extension, a spiral constructed
35 at the end of said supporting-extension at right-angles to said first-named spiral and a rigidly-held straight axis or shaft engaging

within the last-named spiral under torsional-contact and the last-named axis or shaft having a bracket supporting-extension.
40

2. A universal hinge-joint comprising a straight axis or shaft rigidly connected to the object to be supported, a pair of multiple
45 turn spirals each of which is wound and extends oppositely to the other upon said straight axis or shaft and in intimate, frictional torsional-contact therewith and extension-arms projecting from said spirals to a suitable bracket or other support.
50

3. A universal hinge device for use in supporting pictures, mirrors, electric lamps, desk phones, or the like, such device comprising an axis or shaft rigidly mounted on the object to be supported, a pair of spirals
55 wound upon or encircling said shaft in intimate, frictional torsional-contact therewith and having rearwardly-extending arms, a pair of spirals extending in opposite directions from the rear ends of said arms and at
60 right-angles to the first-named spirals, a bracket-arm having an axis or shaft constructed therein at one end and engaging the last-named spirals in frictional, torsional-contact therewith, and, also, having a pair
65 of spirals constructed therein at its opposite end, and a wall-bracket having an axis or shaft engaging within said last-named spirals in frictional torsional-contact therewith.

RANKIN D. JONES, JR.

Witnesses:

SPENCER M. JONES,
RANKIN D. JONES.