

(No Model.)

H. P. DREW.
SWING JOINT FOR GAS FIXTURES.

No. 586,841.

Patented July 20, 1897.

Fig 1.

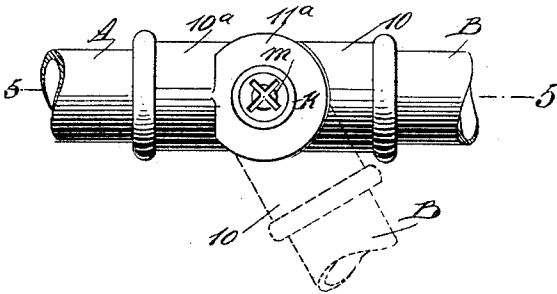


Fig 4.

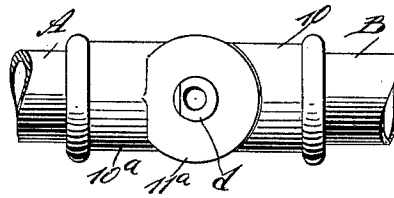


Fig 2.

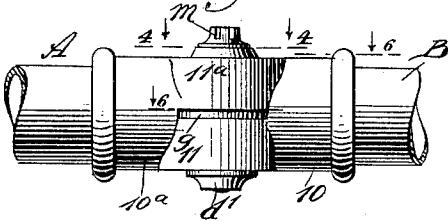


Fig 5.

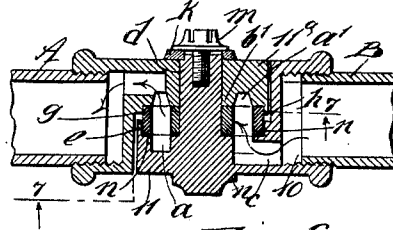


Fig 3.

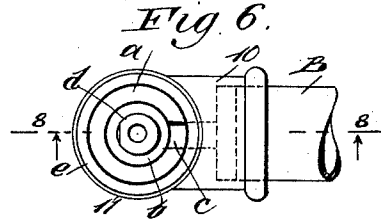
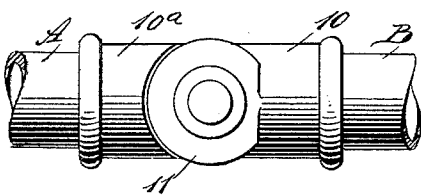


Fig 7.

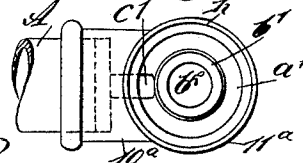
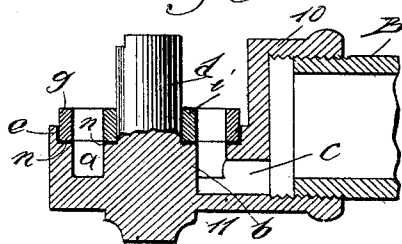


Fig 8.



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SWING-JOINT FOR GAS-FIXTURES.

SPECIFICATION forming part of Letters Patent No. 586,841, dated July 20, 1897.

Application filed February 27, 1897. Serial No. 625,268. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. DREW, of New York city, in the county and State of New York, have invented a new and Improved Swing-Joint for Gas-Fixtures, of which the following is a full, clear, and exact description.

This invention relates to swing-joints for gas-fixtures of a type wherein two cupped joint-sections, each having a socket extended from the periphery, are provided, said sections being pivotally connected by a center screw or like means.

In swing-joints of the indicated character it has been found difficult to rapidly produce such articles of manufacture in perfect working condition, as by usual methods and forms of construction the joint-sections are liable to be tight at one point of swinging movement and loose at another point, or, in other words, work unevenly and are liable to sag or leak if swung to the loose point between the joint-sections.

The object of my invention is to provide novel features of construction for a swing-joint whereby the assembled joint-sections and means for connecting the same afford a perfectly smooth-working tight joint at all points of swinging movement and a reliable swing-joint is produced rapidly and at moderate cost of manufacturing the same.

The invention consists in the novel construction of certain details for the swing-joint, as is hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved swing-joint and tubular portions of a swing-joint attached thereto, a flexure of the joint being indicated by dotted lines. Fig. 2 is a side view of parts shown in Fig. 1. Fig. 3 is a reverse plan view. Fig. 4 is a plan view, with a cap-screw removed, on the line 4 4 in Fig. 2. Fig. 5 is a longitudinal sectional view essentially on the line 5 5 in Fig. 1. Fig. 6 is a plan view of the male joint-section defined by the line 6 6 in Fig. 2. Fig. 7 is a reverse plan view of the female joint-section, the position of which is indicated by the line

7 7 in Fig. 5; and Fig. 8 is an enlarged longitudinal sectional view on the line 8 8 in Fig. 6.

The male and female sections of the two-part swing-joint are nearly alike in general features of construction, but for clearness in description they will be separately considered. The male section comprises a cylindrical internally-threaded socket portion 10, whereon is formed the cup portion 11, that is circular in contour and is annularly chambered, as at *a*. The open face of the cup portion 11 is level and essentially conforms with the longitudinal axis of the socket 10. The production of the annular groove or chamber *a* by any available means leaves the integral center hub *b* stand in the cup portion 11. A perforation *c* extends from the rear wall of the socket portion 10 through said wall into the bottom of the annular chamber *a*, as clearly shown in Figs. 6 and 8. A post *d* is formed or affixed on or in the hub *b*. Preferably said post is in the form of a cylinder produced integral with the hub, as shown in Figs. 5 and 8.

The female joint-section that coacts with the male joint-section has a socket portion 10^a, that is interiorly threaded, and from which, at one end, is integrally projected the circularly-contoured cup formation 11^a. The part 11^a has a flat face which is designed to nearly approach a like face on the cup formation 11 when the two parts 11 11^a are loosely secured together.

In the flat face of the cup formation 11^a an annular groove or chamber *a'* is formed, thus producing a central hub *b'*, that is integral with the cup portion mentioned.

From the interior of the socket portion 10^a a perforation *c'* is extended through the wall between the socket and cup, so as to form a gas-passage.

The hub *b'* is axially perforated, as at *b'²*, to receive the neatly-fitted post *d*, and the construction of parts is such as will permit a free lateral movement of one joint-section on the other joint-section of considerable extent.

In the upper surface of the male cup formation 11 a counterbore is produced, which leaves a circumferential flange *e* remain standing on the annular outer wall of the portion 11, as shown in Figs. 5 and 8, the hub *b*, that has been socketed for the recep-

tion of the post *d*, being reduced to a level with the bottom wall of said counterbore.

In the counterbore of the cup portion 11 a joint-ring *g*, preferably of metal, is seated in a manner that will presently be described, said ring being a short cylinder, having its end walls level and parallel with each other.

The cup formation 11^a on the female joint-section is slightly counterbored to receive the projecting upper end of the joint-ring *g*, and the bottom of this counterbore should fit upon the end surface of the joint-ring gas-tight, the diameter of said counterbore adapting the upper portion of the joint-ring to loosely engage the inner side of the circumferential flange *h*, left standing on the cup portion 11^a by counterboring the same.

The annular wall of the perforated hub *b'* is reduced in height to render it level with the bottom of the counterbore in the cup portion 11^a.

On the post *d* is neatly fitted a joint-ring *i*, that is cylindrical and flat on the ends, the latter respectively facing toward the upper surface of the hub *b* and like surface on the hub *b'*.

For convenience in manufacture the joint-rings *g* and *i* are rendered equal in height; but this is not absolutely necessary.

The upper end of the post *d* is fitted with a washer *k*, that is held from rotation in the usual way by producing mating flat places on the side of the post and inner edge of the washer.

The washer *k* is held in place and the joint-sections are clamped together by the headed screw *m*, which engages a tapped perforation in the end of the post *d*, said screw being preferably kerfed in its head to permit a convenient adjustment of the same.

When the joint-rings *g* and *i* are to be secured in place within the cup formation 11, a suitable cement, which preferably becomes plastic when heated and is rigid when cold, is applied to the sides and one end of each joint-ring, which are heated, and at the same time the male joint-section is heated a proper degree. The cement may also be of a kind that is plastic when cold and sets on exposure to the air, which dispenses with heating the joint-sections. The joint-rings *g* *i* are now placed in position, as shown in Figs. 5 and 8, and the female joint-section that has also been warmed is now slid upon the post *d*. The washer *k* and screw *m* are now adjusted to gradually draw the male and female joint-sections toward each other, and at the same

time said joint-sections are rocked back and forth on their pivot connection. This vibratory movement of the joint-sections, while the gas-fitter's wax-joints *n* are cooling that have been introduced between the ends of the joint-rings and the parts of the cup formation 11 they are near to, renders the joints between the upper ends of the joint-rings and the joint-faces on the cup formation 11^a perfectly true, so that the frictional resistance of vibration of the joint-sections on their pivot connections will be the same at any point of vibratory movement produced between the two portions of the improved swing-joint.

It will be seen that the improved swing-joint may be introduced between portions A B of a gas-fixture, or between any style of a valve and a gas-fixture, so as to permit the latter to be flexed in the usual manner, as occasion may require.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A swing-joint for tubing, the joint having two sections one with a groove or chamber, and a central hub situated in said groove or chamber, the said one section also having a post rising from the hub, the second section having an annular groove or chamber matching with the groove or chamber of the first section, and the second section also having a central hub receiving the post of the first section whereby the two sections are pivotally connected, and two rings cemented respectively to the edges of the outer wall of the groove or chamber in the first section and to the upper side of the hub on the said first section, the rings respectively bearing against the hub and outer walls of the second section.

2. A swing-joint for tubing, the joint having two sections each having a hub surrounded by a groove or chamber, the hubs and the grooves or chambers being capable respectively of matching with each other, means passing through the hubs whereby to hold the sections together so that they may swing independently on a center coincident to the hubs, and two independent rings respectively secured around the outer wall of the groove or chamber and adjacent to the hub in one section, the rings moving with and forming part of said section, and the rings bearing loosely on the coacting section.

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Witnesses:

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