(No Model.)

H. J. MORTON.

SWING JOINT FOR STEAM.

No. 324,874. Patented Aug. 25, 1885.

Fig. 1.

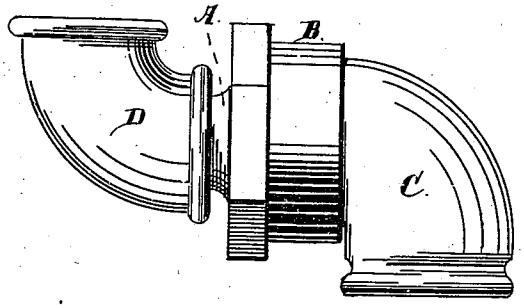


Fig. 7.

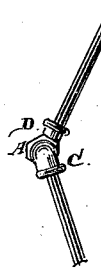


Fig. 2.

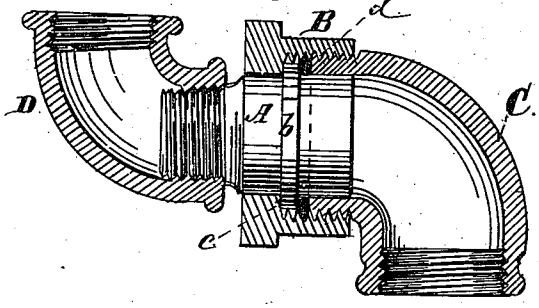


Fig. 5.

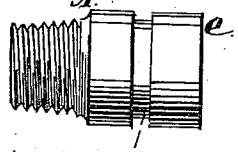


Fig. 8.

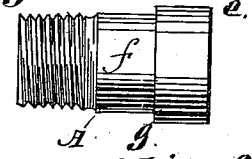


Fig. 3.

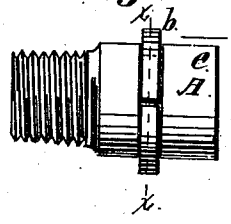


Fig. 4.

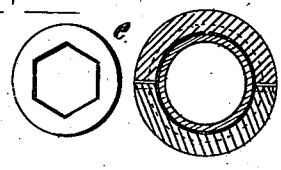
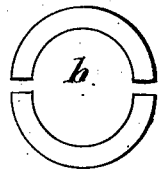


Fig. 6.



Witnesses:

C. W. Bond.

Harry F. Jones.

Inventor:

Horace J. Morton

UNITED STATES PATENT OFFICE.

HORACE J. MORTON, OF CHICAGO, ILLINOIS.

SWING-JOINT FOR STEAM.

SPECIFICATION forming part of Letters Patent No. 324,874, dated August 25, 1885.

Application filed April 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, HORACE J. MORTON, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Swing-Joints for Steam, &c., of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a central vertical section; Fig. 3, a detail; Fig. 4, a section at line *x* of Fig. 3. Fig. 5 shows the coupling-piece with the ring removed. Fig. 6 shows the divided ring. Fig. 7 shows on a small scale a perspective of my joint with pipes attached thereto. Fig. 8 is a modification.

My invention relates, primarily, to swing-joints for connecting tubes which are used to convey steam.

The leading objects of my invention are to so construct such a joint that it can swing readily without wear, so that it can be readily packed and be steam-tight without interfering with its easy movement, and so that the obstruction to the passage of steam will be as slight as possible, which I accomplish as illustrated in the drawings, in which—

A is a coupling-piece, which is screw-threaded at one end, the remaining portion being smooth, except that it is provided with a groove, *a*, extending around it.

b is a ring made in two parts, so that the two halves can be inserted in the groove *a*, as shown in Fig. 3, the ring projecting beyond the periphery of the body of the coupling-piece A, and forming in effect a shoulder. The end *e* of the coupling-piece A is adapted to receive a wrench, as shown in Fig. 3, to hold it while the elbow D is being screwed to place.

B is a coupling-nut and stuffing-box, having a shoulder, *c*, upon the inside near one end, and screw-threaded upon a portion of the inside, as shown in Fig. 2.

C is an elbow, screw-threaded upon the outside at one end, and upon the inside at the other end.

d is packing of hemp or any other suitable material.

D is another elbow, screw-threaded upon the inside, at both ends, as shown.

The parts are put together by first putting the coupling-piece A into the coupling-nut B, the screw-threaded end of the coupling projecting outside of the nut, as shown in Fig. 2, and the projecting portion of the ring *b* resting upon the shoulder *c*. Then any suitable packing is to be placed around the smooth part of the coupling-piece and between it and the wall of the coupling-nut B, the packing resting against the projecting part of the ring *b*. Then the elbow D is to be screwed upon the projecting screw-threaded end of the coupling-piece A. Then the elbow C is to be screwed to place, compressing the packing. When all this has been done, the parts will be substantially as shown in Figs. 1 and 2.

The coupling-piece A can be easily rotated, turning in the ring *b*, producing but very little friction or wear, and the compressed packing *d* will not interfere with the easy movement of the joint; or the coupling-nut and the ring *b* can move around the coupling A.

Pipes through which steam is to be conveyed can be connected to the elbows C D.

The form and construction of this joint are such that the opening through it can be large without sharp angles, so that there will be but little obstruction to the passage of steam.

In Fig. 7 I have shown on a small scale two pieces of pipe connected to the swing-joint, and it is evident that these pipes may be brought to any desired angle with each other by rotating one or both parts of the swing-joint.

I do not limit myself to the use of this joint in connection with steam-pipes, but it may be used for any other purpose to which it is adapted.

The divided ring is the only part upon which any material wear can come in use, and if this ring should wear so as to affect the joint it can be very easily replaced.

The form which I have shown I regard as the best; but in Fig. 8 I have shown a modification which may be used in some cases, in which the part *f* of the coupling-piece is made smaller than before, so that it can pass through a solid ring of the same size as the ring composed of two parts, as above described. If this modification be used, the solid ring can be placed in the coupling-nut, resting on the

shoulder *c*, and then the screw-threaded end of the coupling A can be passed through the ring, the shoulder *g* coming in contact with the ring.

What I claim as new and desire to secure by Letters Patent, is—

1. In a swing-joint, the combination of the coupling-piece A, a loose ring mounted upon and encircling the same, and a coupling-nut, B, substantially as described.

2. A swing-joint consisting of a coupling-piece, A, provided with a groove, *a*, in combination with a loose ring and a coupling-nut, B, substantially as and for the purposes specified.

HORACE J. MORTON.

Witnesses:
O. W. BOND,
HARRY T. JONES.