

UNITED STATES PATENT OFFICE.

JAMES L. PEASE, OF CHICOPEE, MASSACHUSETTS.

TUBE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 272,315, dated February 13, 1883.

Application filed October 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. PEASE, a citizen of the United States, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Tube-Couplings, of which the following is a specification.

This invention relates to an improved tube-coupling consisting in brief of two coupling members, one of which is provided upon its perimeter, at or near its end, with a channel having inclined sides to be received within the other member having detents projecting inwardly through its sides and into said channel. An outer casing or bushing over the heads of the detents, and having a channel filled at intervals by cams, by its rotation drives the detents into the channel beneath them or permits them to clear said channel. Corresponding faces in both members are drawn into intimate contact by the action of the detents in one section upon the inclined sides of the channel of the other, to form a tight joint.

In the drawings, Figure I is a view of the members of the coupling separated. Fig. II is a partial sectional elevation of the members coupled. Fig. III is a view of the detent-bearing section with the operating cam-ring removed. Fig. IV is a view of the cam-ring. Fig. V is a section in plan view upon line $x x$ of Fig. III, and Fig. VI is a view of one of the detents detached.

B is one section of a tube-coupling, having the annular channel b , with its sides inclined to form in effect a V-shaped groove.

d is an annular shoulder, faced to form a close joint with the end e of section C. The section C is provided with one or more detents, h , arranged in corresponding openings, h' , in its wall, to extend inward and be opposite the channel b when the section B is received within the one C. Seated upon the shoulder f and snugly sleeved upon the part C is the ring D, adapted to be easily rotated. The ring D is provided internally with the groove g , arranged to come opposite the heads of the detents, and of depth sufficient to receive the detents when thrown out by the part B. Arranged within groove g , in number and space corresponding to detents h , are cams n .

It will be seen that when the cams n are not opposite the detents h the part B may be freely inserted or withdrawn from the part C; but that when the ring D is rotated to bring the cams n over said detents they are forced into

the groove b to draw the faced portions of the coupling members clearly together.

In practice, I hinge the detents to elongated straps i in a countersink, m , which, while securing them, permits the proper radial movement; and I also prefer to form springs of the straps i to project the detents inward, for the purpose of enabling the part B to be sprung into place with one hand, and be held until it is convenient to operate the locking-ring D.

To more perfectly operate the detents by part B, when they are released by ring D, I form the detents with wedge-points, as shown, and provide the extreme end of part B with an incline surface, y .

The ring D, when in place, is secured by a screw, o , from the part C, which passes through an elongated opening, s , therein, the ends of which opening form stops to indicate the opening or closing of the detents.

The points of the detents are arranged to come a little to one side of the inverted apex of channel b , as shown in Fig. II, so as to exert a constant pressure upon the joint surfaces.

In place of a close joint being made at $c d$, the end at y may be packed against the shoulder at v .

This coupling is well adapted to the object-glass holder of a microscope, where it is frequently necessary to affix the object-glass to the tube with one hand while manipulations are conducted with the other.

Now, having described my invention, what I claim is—

1. The within-described tube-coupling, consisting of section B, having groove b , with double-inclined sides, section C, having one or more wedge-shaped detents h , hinged at the end of flexible arms to swing through sockets in its shell, and ring D, with channels g , and cams n , all combined and operating to, in effecting a coupling, draw corresponding packing-surfaces of the two sections into intimate contact, substantially as set forth.

2. In a tube-coupling, the combination, with the section B, having the groove b , of the section C, having the hinged spring-detents h , and the ring D, with the interior channel, g , and cams n , and rotation-limiting stop o , the parts being provided with packing-surfaces, and arranged to operate substantially in the manner and for the purpose set forth.

Witnesses: JAMES L. PEASE.

H. A. CHAPIN,
WM. H. CHAPIN.