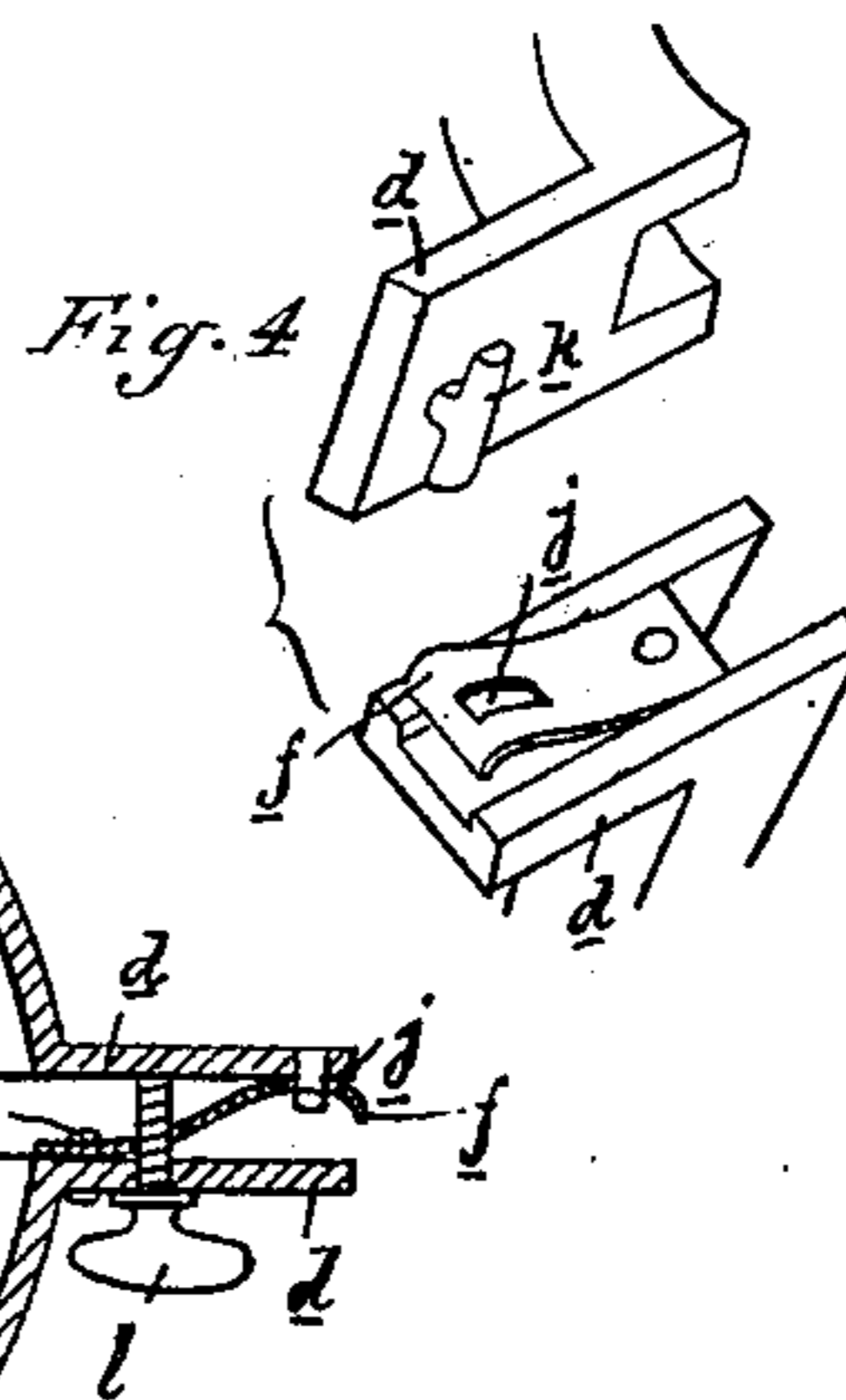
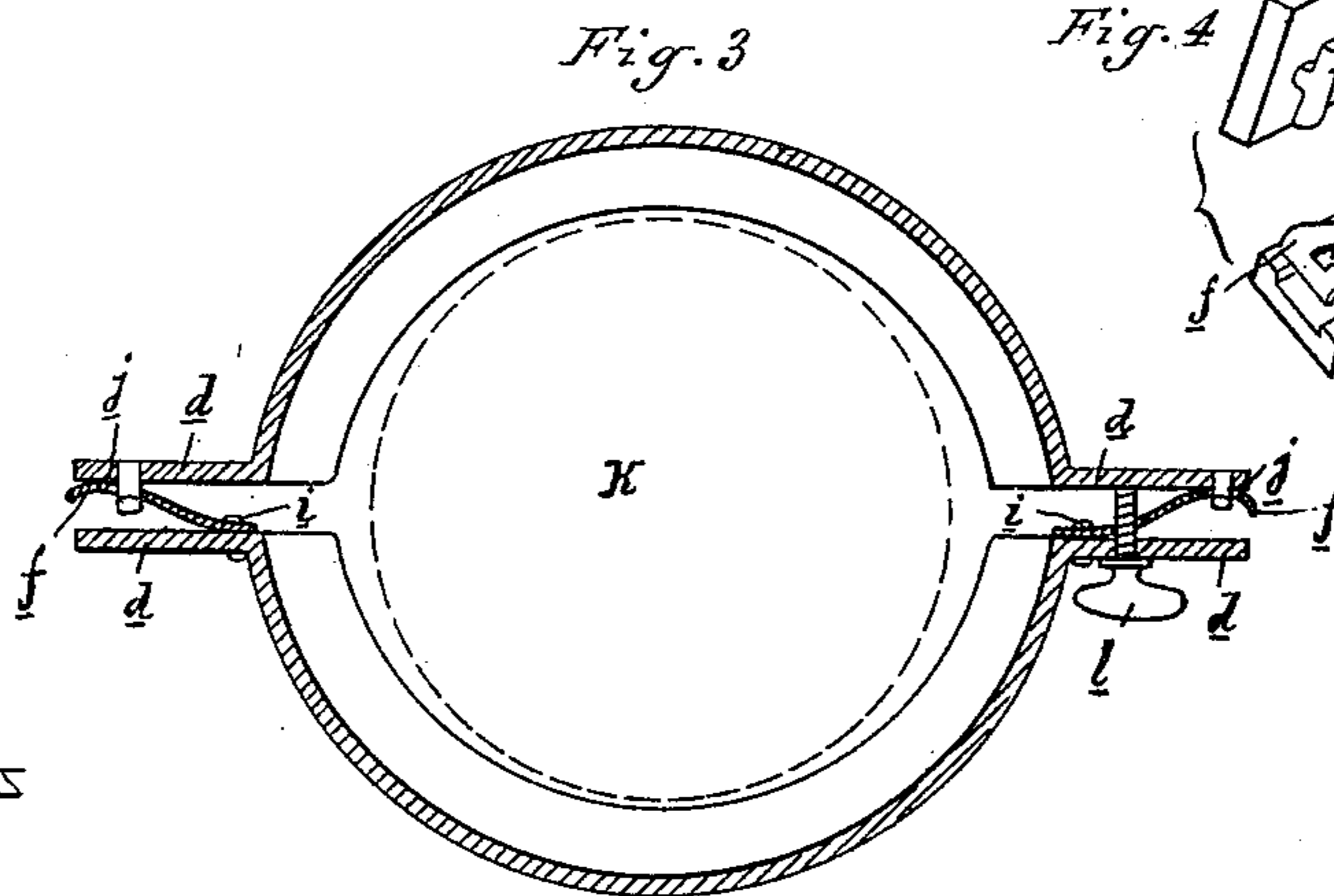
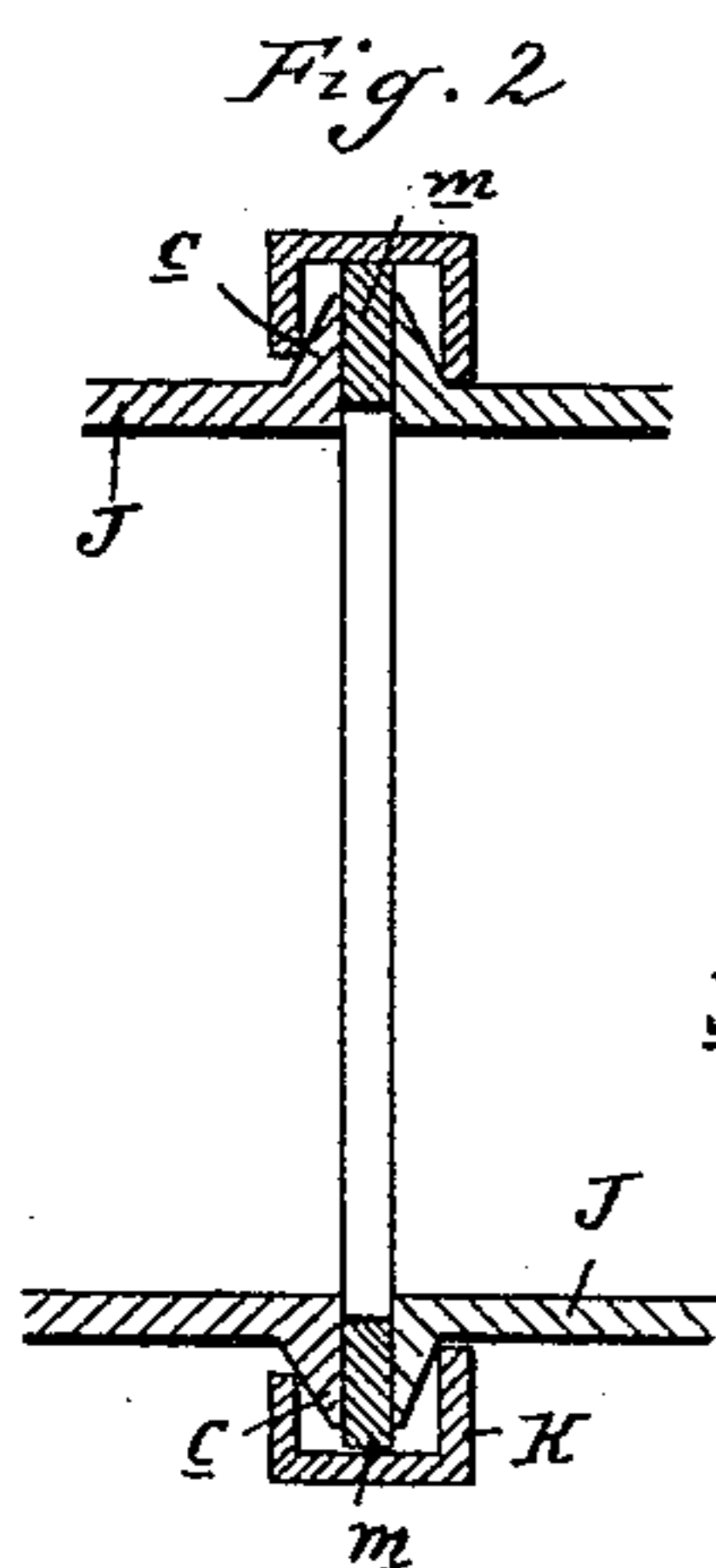
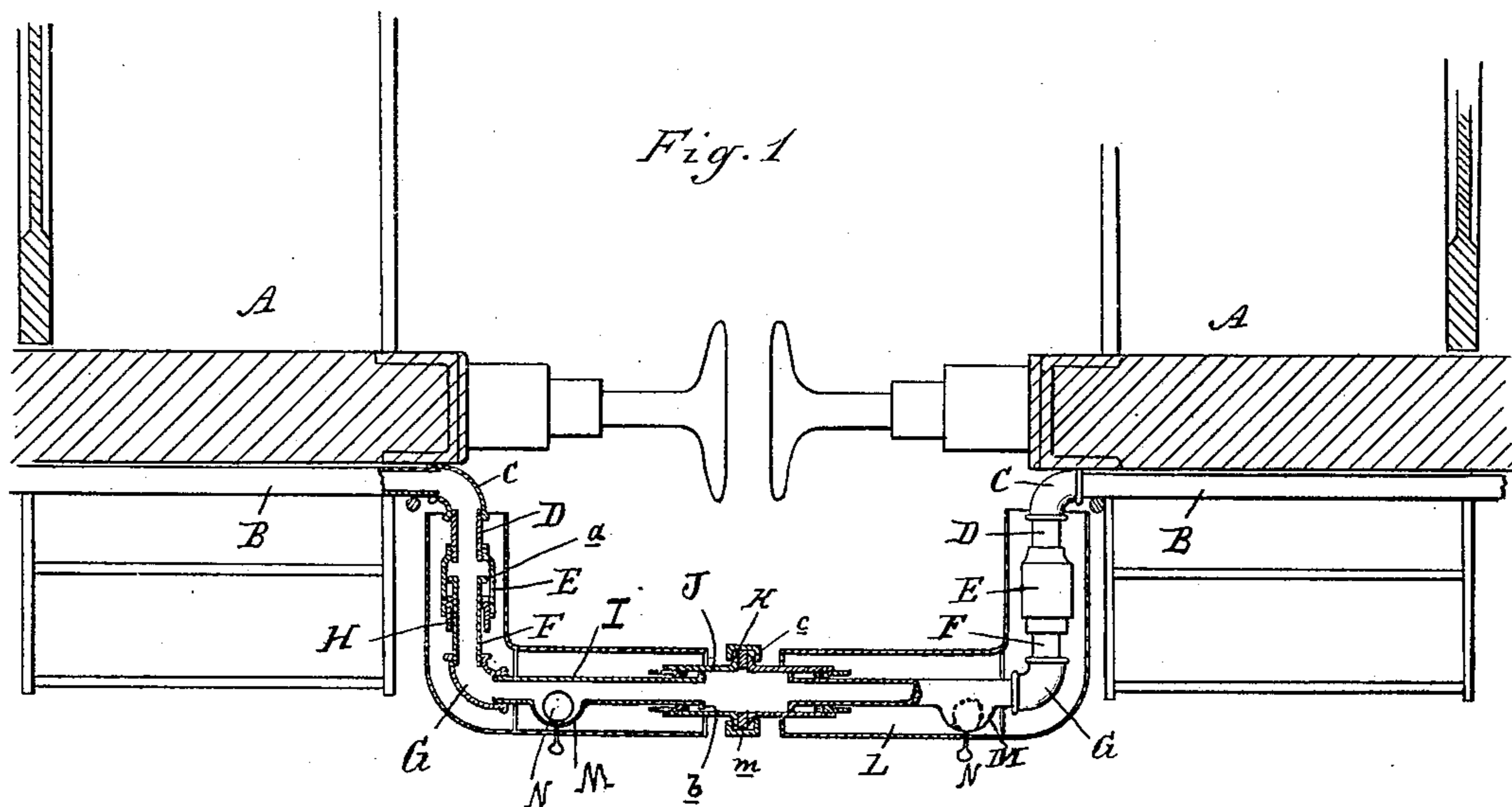


(No Model.)

L. T. WHITE.  
PIPE COUPLING.

No. 377,130.

Patented Jan. 31, 1888.



Attest:  
A. Barthel  
W. J. Sprague

Inventor:  
Lyman T. White.  
by his Atty  
W. J. Sprague

# UNITED STATES PATENT OFFICE.

LYMAN T. WHITE, OF EATON RAPIDS, MICHIGAN.

## PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 377,130, dated January 31, 1888.

Application filed March 10, 1887. Serial No. 230,319. (No model.)

*To all whom it may concern:*

Be it known that I, LYMAN T. WHITE, of Eaton Rapids, in the county of Eaton and State of Michigan, have invented new and useful Improvements in Pipe-Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in couplings of a flexible character for air, steam, or water pipes, such as are more especially designed for carrying air, steam, or water to the various cars of a train for braking or other purposes.

The invention consists in the peculiar details of construction wherein are produced "slip" joints between the parts, all as more fully hereinafter set forth.

Figure 1 is a sectional view showing sections of two railway-cars with my improved coupling. Fig. 2 is an enlarged vertical section of the center of the coupling. Fig. 3 is a cross section. Fig. 4 are enlarged details.

In the accompanying drawings, which form a part of this specification, A represents the ends of two cars of a train provided with the usual pipes, B, for conveying steam, air, or water to the various cars in the train for the purposes of braking or heating. Upon the ends of these pipes B, I secure an elbow, C, into which is screwed a nipple, D, the free end of which has secured to it an enlarged coupling, E.

F is a nipple, the lower end of which carries an elbow, G, while the upper end is provided with a flange, *a*, designed to slide easily within the coupling E, and is retained therein by means of a reducer, H, which screws into the large end of the coupling E, the usual packing being employed to prevent leakage.

I is a nipple, one end of which is screwed into the elbow G, while the outer end thereof is provided with the flange *b*, which slides in the nipple J, as shown, the usual packing being employed also in this case to prevent leakage. The free ends of these couplings J are provided with beveled flanges *c*, each of the pipes B being provided with the devices

hereinbefore described. When the cars are employed together, these flanges *c* are clasped by a double ring, K, cut in two parts, as shown in Fig. 3, which, when in place, also secures the interposed packing *m*. These parts are each provided with lugs *d* at each end of each section, between which are secured the flat springs *f*, one end being rigidly secured, as at *i*, while the other end is slotted, as at *j*, to loosely engage with the T-headed stud *k*. A set-screw, *l*, passing through the lugs, compresses the parts of the ring together, so that the springs will resist a moderate given longitudinal strain sufficient to hold the two parts together under the usual tension of the train, but not if the cars should break their couplings, in which case the ring-sections will spring apart and let one of the flanges pass out.

The couplings herein described may be incased in a suitable covering, L, which may consist of a larger pipe and so arranged as not to interfere with the expansion and contraction or sliding of the inclosed couplings, and, also, in case the device is employed for steam purposes, the water of condensation will be less liable to freeze.

The nipples I are each provided with a pocket, M, in which is located a suitable pressure or float valve, or a cock, to admit of the discharge of condensed water that may accumulate in such pockets, the valve shown being a float-valve, as at N.

It will be observed that a coupling constructed substantially as described forms, in fact, a universal joint which adjusts itself to the various lateral and vertical positions assumed by the cars.

What I claim as my invention is—

In a device for the purposes specified, the ring K, formed of two parts, each part provided with lugs *d*, springs *f* between said lugs and slotted at one end, a T-stud, *k*, loosely engaging the slot of said spring, and the set-screw *l*, passed through said lugs, as set forth.

LYMAN T. WHITE.

Witnesses:

ALANSON OSBORN,  
F. H. DE GOLIA.