

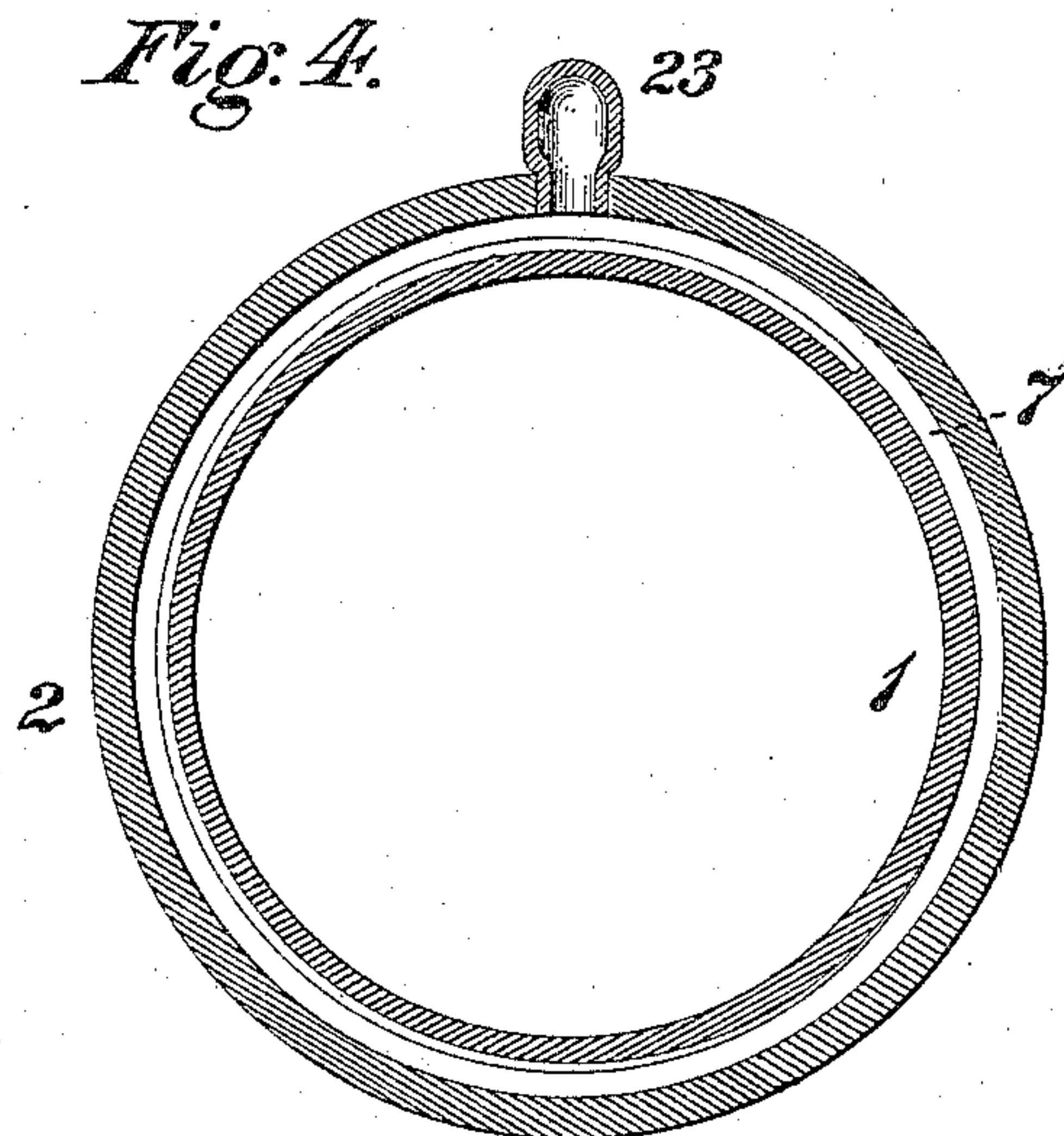
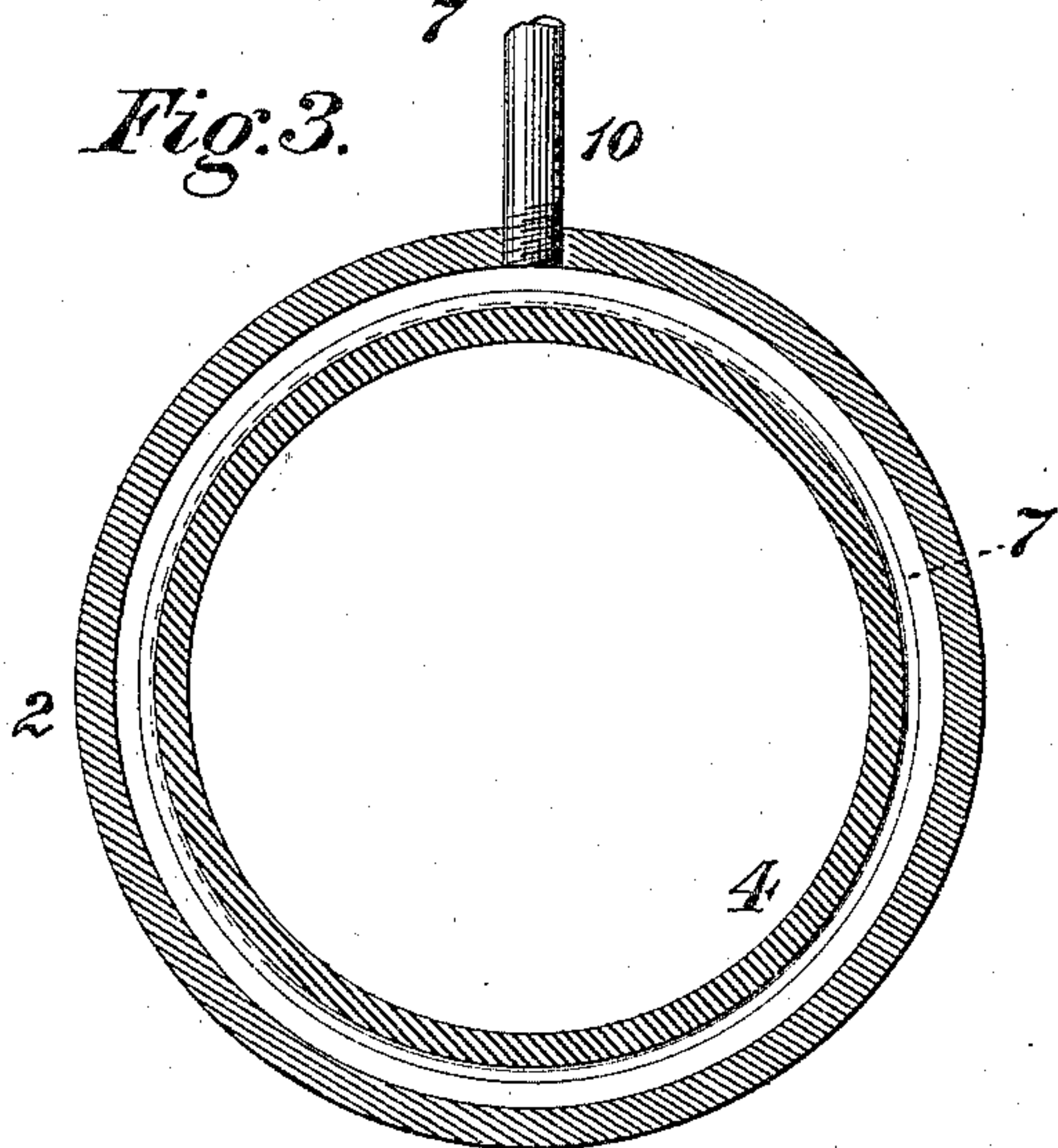
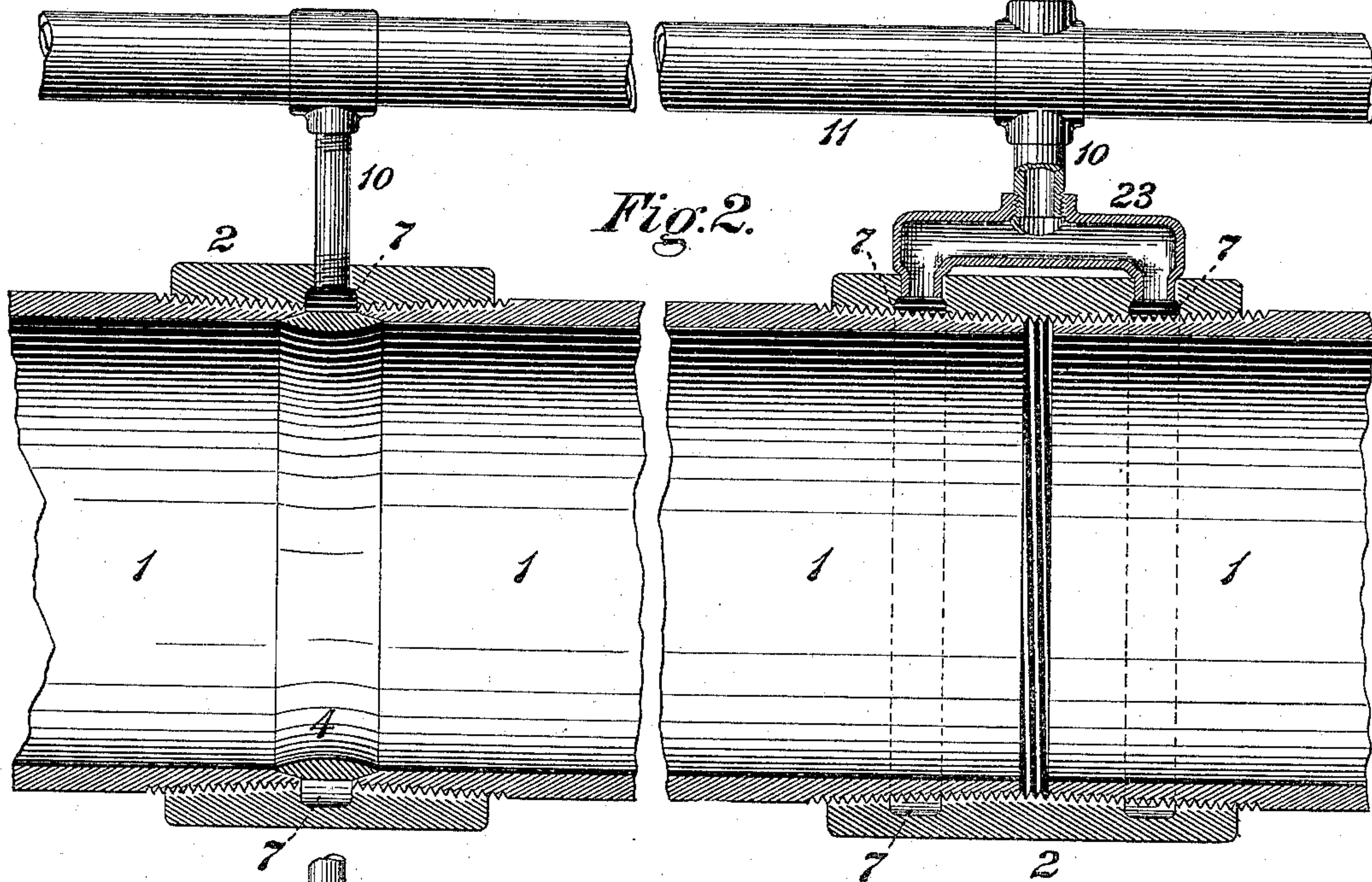
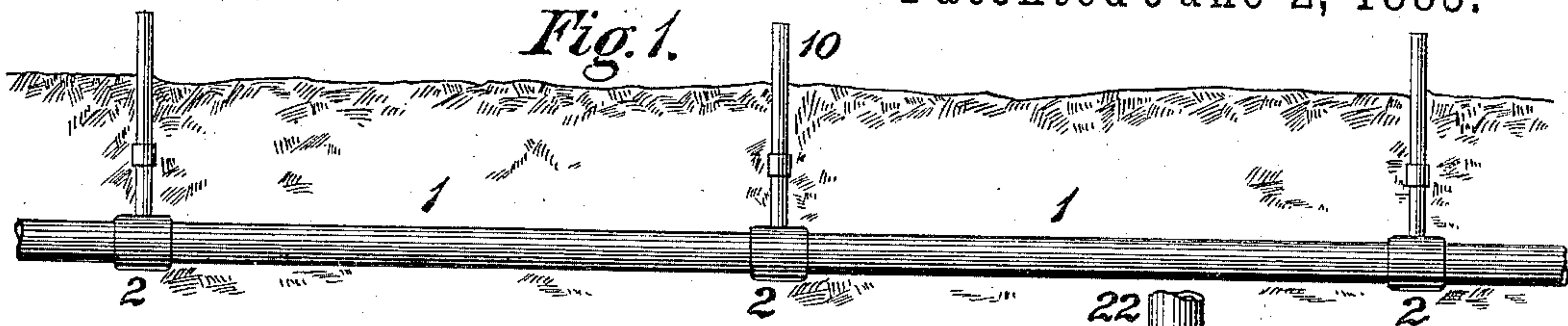
(No Model.)

G. WESTINGHOUSE, Jr.

MEANS FOR DETECTING AND CARRYING OFF LEAKAGE FROM GAS MAINS.

No. 319,364.

Patented June 2, 1885.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, JR., OF PITTSBURG, PENNSYLVANIA.

MEANS FOR DETECTING AND CARRYING OFF LEAKAGE FROM GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 319,364, dated June 2, 1885.

Application filed April 21, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WESTINGHOUSE, Jr., residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered a certain new and useful Improvement in Means for Detecting and Carrying off Leakage from Gas-Mains, of which improvement the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a side view in elevation of a gas-main illustrating the application of my invention; Fig. 2, a longitudinal central section, on an enlarged scale, illustrating a modification of the same; and Figs. 3 and 4 transverse sections through the couplings shown on the left and on the right of Fig. 2, respectively.

The object of my invention is to enable the leakage of gas from the joints of a main to be detected and to prevent the escape of the same into the surrounding earth; to which end my invention, generally stated, consists in the combination of a pipe-joint having an internal chamber which communicates with one or both of the connected pipe-sections, and a vent-pipe leading from said chamber to a suitable point of discharge, as hereinafter more fully set forth.

In the practice of my invention I provide the joints of a main or line of pipe with internal chambers or receptacles, 7, each of which has a portion of its walls or boundaries formed by one or both of the sections of pipe, which are connected by the joint in such manner that any gas leaking from the main thereat must pass into and through said chamber to gain egress from the main. In the joint shown on the left of Fig. 2 and in Fig. 3 the chamber 7 is formed between the inside of the coupling-socket 2 (which may be recessed to a greater or less degree, as desired, to afford increased capacity) and an expander-ring, 4, fitting closely between the ends of the two pipe-sections 1 1, which are connected by the coupling, such construction, which is not *per se* herein claimed, being set forth in an application for Letters Patent filed by me under date of March 21, 1885, Serial No. 159,638.

A modification of the chamber 7 is illustrated on the right of Fig. 2 and in Fig. 4.

In this case two annular grooves are recesses are formed within the bore of the socket, each being located between its transverse center and one of its ends, and being closed on its inner side by the adjacent pipe-section when screwed into engagement with the socket. Each of the chambers 7 thus provided has an opening or vent, and the vents of the two chambers of each coupling-socket are preferably connected, as shown, by a U-shaped pipe, 23, which serves as an attachment to an escape, 10, as presently to be described.

The above construction, which is set forth in another application filed by me of even date herewith, and marked "Case C" is not *per se* herein claimed. It will be seen that, as in the former case, any leakage from the main at the junction of the sections must pass into the chambers 7 before escaping from the main. The precise form and location of the chambers 7 are not, however, material, so long as they possess the capacity of intercepting leakage, and may be varied in the judgment of the constructor without departing from the spirit of my invention.

A vent or escape pipe, 10, is connected to each of the chambers 7 of the main, and leads therefrom to any convenient and suitable point of discharge above the level of the ground, at which the gas may be permitted to escape into the atmosphere or be consumed as discharged. The presence and comparative degree of leakage may be detected by testing the several vent-pipes with a light, and as said pipes present a free and unobstructed outlet for gas from the chambers 7 leakage of gas into the earth surrounding the main is effectually prevented. The vent-pipes 10 may either lead separately to points above the surface of the ground, as shown in Fig. 1, or be connected with a common leakage-line, 11, provided at desired intervals with the escape-pipes 22, as in Fig. 2.

I claim herein as my invention—

1. The combination of a pipe-joint having an internal chamber or receptacle located between the interior wall of the coupling and the exterior wall of a pipe-section, and a vent-pipe leading from said chamber to a suitable point of discharge, substantially as set forth.

2. The combination, in a main or pipe line,

of a series of joints or couplings, each having  
an internal chamber or receptacle located be-  
tween the interior wall of the coupling and the  
exterior wall of a pipe-section, a leakage-line  
5 having one or more discharge-pipes leading  
therefrom to points above the level of the  
ground, and series of vent-pipes, each con-  
necting one of the chambers of the main with  
the leakage line, substantially as set forth.

In testimony whereof I have hereunto set to  
my hand.

GEO. WESTINGHOUSE, JR

Witnesses:

J. SNOWDEN BELL,  
R. H. WHITTLESEY.