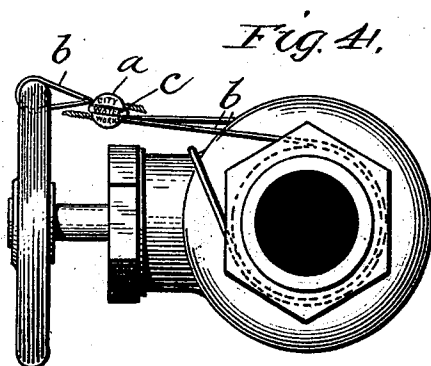
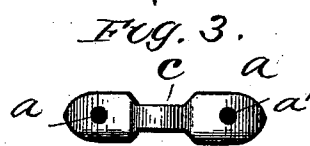
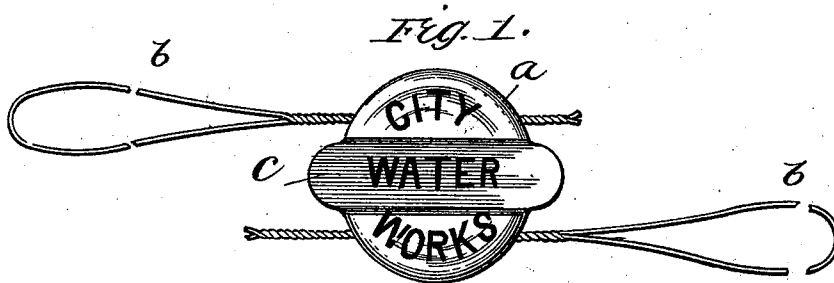


(No Model.)

G. A. TOWER.
SEALING DEVICE FOR VALVES, &c.

No. 516,851.

Patented Mar. 20, 1894.



Witnesses
Chas. A. Muzzey.
Howard W. Adamsley.

Inventor
George A. Tower
By Alexander Davis
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE A. TOWER, OF RICHMOND, VIRGINIA.

SEALING DEVICE FOR VALVES, &c.

SPECIFICATION forming part of Letters Patent No. 516,851, dated March 20, 1894.

Application filed September 20, 1893. Serial No. 486,027. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. TOWER, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Sealing Devices for Valves, &c., of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a detail side elevation of the seal, showing it stamped or compressed; Figs. 2 and 3 edge elevations showing the seal respectively before and after stamping, and Fig. 4 an end elevation of a fluid valve sealed against opening with my improved sealing device.

The object of this invention is to provide an improved and novel sealing device for valves, which requires a practically unyielding, inelastic but refragable connection between the movable and stationary parts; said invention consisting essentially of two wire or other loops of a non-stretchable material, such as steel, having their inner or adjacent ends embedded in a seal of a material easily broken or separated, and their outer or looped ends adapted to be attached respectively to the movable and stationary parts, said seal being preferably weakened at a point between where the two wires are embedded; so that a predetermined strain on the wires will part the seal and release the movable part as more fully hereinafter described.

In the drawings, *a* designates the seal, which is of a uniform thickness before stamped or compressed. Two longitudinal openings *a' a'* are formed through the seal, these holes being formed at diametrically opposite points. The twisted ends of the respective wire loops *b* are inserted in the respective openings, these loops being formed, of course as long as the exigencies of the particular case may render necessary. When the wires are looped around the parts of the valve to be sealed and are drawn taut and the twisted ends inserted in the openings, the seal is compressed or stamped so as to permanently embed the twisted ends therein.

In stamping, a suitable tool is employed that will compress the seal and form a narrowed portion or strip *c* across the same be-

tween the embedded wires, thus weakening the seal at that point; any suitable words may be formed in relief or in intaglio on the seal at the time of stamping.

In using this device to seal a valve operated by a rotary stem, one of the wires is looped around a convenient part of the hand-wheel on the stem and the other is looped about the valve casing in a suitable manner (one very simple and effective method being shown in Fig. 4), the two loops being drawn as taut as possible before sealing, so that it will be impossible to start the valve without breaking the seal. When it is desired to open the valve, it is simply necessary to rotate the wheel sufficiently to break the seal in two, the power required to be exerted on the wheel being determined by the thickness of the narrowed connecting portion between the two parts of the seal, as is evident.

It is obvious that this device is only intended to seal those valves that are used infrequently and where it is desired that any tampering with the valve will be made evident to the inspector. The invention may be applied to the sealing of any valve of whatever construction and for that and other reasons it is an improvement over existing devices. It is obvious, however, that the main improvement lies in the fact that as the seal breaks and not the straps, which are of an unyielding, inelastic material, there can be no stretching and consequent partial opening of the valve. The seal may be weakened in any other manner without departing from the invention, as it is simply necessary that the seal forming connection between the wires be so constructed as to break before the wires part or stretch.

While the invention is designed especially for use on valves and while I have shown and described it in no other connection, yet it is obvious that the device may be used with advantage for other purposes and that the invention is therefore not limited in that respect. The device may be employed wherever a non-stretchable but refragable sealing device is required.

While no other material but wire is described as being used for the loops, it is obvious that, if for any reason it is found de-

sirable, other equivalent non-stretchable material, such as steel-bands, may be used without departing from the invention in the least.

Having thus fully described my invention, what I claim is—

1. A sealing device for valves, &c., consisting of two independent wire connections and a soft metal seal connecting their adjacent ends, said seal being adapted to break at a point between where the wires connect to the seal, substantially as described.

2. A sealing device for valves, &c., consisting of a soft-metal seal and two oppositely extending separable wire-loops connected to the seal at opposite sides, said seal being adapted to break between the wires, substantially as described.

3. A sealing device for valves, &c., consisting of two independent wire loops, and a seal connecting the adjacent ends of the wire loops, said seal being weakened at a point between

the wires so as to be breakable at that point, substantially as described.

4. A sealing device for valves, &c., consisting of two independent non-stretchable wire loops, their opposite ends being adapted to be connected respectively to the movable and stationary parts of the valve or other object and the strands of their respective adjacent ends twisted, and a breakable connecting seal having said twisted ends embedded in it, whereby the sealing device will be inelastic and a strain on the loops in opposite directions will part the seal between the wires, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. TOWER.

Witnesses:

T. T. HARRIS,
W. T. HARRIS.