

A. A. KENT.  
Pressure Gage.

No. 103,893.

Patented June 7, 1870.

FIG. 1

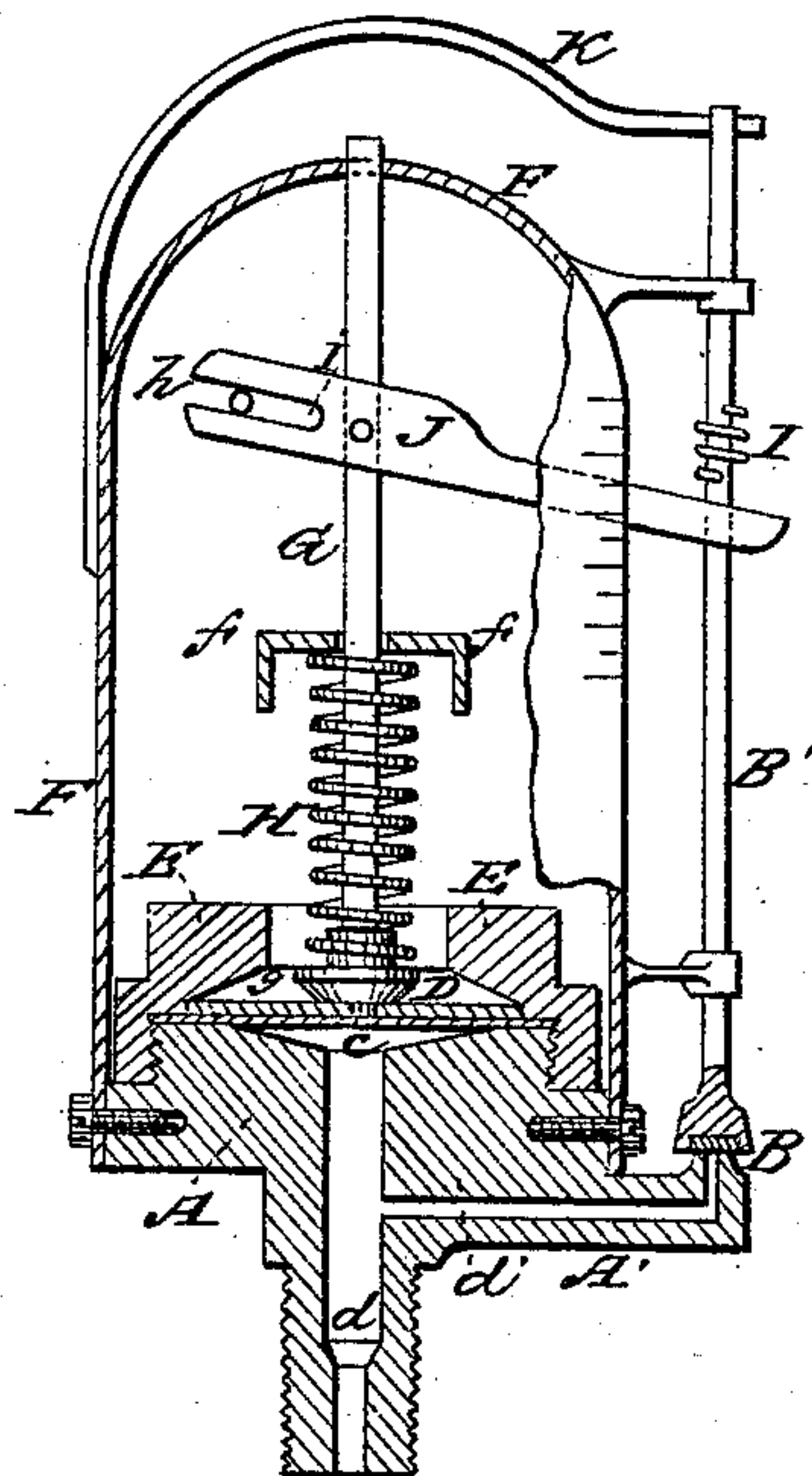
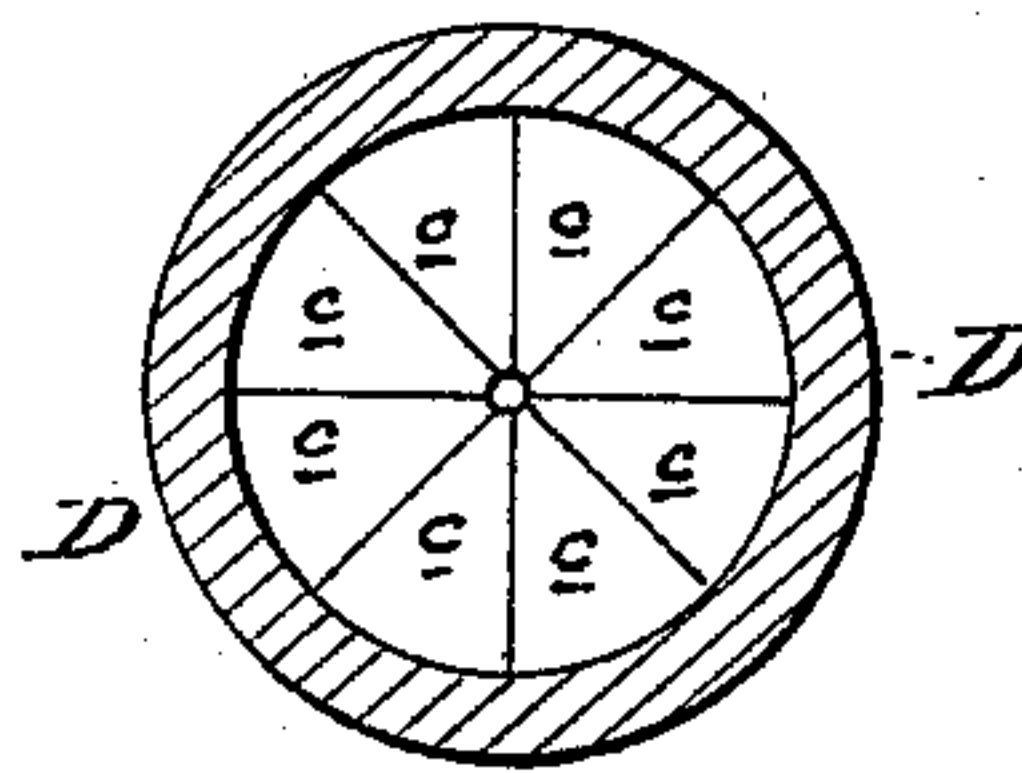


FIG. 2



WITNESSES:

*W. S. Sprague*  
*Jas C. Day*

INVENTOR:

*A. A. Kent*  
*Per Attorney*  
*W. S. Sprague*

# UNITED STATES PATENT OFFICE.

ARTEMAS A. KENT, OF LYONS, IOWA.

## IMPROVEMENT IN PRESSURE-GAGE AND SAFETY-VALVE.

Specification forming part of Letters Patent No. **103,893**, dated June 7, 1870.

*To all whom it may concern:*

Be it known that I, A. A. KENT, of Lyons, in the county of Clinton and State of Iowa, have invented a new and useful Improvement in Combined Pressure-Indicator and Safety-Valve; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a vertical longitudinal section of my device, and Fig. 2 is a plan of the elastic disk.

Like letters indicate like part in each figure.

The nature of this invention relates to the construction of a combined safety-valve and pressure-indicator.

It consists in the peculiar arrangement of an elastic flexible disk within a suitable case, on which disk the pressure is exerted and counteracted by a spring on the upper side of the disk, coiled about a stem bearing on the disk, said stem having pivoted to it an indicating-arm, which, in its upward movement raises the valve by striking a tappet adjustably secured on its stem, as more fully hereinafter shown and set forth.

In the drawings, A represents the stand-pipe of my safety-valve, flanged or threaded in its lower part, so that it may be secured to a pressure-generator. It is provided with a branch, A', on the end of which is seated the safety-valve B. A passage, *d*, is formed through the stand-pipe, branching off at *d'* to the seat of the safety-valve. The top of the stand-pipe is countersunk, forming a cup-shaped recess, C, in which is laid a flexible disk, D, secured in place by a cup-shaped cap, E, screwed over the top of the stand-pipe. The disk is composed of light sheet-rubber packing, strengthened by light metallic segments *c*, secured to its upper surface, which allow it to expand or vibrate freely, thereby permitting the use of a lighter and more flexible disk than would otherwise be the case, and very sensitive in the varying pressure to which it may be subjected.

F is a case surmounting the stand-pipe.

G is a stem passing through the cap E, pressing by its head *g* on the disk D.

*ff* are lugs in the case, and H a spring coiled about the stem G between its head and the lugs *f*, pressing the former down on the disk.

B' is the stem of the safety-valve, sustained in position by pressing through a guide projecting from the upper part of the case, and a light semi-elliptic spring, K, the free end of which presses down on the head of the stem.

I is a tappet adjustably vertically on the valve-stem.

J is an indicator-lever pivoted to the stem G, its longer arm projecting through an opening in the side of the case, and has a slot, *h*, in its shorter arm engaging with a stud, *i*, in the case. The edge of the case where the lever J projects is laid off to a scale.

The operation of the device may be explained as follows: As pressure is developed in the generator it is exerted against the under side of the disk, pressing up the stem G, which in turn raises the long arm of the indicator-lever, the pressure being indicated by the projecting end of the lever on the scale. The tappet I is adjusted on the valve-stem to any desired point on the scale, and as soon as that pressure is attained or exceeded the lever J strikes the tappet, by which the safety-valve is raised and the pressure relieved through the opening at the outer end of the passages *d'*. The peculiar construction of the disk, rendering it very sensitive and quick in its action, is especially valuable in vulcanizing apparatus and in situations where accuracy and celerity of action in the safety-valve are essential.

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

The stand-pipe A, passages *d d'*, disk D, cap E, spring H, stem G, indicator-lever J, case F, provided with a suitable scale, safety-valve B, valve-stem B', and adjustable tappet I, the whole arranged and operating substantially as described, and for the purpose set forth.

ARTEMAS A. KENT.

Witnesses:

J. N. RENTON,  
N. CANNY.