J. E. TREAT.

Indicator for Pressure Gages.

No. 201,637. Patented March 26, 1878.

Fig. 1.

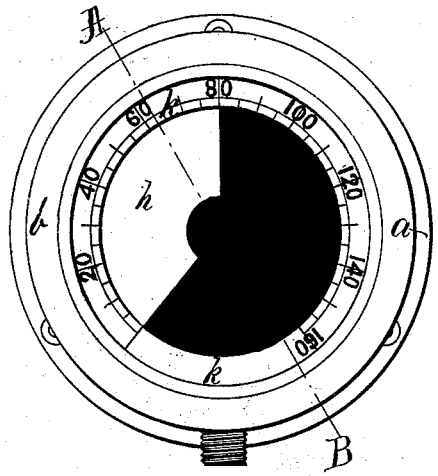


Fig. 2.

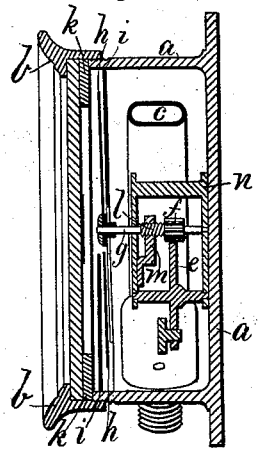


Fig. 3.

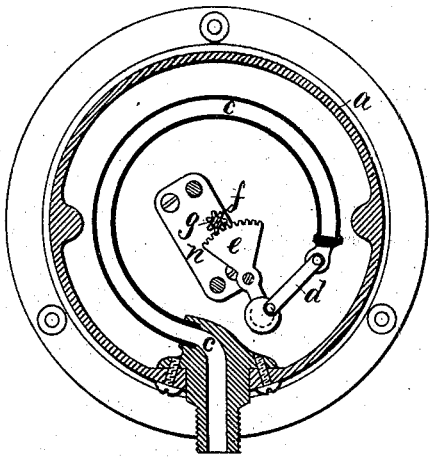
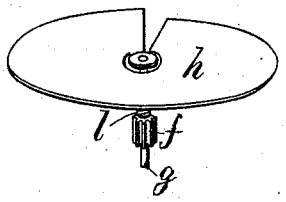


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN INDICATORS FOR PRESSURE-GAGES.

Specification forming part of Letters Patent No. **201,637**, dated March 26, 1878; application filed August 28, 1877.

To all whom it may concern:

Be it known that I, JAMES E. TREAT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Indicators for Steam and other Gages; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in indicators for steam, water, pressure, and vacuum gages, consisting in the combination, with any of the ordinary mechanism generally employed in such gages, of a stationary and a movable helix-shaped disk, of strongly-contrasting colors, the latter disk being secured to the pinion-shaft, to which ordinarily the finger or pointer is attached.

In combination with these helix-shaped disks I use a stationary index-plate, divided into units, representing pounds to the square inch, or atmospheres, &c., which stationary plate may be made in one piece with the stationary helix-shaped disk, or made as a separate ring, without departing from the spirit of my invention.

To prevent the rotary helix-shaped disk from grinding on or coming in contact with the stationary helix-shaped disk during the rotation of the former, I provide its spindle with a screw-thread working into a screw-threaded bearing the pitch of which is made similar, or nearly so, to that of the pitch of the helix-shaped disks.

The advantage of this kind of indicator is that as one disk travels over the other it presents very forcibly to the eye the amount of pressure or vacuum indicated by the gage, even if the beholder is at quite a distance from it, and it is particularly valuable for the purpose of indicating gages in dark or cloudy weather, or by lamp or gas lights, in the engine-rooms of steamers, or on locomotives or stationary engines.

This kind of indicator is equally useful for "Bourdon's," "Schaeffer's," or any and all kinds of gages, whether used for steam, water, air, gas, or other pressure, or for vacuum-gages.

I have in the drawing shown my invention as applied to a "Bourdon" pressure-gage; but it is equally well adapted for all other kinds of gages.

On the accompanying drawings, Figure 1 represents a front view of my invention. Fig. 2 represents a longitudinal section on the line A B, shown in Fig. 1. Fig. 3 represents a sectional view of the interior mechanism of an ordinary pressure-gage; and Fig. 4 represents a perspective view of the movable helix-shaped disk.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a represents the case of an ordinary gage, provided with the cap *b*, elastic pressure-tube *c*, link *d*, cog-segment *e*, pinion *f*, and indicator-shaft *g*, in the usual manner. To the shaft *g* is secured, in a suitable manner, the helix-shaped disk *h*, that is made to move with the shaft *g* around its axis.

i represents the stationary helix-shaped disk, that is secured to the case *a*, or otherwise held firmly in position. The disks *h* and *i* are made of strongly-contrasting colors, so that when the former moves over and obscures the latter more or less the exact state of the gage can be quickly ascertained.

k represents the stationary index, provided with divisions and numerals, as shown, which latter may, if desired, be made directly on the stationary disk *i*.

l represents the screw-thread on the pinion-shaft *g*, and *m* represents the screw-threaded bearing therefor, for the purpose hereinbefore set forth. *n* represents the ordinary rear bearing for said pinion-shaft.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. The herein-described improvement on gage-indicators, consisting of the movable helix-shaped disk *h*, the stationary helix-shaped

disk *i*, and stationary index *k*, as and for the purpose set forth.

2. The combination, with the movable disk *h* and stationary disk *i*, of the shaft *g*, with its screw-thread *l* and screw-threaded bearing *m*, as and for the purpose set forth and described.

In testimony that I claim the foregoing as my own invention I have affixed my signature in presence of two witnesses.

JAMES E. TREAT.

Witnesses:

ALBAN ANDRÉN,

HENRY CHADBOURN.