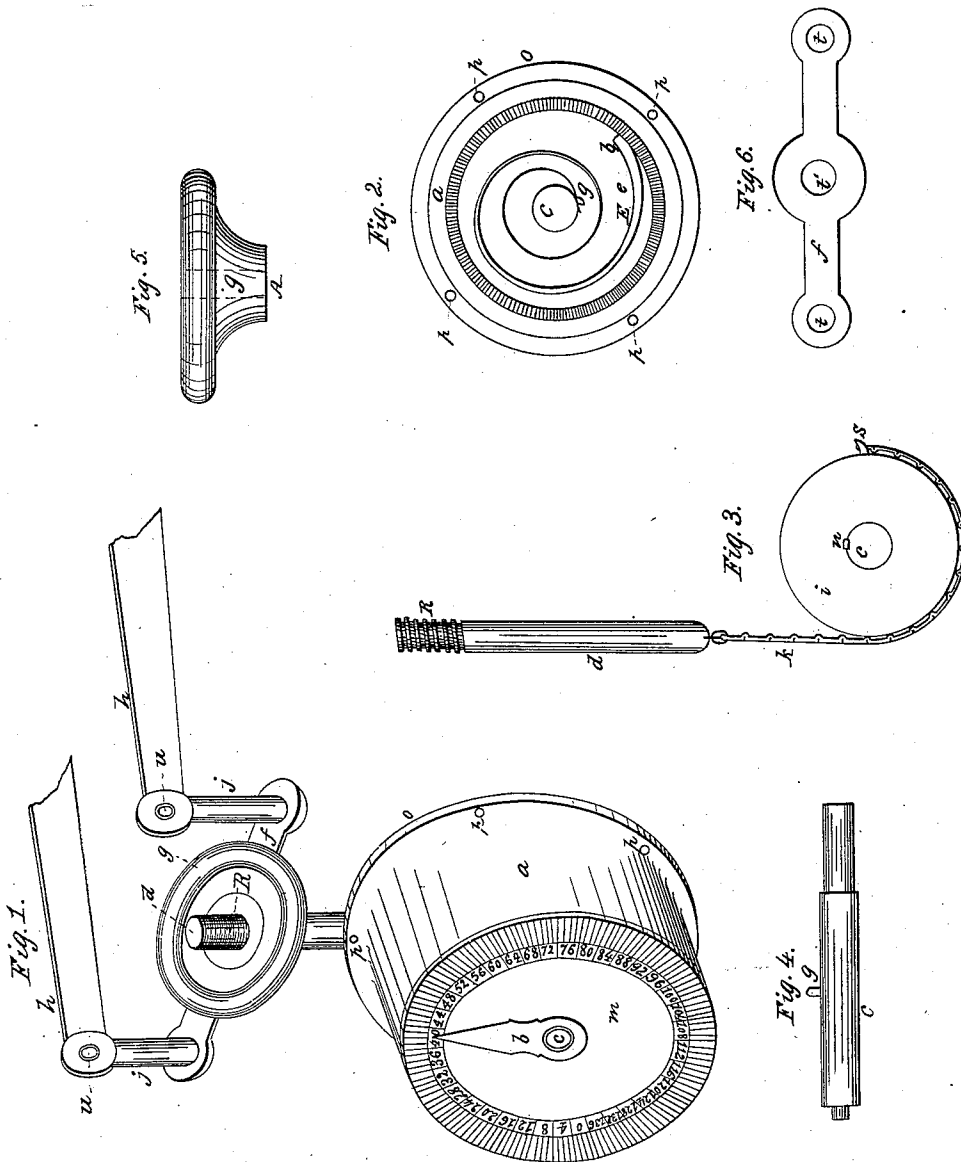


DAVIE & WEBBER.
Steam Pressure Indicator.

No. 47,166.

Patented April 4, 1865.



Witnesses:
Daniel Clow
Joseph Baker

Inventors:
T. M. Davis
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UNITED STATES PATENT OFFICE.

W. M. DAVIE AND CHARLES T. WEBBER, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN STEAM-PRESSURE INDICATORS.

Specification forming part of Letters Patent No. 47,166, dated April 4, 1865.

To all whom it may concern:

Be it known that we, W. M. DAVIE and CHARLES T. WEBBER, of the city of Janesville, county of Rock, and State of Wisconsin, have invented a new and useful Improvement in Steam-Pressure Indicators; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view; Fig. 2, a vertical section; Fig. 3, a sectional elevation; Fig. 4, a longitudinal section; Fig. 5 is a side view of the hand-wheels; Fig. 6, a transverse section.

a is a cylindrical box or chest. *b* is a hand or indicator. *c* is a horizontal shaft. *d* is a connecting rod. *e* is a scroll-spring. *f* is a cross-bar. *g* is a hand-wheel. *h h* are levers. *i* is a pulley. *j j* are connecting-rods. *k* is a chain. *l* is a screw or bolt. *m* is a disk or dial. *n* is a key. *o* is a flange. *p p p p* are holes in the said flange. *q* is a hook. *r r* are threads or screws. *s* is a hook. *t t t* are holes. *u u* are pivot-bolts.

The nature of our invention consists in constructing a counterbalance to the pressure of steam upon the ordinary safety-valves of a locomotive-boiler, and for this purpose we attach the box or chest *a* to the end, or to any convenient part of the said boiler, with common bolts or rivets inserted into the holes *p p p p* in the said flange *o*, and this box is made of cast-iron or any kind of metal of equal strength. It is composed of two parts, the face or disk *m* being separate, and can be attached or detached from the said cylindrical box or chest at pleasure. Now, to the inner surface of this said box we attach the spring *e* with the bolt *l*. The width of this said spring corresponds with the depth or the length of the said cylindrical box. The shaft *c* passes longitudinally through the center of this said box, and has its bearings in the ends thereof. Now, whereas the one end of the said spring is attached, as before stated, to the inner surface of the said cylindrical box, the other end is attached to the said shaft *c* by the hook *q*, which enters a hole in the end of the said spring. Upon the rear end of this said shaft *c* we attach the said pulley *i*, and fasten it thereto with the key *n*. To the front end of the same shaft we attach the hand or indicator *b*. The hook *s* is permanently inserted into the outer periphery of the said pulley *i*, and the chain *k* is loosely hooked onto it, and

the other end of said chain is attached to the connecting-rod *d*, which said rod enters the hole *t'* in the cross-bar *f*, passing through said bar, and enters the hand-wheel *g*, through the center of which is a hole and a thread or screw, *r'*, corresponding with the screw *r*, that is cut on the said rod *d*. Now, the said connecting-rod *d* is loosely fitted to the said cross-bar *f*, and the said hand-wheel rests on the top of the said cross bar. The connecting-rods *j j* are permanently attached to the said cross-bar, and hinged to the levers *h h* with the bolts or pins *u u*. Now, these said levers *h h* are such as are commonly used in connection with the safety-valves of locomotive steam-boilers, and as a matter of course operate in the same way. As the steam presses upon the said valves, the tendency is to raise the said levers, and these said levers being connected with the said cross-bar, and the said hand-wheel resting, as described, upon the top of the said cross-bar and screwed onto the end of the said connecting-rod *d*, and this said rod being connected with the said chain, and the chain with the said pulley *i*, and the pulley with the shaft *c*, and the shaft with the said spring *e*, the whole strain ultimately or centers upon the said spring, and it is obvious that the whole thing is controlled and regulated by the said hand-wheel. When screwed down, a greater tension is acquired, and when screwed up a less tension, and vice versa. Now, in order to tell at a glance what the pressure of steam is, we look at the said dial, upon which are lines and figures indicating the same, and the hand *b* being attached, as before described, to the said shaft *c*, it turns with it and always points to the figures upon the face of the said dial corresponding with the number of pounds to the inch of pressure upon the said valves.

Having thus fully described the construction and operation of our invention, what we claim, and desire to secure by Letters Patent, is—

The arrangement of the scroll spring *e*, in combination with the cylindrical box or chest *a*, shaft *c*, pulley *i*, chain *k*, connecting-rod *d*, cross-bar *f*, and hand-wheel *g*, substantially as and for the purposes set forth.

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Witnesses:

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