2 Sheets--Sheet 1.

DAVID P. DAVIS.

Improvement in Recording Pressure Gages.

No. 152,467. Patented June 30, 1874.

Fig. 1.

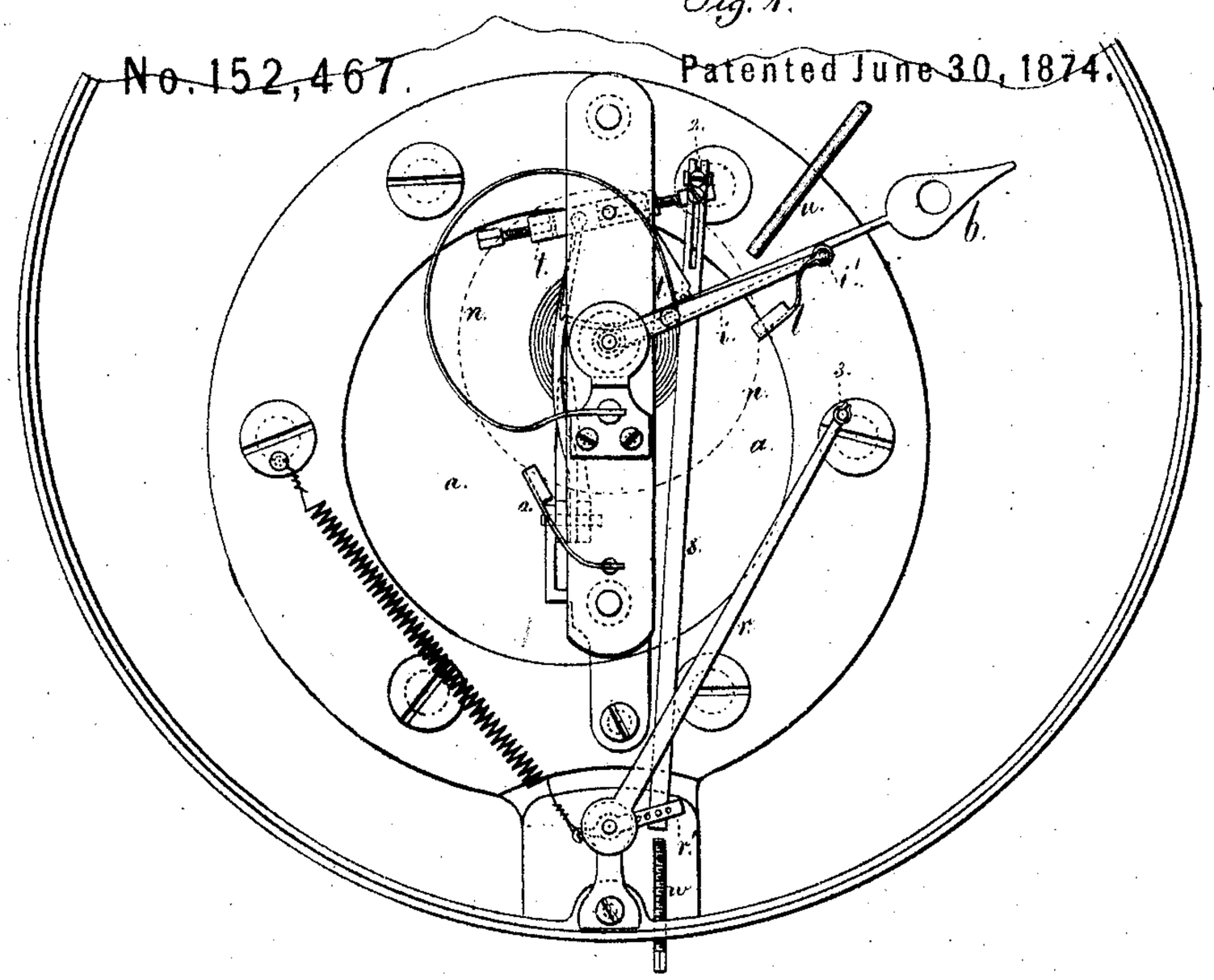
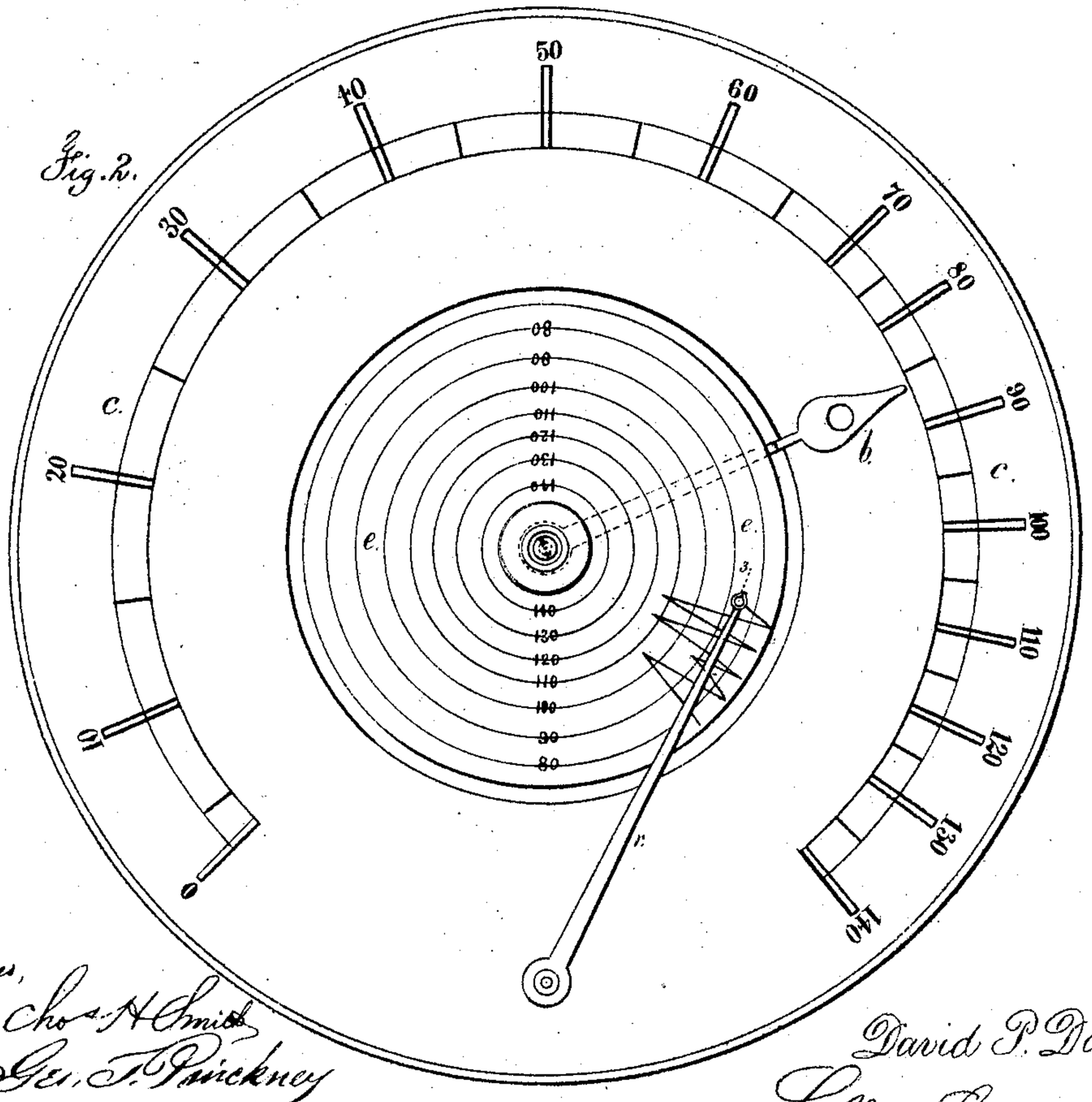


Fig. 2.



Witnesses,
Chas. A. Smith
Geo. T. Pinckney

David P. Davis
L. W. Serrell atty.

2 Sheets--Sheet 2

DAVID P. DAVIS.

Improvement in Recording Pressure Gages.

No. 152,467. Patented June 30, 1874.

Fig. 3.

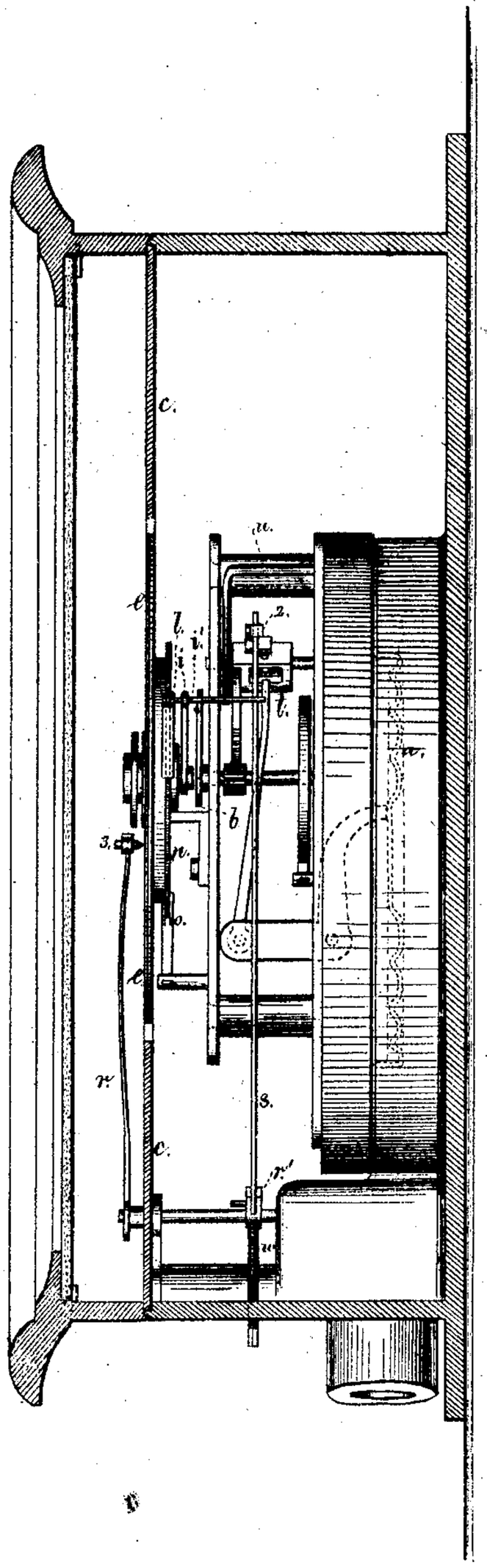
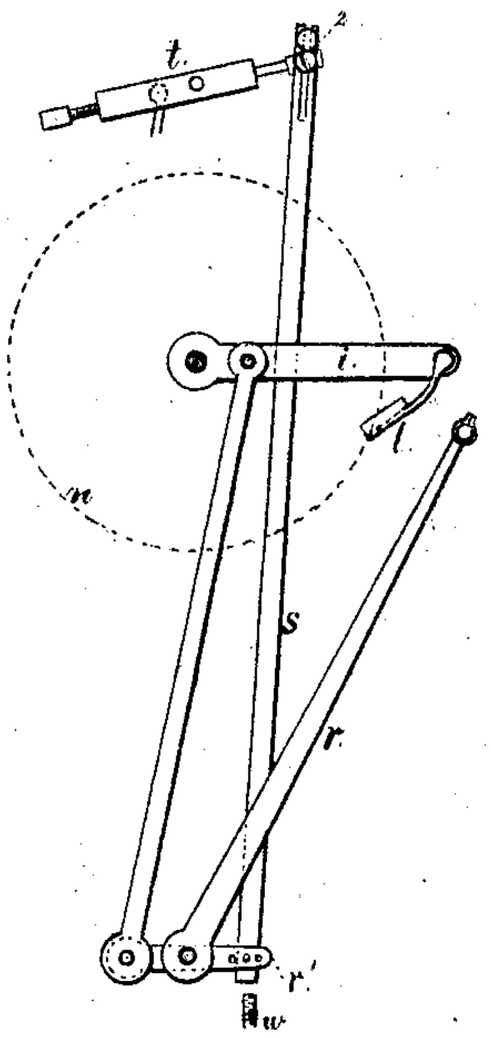


Fig. 4.



Witnesses.

Chas. A. Smith

Geo. T. Pinckney

David P. Davis

Lemuel W. Serrell atty.

UNITED STATES PATENT OFFICE.

DAVID P. DAVIS, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN RECORDING PRESSURE-GAGES.

Specification forming part of Letters Patent No. **152,467**, dated June 30, 1874; application filed September 26, 1871.

To all whom it may concern:

Be it known that I, DAVID P. DAVIS, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Registering Pressure-Gages; and the following is declared to be a correct description of the same.

In Letters Patent No. 66,307, granted to me July 2, 1867, a revolving disk is shown, on which the pencil or point marks indicate the pressure at certain periods.

In steam-boilers it is but seldom necessary or important to make any registration of pressure, except when that pressure goes beyond a certain fixed or standard maximum pressure.

I make use of an open dial, within which is a registering-disk. The pressure-indicating hand passes between the disk and dial, and a marker is applied at the end of a swinging arm to indicate upon the registering-disk the maximum pressure. The hand and arm are moved by mechanism that is connected with a diaphragm, against which the boiler-pressure operates.

In the drawing, Figure 1 is an elevation of the apparatus with the dials removed. Fig. 2 represents the face or dials; and Fig. 3 is a side view of the parts, the case being in section.

The diaphragm *a* and connections to the hand *b* are of any desired character, and the dial *c* is to be divided to indicate the pressure. The hand *b* is behind the registering-disk *e*, but the end passes in front of the dial *c*, the hand being bent so as to pass between *c* and *e*. An arm, *i*, swings upon a center, in line with the arbor of the hand *b*, and carries a pawl, *l*, that acts upon a roughened ring or ratchet-wheel, *n*, attached to the back of the disk *e*. An angle or offset, *i'*, from the arm *i* crosses the path of the hand *b*, so that when the hand *b* meets said offset the arm *i*, wheel *n*, and disk *e* revolve together. A holding-pawl, *o*, prevents the disk *e* turning back as the pressure lessens. A spring-arm, *r*, carries a point or marker, 3, and swings on a shaft located so that the movement of the pencil is from the edge toward the center of the disk *e*. This arm is moved simultaneously with the rotation of the disk *e*, and may be connected by cranks and a connecting-rod with the arm *i*. I have, however, shown the crank-arm *r'* connected by the link *s* with the swinging frame *t*, that is moved by the rod connected to the lever of the diaphragm *a*. The end of the link *s* is slotted and provided with an adjustable stop, 2, so positioned that the arm *r'* and marker 3 commence to move at the same time that the disk *e* and its card commence to revolve by the action of the hand *b* and pawl *l*. The disk *e* is divided by concentric circles so positioned as to correspond with the pressure indicated by the hand *b*, so that if the hand *b* points to 85 the pencil 3 will be at the circle on the dial marked 85, and so on.

It will now be seen that the pencil or marker 3 commences to register when the recording-disk *e* is moved, and as the pressure increases the pencil is moved nearer to the center of the disk, and that when the pressure lessens the disk *e* remains stationary while the pencil is moved toward the edge of the disk, and in this manner the marks made on the disk indicate the pressure from time to time.

As a general thing the pressure does not require to be denoted until after arriving at the limit which is considered perfectly safe; therefore, the stop *w* is applied to arrest the movement of the arm *i*, so that it will remain inactive until the hand *b* arrives at the said pressure, and commences to move said arm *i* and the disk *e*, and the pencil 3 is moved at the same time.

If desired, a crank and rod may connect from *r* or *r'* to the arm *i* and pawl *l*, as seen in Fig. 4, and thereby the movement of the marker 3 and disk *e* will be derived from the rod *s*, and by adjusting the screw *w* the parts will be positioned so that the stop 2 will be acted upon sooner or later in the movement of the gage.

The hand *r* sometimes will require to be turned upon its shaft to bring the pencil 3 to the proper circle on the card of the disk *e* in adjusting the parts.

I claim as my invention—

1. The registering-disk *e* within the pressure-indicating dial *c*, in combination with the hand *b*, passing through between *c* and *e*, and the marker 3 at the end of the arm *n*, that swings upon such disks, the parts being ar-

ranged as set forth, and for the purposes specified.

2. The arm *i*, swinging upon a center in line with the arbor of the hand *b*, and carrying the pawl *l*, that acts upon the wheel *n* of the registering-disk *e*, in combination with the hand *b*, that gives motion to said arm *i*, and the stop *u*, that limits its return movement, as and for the purposes set forth.

3. The slotted link *s* and adjustable stop 2, in combination with the arm *r*, marker 3, and mechanism for moving the registering-disk, substantially as set forth.

Signed by me this 23d day of September, A. D. 1871.

DAVID P. DAVIS.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.