C. W. KIMBALL.

Steam Gage.

No. 26,850. Patented Jan'y 17, 1860.

Fig: 2.

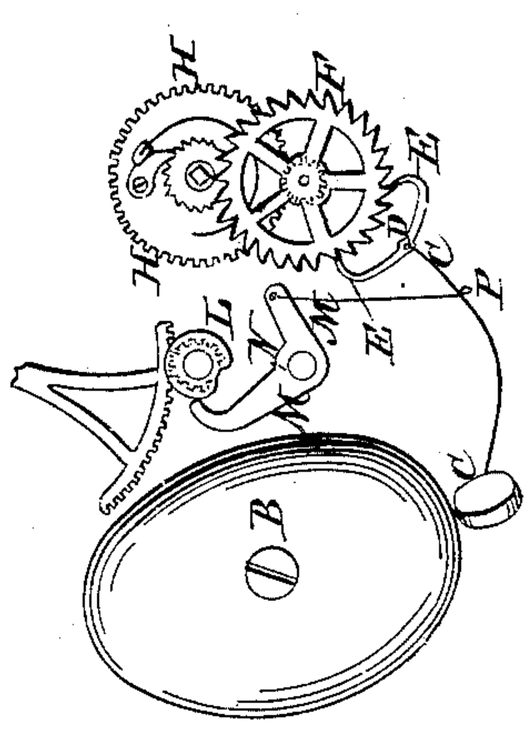


Fig: 3

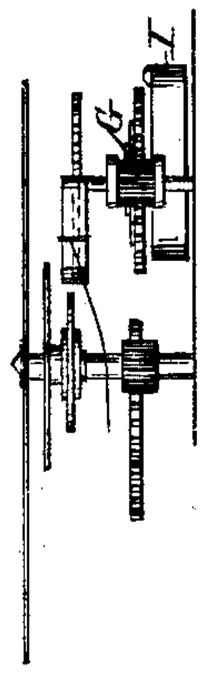
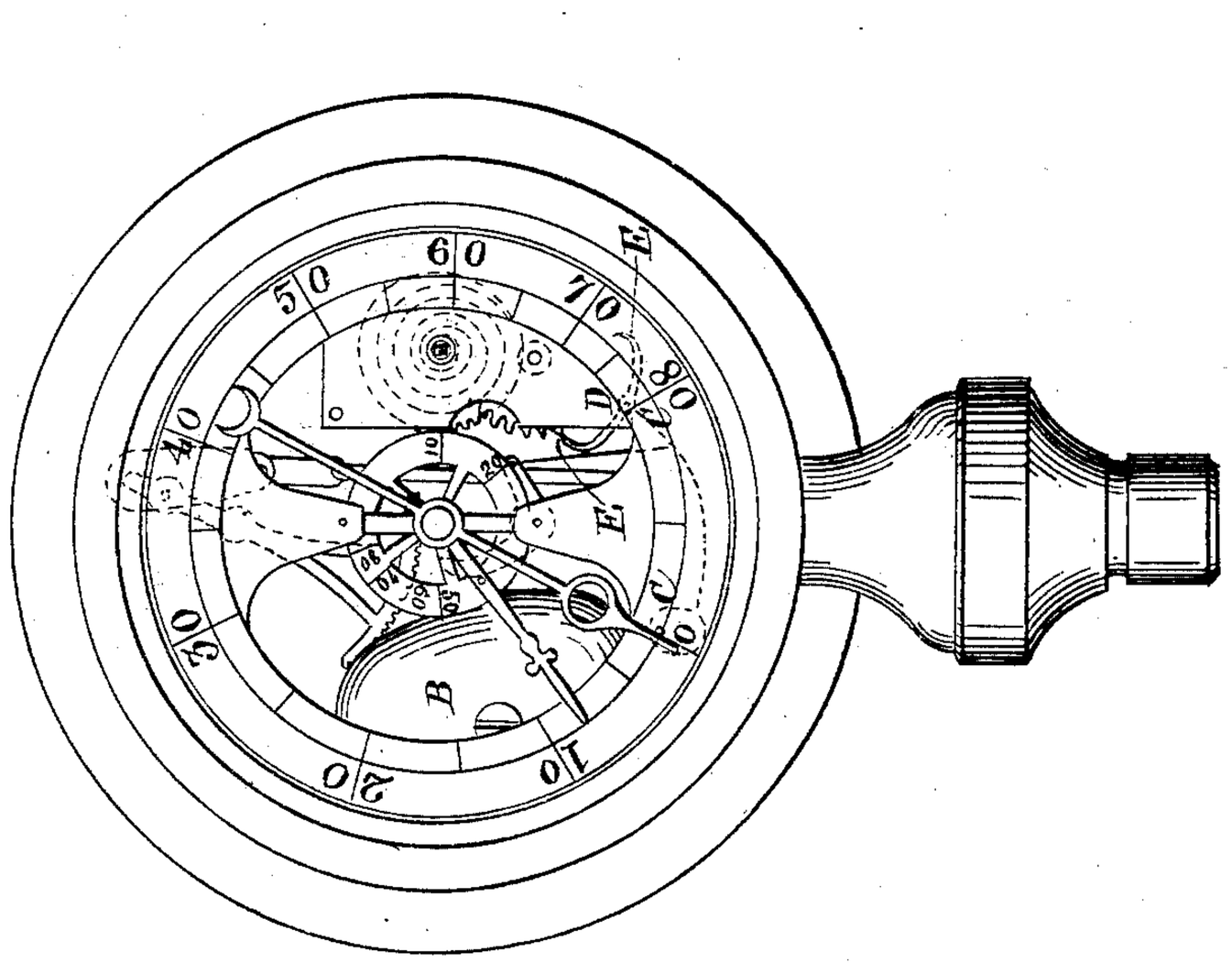


Fig: 1.



Witnesses

C. Morgan
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Inventor

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UNITED STATES PATENT OFFICE.

CHARLES W. KIMBALL, OF SPRINGFIELD, MASSACHUSETTS.

STEAM-GAGE.

Specification of Letters Patent No. 26,850, dated January 17, 1860.

To all whom it may concern:

Be it known that I, CHARLES W. KIMBALL, of Springfield, in the county of Hampden and State of Massachusetts, have invented certain Improvements in Steam-Gages; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in supplying the steam gage with an alarm which may be set to sound and be sounded at any desired amount of pressure, and may be used either with or without "a tell tale" which indicates at any moment the highest pressure to which the gage has been subjected since the steam was applied.

To enable others skilled in the art to use my invention I proceed to describe its construction and operation.

It is applicable only to dial, or clock faced gages; and is equally applicable to all the variety of dial or clock faced gages in use. I do not therefore, in this specification go into any description of the construction of the gage, as it has hitherto been used.

The alarm may be the ordinary alarm movement of the alarm clock, or, which is better it may be the movement for striking the hour on the clock, arranged to strike one hundred times, or more, or it may be a steam whistle.

The model and drawings accompanying this specification represent a gage of E. G. Allen, patented October 27, 1857, to which is applied a common alarm clock alarm movement—this single illustration being sufficient to explain the principle of my improvement.

Figure 1, in the accompanying drawings represents the gage with the alarm attached, and all the parts ready for use, the dial plate being so far as practicable, removed, in order to exhibit the arrangements of the parts. Fig. 2 shows the arrangement of the alarm more fully, as seen from the front, the dial being wholly removed. Fig. 3, is a side view of the working parts.

The long hand pointing to O′, Fig. 1, is the indicator, showing the existing pressure at any moment. The shorter hand represented is the tell tale which always marks the highest pressure to which the gage has been subjected. The small wheel about the center of the dial, marked with figures 10, 20 &c., is used for setting the alarm.

B is the bell on which the alarm is sounded, C C the hammer. E, E, the pallet connected with the hammer rod and working on a pivot D.

F, Fig. 2, is the pallet wheel. G, Fig. 3, the pinion which moves wheel F.

H, Fig. 2 is the gear which moves pinion G, and is itself moved by the coiled spring, one end of which is fastened to the stud I, Fig. 3, while the other end is fastened to the shaft which passes through the center of gear H. This spring is wound up in the usual way—the key hole appearing on the plate marked "alarm" on Fig. 1.

For the purpose of attaching the alarm to the gage, I place upon the shaft which carries the index hand, a cam as shown at L, Fig. 2. Against this cam I place one end of the lever M, M, Fig. 2 working on a pivot N, the other end of the lever being attached by a wire to the hammer rod at P. Fastened to the cam, and between it and the dial plate is the wheel marked 10, 20 &c.; this wheel and cam are so closely fitted to the shaft that they move with the index, according to the pressure; though they may be turned upon the shaft by the hand, independent of the index. This wheel is so marked, with reference to the cam, that when any given figure on the wheel is brought opposite the point marked "alarm" Fig. 1, the index being at O°, the alarm will sound when the pressure has raised the index to the corresponding figure on the dial. The alarm is set on Fig. 1, at a pressure of 10 pounds; the index being raised to figure 10 on the dial, the alarm would sound.

So long as the lever M remains on the circular part of the cam L, the pallet E E is held in the teeth of the pallet wheel, by means of the wire attached to the lever and to the hammer rod. But when the index has arrived at the figure designated, for the alarm to sound, the depression in the cam has reached the end of lever M, which drops into the depression; the end of the lever attached by the wire to the hammer rod is thereby moved a sufficient distance toward the hammer rod to release the pallet, and the alarm sounds. The wire running from the lever M instead of being attached to the

hammer rod of an alarm, may be connected with the valve of a steam whistle, or with an arrangement for dropping a ball or giving a signal in any other of the many familiar devices for that purpose.

Instead of the form of cam herein described for moving the lever M, the same result may be obtained by allowing the end of the lever to rest upon the shaft which carries the index, and by fastening a pin to the wheel marked 10, 20, &c., to run down alongside the shaft. When the index is raised to the designated figure this pin lifts the end of the lever and releases the pallet and the alarm sounds, as before described.

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

The application to dial or clock faced steam gages, of the cam, lever and wire or their equivalent, for the purpose of giving an alarm, substantially as above set forth.

CHARLES W. KIMBALL.

Witnesses:
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A. L. SOULE.