C. ACKERMANN.

GOVERNORS FOR STEAM-ENGINES.

No. 176,256. Patented April 18, 1876.

Fig. 1.

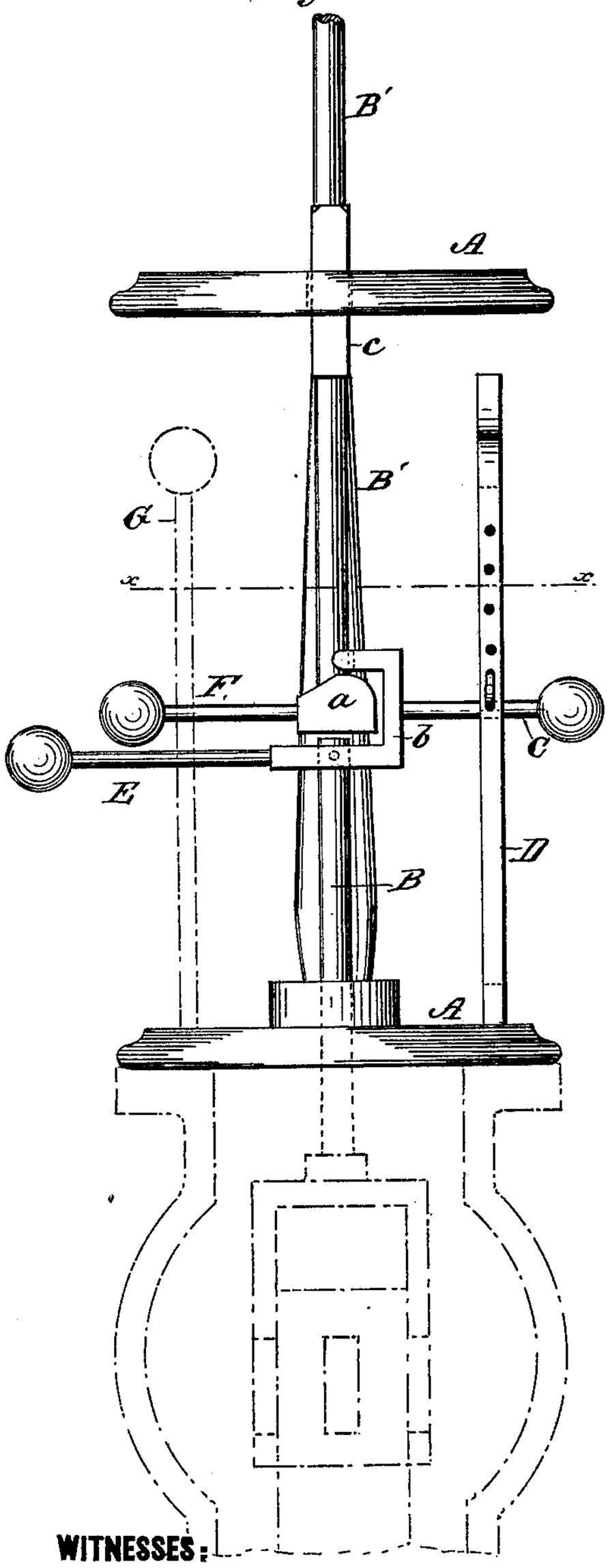


Fig. 2.

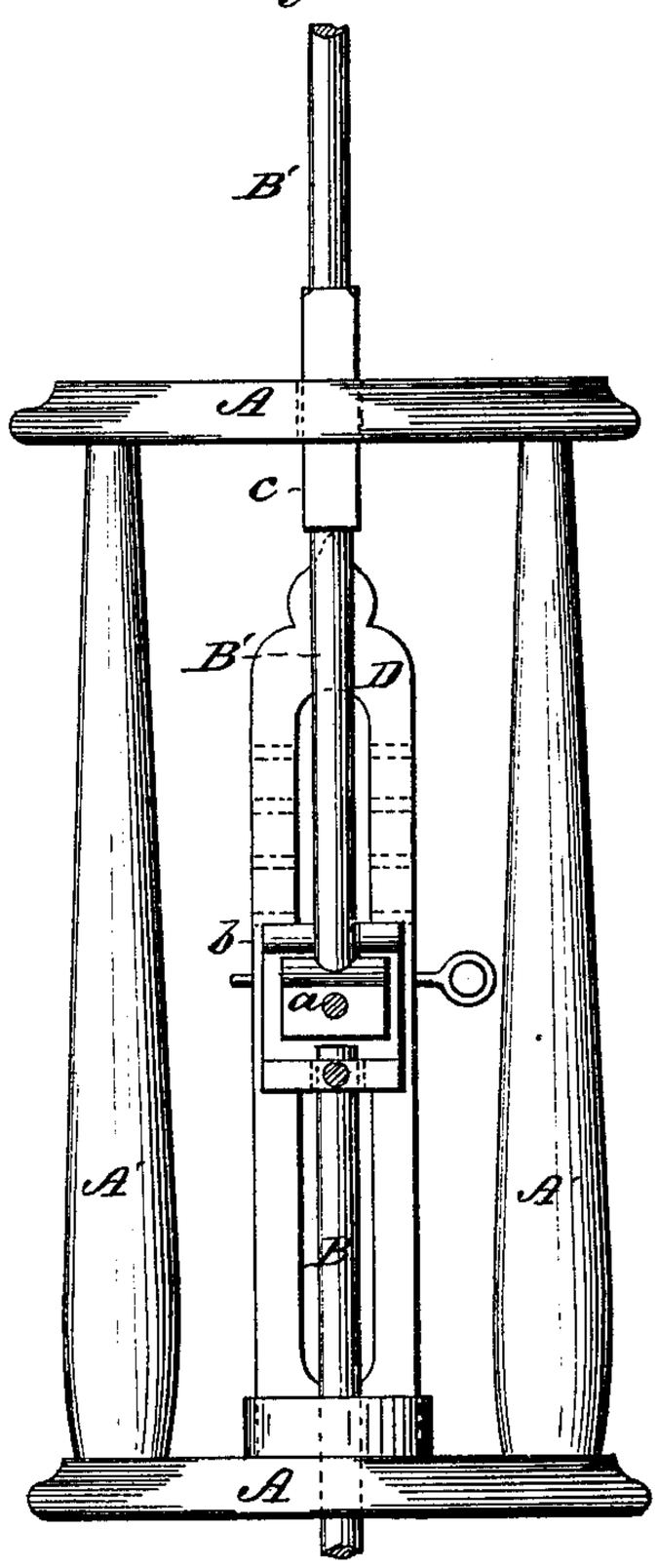
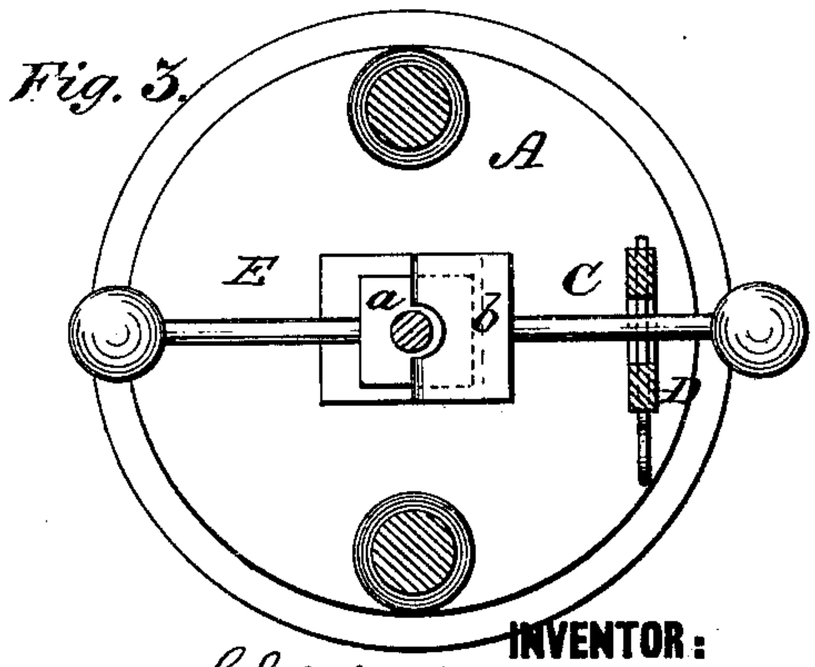


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHRIST ACKERMANN, OF YOUNG AMERICA, MINNESOTA.

IMPROVEMENT IN GOVERNORS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **176,256**, dated April 18, 1876; application filed March 7, 1876.

To all whom it may concern:

Be it known that I, CHRIST ACKERMANN, of Young America, in the county of Carver and State of Minnesota, have invented a new and Improved Governor for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation of my improved governor attachment; Fig. 2, a front elevation of the same; Fig. 3, a horizontal section through line *x x* of Fig. 1.

My invention relates to an improvement in steam-engine governors designed to obviate the bad effects upon the engine of fast running produced by the breakage of the governor-belt and the throwing open of the valve.

My improvement consists in the peculiar construction of parts hereinafter described, whereby the connection between the valve and the balls of the governor is broken whenever the belt breaks and the balls drop, so that the valve and its stem, in this event, automatically closes as soon as the accident occurs.

In the drawing, A A′ represent the frame for containing my improved devices, which is constructed without special adaptation to the parts to which it is to be applied, and which may be varied to suit the accommodation of my devices to any governor. B is the stem, which is attached to the valve below, as shown in dotted lines, and which stem is ordinarily loosely attached above to the governor-arms carrying the balls, and is in an elevated position, with the valve open, when the balls are down, and is depressed, with the valve closed, or partially closed, when the balls are up. This stem I construct in two parts, B and B′, the first of which passes through the lower part of the frame, and is attached to the valve, and the other part, B′, of which stem passes through the upper part of the frame, and is loosely attached to the arms of the governor carrying the balls, the said governor being constructed, as usual, with toggle-arms pivoted to a revolving collar, which is actuated by a gearing in the usual way. Upon the lower end of the stem B′ is a lug, *a*, and upon the upper end of the part B is catch *b*, which receives the lug *a*, and forms a loose connection for the two parts, which, so long as no accident happens to the belt, remains in gear, and imparts the controlling effect of the governor to the valve. The catch *b* is pivoted to the stem B, and is slotted at its pivot, so as to have a slight axial motion upon the same. C is an arm attached to the catch *b*, and projecting horizontally through a slotted standard, D.

Now, if the valve-stem flies up from a breakage of the belt and a falling of the balls, the arm C strikes across a stop-pin in the standard D, and, by tilting or tripping the catch *b* upon its pivot, allows the lug *a* of the upper portion to pass out, and the connection being thus broken, the upper portion of the stem passes upward, while the lower portion, with its valve, falls and shuts the steam off, thus stopping the engine.

The catch *b* is made with a weighted arm, E, upon the side opposite C, so as to balance the latter and hold the catch in equilibrium upon its pivot. The lug *a* is also provided with a weighted arm, F, which holds the lug *a* well under the catch *b*, and maintains the engagement of the two.

To prevent the accidental disengagement of the sections of the valve-stem from turning axially, the upper section is squared at *c*, at the point where it slides through the frame, a distance equal to the adjustment of the valve, the said frame having a square hole, through which it slides. This connection need not necessarily be square, however, as it would serve the purpose equally as well if made with any number of angular sides.

When the devices are to be applied to governors already in use, this stem cannot be made square to advantage to operate for this purpose, and in such cases guide-standards G, as shown in dotted lines, may be constructed upon the frame, and the arm F, being arranged between them, is guided in its movements and prevented from turning.

What I claim is—

1. The combination, with the coupling *a b*, of the frame A, having an angular hole therethrough, and the stem B′, having an angular portion, *c*, fitting therein, for the purpose of

preventing the accidental disengagement of the coupling from the axial movement of the stem, substantially as described.

2. The section B of the stem, having a loosely-pivoted catch, *b*, balanced by weights, in combination w.th the standard D and the section B′, having counterbalanced lug *a*, as and for the purpose described.

The above specification of my invention signed by me this 6th day of March, 1876.

CHRIST ACKERMANN.

Witnesses:
SOLON C. KEMON,
CHAS. A. PETTIT.