No. 628,591. Patented July 11, 1899.

LE GRAND SKINNER.

STEAM ENGINE GOVERNOR.

(Application filed Aug. 31, 1898.)

(No Model.)

Fig. 2.

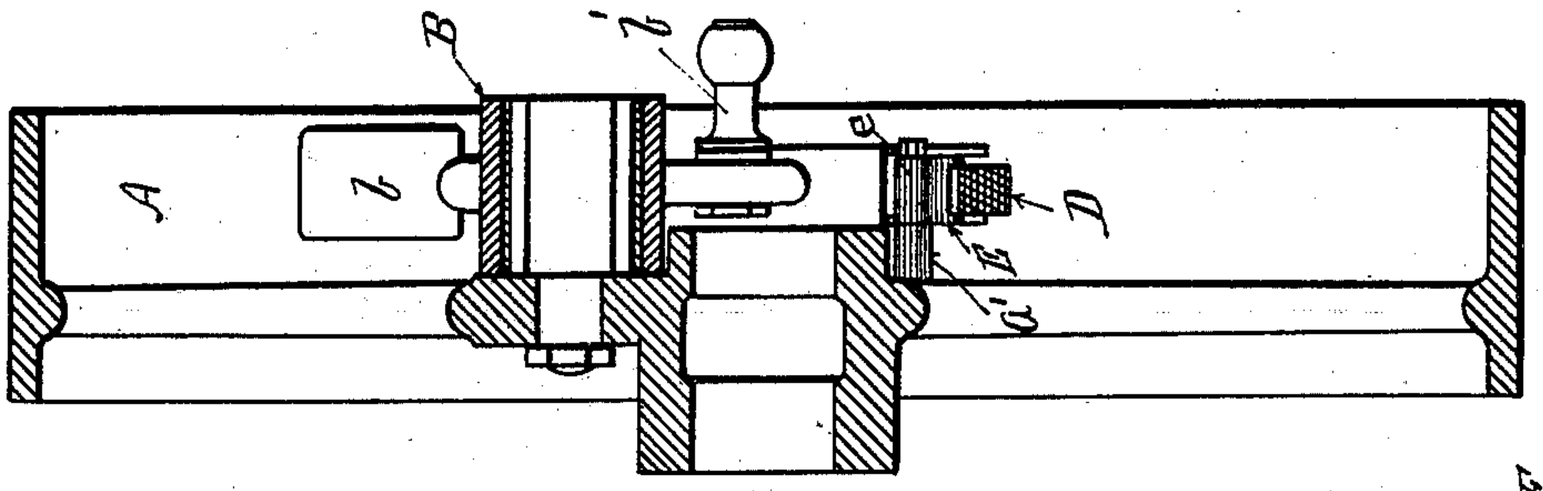

Fig. 1.

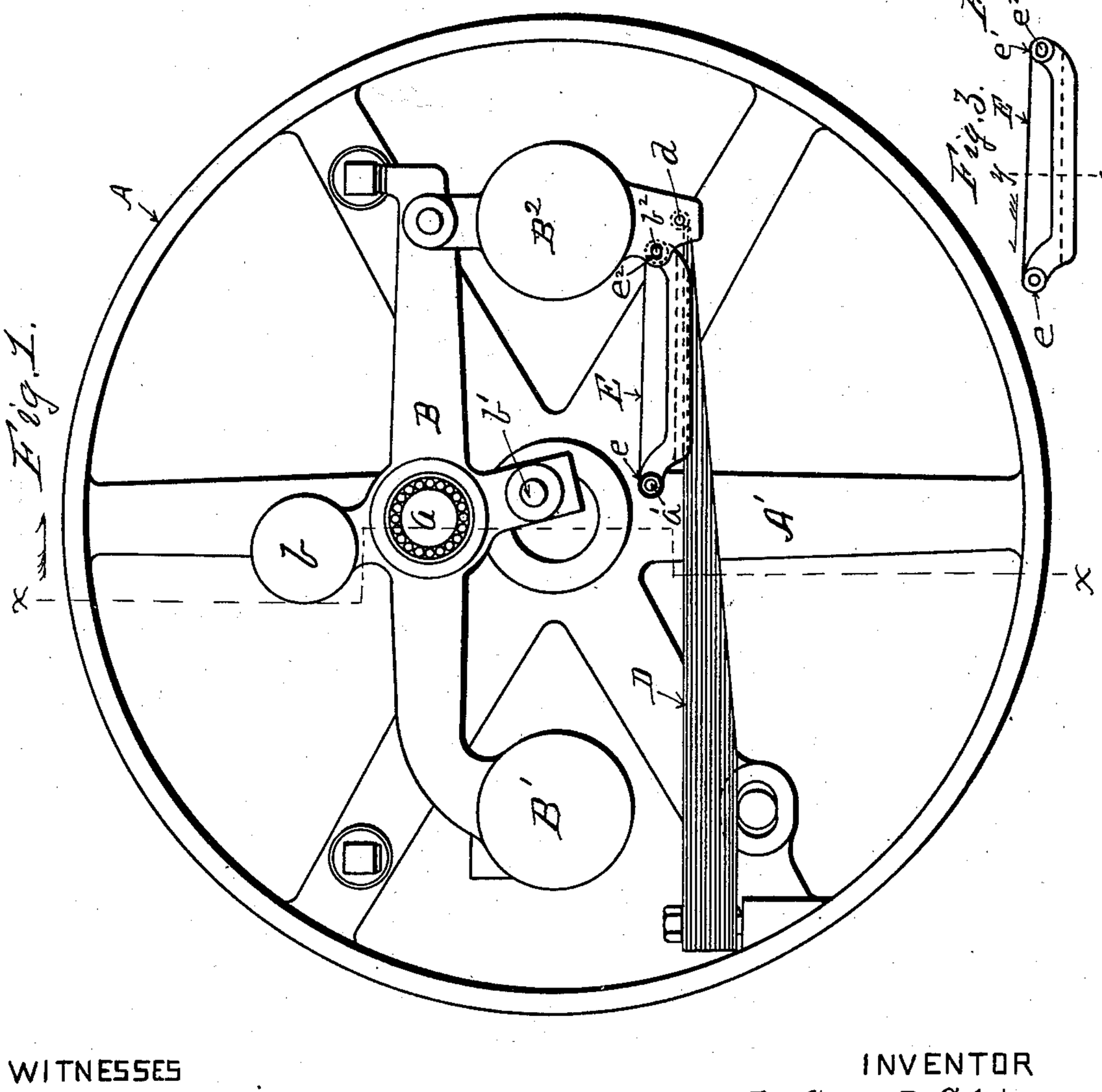

Fig. 4.

Fig. 3.

WITNESSES

Fred Einfeldt

A. L. Jackson

INVENTOR

Le Grand Skinner

BY A. B. Shugert

ATTORNEY

UNITED STATES PATENT OFFICE.

LE GRAND SKINNER, OF ERIE, PENNSYLVANIA.

STEAM-ENGINE GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 628,591, dated July 11, 1899.

Application filed August 31, 1898. Serial No. 689,969. (No model.)

To all whom it may concern:

Be it known that I, LE GRAND SKINNER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Engine Governors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 the letters of reference marked thereon, forming part of this specification.

This invention relates to improvements in steam-engine governors, and has for its object the prevention of accidents caused by the breaking of the spring or other portions of the governor, whereby the valve motion is controlled, so that the control thereof is lost and the engine runs away. I accomplish this result by connecting the governor-ball upon which the spring acts by means of an auxiliary link with one of the arms of the governor-wheel in the manner hereinafter set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side view in elevation of the steam-engine governor embodying this invention. Fig. 2 is a vertical section of the same on the line $x\ x$ in Fig. 1, looking in the direction of the arrow. Fig. 3 is a side view in elevation of the link forming part of my invention. Fig. 4 is a transverse section of the same on the line $y\ y$, looking in the direction of the arrow.

In the drawings thus illustrating my invention, A is the governor-wheel; B, a centrally-pivoted arm oscillating on a stud a on one of the arms of the wheel B at one side of the center of the wheel; B′, a weight on one end of said arm integral therewith; B^2, a weight hinged to the opposite end of said arm B; b, a central weight on said arm; b', the valve-actuating mechanism on said arm, and D the spring operating upon the weight B^2, all of which parts are old and of the usual construction.

In one of the arms A′ of the governor-wheel above the spring D, I secure a stud a', upon which I pivot one end e of an auxiliary link E. The opposite end thereof e' I pivot upon a stud b^2 on the weight B^2 inside of and above the stud d, to which the end of the spring D is secured thereto. The opening e^2 in the end e' of the auxiliary link E, which passes over stud b^2 on the weight B, is slotted, so as to allow for the necessary movement of the weight B^2.

The auxiliary link E is preferably constructed like an inverted trough on its under side, as illustrated in Fig. 4, so that it embraces the upper side of the spring D, as illustrated in Figs. 1 and 2, so that in case the spring D breaks at any point under the auxiliary link E the broken end will be caught by the trough-shaped auxiliary link E, and at the same time the link E prevents the weight B^2 from swinging outward, so as to retain the valve-moving mechanism at such point as to cause the greatest possible movement of the valve, and thereby cause the engine to race or run away.

Having thus described my invention, so as to enable others to construct and use the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a steam-engine governor, of a rotating member or wheel, an oscillating arm pivoted upon said rotating member or wheel, a fixed weight on one end of said arm and a hinged weight upon the other, a spring connecting said hinged weight with said rotating member or wheel and opposing the centrifugal force exerted on said hinged weight, an auxiliary link connecting said weight with the governor-wheel whereby any injurious action of said weight is prevented in the case of the breaking of the spring, substantially as set forth.

2. The combination in a steam-engine governor, of a rotating member or wheel, an oscillating arm pivoted upon said rotating member or wheel, a fixed weight on one end of said arm and a hinged weight on the other, a leaf-spring connecting said hinged weight with the said rotating member or wheel and opposing the centrifugal force exerted on said weight, and an auxiliary link above said spring connecting said weight with the rotating member or wheel whereby any injurious action of the weight is prevented in the case of the breaking of said spring, substantially as set forth.

3. The combination in a steam-engine governor, of a rotating member or wheel, an arm pivoted to said rotating member or wheel having a fixed weight on one end and a hinged weight on the other, a leaf-spring connecting said hinged weight with the rotating member or wheel and opposing the centrifugal force exerted on said weight, and an auxiliary inverted trough-shaped link embracing said spring and connecting said weight with the rotating member or wheel so as to prevent injurious action of the weight in case of breakage of the spring, substantially as set forth.

4. The combination in a steam-engine governor, of a rotary member or wheel, an oscillating arm pivoted thereto, a fixed weight on one end of said arm and a movable weight on the other, so as to be moved by centrifugal force exerted thereon, a leaf-spring connecting said hinged weight with the rotating member or wheel so as to oppose centrifugal force exerted on said hinged weight, and an inverted trough-shaped auxiliary link embracing said spring and connecting said weight with the rotating member or wheel, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LE GRAND SKINNER.

Witnesses:

FRED EINFELDT,

H. J. CURTZE.