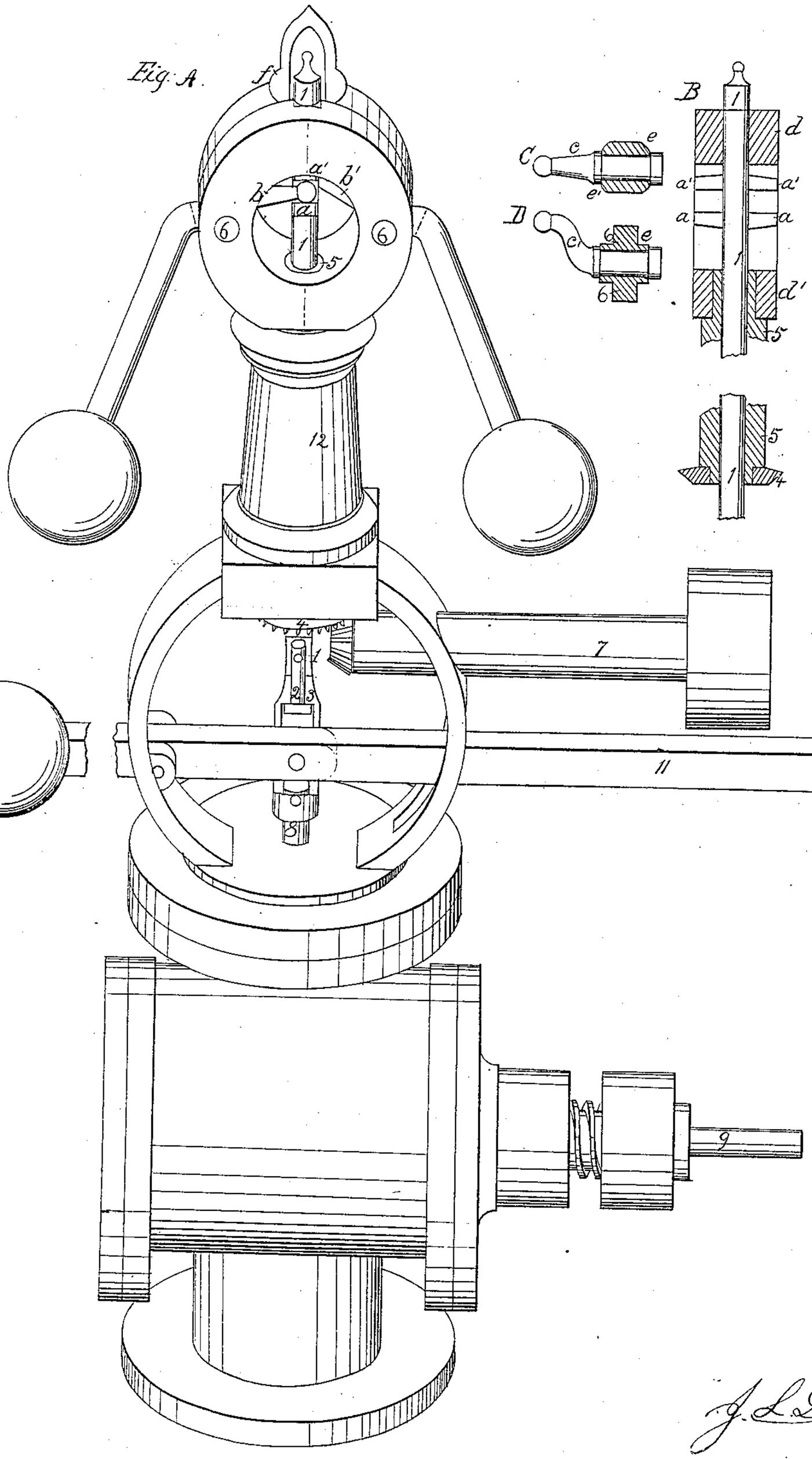
J. L. Dickinson,

Governor.

No. 81,072. Patented Aug. 18, 1868.

Fig. A.



Witnesses;
H. L. Fulton
Wm Hall.

Inventor
J. L. Dickinson

United States Patent Office.

J. L. DICKINSON, OF DUBUQUE, IOWA.

Letters Patent No. 81,072, *dated August* 18, 1868.

IMPROVEMENT IN GOVERNORS FOR STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. L. DICKINSON, of Dubuque, in the county of Dubuque, in the State of Iowa, assignor to myself and to Rouse and Dean, of the same place, have invented a new and useful Improvement in "Governors;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure A is an oblique perspective view of the "governors" as adapted to different kinds of valves used in steam-engines.

B, parts of the spindle, revolving head, and tube or sleeve, which drives the head and spindle.

C, side view of bent lever or crank, from the red line on the arm to the spindle, showing the journal and a half box under it.

D, plan view of the same, in which the crank is seen, and the trunnions of the adjustable boxes, in section.

a a' are spurs on the spindle, between which the crank-end of the arms works.

b b' are the bent or crank-ends of the arms.

c c' are the same, showing the journals on the arms, and the adjustable boxes, by means of which a lateral motion is given to the balls, in addition to the usual vertical motion.

d d', section of the annular head, holding the boxes, and forming the guide to the upper end of the spindle.

e e' are the boxes.

f, section of cap over spindle.

Like figures refer to like parts.

1 is the spindle.

2 is the pin, attaching the spindle to the mortised socket, through which the lever passes.

3 is the mortised socket in section.

4 is the bevel-wheel, driving the sleeve 5, the spindle 1, the head *d d'*, and the balls.

5 is the sleeve, running in column 12, and having the head *d d'* fastened to it, and the spindle running up and down in it.

6 are the trunnions of the boxes, allowing the usual vertical motion of the balls.

7 is the tube, bearing the shaft, with pulley outside and bevel-wheel inside, giving motion to driving-wheel 4.

8 is the valve-stem, when the valve is in an upright steam-pipe, in which case the lever 11 can be cut off at the red line.

9 is the valve-stem for valve in horizontal pipe, or for the butterfly-valve in either.

10 is the counterpoise.

11 is the lever.

12 is the column, in which runs the sleeve 5.

Operation.

The operation of the improvement is as follows, viz, that, when the engine is in motion, the balls are in the same position as in all ordinary governors; that when the motion is suddenly checked, by increased resistance or load, the momentum of the balls carries them ahead of the "governor," thereby acting through the "crank-ends" of the arms upon the valve quicker than by the fall of the balls alone.

By the force of momentum combined with gravitation, a more sensitive governor is made, and a more uniform motion is secured.

Claim.

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

The crank-form of the upper end of the ball-arms, in combination with the adjustable boxes, giving both lateral and vertical motion to the balls, for the purpose and in the manner substantially as herein described.

J. L. DICKINSON.

Witnesses:

H. L. FULTON,

WM. HALL.