A. BROWN.

STEAM ENGINE GOVERNOR.

No. 50,793. Patented Nov. 7, 1865.

Fig. 1

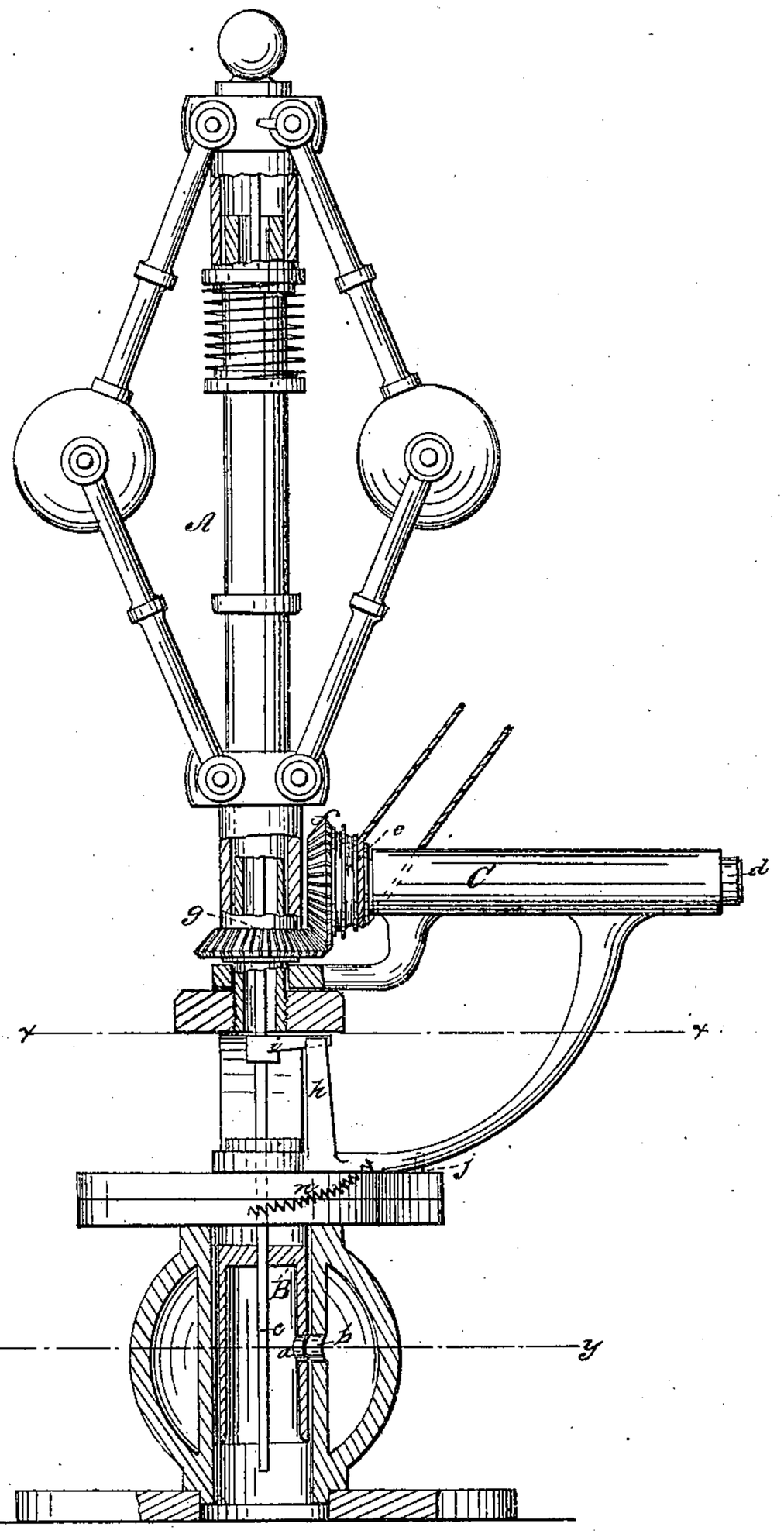


Fig. 2

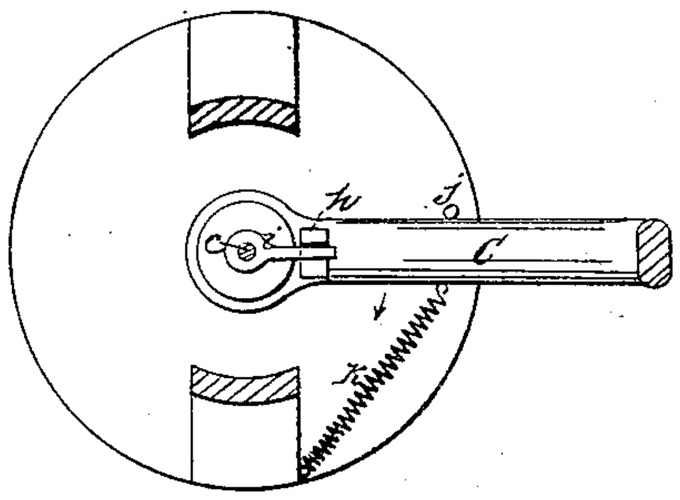
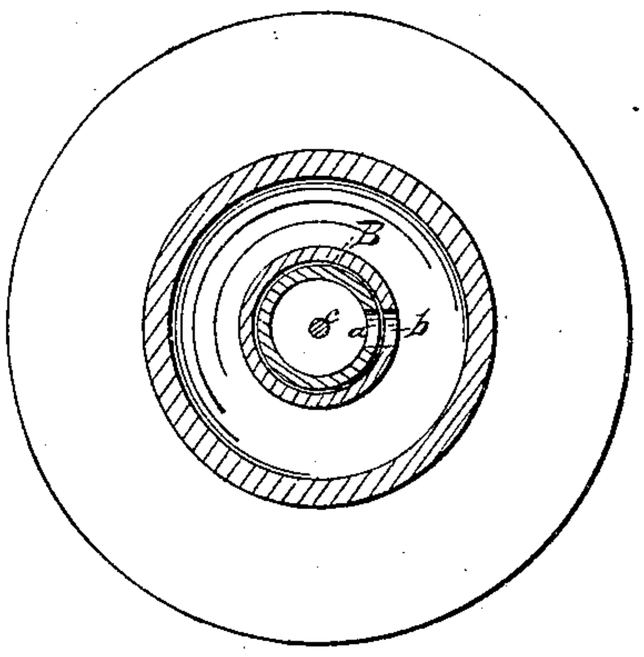


Fig. 3



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UNITED STATES PATENT OFFICE.

AUGUSTUS BROWN, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-ENGINE GOVERNORS.

Specification forming part of Letters Patent No. **50,793**, dated November 7, 1865.

To all whom it may concern:

Be it known that I, AUGUSTUS BROWN, of the city, county, and State of New York, have invented a new and useful Improvement in Steam-Engine Governors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional side elevation of this invention. Fig. 2 is a horizontal section of the same, taken in the plane indicated by the line *x x*, Fig. 1. Fig. 3 is a similar section of the same, the plane of section being indicated by the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to combine with the governors of a steam-engine a stop-motion which is so arranged that when the belt of the governor breaks or parts from some cause the throttle-valve will be closed and the engine is prevented from running away and doing some injury. This object is effected by using, in combination with the governor, a valve which has a rotary and also a rising-and-falling motion, and which is so arranged that it closes by either of these motions. The governor-balls impart to the valve the rising-and-falling motion, and if the balls fly out the valve is closed, and if they sink down the valve is opened. The revolving motion is imparted to the valve by the action of a spring acting on an arm which is secured to the stem of the valve, and which forms the bearing for the shaft on which the pulley is mounted, by which the governor receives its motion. By the belt passing over the pulley the spring is strained and the valve is kept open; but as soon as the belt breaks the spring causes the valve to revolve, thereby closing the same and preventing the engine from running away.

A represents a ball-governor, which is constructed in any suitable manner, and which is connected to the valve B in such a manner that when the balls fly out the valve is closed and when the balls sink down the valve is opened. Said valve is constructed in the form of a cylinder, and it fits into a cylindrical shell, so that a revolving motion can be imparted to it as well as a rising-and-falling motion, and the communication between the steam-supply pipe and the steam-cylinder is governed by the position of two or more holes, *a b*, one in the valve and the other in the shell. If these holes register, the steam passes freely to the cylinder; but if by raising or turning the valve the hole *a* is brought in such a position that it is partially or wholly covered by the solid part of the shell, the supply of steam to the cylinder is diminished or entirely cut off.

From the center of the valve B rises a stem, *c*, which connects with the governor, so that by the action of the same the valve is raised or lowered, as above stated. Said stem forms the bearings for a swivel arm or frame, C, which embraces the stem at two points, and which is provided with a long box or bearing for the driving-shaft *d* of the governor. On this shaft is mounted a cone-pulley, *e*, and a bevel-wheel, *f*, which latter gears into a bevel-wheel, *g*, on the spindle of the governor, and a belt passing over the pulley *e* imparts to the shaft the desired rotary motion.

From the swivel-arm C rises a forked standard, *h*, which straddles a lever, *i*, extending from the valve-stem *c*, so that if the swivel-arm is turned in either direction, the valve-stem and the valve are compelled to turn with it. By the action of the belt, which imparts motion to the shaft *d*, the swivel-arm C is drawn up against a stop, *j*, as shown in Fig. 2 of the drawings, and in this position the holes *a b* in the valve and its shell register, (provided the valve is not raised,) and the supply of steam to the cylinder is regulated by the action of the governor in the usual manner. A spring, *k*, acting on the arm C, has a tendency to turn the same with the valve in the direction of the arrow marked near it in Fig. 2. As long as the belt draws said arm up against the stop the spring remains inactive; but if the belt breaks the spring causes the arm to turn, and the valve is closed.

It is obvious that the swivel-arm and the spring acting on it might be arranged in va-

rious different ways. I do not wish to confine myself to the precise arrangement of these parts; neither do I wish to confine myself to any particular valve or governor, as the same arrangement, with slight modifications, might be applied to valves and governors of different descriptions.

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

The swivel-arm C and spring *k*, in combination with a governor and its valve and with the belt which serves to impart motion to said governor, substantially as and for the purpose described.

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