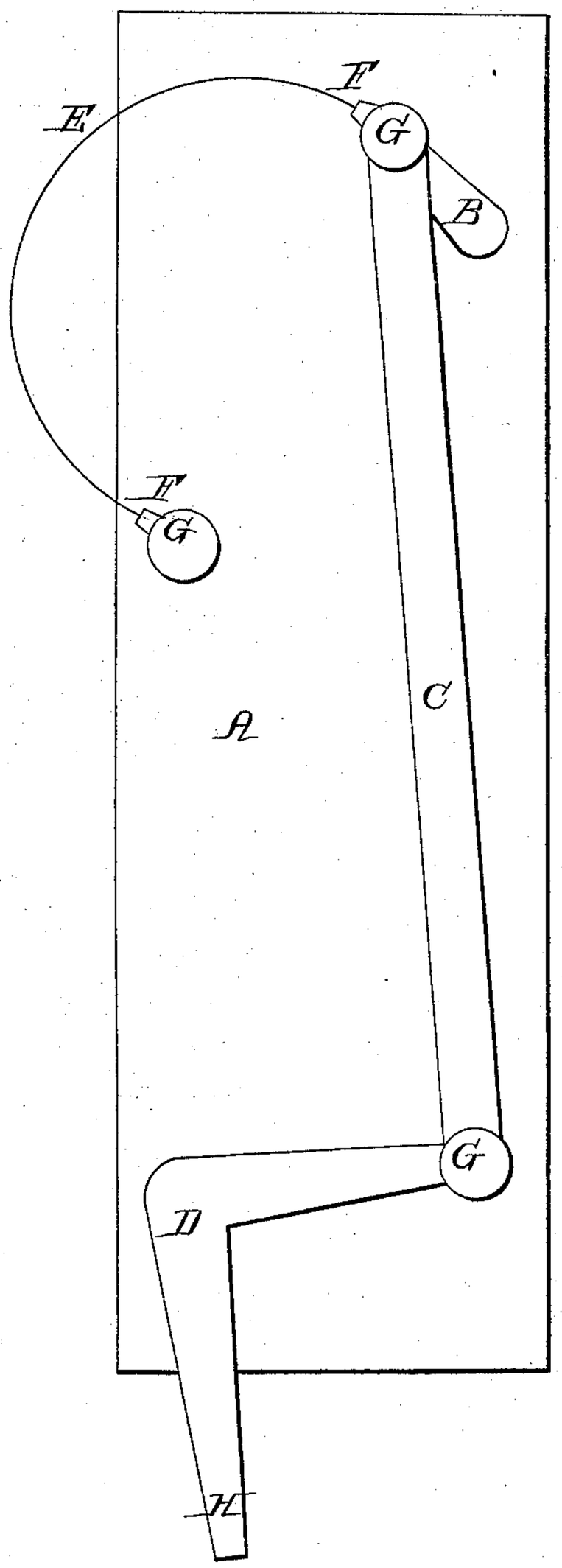
T. Shaw,

Mechanical Movement.

No. 38,608. Patented May 19, 1863.



Witnesses;
Benjamin Ainsworth

Inventor;
Thomas Shaw.

UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CRANK-MOTION.

Specification forming part of Letters Patent No. **38,608,** dated May 19, 1863.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and Improved Mode of Assisting the Crank Over the Dead-Center; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in the application and situation of a spring to operate as hereinafter described.

In order to enable others to practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of the specification, A is a block of wood, upon which is hinged a crank, B, bell-crank D, and spring E, the whole of which are connected to the rod C and swung upon thumb screws G.

F F are brass boxes, secured to the end of spring E, through which pass screws G.

H is an arm of the bell-crank D, intended to be operated by the hand.

The position of the crank B is secured by its being the natural position of the spring E—*i. e.*, the position it would take when at liberty to do so. It will be seen that the crank B is now in a proper position to be revolved by arm C, and when drawn forcibly down by said arm, it (the crank) will be thrown over the dead-center, and in the position of one-half revolution from its first position, by means of the spring E, for the reason aforesaid. This effect is secured by hinging the end of spring E (farthest from the crank) at a point at an angle of forty-five degrees from the line of motion of arm C, which position throws the crank at an angle of about forty-five degrees from the aforesaid line. The power is taken up at the strongest point of the crank and given out at the weakest, which so regulates the power as to render in many cases the fly-wheel unnecessary.

I do not claim, broadly, the employment of springs to assist the crank over the dead-center; but

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

The combinations of metallic spring E with crank B and arm C, in the manner and for the purpose herein set forth.

THOMAS SHAW.

Witnesses:

HUGH CLARK,

BENJAMIN AINSWORTH.