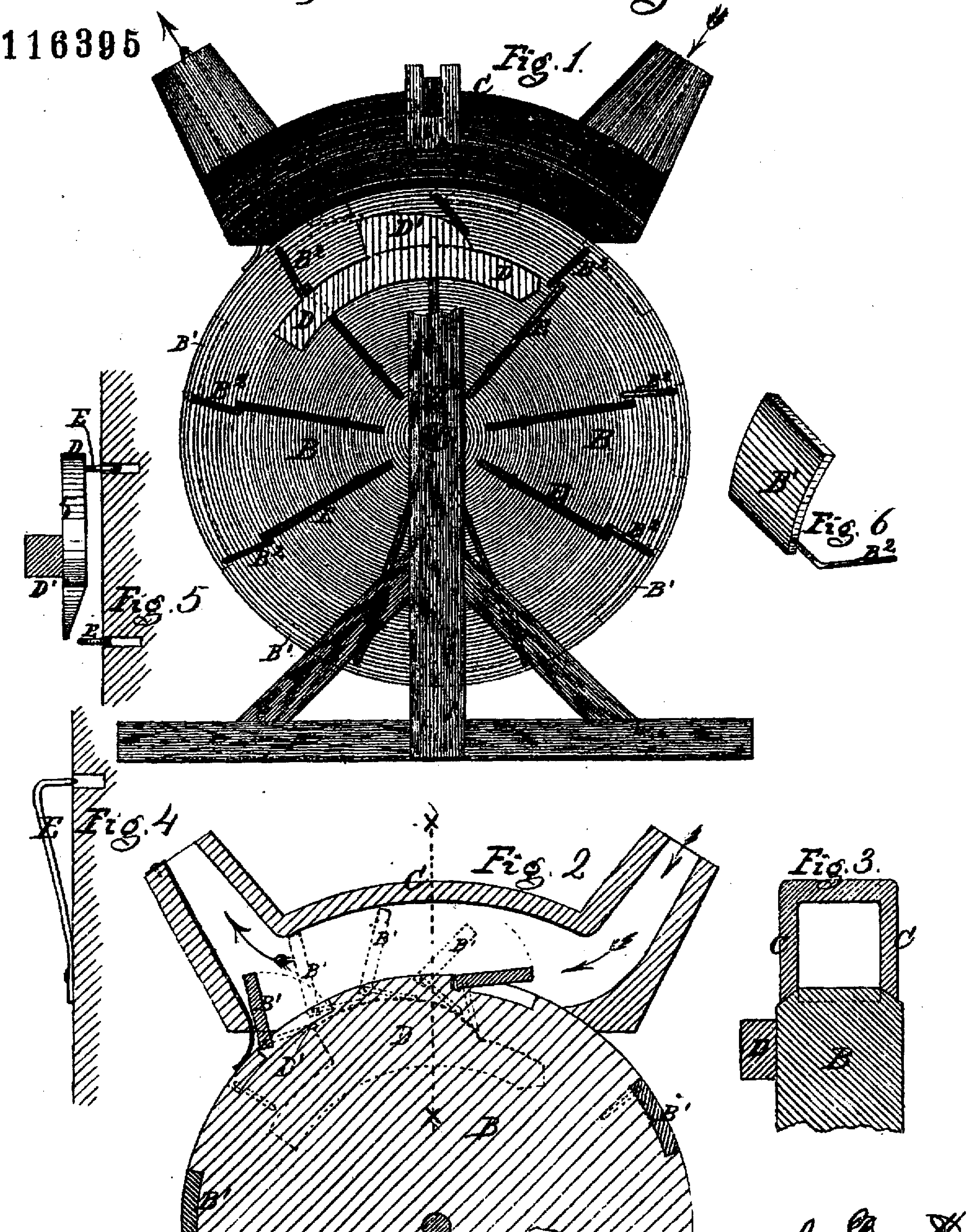
J. Barnett
PATENTED JUN 27 1871
Rotary Steam-Engine.

116395



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116,395

UNITED STATES PATENT OFFICE.

JOHN BARNETT, OF FREDERICKTOWN, OHIO.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

Specification forming part of Letters Patent No. 116,395, dated June 27, 1871.

To all whom it may concern:

Be it known that I, JOHN BARNETT, of Fredericktown, in the county of Knox and State of Ohio, have invented a certain new and useful Improvement in Rotary Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of the same, and in which—

Figure 1 is an elevation of my improved engine, showing the frame for supporting it, the revolving wheel, together with the devices for opening and closing the abutments and the steam-chest. Fig. 2 is a sectional elevation of a portion of the revolving wheel, showing the position of the abutments within the steam-chest, the induction and eduction passages for the steam, and in dotted lines the cam which opens the said abutments. Fig. 3 is a transverse section of the steam-chest on line *x x*, Fig. 2. Fig. 4 is a sectional elevation of a portion of the revolving wheel, showing one of the stops which hold the swinging abutments in their closed position. Fig. 5 is an end view of the cam which moves the swinging abutments, the spring stops being shown in connection with it, and also a section of the revolving wheel. Fig. 6 is a perspective view of one of the swinging buckets, the crank which operates it being shown in connection therewith.

This invention relates to rotary steam-engines; and it consists in the construction, combination, and arrangement of some of the parts of which it is composed, as will be more fully explained hereinafter.

In the drawing, A refers to the frame of the engine, which may be of the form shown in the drawing, or of any other suitable form, it being so constructed as to receive the boxes in which the wheel, to which the swinging abutments are hinged, rotates, and, at the same time, support the steam-chest. B refers to a revolving wheel, which has a shaft passing through its center, or it may have journals formed upon its sides. In either case the journals revolve in a frame or in boxes secured to such frame. In the periphery of this wheel pockets or recesses are formed for the reception of the swinging abutments, as shown in Figs. 1 and 2. C refers to the steam-chest, the lower or inner surface of which is in the form of the segment of a circle, the radius of which is the same as that of the revolving wheel B. This steam-chest is attached to the frame of the engine, and by it held in such a position that its edges shall be in contact with the periphery of the wheel B, in order that a tight joint may be formed between them. This chest is provided with an induction and eduction passage, as shown in Fig. 1, and with a recess or passage into which the swinging abutments B^1 B^1 open, as shown in Fig. 2, the position of such abutments being shown in said figure, as well as the course of the steam through the chest. D refers to a cam, which is made stationary by being attached to the frame of the engine, it being placed in such a position as to receive upon its projection surface D′ the crank-arm B^2 of the swinging abutment, and thus cause it to open out the said abutment when it has arrived at the proper point within the recessed steam-chest. The inner surface of this cam is so constructed and arranged as to receive upon its surface the springs which hold the swinging abutments in their closed position and press them inward during the tie of the passage of such abutments through and under the steam-chest, but so as to relieve such spring the moment the abutment has passed said chest, in order that it may receive and hold the crank-arm B^2, and thus prevent the abutment from being again thrown out, or into its open position, by centrifugal force. E E refer to the springs above alluded to, a series of them being secured to the side of the revolving wheel B, near its center, and extending outward radially to a point which will permit the crank-arm B^2 to rest upon it, as shown in Fig. 1, at which point it is bent at a right angle, and enters apertures or recesses, which are formed in the wheel B, as shown in Figs. 4 and 5. The office of these springs, as above described, is to retain the swinging abutments in their closed position while not within or under the steam-chest.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the abutments B^1, their arms B^2, cams D D′, and springs E E.

2. The construction of the double cam D D′, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 28th day of February, A. D. 1871, in presence of two subscribing witnesses.

JOHN BARNETT.

Witnesses:

J. W. CONDON,

FRANKLIN BEAL.