

No. 666,145.

Patented Jan. 15, 1901.

J. KENNEDY.

VALVE.

(Application filed Sept. 10, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

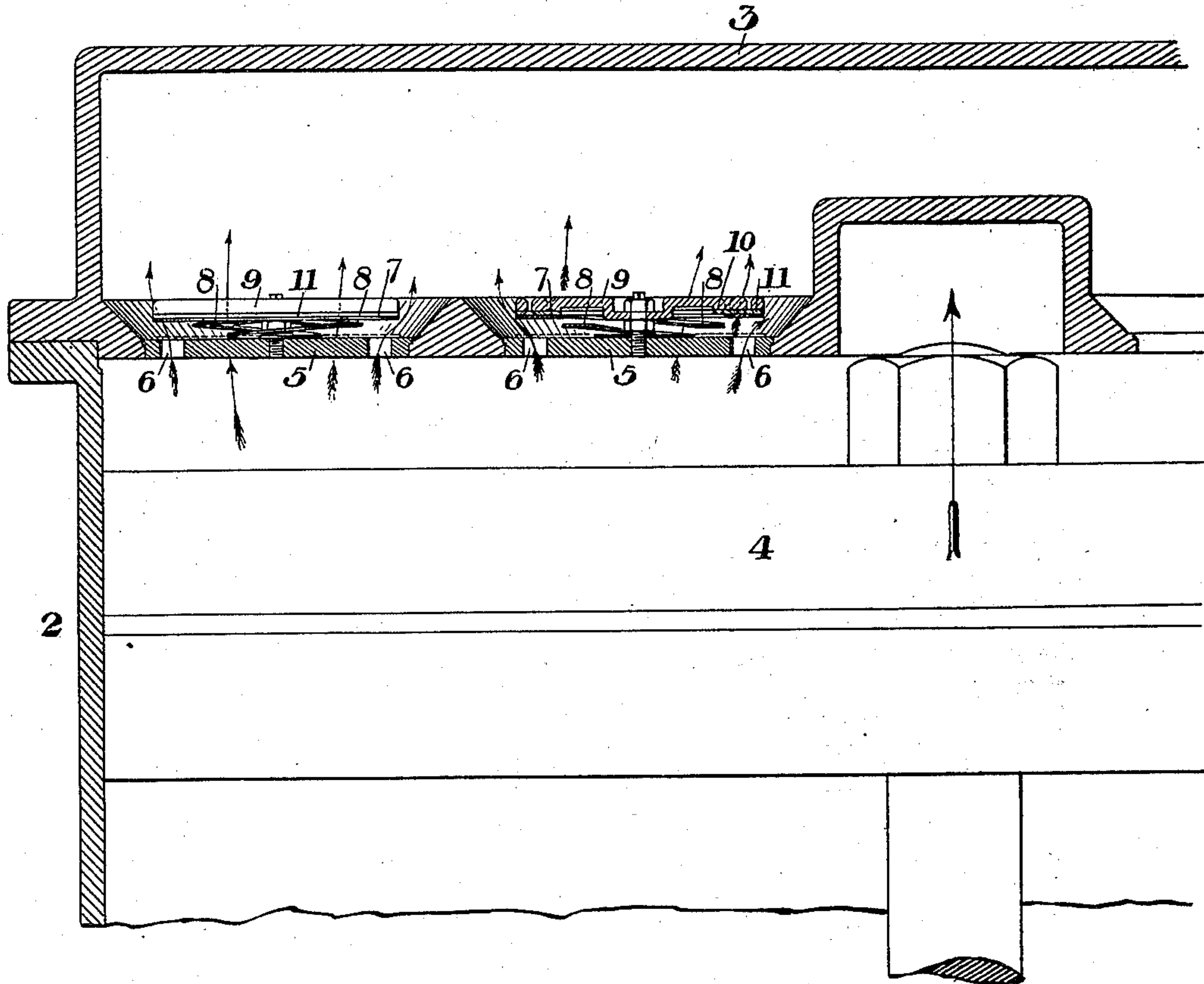
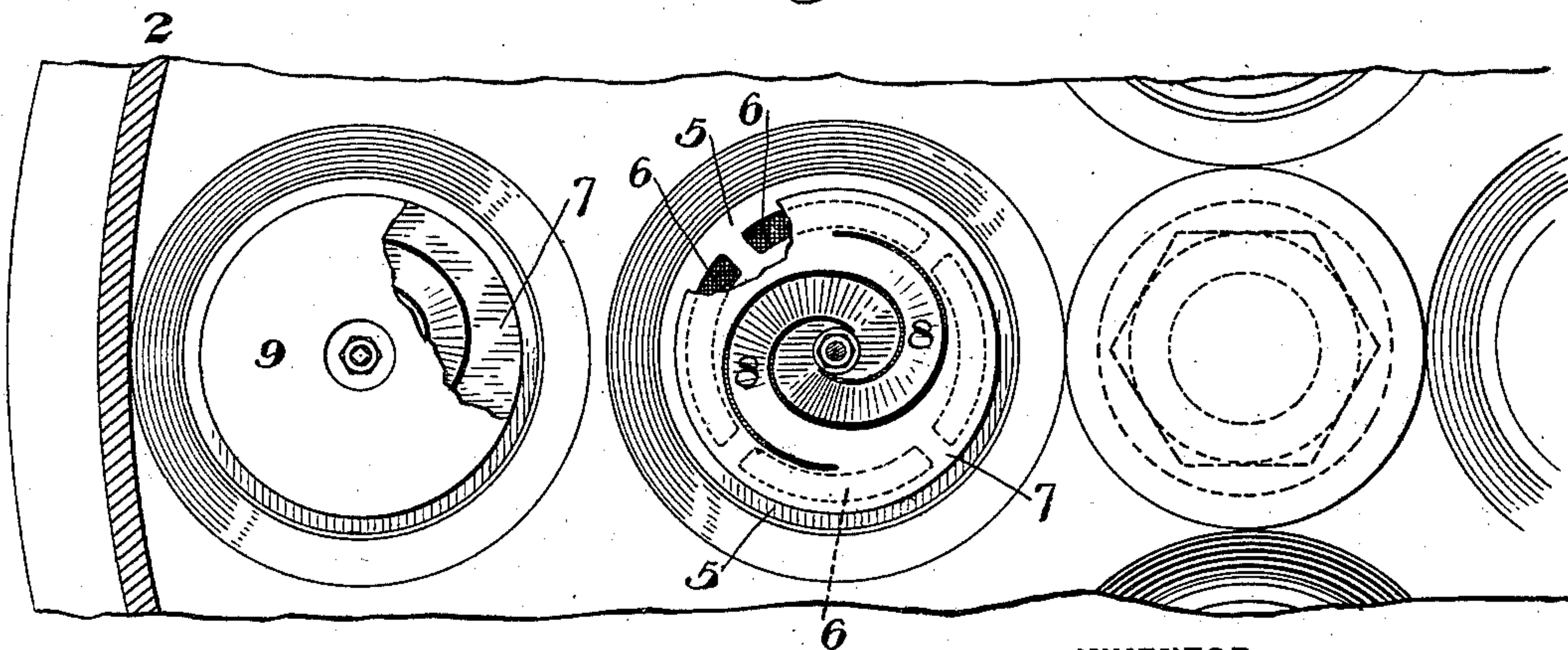


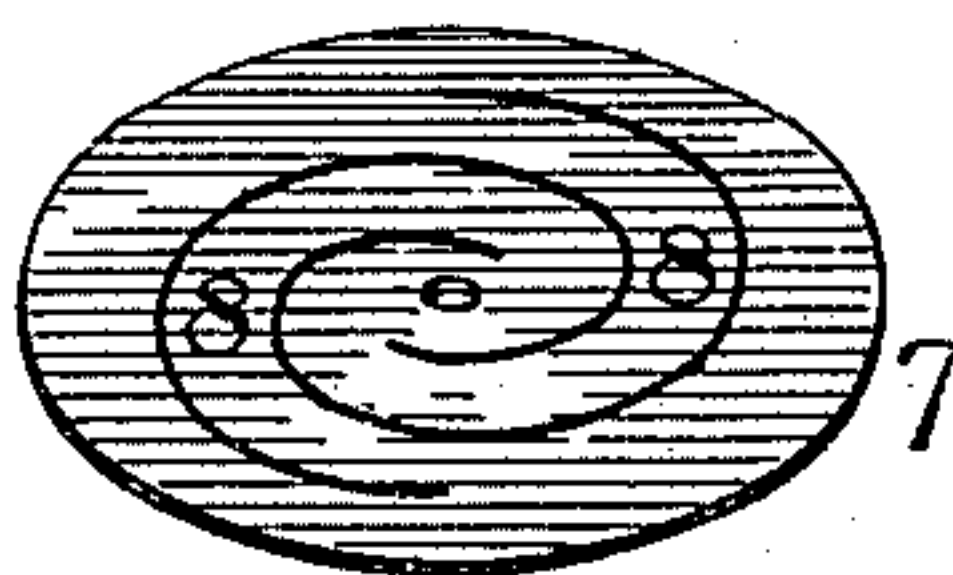
Fig. 2.



WITNESSES

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Fig. 3.



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2 Sheets—Sheet 2.

(No Model.)

Fig. 4

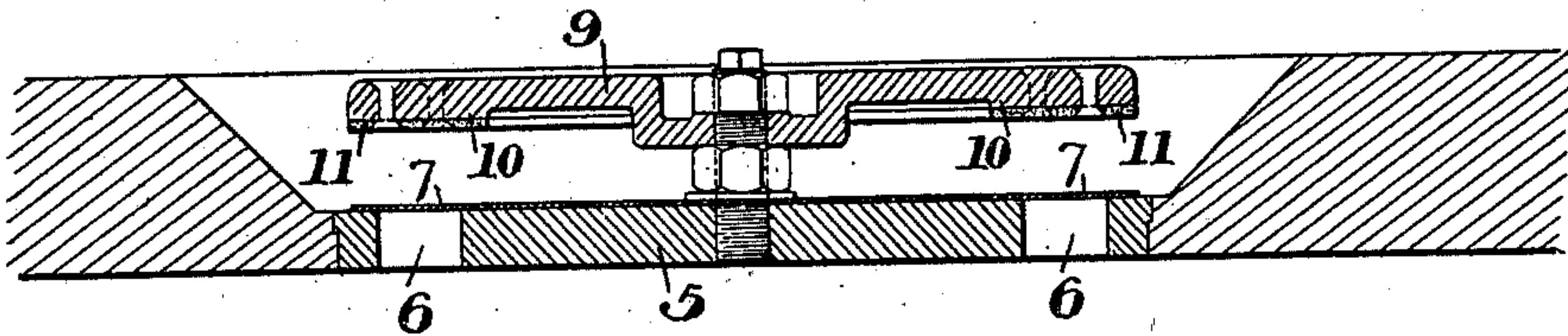


Fig. 5

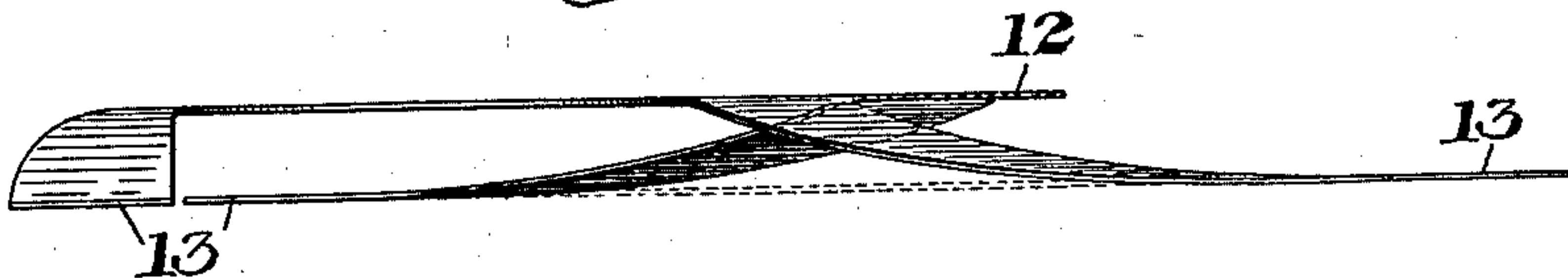
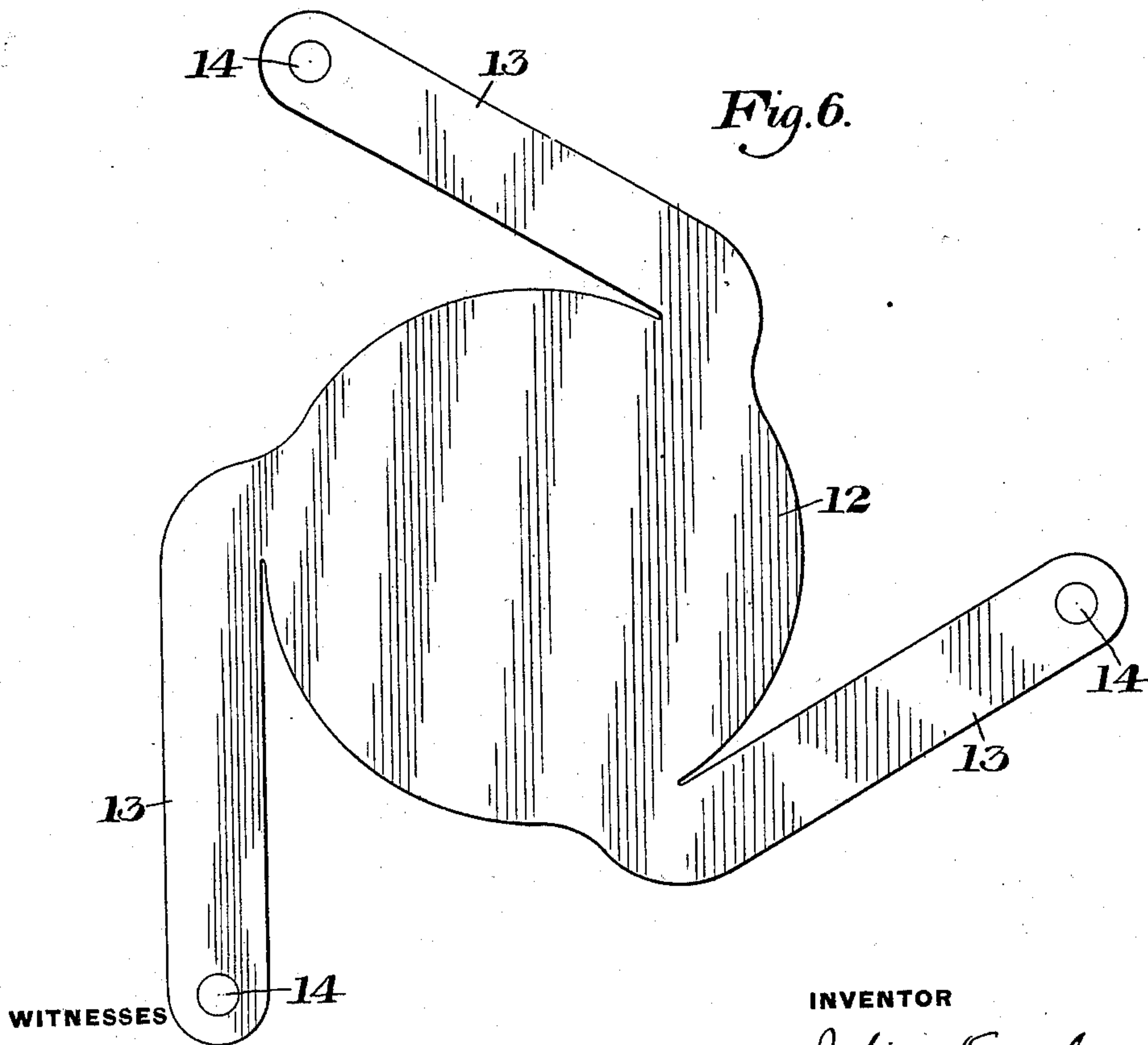


Fig. 6



WITNESSES

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UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF PITTSBURG, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 666,145, dated January 15, 1901.

Application filed September 10, 1900. Serial No. 29,615. (No model.)

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Valves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional side elevation showing a portion of the head of a blowing-engine provided with my improved valves. Fig. 2 is a partial plan view of the head, partly broken away. Fig. 3 is a perspective detail view showing the method of cutting the blank for the valves. Fig. 4 is a sectional view on a larger scale, showing one of my valves in closed position; and Figs. 5 and 6 are respectively a side elevation and a plan view showing a modified form of the valve.

My invention relates to valves employed for blowing-engines, compressors, air-pumps, &c., and is designed to provide a simple valve of little weight to avoid the pounding action of the heavier valves now used.

To that end it consists in a thin sheet-metal valve having spring-arms integral with it; also, in a sheet-metal valve having spiral spring-arms, and, further, in the particular construction and arrangement, as hereinafter more fully described, and set forth in the claims.

In the drawings, referring to the form of Figs. 1 to 4, inclusive, 2 represents the head of a blowing-engine having the inclosing case 3, forming a chamber, and 4 is the piston of such engine. The head is provided with a series of circular holes, in which are secured valve-seats 5, having curved air-ports 6, arranged in annular form. The valve 7 consists of a circular sheet-metal disk having spiral spring-arms 8 8, these arms projecting downwardly against the valve-seat and normally holding the valve open, its outward movement being limited by an adjustable disk 9, having an annular portion 10, provided with a facing 11 of leather or similar material. This stop or buffer disk may be adjusted as desired and forms an efficient stop for the valve, whose momentum is of

course very slight. In Fig. 1 the piston is shown as approaching the head and forcing the air into the wind-box. On the return stroke the valves will be closed, as shown in Fig. 4.

Instead of using the circular disk with spiral arms cut from its interior, thus leaving an annular portion for the valve proper, I may provide a plain disk 12, as shown in Figs. 5 and 6, this disk having the integral arms 13 extending outwardly at an angle thereto and preferably symmetrically located about the body. In this form the valve is secured by screws extending through holes 14 on the ends of the arms. These arms are bent down in the same manner as the spiral arms of the first form and will give substantially similar action.

In the operation of the valves the pressures cause them to rise and fall, the elastic integral arms giving an easy motion without substantial jar or pounding. The spiral form of the spring-arms is especially advantageous, and I desire to cover this form whether the arms are integral with the valve or secured thereto, though it is preferable to form the arms integral with the valve-body.

Many variations may be made in the form and size of the valve without departing from my invention.

I claim—

1. A valve consisting of a thin sheet-metal disk or plate having integral spring-arms; substantially as described.

2. A sheet-metal valve having spiral spring-arms secured thereto; substantially as described.

3. A sheet-metal valve having integral spring-arms extending at an angle to the plane of the body; substantially as described.

4. A valve comprising a sheet-metal circular disk having internal spiral spring-arms cut from its body; substantially as described.

In testimony whereof I have hereunto set my hand.

JULIAN KENNEDY.

Witnesses:

H. M. CORWIN,
C. P. BYRNES.