

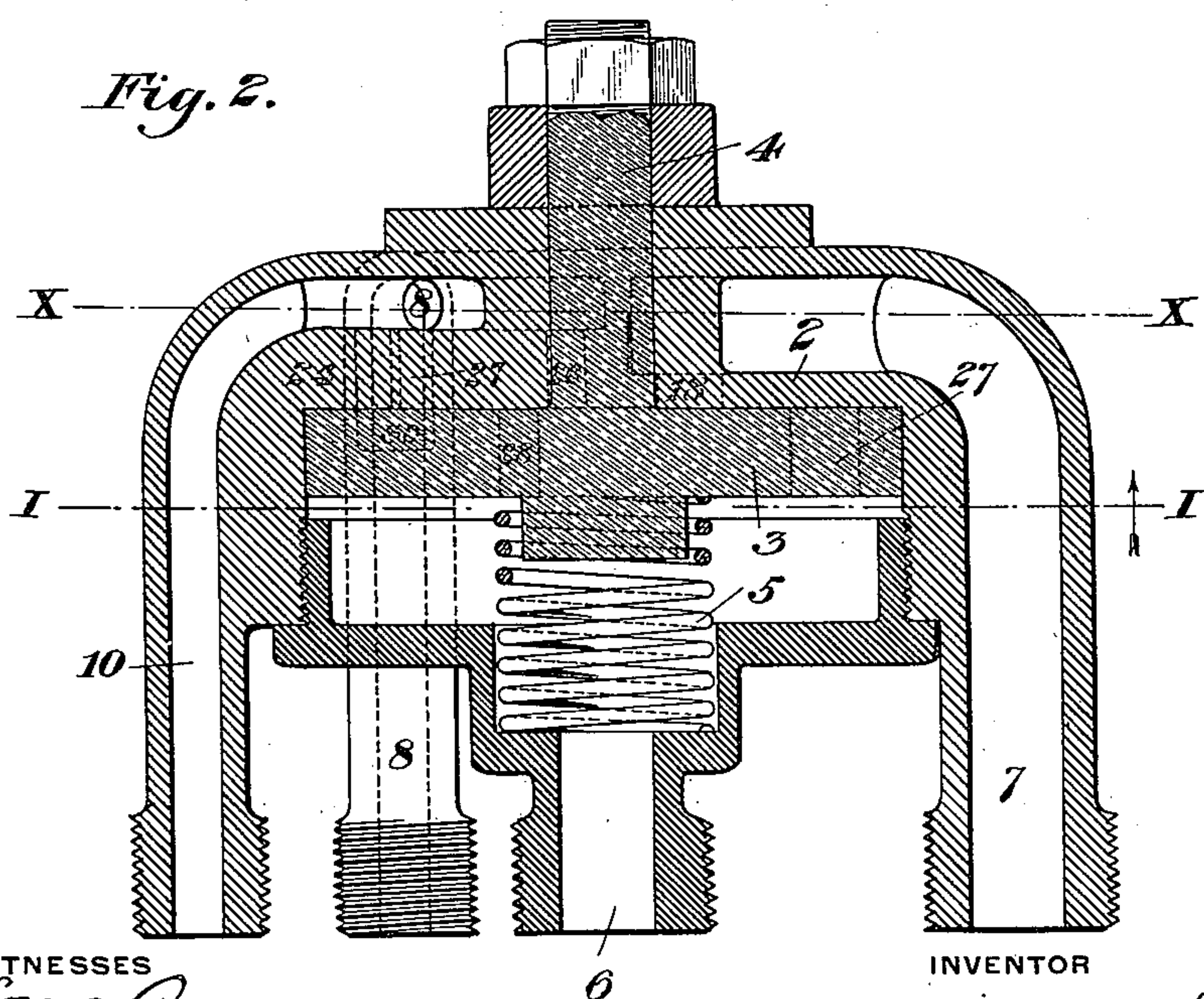
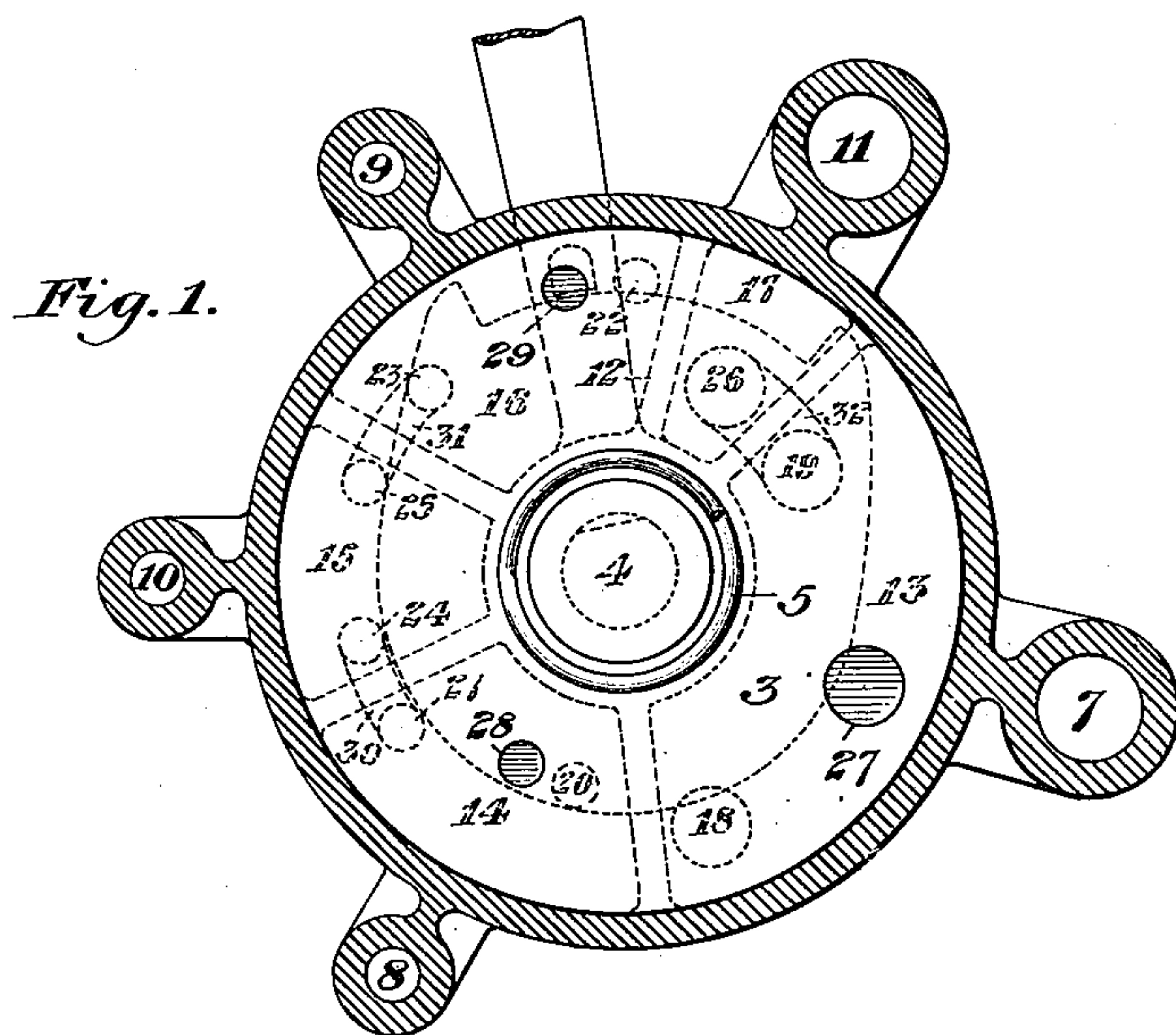
(No Model.)

2 Sheets—Sheet 1.

H. E. HUNT.
VALVE.

No. 555,377.

Patented Feb. 25, 1896.



WITNESSES

H. M. Corwin
L. A. Comerford

INVENTOR

H. E. Hunt
by Baker & Baker
attys.

(No Model.)

2 Sheets—Sheet 2.

H. E. HUNT.
VALVE.

No. 555,377.

Patented Feb. 25, 1896.

Fig. 3.

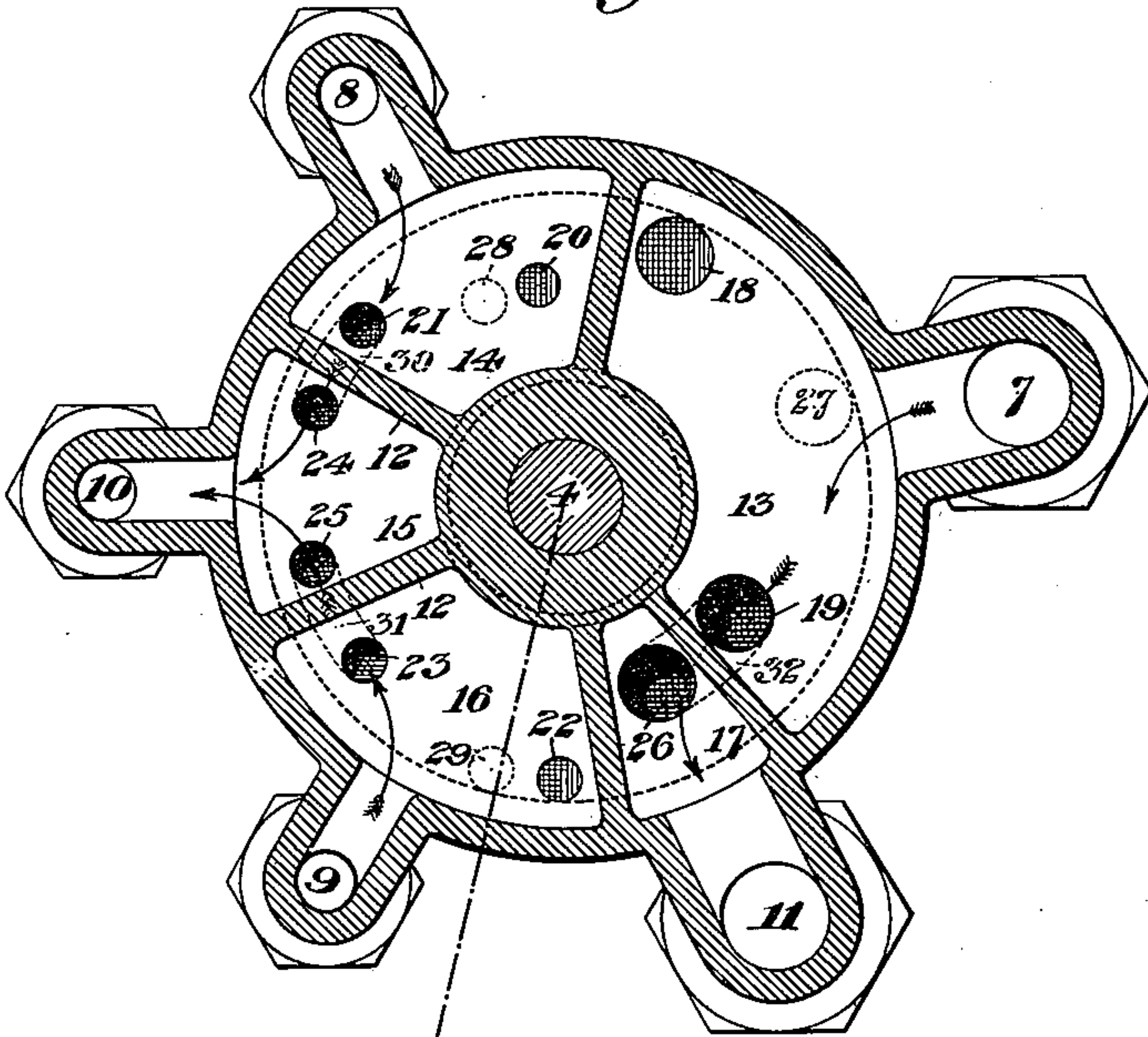
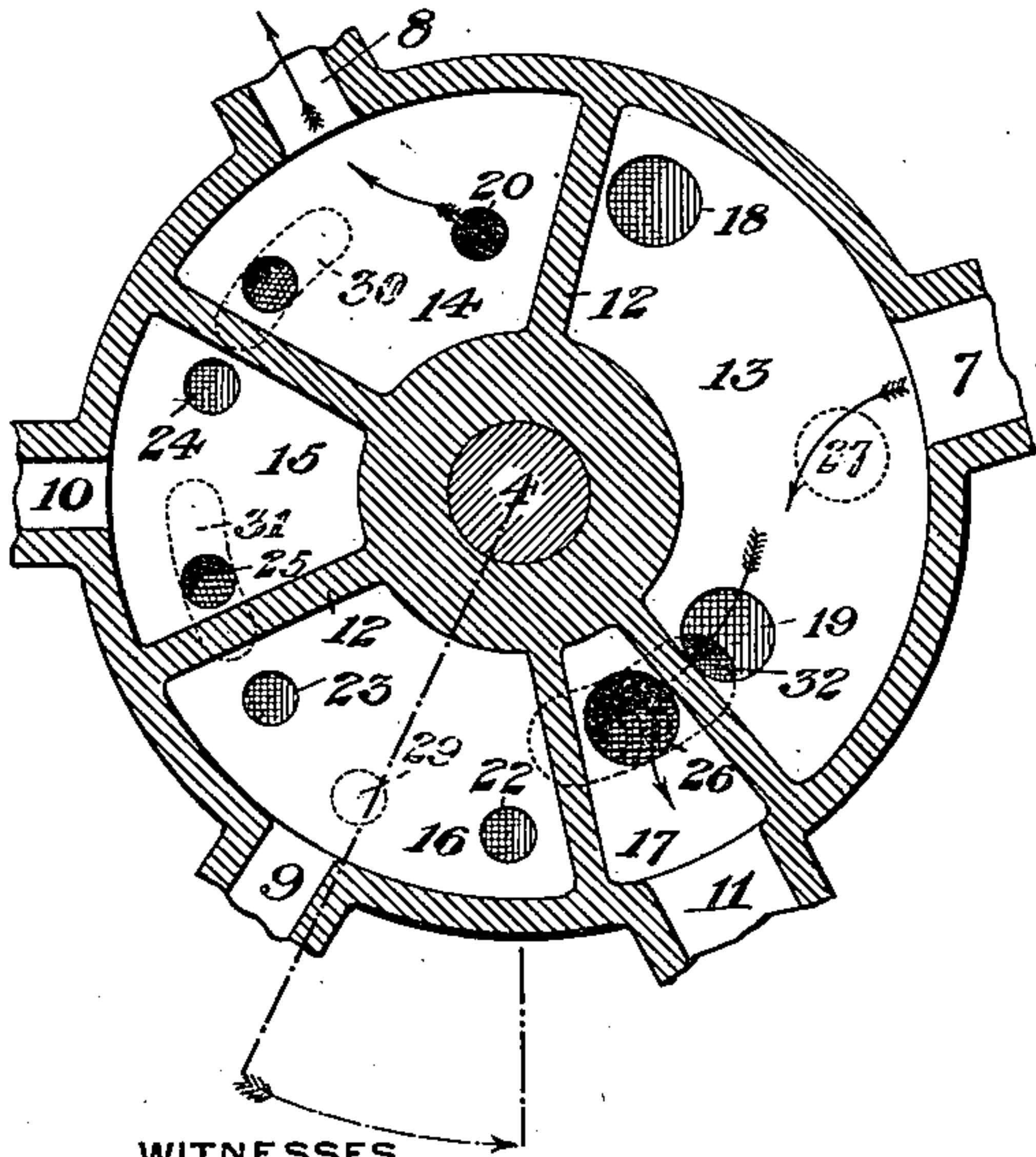


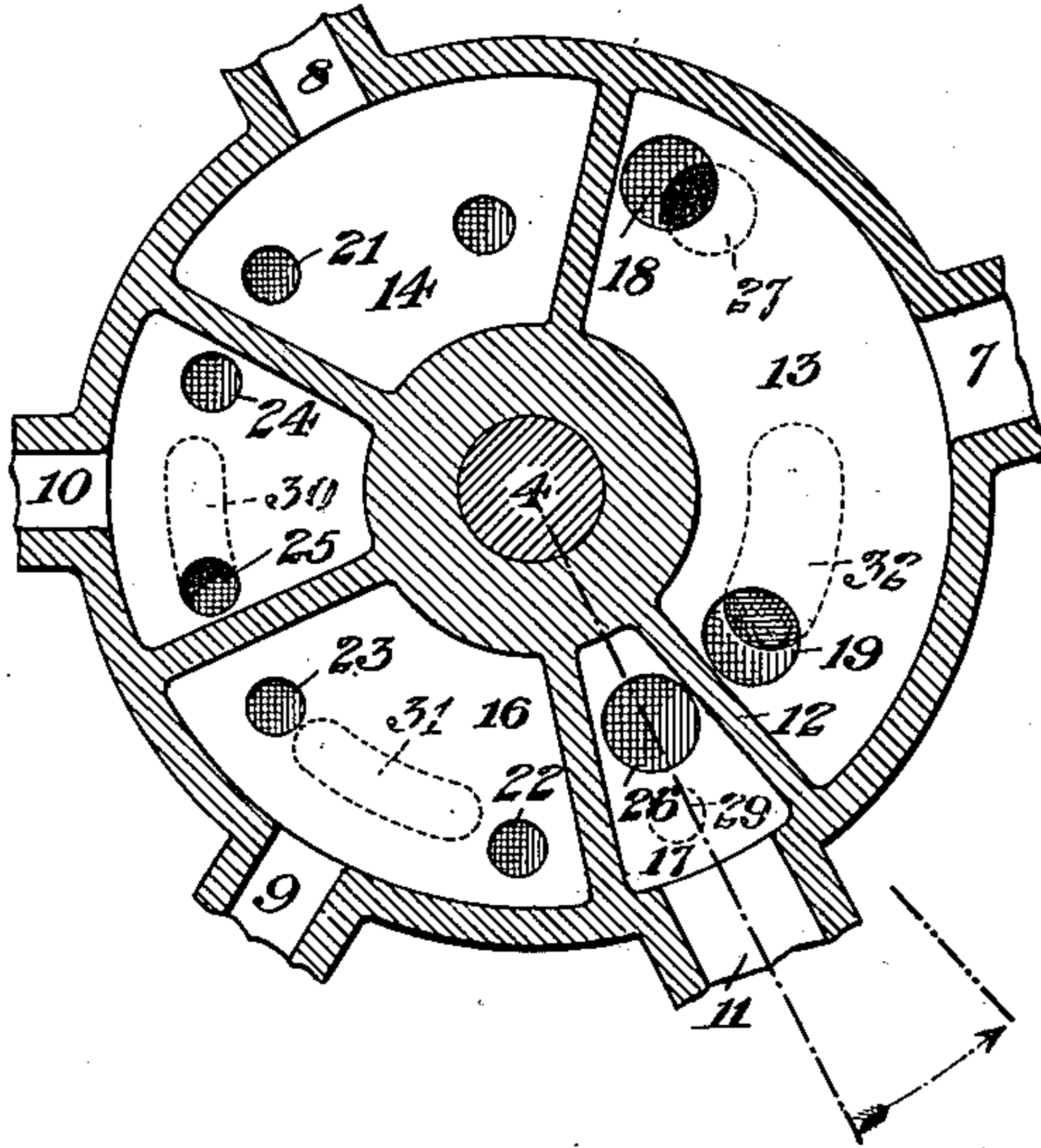
Fig. 4.



WITNESSES

St. M. Corwin
L. A. Corwin

Fig. 5.



INVENTOR

Herbert E. Hunt
by Bakewell & Bakewell.
his attys.

UNITED STATES PATENT OFFICE.

HERBERT E. HUNT, OF PITTSBURG, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 555,377, dated February 25, 1896.

Application filed October 30, 1895. Serial No. 587,347. (No model.)

To all whom it may concern:

Be it known that I, HERBERT E. HUNT, of
Pittsburg, in the county of Allegheny and
State of Pennsylvania, have invented a new
5 and useful Improvement in Valves, of which
the following is a full, clear, and exact descrip-
tion, reference being had to the accompany-
ing drawings, forming part of this specifica-
tion, in which—

10 Figure 1 is a cross-section of my improved
valve, taken on the line I I of Fig. 2, looking
upward. Fig. 2 is a vertical central section
of the valve; and Figs. 3, 4, and 5 are cross-
15 sections on the line X X of Fig. 2, looking
downwardly.

Like symbols of reference indicate like parts
in each figure.

My invention relates to the class of valves,
and is designed to afford a five-way disk-valve
20 of improved construction, more especially for
use upon street-cars where the air passing
through the valve controls the air-braking
system and also the cylinder arranged to actu-
ate the controller.

25 In the drawings, 2 indicates the flat circular
seat for the rotary disk-valve 3, which is
provided with a stem 4, and is normally held
against its seat by a spring 5.

30 6 is the supply-pipe leading from the air-
reservoir to the valve.

7 is the pipe leading from the valve to the
braking-cylinder.

8 and 9 are the pipes leading to the opposite
ends of the controller-actuating cylinder, and
35 10 and 11 are pipes leading to the open air.
Between the entrances to these pipes are
bridges 12, forming separate chambers 13, 14,
15, 16 and 17. Within the chamber 13 is a
supply-port 18 and an exhaust-port 19 for the
40 brake-cylinder. Within the chamber 14 is a
supply-port 20 and an exhaust-port 21 for one
end of the controller-actuating cylinder, the
corresponding ports for the other end of such
cylinder being ports 22 and 23 in the chamber
45 16. In the chamber 15 are two exhaust-ports
24 and 25, one for each end of the controller-
actuating cylinder, and in the chamber 17 is
an exhaust-port 26 for the brake-cylinder.

50 The disk-valve contains supply-port 27, ar-
ranged to register with the port 18 and sup-
ply air to the brake-cylinder, port 28, ar-

ranged to register with the port 20 and supply
air to one end of the controller-actuating cyl-
inder, and port 29, arranged to supply air to
the other end of such cylinder and registering 55
with the port 22 in certain positions, these be-
ing through-ports. It also contains, on its in-
ner face three grooved or recessed ports 30, 31
and 32, the first two serving to exhaust both
ends of the controller-actuating cylinder, and 60
the third to exhaust the brake-cylinder.

Figs. 2 and 3 show the valve in normal posi-
tion of complete release, the brake-cylinder
releasing the through-port 32 registering with
the ports 17 and 19, and the other cylinder 65
being on release by the port 30, connecting the
ports 21 and 24, and the port 31, connecting
ports 23 and 25.

To move the car the valve-lever is turned
to the left, bringing the port 28 into registry 70
with the port 20, at the same time cutting out
ports 23 and 24, while the brake is on partial
release, all as shown in Fig. 4. To return the
controller to inoperative position, the lever is
moved in the opposite direction, whereupon 75
the ports 20 and 28 are thrown out of registry,
the air in the controller-actuating cylinder ex-
hausting as the port 30 connects the ports 21
and 24. Further movement in the same di-
rection brings the ports 22 and 29 into regis- 80
try, thus admitting air to the other end of the
cylinder, driving the controller-lever back to
its original position; and still further move-
ment brings the ports to the position of Fig.
5, wherein the ports 27 and 18 are in partial 85
registry, admitting air to the brake-cylinder
and setting the brakes, this being the service
stop. A slight further movement gives a full
registry of the ports 27 and 18, giving an emer-
gency stop. 90

It will be noticed that the port 29 is outside
of the port 26, so that they cannot register in
the position of Fig. 5.

The advantages of my invention will be ap-
parent to those skilled in the art, since in the 95
single valve are contained the supply and
release ports for both the brake-cylinder and
the controller-actuating cylinder, and the
ports are so arranged that one of these cylin-
ders must be cut off when the other is in op- 100
eration.

Many variations may be made in the form

and arrangement of the parts by the skilled mechanic without departing from my invention, since

What I claim as my invention is—

- 5 1. A valve comprising a valve-casing having five chambers, two chambers having exhaust-ports, and the others having supply and exhaust ports, and a rotary disk-valve having ports arranged to register therewith; substantially as described.
- 10 2. A valve having a casing provided with

five chambers, a disk-valve having grooved ports arranged to connect two of these chambers with a third, and a port which in a different position of the valve connects the remaining chambers; substantially as described. 15

In testimony whereof I have hereunto set my hand.

HERBERT E. HUNT.

Witnesses:

C. BYRNES,

G. I. HOLDSHIP.