

No. 695,771.

Patented Mar. 18, 1902.

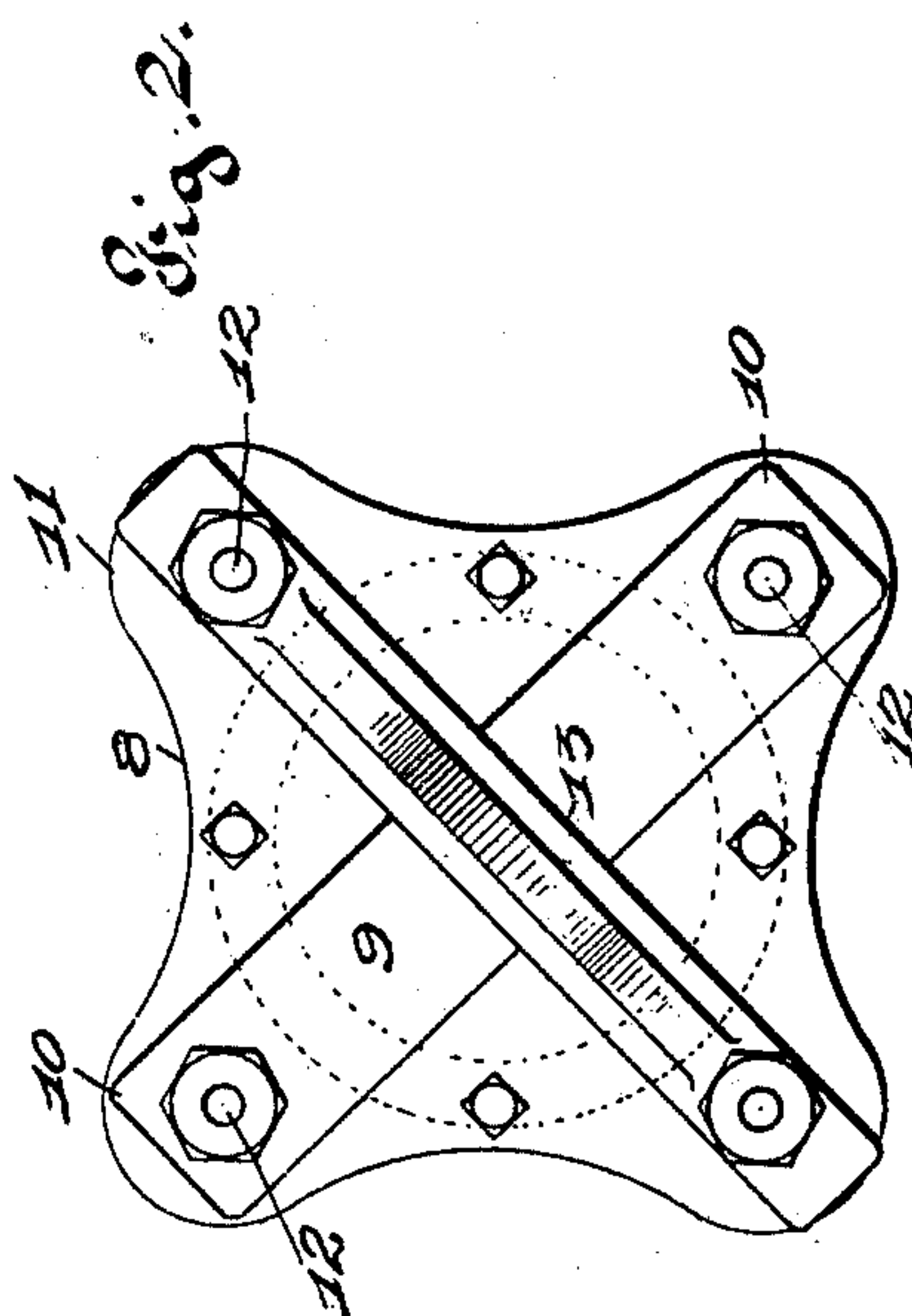
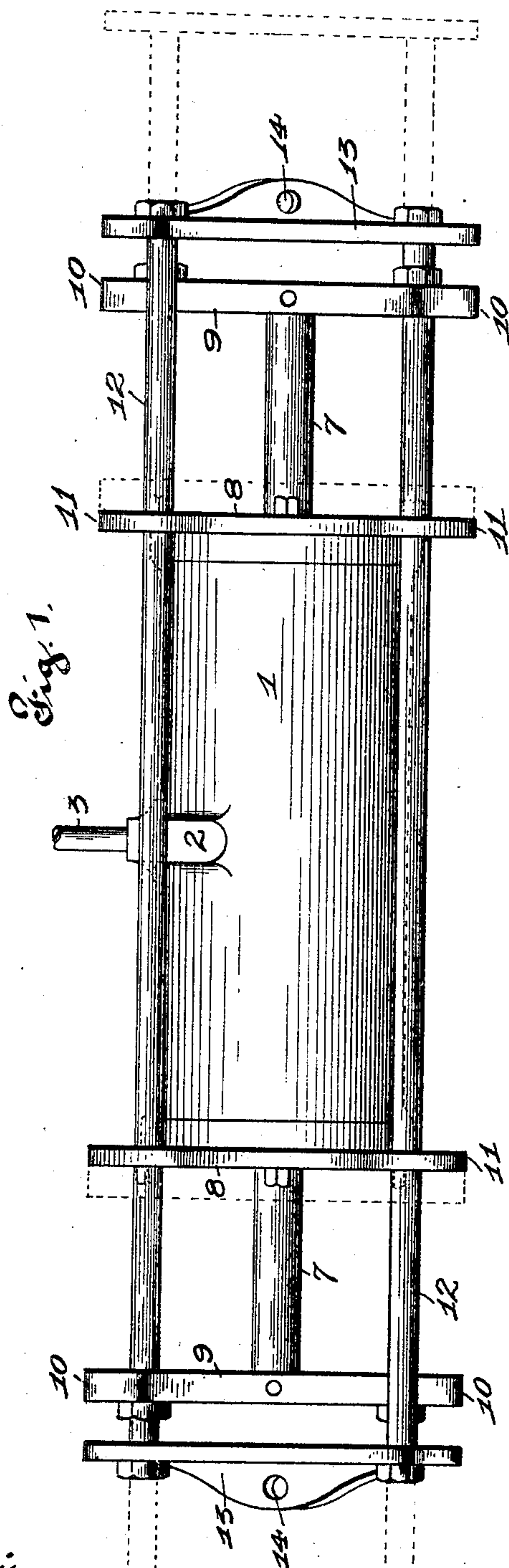
P. W. VOGT.

AIR BRAKE.

(Application filed Dec. 30, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witness
Myself
Francis Turner

Inventor
Phillip W. Vogt.
by Higdon & Pongan Attys.

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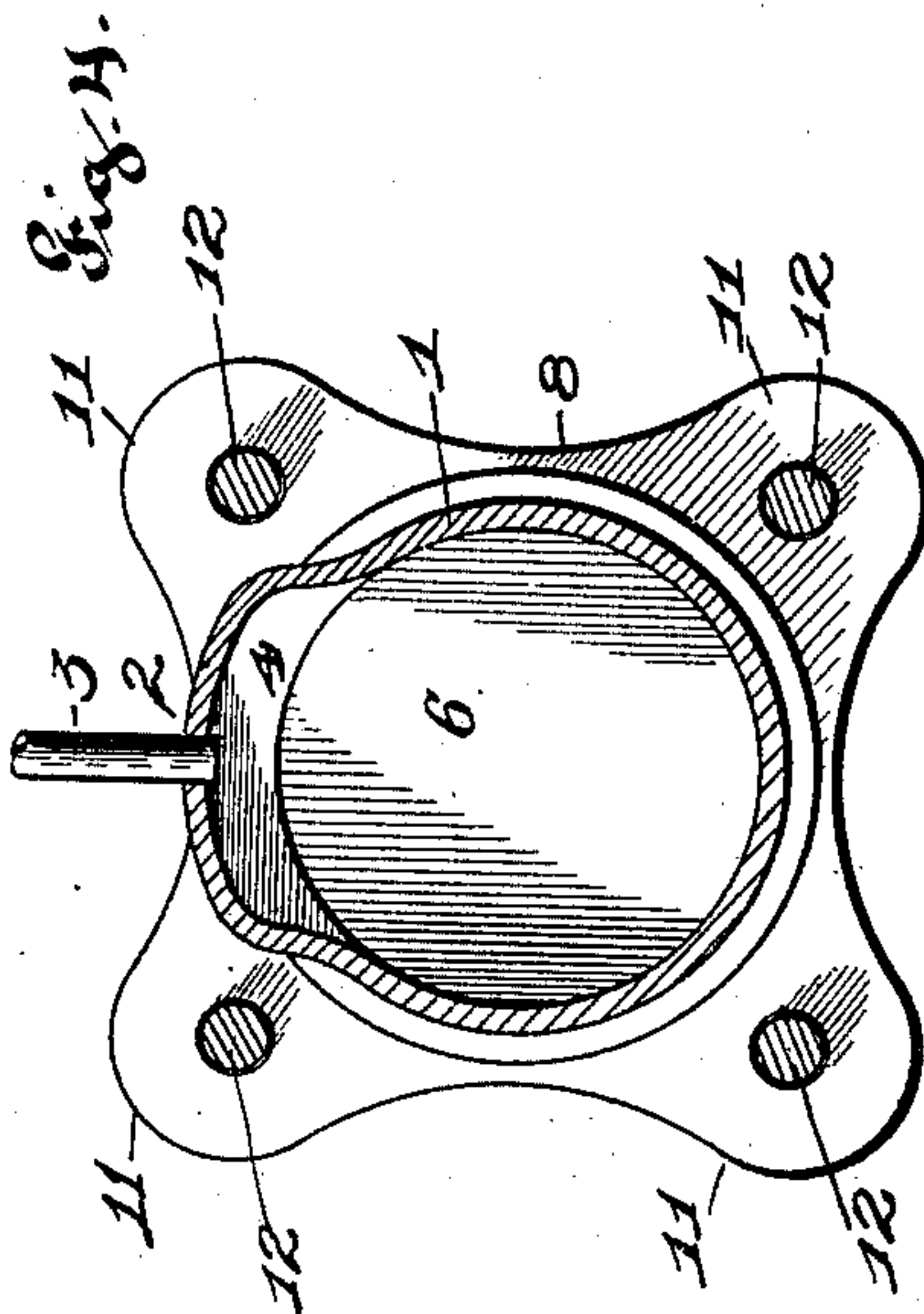
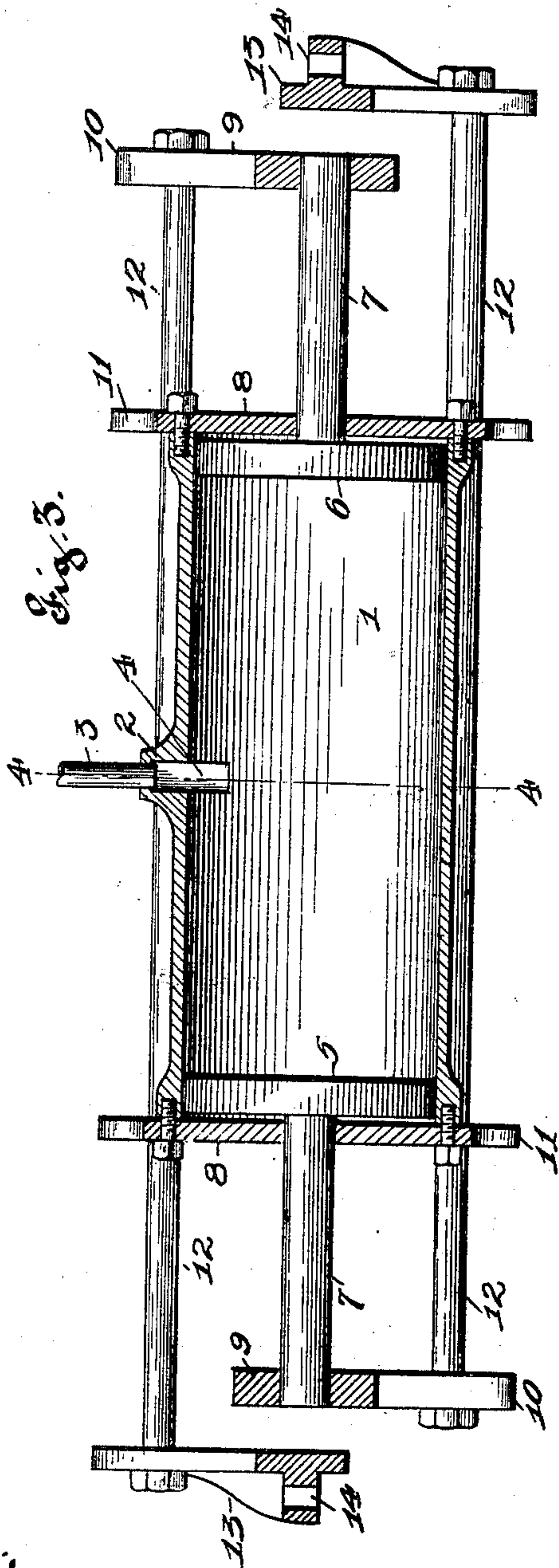
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(No Model.)

2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

PHILLIP W. VOGT, OF ST. LOUIS, MISSOURI.

AIR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 695,771, dated March 18, 1902.

Application filed December 30, 1901. Serial No. 87,677. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP W. VOGT, of the city of St. Louis, Missouri, have invented certain new and useful Improvements in Air-
5 Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to air-brakes; and it
10 consists of the novel construction, combination and arrangement of parts hereinafter shown, described, and claimed.

The object of my invention is to provide an improved brake-cylinder which shall be more
15 economical in the use of air than cylinders heretofore in use and which shall be comparatively quick and powerful when the small diameter of the cylinder is taken into consideration.

20 My invention consist of a suitable steam or air cylinder having central inlet and outlet openings, pistons mounted in said steam or air cylinder, one upon each side of said openings, piston-rods extending from said pistons
25 outwardly through the heads of said cylinder, and means of making connections between the outer ends of said piston-rods and the brakes, said connections being crossed, so that the brakes are tightened by the admission of steam or air between the pistons and
30 loosened by exhausting the steam or air from between the pistons.

In the drawings, Figure 1 is a side elevation of a brake-cylinder and connections embodying my invention. Fig. 2 is an end view
35 of same. Fig. 3 is a sectional side elevation of same. Fig. 4 is a transverse section on the line 4 4 of Fig. 3.

1 indicates the cylinder, which is made with
40 a comparatively small internal diameter, but of increased length, and is provided centrally of its length with a pipe connection 2 for the pipe 3, which latter may be used as both a supply and exhaust pipe. The connection 2
45 is provided on its interior with a port or passage 4, which extends transversely of the cylinder for the purpose of facilitating the entrance or exit of the air.

I locate two pistons 5 and 6 within said cylinder
50 so that they will move simultaneously in opposite directions and provide them with

the usual piston-rods 7, which pass through the cylinder-heads 8, and the outer ends of said rods are connected to cross-heads 9, which have laterally-projecting perforated ears 10. 55
The cylinder-heads 8 also have each four projecting perforated ears 11. Mounted to slide in these ears are four parallel connecting-rods 12. These connecting-rods are connected in
60 pairs by means of the cross-heads 9. In other words, the cross-head 9 at one end of the cylinder has a pair of said connecting-rods 12 rigidly fixed in the perforated ears of said cross-head. The other cross-head 9 at the opposite end of the cylinder is connected in a 65
similar manner to the other pair of connecting-rods 12. The free ends of each pair of said rods 12 carry a cross-bar 13, which may have a perforation 14 centrally of its length.

The pistons 5 and 6 should of course be provided with the usual packing-rings or the like. 70

In operation the cylinder 1 is to be suspended beneath the car in any suitable manner, and the pipe 3 is to be connected to the
75 source of fluid-supply, whether it be air, steam, or other fluid. Said pipe should of course be also connected in such a manner that the fluid may be exhausted from the cylinder through it. The brake rods or chains 80
should be connected to the perforated cross-bars 13 in any approved manner, so that when the supply of air is driven into the cylinder through the pipe 3 and port 4 the pistons will be simultaneously forced apart to 85
the position indicated by the dotted lines in Fig. 1, and thereby the brakes will be applied. When the air is exhausted from between the pistons, the usual springs of the
80 brake connections will force the pistons inwardly and cause the parts to assume their normal position. Said normal position is with the pistons 5 and 6 at the limit of their inward movement, at which position they would be almost in contact with each other, with a 95
small space between for passage of the fluid.

By the use of my invention the brake-cylinder may be of much smaller diameter than usual, and hence will not project as far as the ordinary cylinder does. 100

Another advantage lies in the fact that I provide practically a double cylinder, by

means of which power is applied simultaneously in opposite directions.

What I claim is—

1. In an air-brake, a suitable steam or air
5 cylinder having central inlet and outlet openings; pistons mounted in said steam or air cylinder, one on each side of said openings; piston-rods extending from said pistons outwardly through the heads of said cylinder;
10 and means of connecting said piston-rods to the brakes, said connections being crossed so that the brakes are tightened by admitting steam or air between the pistons, and loosened by exhausting steam or air from between
15 the pistons, substantially as specified.

2. A brake-cylinder having a central induction and eduction passage, two pistons mounted in said cylinder and adapted to move simultaneously in opposite directions,
20 connections to which the brake-rods may be attached exterior of said cylinder, piston-rods connected to said pistons, cross-heads connected to said piston-rods, pairs of connecting-rods secured at one end to said cross-
25 heads, and cross-bars secured to the opposite

ends of said connecting-rods, substantially as specified.

3. In an air-brake, a suitable steam or air cylinder having a central induction and eduction passage; two pistons mounted in said
30 cylinder, one on each side of said passage; piston-rods extending outwardly from said pistons through the heads of the cylinder; cross-heads connected to the outer ends of the piston-rods; connecting-rods extending from
35 the cross-heads parallel with the cylinder; and second cross-heads connecting the opposite ends of said connecting-rods and adapted to be attached to the brakes so that the
40 brakes will be tightened by admitting pressure between the pistons, the connections between the said pistons being crossed by said connecting-rods, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

PHILLIP W. VOGT.

Witnesses:

ALFRED A. EICKS,
JOHN C. HIGDON.