

No. 860,585.

PATENTED JULY 16, 1907.

G. J. TREADGOLD.

STEAM BLOWER.

APPLICATION FILED MAR. 22, 1906.

Fig. 1-

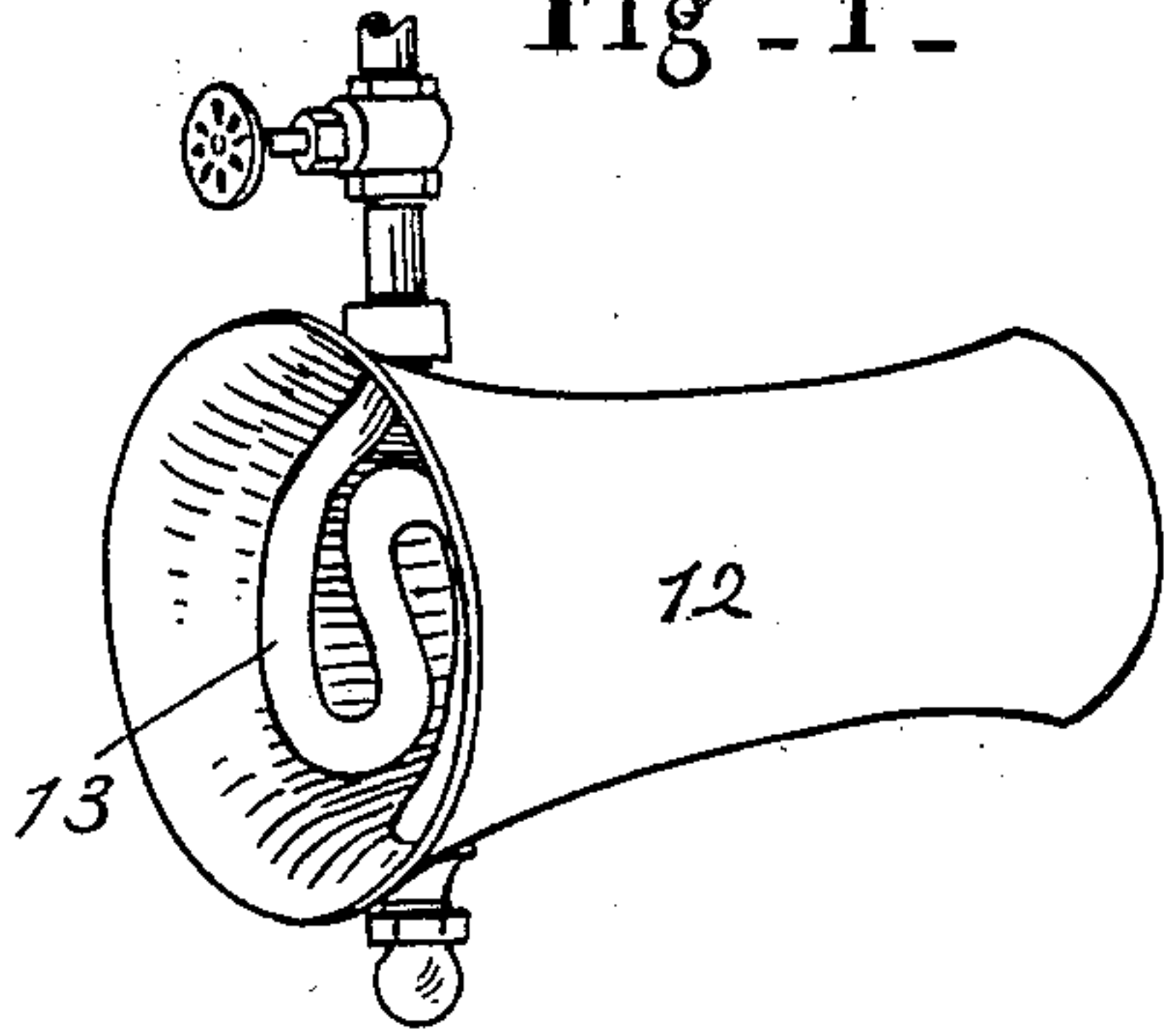


Fig. 3-

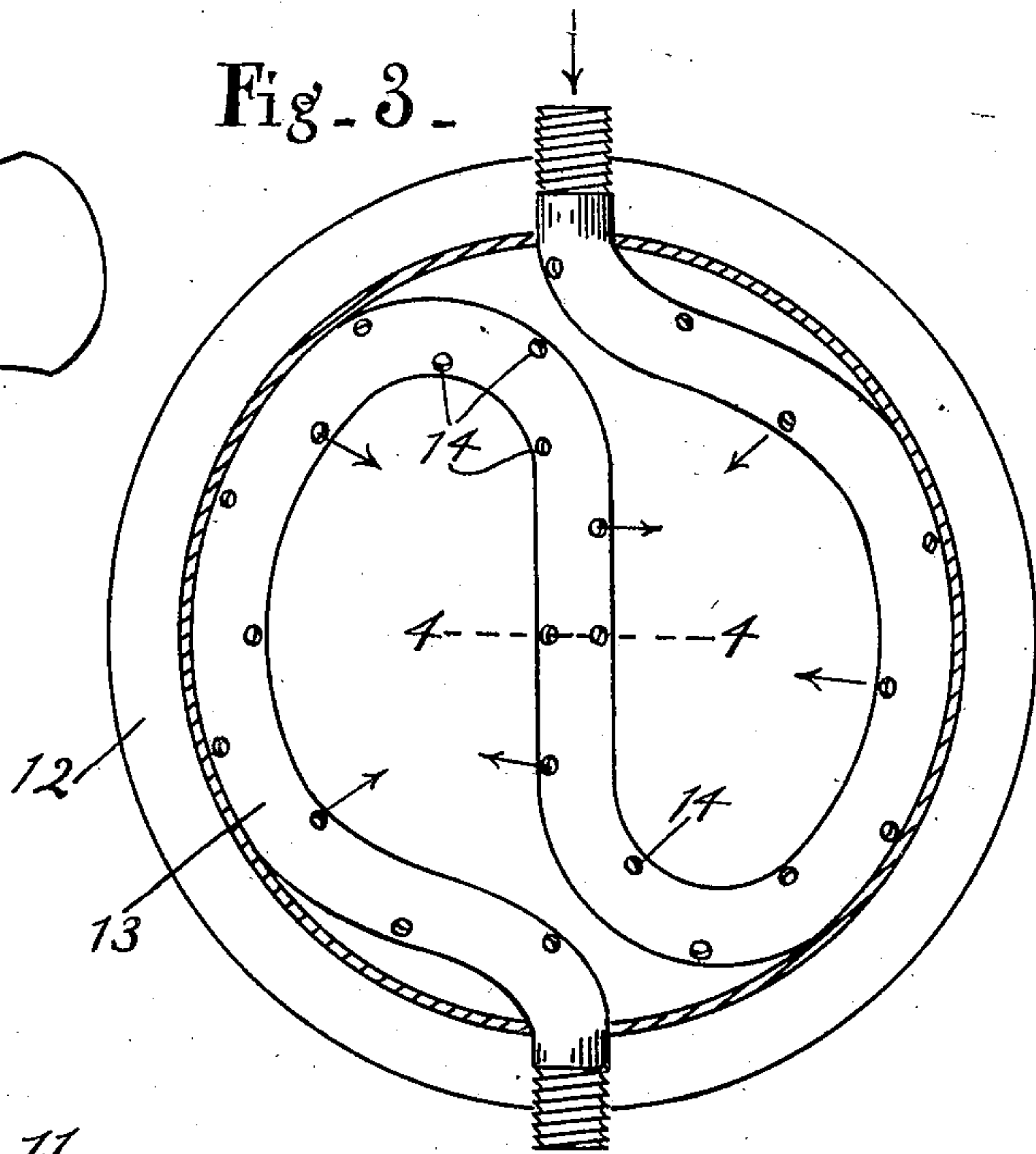


Fig. 2-

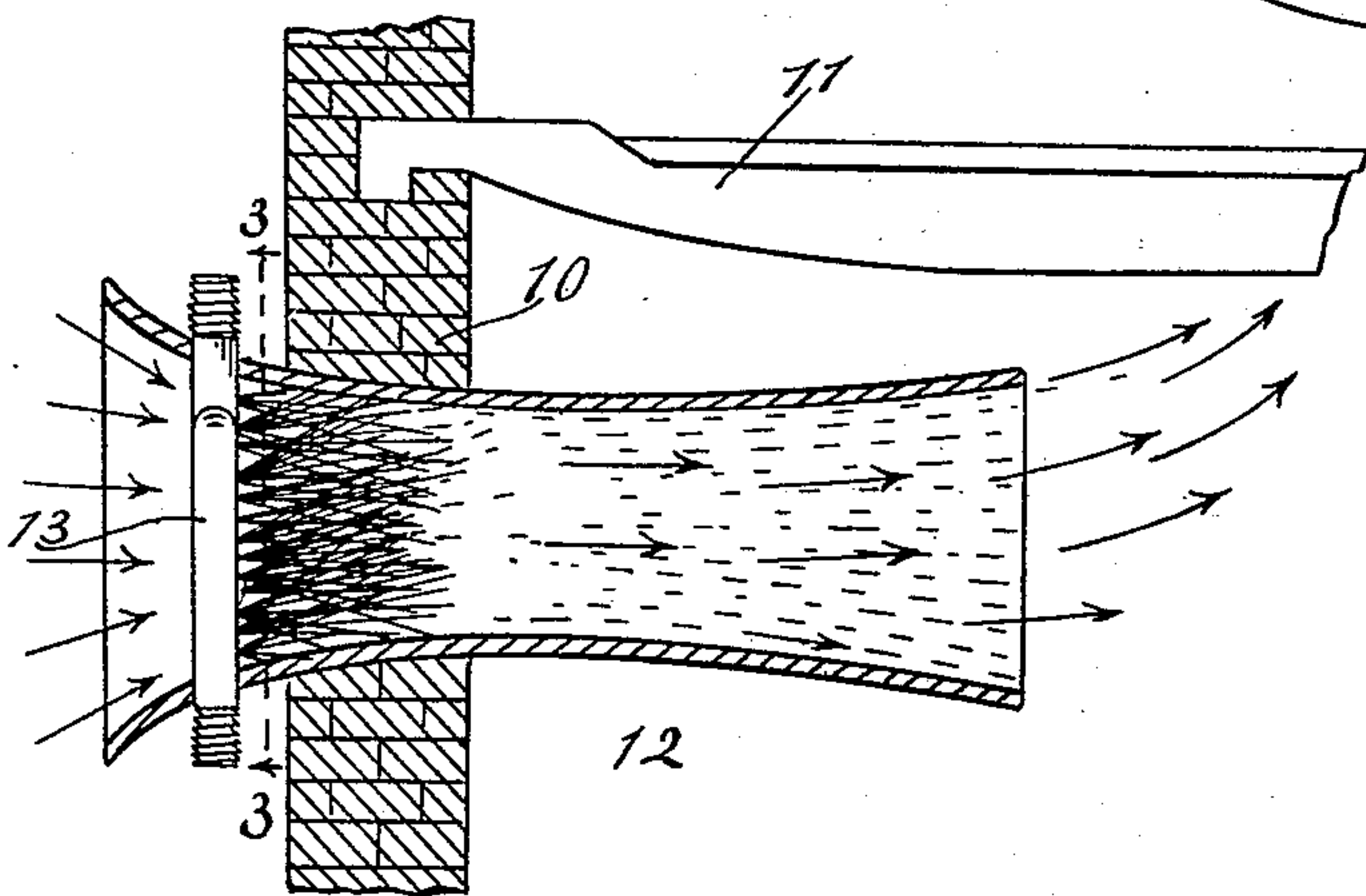
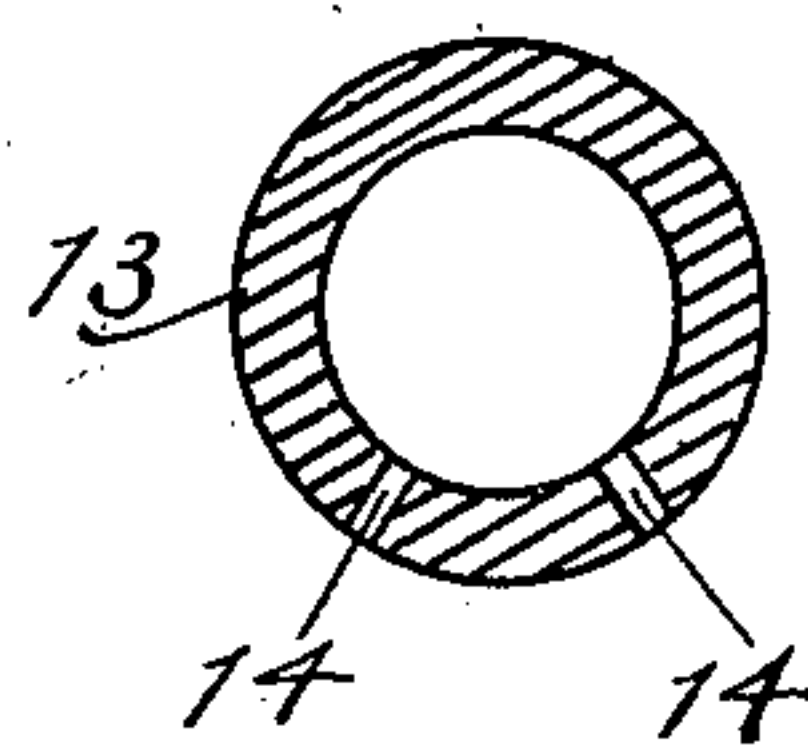


Fig. 4-



Witness  
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# UNITED STATES PATENT OFFICE.

GEORGE J. TREADGOLD, OF INDIANAPOLIS, INDIANA.

## STEAM-BLOWER.

No. 860,585.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed March 22, 1906. Serial No. 307,453.

*To all whom it may concern:*

Be it known that I, GEORGE J. TREADGOLD, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Steam-Blower; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to increase very perceptibly the efficiency of steam blowers, and that result is accomplished by the invention herein including within a circular casing a steam pipe that is double looped and substantially S-shaped, so that it lies against the wall of the casing and extends also across the space within the casing and is provided throughout its length with two series of steam ports, one near each margin, as the same is viewed from within the furnace or casing, the ports on the two sides being so bored or arranged as to diverge from each other. The result is a number of diverging and converging jets of steam that so intermingle as to fill the passageway or casing and cause a powerful suction effect whereby air is drawn into the casing or passageway and mingled with the steam and expelled into the furnace.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a perspective view of the device separated from the furnace. Fig. 2 is a longitudinal section of a portion of the furnace showing the front wall and a part of one of the grate bars and the blower in place, the blower being shown in central vertical longitudinal section. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a section of the steam pipe on the line 4—4 of Fig. 3.

In detail 10 represents the front wall of the furnace and 11 one of the grate bars.

12 is the blower casing secured in and extending through the front wall 10 below the grate and discharged immediately under the grate. The outer end of this casing or shell is flaring and the inner end is very slightly flaring. A steam pipe 13 is located outside of the furnace and is supplied with steam by means of a pipe or other means running from the boiler, the said connection not being here shown. The pipe 13 enters the blower casing 12 on the upper side thereof and is coiled about within said casing in the form of a substantially S-shaped double loop, as appears in Fig. 3, and leaves the casing on the lower side. After the pipe enters the casing it hugs rather closely the inner surface of the casing for about one half its internal circumference and then extends across the space

within the casing substantially diametrically to the point of entrance and therefrom hugs the other side of the casing for substantially half the internal circumference thereof and issues on the lower side at a point diametrically opposite the entrance of said pipe.

Steam ports 14 are bored in the pipe in two rows or series, one near each margin of the pipe as the same is viewed from the interior of the lower casing and as shown in Fig. 3. These ports are bored through the pipe substantially radially so that the ports along one side of the pipe diverge from those along the other side and the steam that issues from them likewise diverges.

With this arrangement of the steam-pipe 13 and its ports 14 there is provided a very large portion of the steam pipe within the casing, so that there is opportunity for providing a large number of steam ports issuing therefrom. The pipe lies near the internal surface of the casing, except the middle portion of the pipe which extends across the space within the casing, thus furnishing also two passageways for the entering air, each passageway between the coils of said pipe being pear-shaped and located on each side of the middle portion of said steam pipe, as appears in Fig. 3.

In operation the steam issues from all of the ports 14 in diverging and converging lines, as is illustrated in Fig. 2. This multiplicity of diverging and converging jets of steam practically fills the casing and has a powerful suction effect by way of drawing in the air from the outside and mixing it very minutely and thoroughly with the steam and forcing the combined air and steam into the furnace beneath the grate bars, thus securing an effective forced draft and maintaining the cinders and ashes in a moist condition so as to greatly promote combustion.

What I claim as my invention and desire to secure by Letters Patent is:

1. A steam blower including an open ended casing, and a steam-pipe entering said casing and coiled about therein adjacent to the wall of the casing and substantially in the form of an S-shaped double loop and provided with a multiplicity of steam ports, substantially as set forth.

2. A steam-blower including an open ended casing, a steam-pipe entering the same and coiled therein in the form of a substantially S-shaped double loop and provided on its inner surface with a series of diametrically extending steam ports along a line near each side thereof whereby two series of diverging ports are provided along the coil of pipe.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

GEORGE J. TREADGOLD.

Witnesses:

HELEN B. MCCORD,  
N. ALLEMONG.