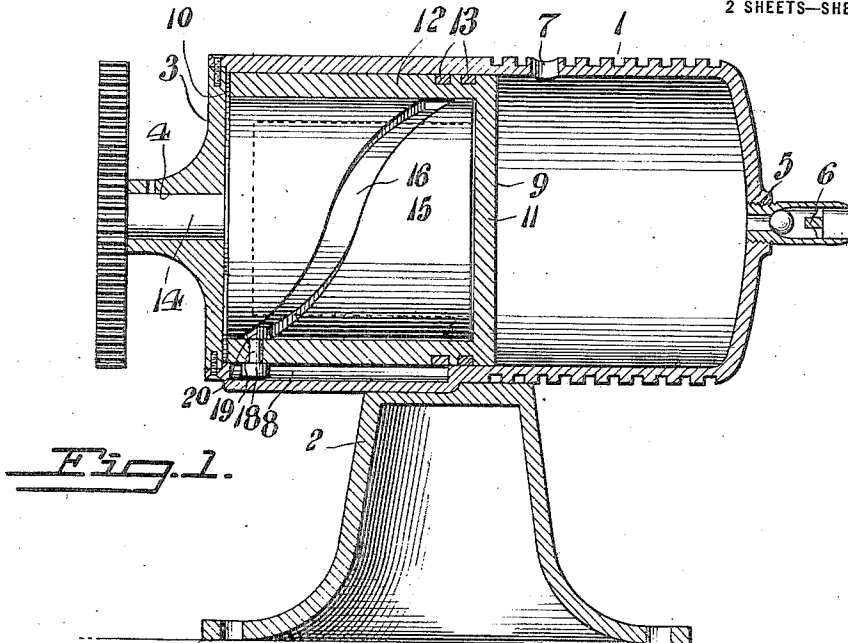
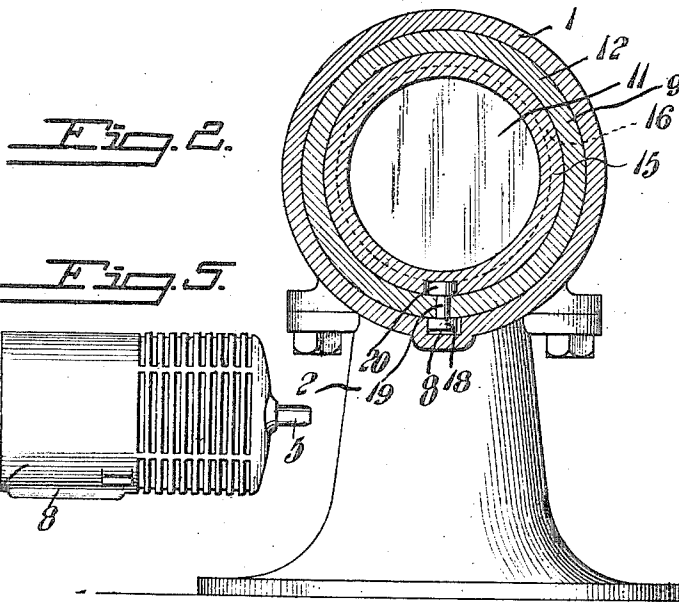


E. J. BROWN.
AIR COMPRESSOR.
APPLICATION FILED MAR. 18, 1916.

1,232,202.

Patented July 3, 1917.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

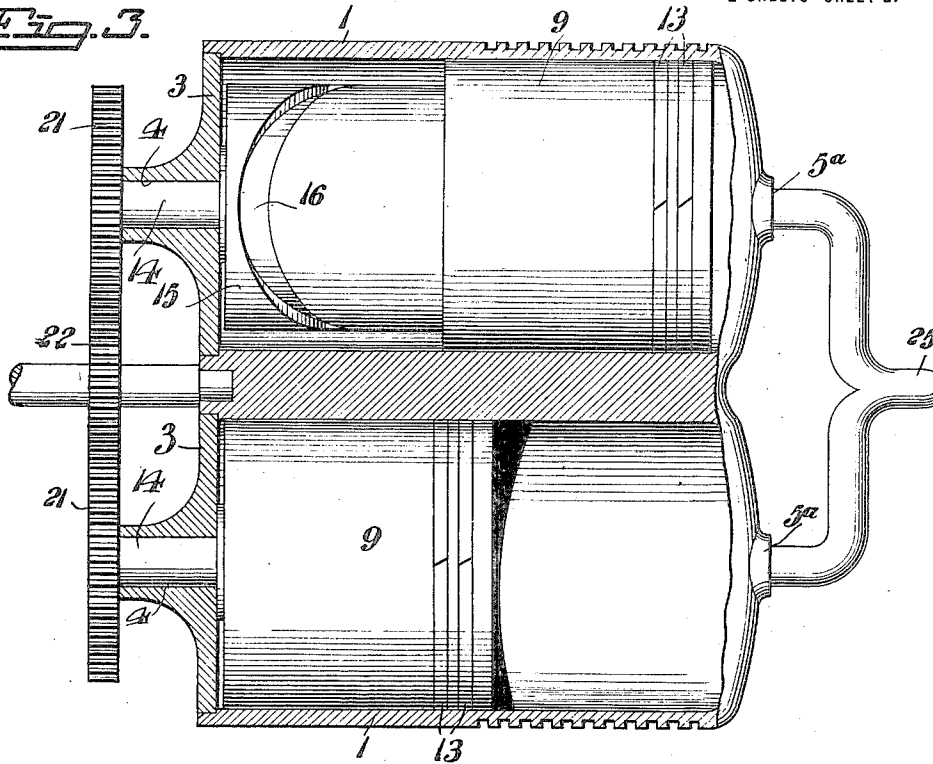
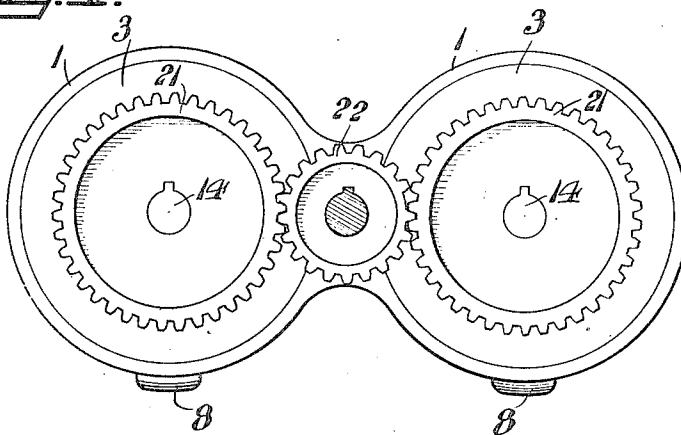


Fig. 4.



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UNITED STATES PATENT OFFICE.

EMMETT J. BROWN, OF TERRE HAUTE, INDIANA.

AIR-COMPRESSOR.

1,232,202.

Specification of Letters Patent.

Patented July 3, 1917.

Application filed March 18, 1916. Serial No. 85,151.

To all whom it may concern:

Be it known that I, EMMETT J. BROWN, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented new and useful Improvements in Air-Compressors, of which the following is a specification.

This invention is an improved air compressing pump especially adapted for use in inflating automobile tires, filling storage tanks, and for other analogous uses, the object of the invention being to provide an improved air compressor of this kind which is extremely cheap and simple, in which only one bearing is required for the shaft, and which is not likely to get out of order.

The invention consists in the features of construction, combination, and arrangement of devices, hereinafter described and claimed.

In the accompanying drawings:—

Figure 1 is a vertical longitudinal sectional view of an air compressing pump constructed and arranged in accordance with my invention.

Fig. 2 is a transverse sectional view of the same.

Fig. 3 is a plan, partly in section, of a modified form of my air compressing pump in which two cylinders are provided.

Fig. 4 is a rear elevation of the same, partly in section.

Fig. 5 is a detailed elevation of the cylinder of the form of the invention shown in Figs. 1 and 2.

In the embodiment of my invention, I provide a cylinder 1 which is mounted and balanced on a supporting standard 2 which is here shown as a hollow casting. The cylinder is provided at one end with a removable head 3, said head having a centrally arranged bearing 4. At the opposite end of the cylinder is an outlet nipple 5 for the attachment of a suitable hose thereto, the said nipple being provided with a check valve 6. On one side and spaced between its ends, the cylinder is provided with an air inlet port 7. The cylinder is also provided in one side with a guide groove 8 which is longitudinally arranged and extends a suitable distance from the head 3.

A piston 9 is arranged for reciprocating movement in the cylinder and is here shown as forming a hollow cylinder open at one end as at 10, said piston comprising a head 11 and a cylindrical wall 12 which extends

from one side of said head. Packing rings 13 of suitable construction are arranged in suitable annular grooves with which the piston is provided.

A shaft 14 is mounted for rotation in the bearing 4 and is provided at its inner end with a cylindrical and concentrically arranged cam 15, which is provided with a cam groove 16 which extends entirely around the same, in its outer side and nearly from end to end thereof. A guide element 18, which is here shown as a head, is arranged for reciprocating movement in the guide groove 8 and is provided with a stem 19 which extends through an opening in one side of the cylindrical wall of the piston and enters the cam groove 16. On the said inner end of the stem is a roller 20 which is arranged to revolve thereon and which operates in the cam groove.

The guide 18 coacts with the guide groove 8 to permit reciprocating movement of the piston and prevent the latter from turning. When the shaft 14 is rotated by any suitable means, the cam 15 is rotated and the element 20 and cam groove 16 cause reciprocating movement to be imparted to the piston as will be understood. At each outward movement, the piston closes the port 7, compresses air and forces the compressed air through the nipple 5 and past the valve 6. At each instroke, and while the port 7 is closed by the piston, a partial vacuum is formed in the cylinder and as the piston moves past the port 7, air is drawn into the piston through said port to be compressed at the next outstroke of the piston as will be understood.

It will be observed that only one bearing is required for the shaft and that the construction of the air compressing pump is extremely simple so that the same can be manufactured at slight cost. Moreover the pump can be operated at high speed.

In the modified form of my invention shown in Fig. 3, two cylinders, pistons, and cams are provided and each cam shaft has a spur gear 21, said spur gears engaging a driving pinion 22 which is arranged between them. Hence the pistons are simultaneously operated. The spur gears are so fixed to the shafts that the pistons are oppositely arranged so that one makes a compressing stroke while the other makes an intake or vacuum creating stroke as will be understood. The nipples 5^a are each provided

with a check valve and are connected to a common discharge nipple 25.

Having described the invention, what is claimed is:

5 The herein described air compressor comprising a cylinder having a longitudinal guide-way in its wall and provided at one end with a head, in combination with a piston arranged in the cylinder and having a
10 longitudinal bore open at the end next said head, a shaft mounted in a bearing in said head, a cylindrical cam on said shaft and arranged to revolve in the bore of said piston, said cam having a cam groove extending

entirely around the same and nearly from 15
end to end thereof, a guide element arranged for reciprocating movement in the guide groove of the cylinder and having a stem extending radially through one side of the cylindrical piston and a roll on the inner 20
end of the stem arranged to revolve thereon and engage in the cam groove of said cam.

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

EMMETT J. BROWN.

Witnesses:

EDWARD P. BROWN,
FRED L. BLACK.