

No. 693,434.

Patented Feb. 18, 1902.

F. W. PARSONS.
COMPRESSOR.

(Application filed Mar. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

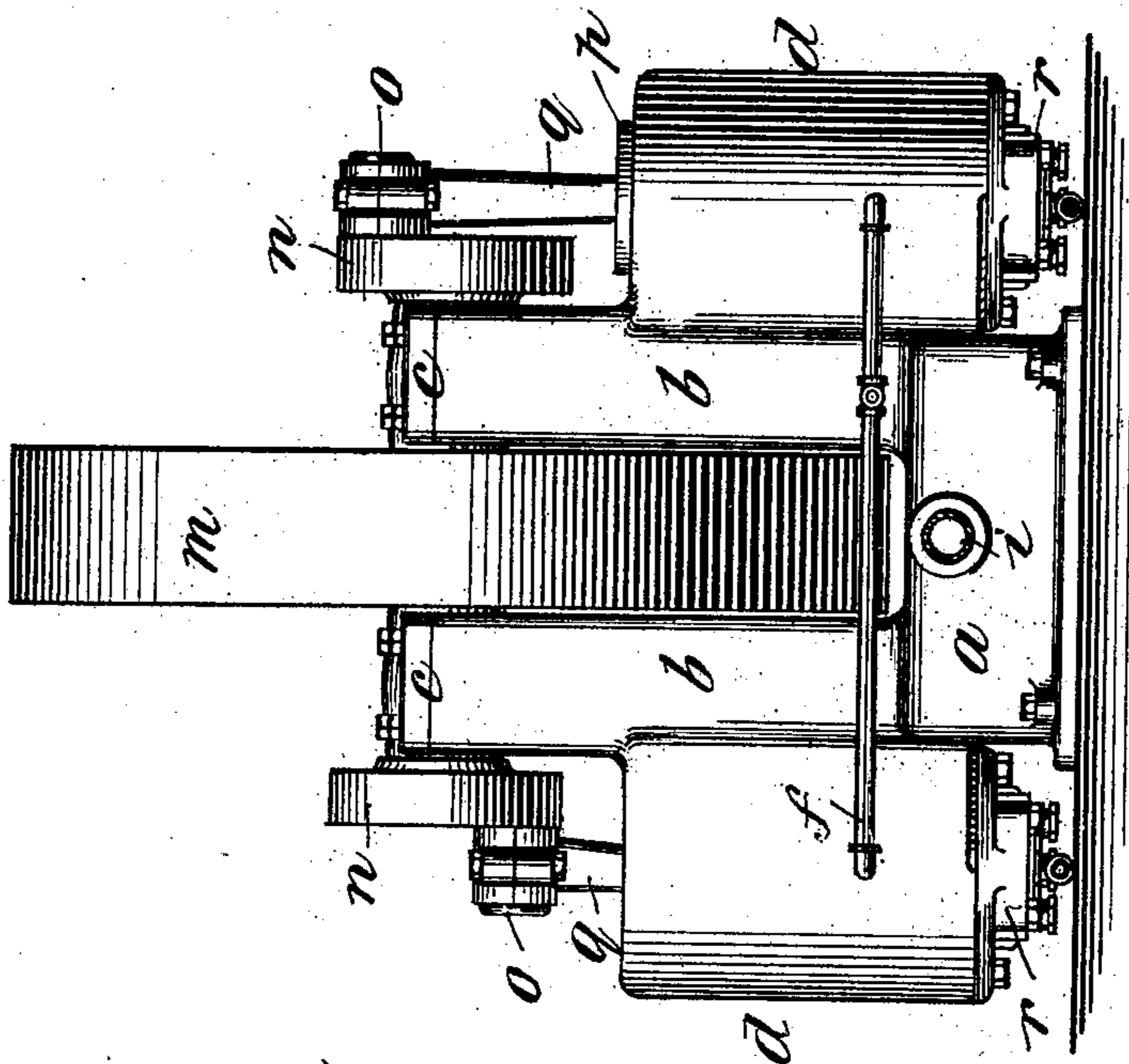
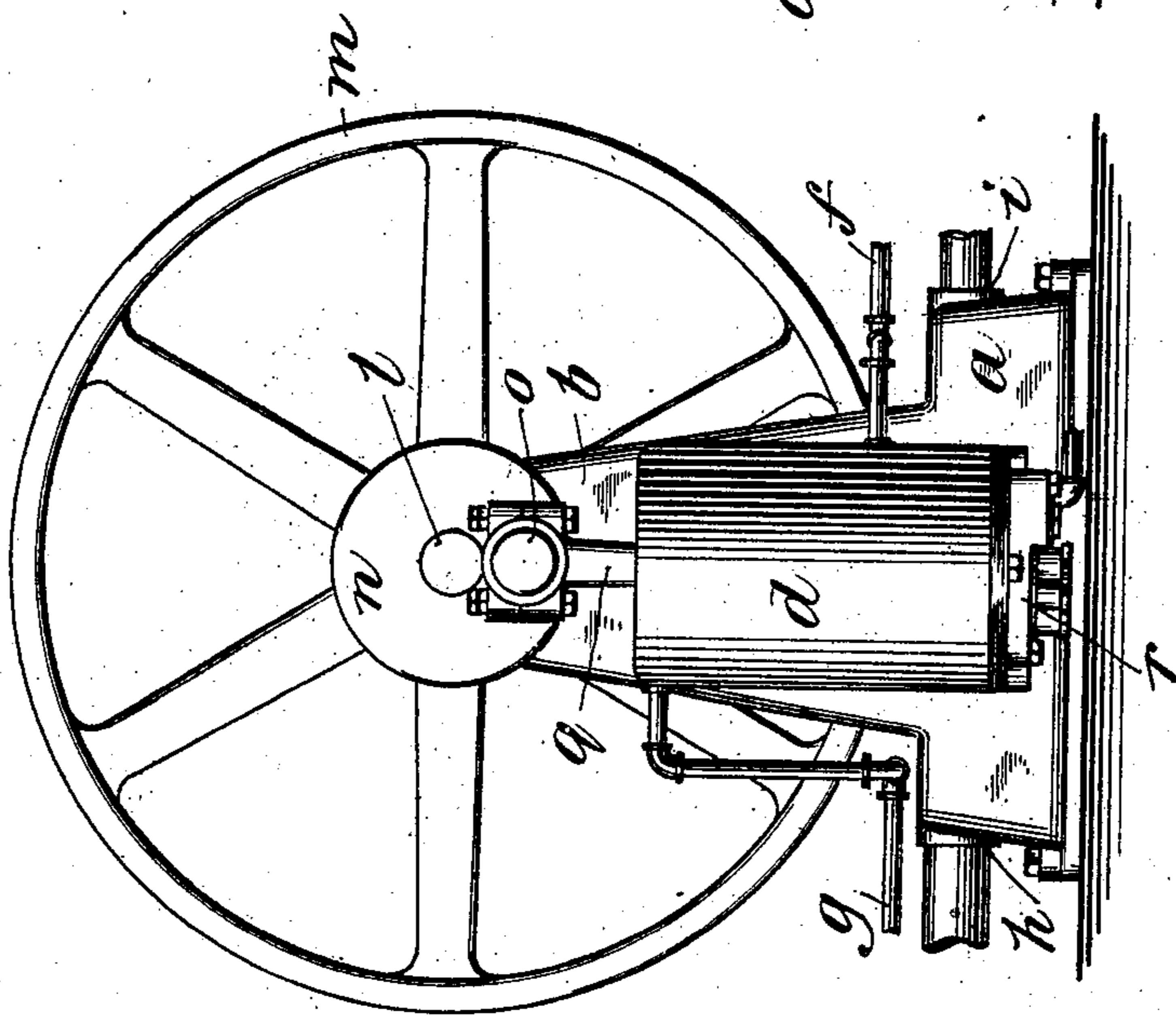


Fig. 1.



WITNESSES:

Harry A. Goss.
J. W. Bryce

INVENTOR

Frederick W. Parsons

BY

D. Howard Hayworth

HIS ATTORNEY

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Fig. 4.

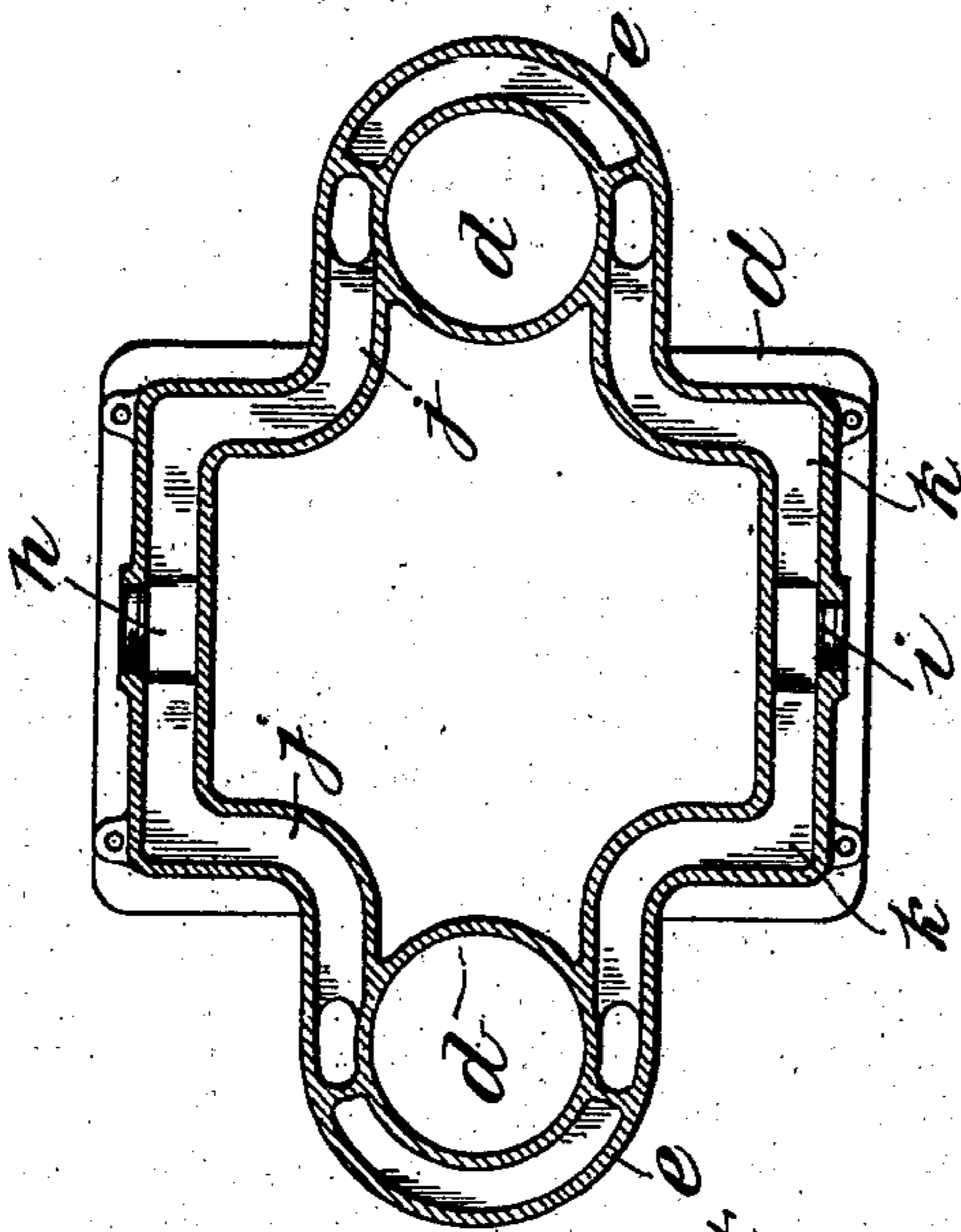
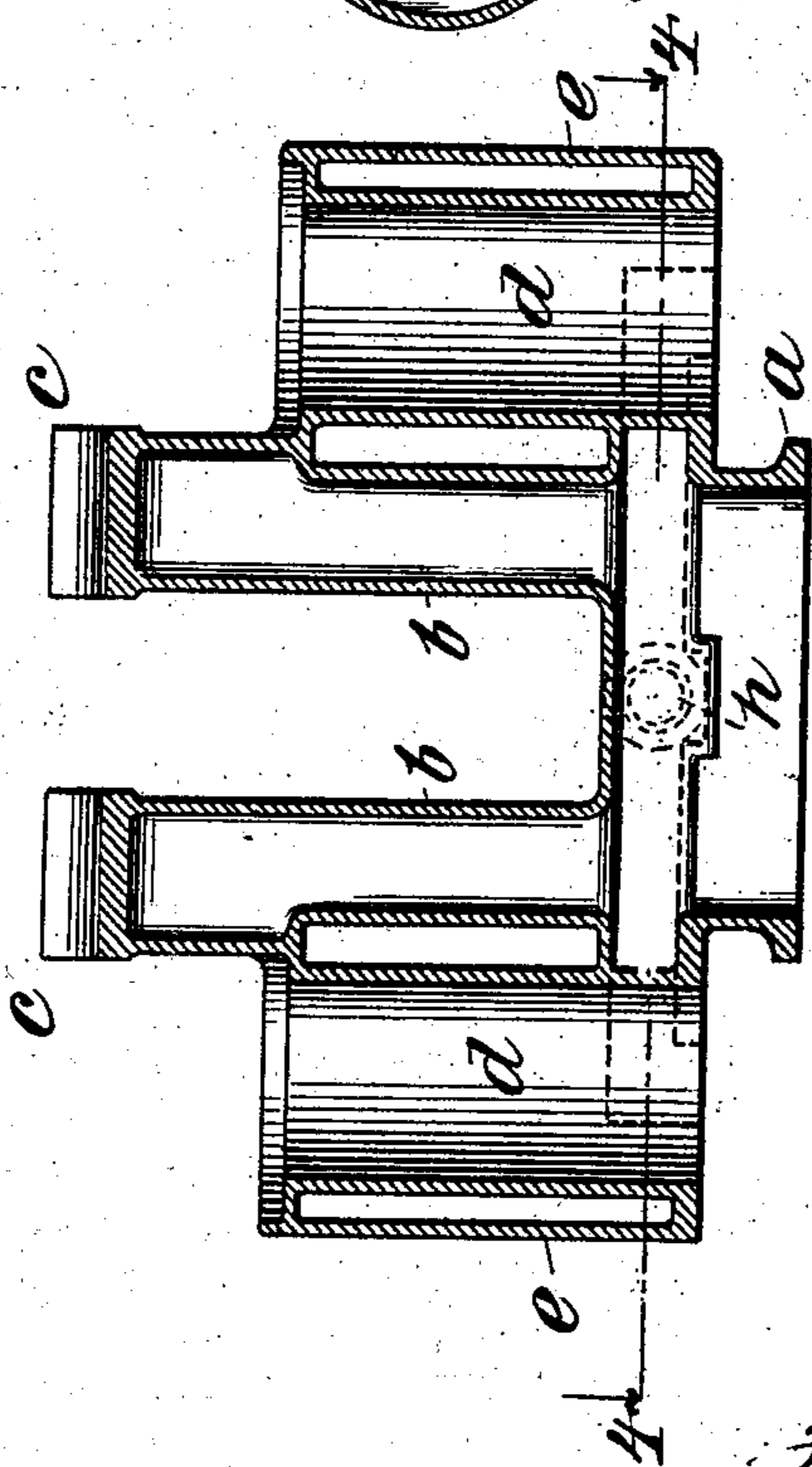


Fig. 3.



WITNESSES:
Harry Goss
J. Wares Bryce

INVENTOR
Frederick W. Parsons
BY
W. Howard Hayworth
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

FREDERICK W. PARSONS, OF ELMIRA, NEW YORK, ASSIGNOR TO RAND DRILL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 693,434, dated February 18, 1902.

Application filed March 11, 1901. Serial No. 50,589. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. PARSONS, a citizen of the United States of America, and a resident of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Compressors, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to compressors, and particularly to air or other fluid compressors of the belt-driven type; and it consists in the provision of a base having two standards uprising therefrom, said standards having bearings at their upper ends, and two vertical cylinders arranged one on the outside of each of said standards, the base, standards, and cylinders being all comprised in one integral casting; and my invention further consists in certain details of construction and combination of parts, as will hereinafter be more fully set forth.

The objects of my invention are to simplify the construction of a compressor of this type, to procure and maintain correct alinement between the two cylinders and between the cylinders and the shaft-bearings, to avoid the possibility of leaky joints in the cylinder-jackets and in the passages between the cylinders, and to provide a structure which is inexpensive to manufacture and easy to assemble.

I will now proceed to describe a compressor embodying my invention and will then point out the novel features in the claim.

In the drawings, Figure 1 is a side elevation of a compressor embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a central transverse sectional elevation of a casting including the base, standards, and cylinders of the compressor. Fig. 4 is a horizontal sectional view of the parts shown in Fig. 3, the plane of section being taken upon the line 4 4 of Fig. 3.

In the embodiment of my invention illustrated in the drawings the main supporting-frame is shown as a single integral casting, which comprises a base *a*, two standards *b* uprising therefrom and having bearings *c* at their upper ends, and two vertical cylinders *d*, arranged one on the outside of each of the

said standards. By reason of this construction it is possible in the process of manufacture to bore both of the cylinders *d*, as well as to bore the shaft-bearings, all at one chucking. The advantage of this is not only in the great saving of time and expense, but also in that it assures correct alinement between the two cylinders and between the cylinders and the shaft-bearings. It further renders it impossible for the parts to become disarranged, and hence for the correct alinement to be destroyed.

The cylinders *d* are jacketed, as at *e*, and the said jackets are preferably formed as a portion of the same integral casting heretofore described. Inlet-pipes *f* are provided, which may conduct a cooling fluid, as water, into the said jackets, and discharge-pipes *g* will convey the same away, and thereby cause a circulation of the cooling fluid in the desired and well-known manner. The said main casting is provided with an inlet-port *h* and an outlet-port *i*. Suitable pipes may connect with the said ports and convey the fluid to be compressed toward the compressor and the compressed fluid as delivered away therefrom. Passages *j*, provided in the casting, lead from the inlet-port *h* to the ends of both of the cylinders, and passages *k*, also provided in the casting, lead from the ends of both of the cylinders to the outlet-port *i*.

The provision of the cylinder-jackets as integral with the casting including the cylinders and the provision of the said passages *j j k k* in the said casting obviates the possibility of leaky joints in the cylinder-jackets or in pipe or other connections, which would necessarily be employed were the inlet and discharge passages arranged otherwise than in the casting, as herein.

A drive-shaft *l* is mounted in the bearings *c* of the standards *b*, and a belt fly-wheel *m* is secured to the said shaft and arranged between the standards. Crank-disks *n* are arranged on opposite ends of the drive-shaft *l* and are arranged on the outside of each of the said standards. Each crank-disk is provided with an eccentric crank-pin *o*, the said pins being preferably arranged at points substantially diametrically opposite to each other with respect to the shaft upon which their

disks are mounted. Suitable pistons *p* are provided, one in each cylinder, and the said pistons are connected to and operated by the said crank-pins by connecting-rods *q*.

5 The lower ends of the cylinders *d* are closed by suitable heads *r*, and suitable suction and check valves may be provided therein in a manner common and well known. It will be noticed, however, that by my construction
10 and arrangement of parts I am enabled to remove and replace the said heads by merely removing the holding-bolts thereof without disturbing any of the other parts of the compressor, and, by reason of the fact that the
15 inlet and discharge passages are in the frame-casting, without breaking any pipe joints or connections. In this manner ready access may be obtained to the valves contained in the cylinder-heads and to the lower end of
20 the cylinders. To remove all the other parts, it is merely necessary to take off the caps of the bearings *c*, and the shaft, crank-disks, connecting-rods, pistons, and fly-wheel may all be removed together.

25 It is obvious that modifications of the con-

struction and combination of parts herein set forth may be resorted to within the spirit and scope of my invention.

What I claim is—

The combination in a compressor with a 30 base, two standards uprising therefrom and having bearings at their upper ends, and two vertical cylinders arranged one on the outside of each of the said standards, the said cylinders, standards, and base being in one 35 integral casting, of a shaft mounted in the said standard-bearings, a fly-wheel secured upon the shaft and arranged between the said bearings, crank-pins carried by the shaft and arranged one on the outside of each of 40 the said standards, pistons in the said cylinders, connecting-rods connecting the said crank-pins with the said pistons, and an inlet and outlet for the fluid acted upon in said cylinders.

FREDERICK W. PARSONS.

Witnesses:

MATHER W. SHERWOOD,
ANNA L. ALLEN.