

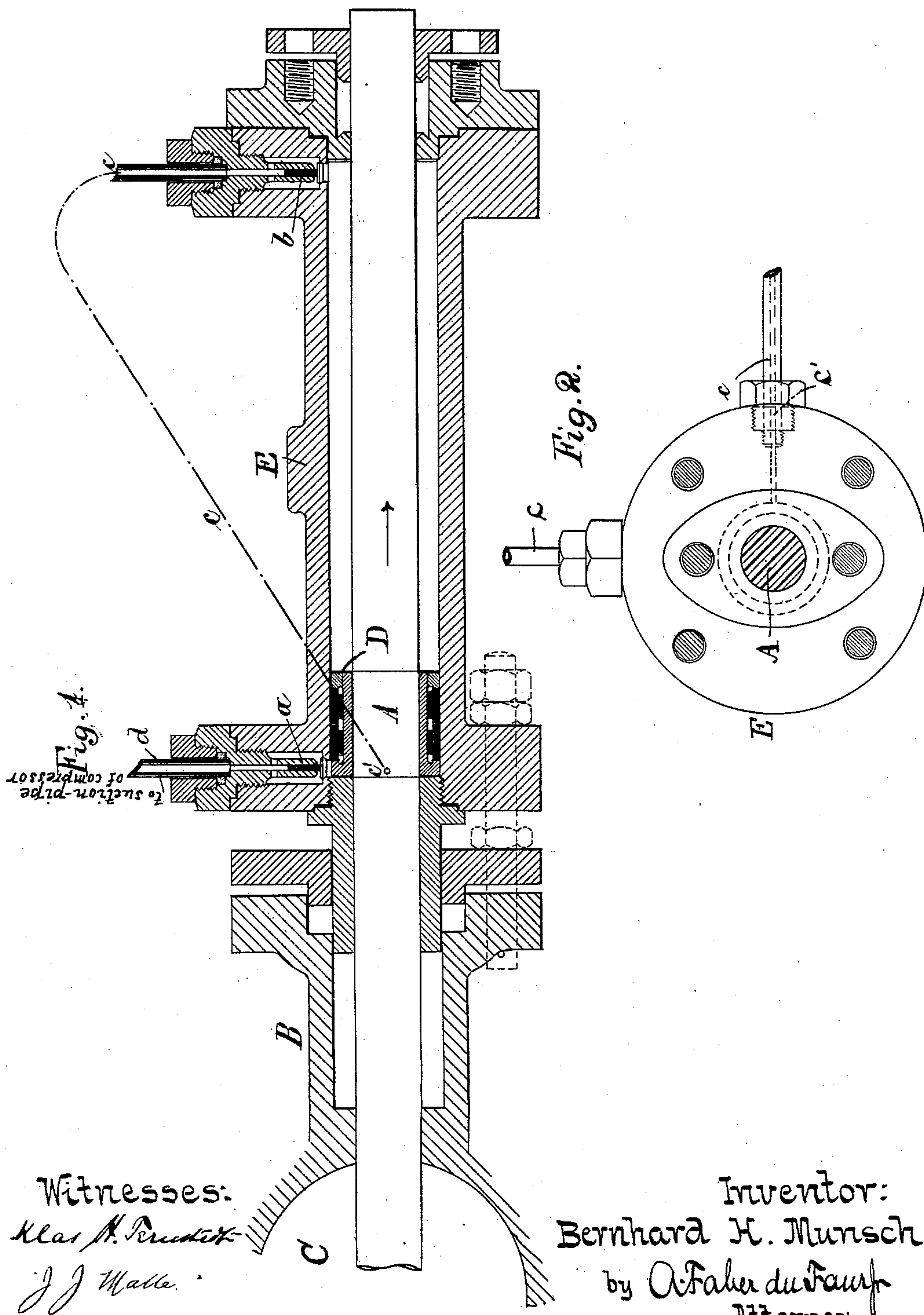
(No Model.)

B. H. MUNSCH.

GAS COMPRESSOR FOR REFRIGERATING MACHINES.

No. 482,876.

Patented Sept. 20, 1892.



# UNITED STATES PATENT OFFICE.

BERNHARD HEINRICH MUNSCH, OF HASTEDT, NEAR BREMEN, ASSIGNOR  
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## GAS-COMPRESSOR FOR REFRIGERATING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 482,876, dated September 20, 1892.

Application filed May 19, 1892. Serial No. 433,514. (No model.) Patented in Germany September 1, 1891, No. 62,318.

*To all whom it may concern:*

Be it known that I, BERNHARD HEINRICH MUNSCH, a subject of the King of Prussia, residing at Hastedt, near Bremen, Empire of Germany, have invented new and useful Improvements in Gas-Compressors for Refrigerating-Machines, (for which Letters Patent have been granted to me in Germany, dated September 1, 1891, No. 62,318,) of which the following is a specification.

My invention has reference to improvements in refrigerating-machines, and especially to devices for returning to the system the gases escaping from the cylinder of the compressor.

The novel features of my invention are fully pointed out in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal section, and Fig. 2 a sectional end view, of a compressor-cylinder provided with my invention.

Similar letters indicate corresponding parts throughout both views.

In the drawings, the letter C designates the cylinder of the compressor, A the piston-rod, and B the stuffing-box at the end of the cylinder.

E designates the cylinder of a small pump arranged in line with and secured to the cylinder C.

The piston-rod A of the compressor is extended and carries a small piston D, fitted to the bore of the pump-cylinder E.

a and b are valves located at opposite ends of the cylinder E. The port controlled by valve a is connected with the induction-pipe (not shown) of the air-compressor by a pipe d, while the port controlled by valve b is connected by a pipe c with the opposite end of the pump-cylinder, said pipe opening into the cylinder at c'.

It is evident that the gas escaping from the cylinder of the compressor at the stuffing-

box B is received by the pump-cylinder E as the piston-rod moves in the direction of the arrow indicated thereon, and on the return stroke it is forced into the induction-pipe through pipe d. If leakage occurs about the piston D, the gas which passes the same is forced through the pipe c to the opposite side of the piston, and from thence to the induction-pipe through valve a and pipe d.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a refrigerating-machine, the combination of the compressor, a pump-cylinder arranged in line with the compressor-cylinder to receive the gases escaping about the stuffing-box of the same, a piston formed on an extension of the piston-rod of the compressor, a port opening into the end of the pump-cylinder toward the compressor-cylinder and connected with the induction-pipe of the latter, and a valve a, controlling said port, substantially as described.

2. In a refrigerating-machine, the combination of the compressor, a pump-cylinder arranged in line with the compressor to receive the gases escaping about the stuffing-box of the same, a piston formed on an extension of the piston-rod of the compressor, ports located at opposite ends of the pump-cylinder, the one being connected with the induction-pipe of the compressor and the other with the pump-cylinder at the opposite end, and valves a b, controlling said ports, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BERNHARD HEINRICH MUNSCH.

Witnesses:

JOHN H. SCHUABEL,  
W. G. GERLACH.