No. 749,247. PATENTED JAN. 12, 1904.

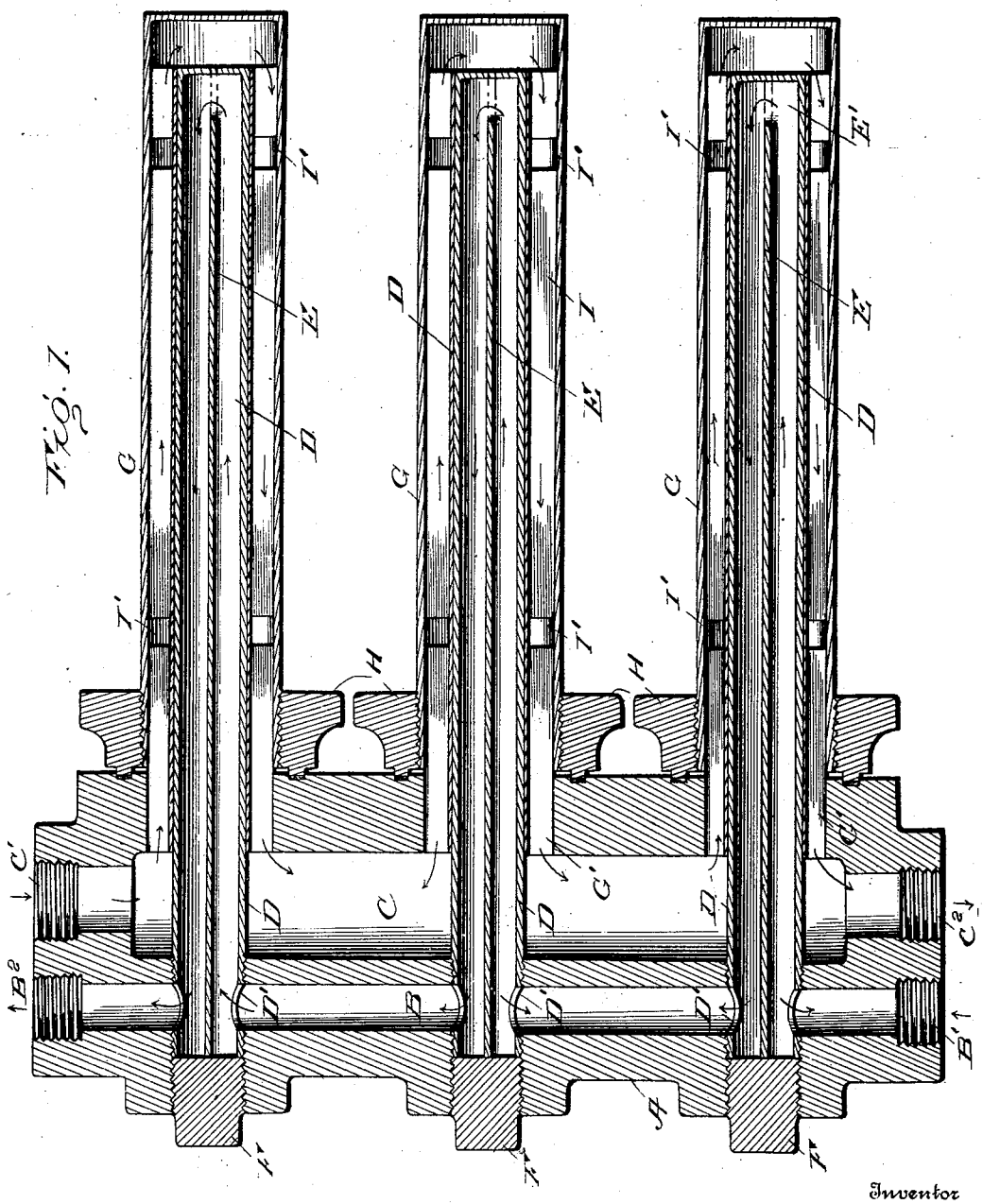
R. WHITAKER.

CONDENSING COIL.

APPLICATION FILED MAR. 31, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

H. A. Williams

Jas. A. Richmond

Inventor

Richard Whitaker.

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NO MODEL. 2 SHEETS—SHEET 2.

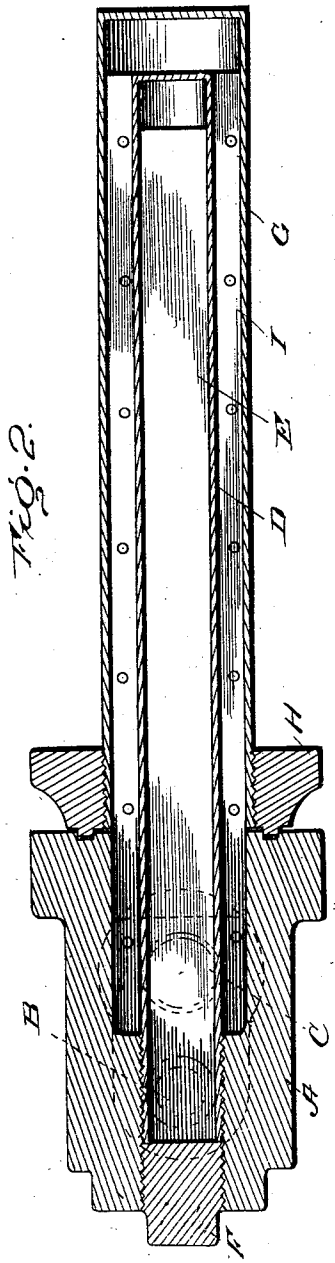

Fig. 2.

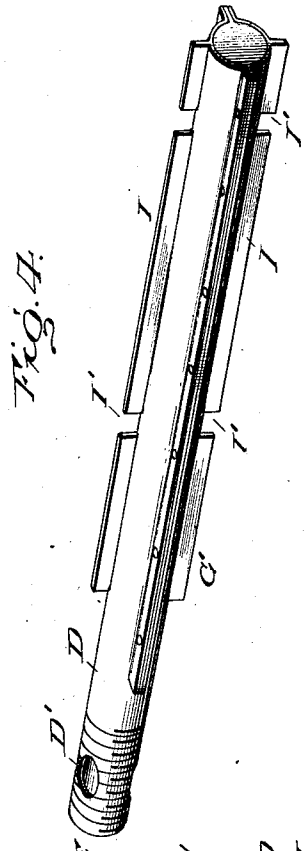

Fig. 4.

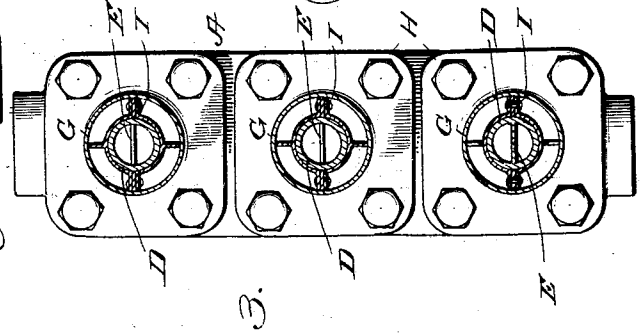

Fig. 3.

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No. 749,247. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

RICHARD WHITAKER, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNOR OF TWO-THIRDS TO ROBERT W. JOHNSON AND JAMES W. JOHNSON, OF NEW BRUNSWICK, NEW JERSEY.

CONDENSING-COIL.

SPECIFICATION forming part of Letters Patent No. 749,247, dated January 12, 1904.

Application filed March 31, 1903. Serial No. 150,390. (No model.)

To all whom it may concern:

Be it known that I, RICHARD WHITAKER, a citizen of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Condensing-Coils, of which the following is a specification.

My invention relates to a condensing-coil for use in connection with refrigerating machinery for liquefying the gas passed thence-through; and an object is to provide a simple, efficient, and economical apparatus of the character stated capable of ready installation and cleaning and in which provision is made for removing any one or more pipes without disturbing the other or others.

A further object is to provide a condensing-coil so constructed and arranged that the water shall not absorb heat from the atmosphere.

The nature, characteristic features, and scope of the invention will be more clearly understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and wherein—

Figure 1 is a vertical sectional view of a condensing-coil embodying features of the invention. Fig. 2 is a sectional view through the header, gland, and one of the double pipes. Fig. 3 is a transverse sectional view looking toward the left of Fig. 1. Fig. 4 is a perspective view of one of the baffles.

Referring to the drawings, A represents a manifold or header which is provided with two main cored passages B and C, running lengthwise thereof. The passage B is the water-passage and is provided with a suitable inlet B′ and outlet B^2, and the passage C constitutes the gas-passage, whereof the gas enters at C′ and is discharged in the form of liquid at C^2. The manifold or header A is also cored at intervals transversely and capped for the accommodation of the water-tube D, said transverse passage extending clear through from front to back of the header. Openings D′ are provided in the pipes D, which openings register with the passage B, and in order to establish a complete circulation of water through the water tubes or pipes thin plates E are arranged interior of said pipes and substantially divide them into halves, a space E′ being left at the far end of the pipe for the passage of the water. Plugs F are disposed in the manifold to close the open ends of the water-pipes and may be readily removed when it is desired to clean said pipes. Inclosing each water-pipe is an outer or gas pipe G, closed at one end and unsupported and having its other end screw-threaded and received in a gland H, secured to the header. The pipes G communicate with the gas-passage C via the annular passages G′ and are provided with baffles I, which extend from the far wall of the cored or gas passages C to near the closed ends of the gas-pipes G and may or may not have the intervening spaces I. This construction and arrangement of pipes having one end unsupported and unrestrained permits of a free expansion and contraction of both the gas and water pipes and prevents the latter from absorbing the heat of the atmosphere, which is generally at a higher temperature than the condensing-water itself. On the other hand, the hot gas being in the outer pipe may part with some of its heat to the atmosphere, especially at the top, where the gas is hottest.

Other characteristic features and advantages of the present construction are that it obviates the use of rubber joints, permits the water-pipes to be cleaned at any time by merely removing the plugs at the back and blowing out dirt accumulations, if there are any. It is also manifest that the header can be made any number of pipes high and the pipes any desired length.

It will be obvious to those skilled in the art to which the invention appertains that modifications may be made in details without departing from the spirit and scope of the invention. Hence I do not limit myself to the precise construction and arrangement of parts herein described, and illustrated in the accompanying drawings; but,

Having described the nature and objects of

the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a condensing-coil, the combination of a header having a main water-passage and a main gas-passage extending lengthwise thereof and other passages extending transversely thereof, plugs closing said transverse passages at one side of the header, water-pipes penetrating said transverse passages on the opposite side, said pipes having openings alined with the water-passage, and baffle-plates for effecting a circulation of water from end to end and back again in each of the pipes, and gas-pipes closed at one end and inclosing the water-pipes and having baffle-plates therein and communication with the gas-passage, said gas-pipes being unsupported at their closed end, substantially as described.

2. In a condensing-coil, the combination of a header having a main water-passage and a main gas-passage extending lengthwise thereof and other passages extending transversely thereof, water-pipes penetrating said transverse passages and closed at both ends and having openings alined with the water-passage, plates or diaphragms interposed between said openings and extending to near the opposite end of the pipes for effecting a complete circulation of water, gas-pipes closed at one end inclosing said water-pipes and having communication with the gas-passage, and baffles extending from the gas-passage to near the closed ends of the gas-pipes, substantially as described.

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

RICHARD WHITAKER.

Witnesses:

F. B. KILMER,

A. R. LEWIS.