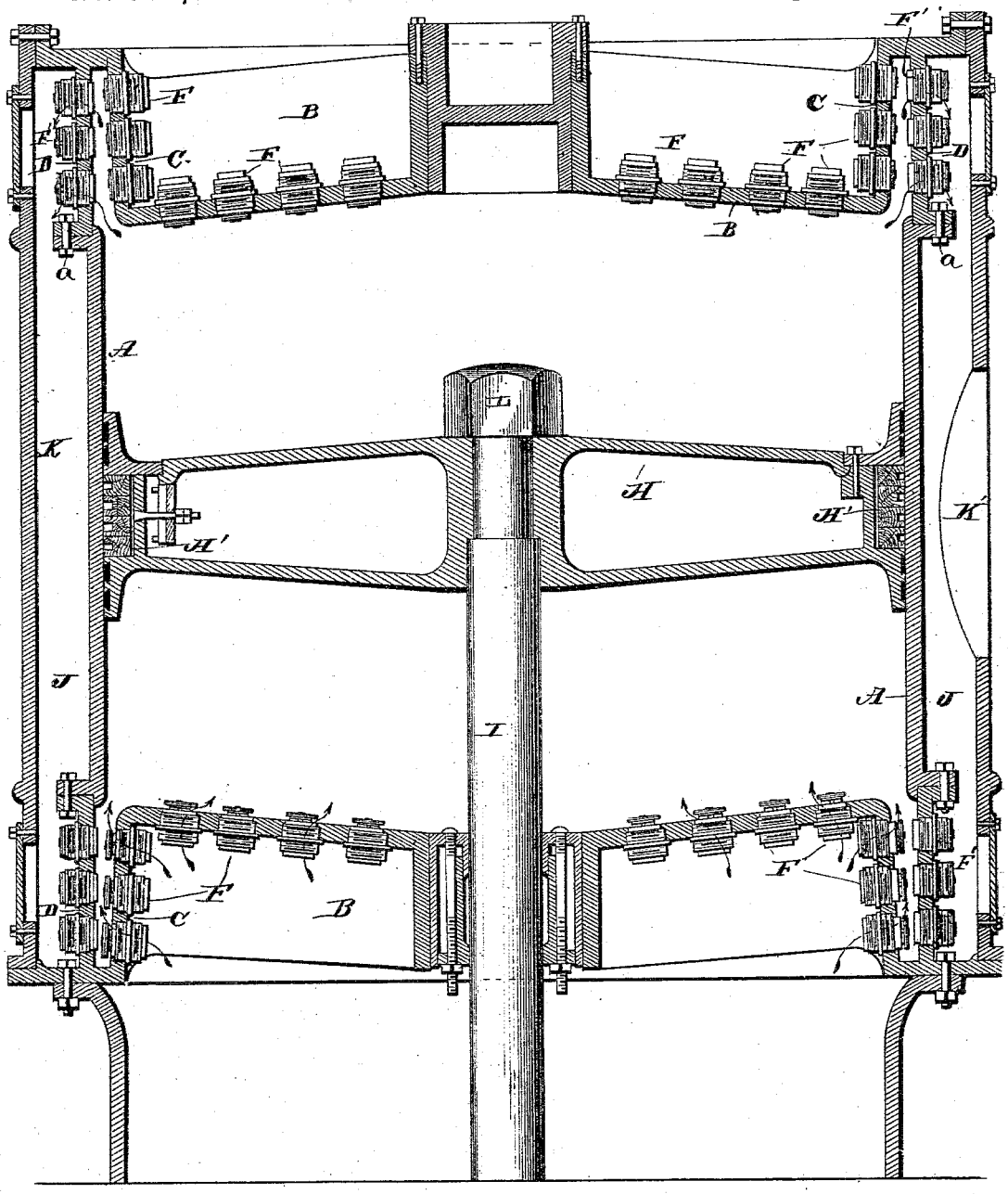
(No Model.)

P. L. WEIMER.

PISTON PACKING FOR BLOWING ENGINES.

No. 301,541. Patented July 8, 1884.



WITNESSES

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PETER L. WEIMER, OF LEBANON, PENNSYLVANIA, ASSIGNOR TO THE WEIMER MACHINE WORKS COMPANY, OF SAME PLACE.

PISTON-PACKING FOR BLOWING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 301,541, dated July 8, 1884.

Application filed September 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, PETER L. WEIMER, of Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Piston-Packings for Blowing-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in piston-packing for blowing-engines, the object of the same being to provide simple and economical packing that can be easily applied, and one that dispenses with the necessity of lubricating the parts with oil; and with this end in view my invention consists in parts and combinations of parts, as will be more fully described, and pointed out in the claims.

The drawing shows a longitudinal section of a cylinder and piston, the latter being provided with my improved packing.

To enable others to thoroughly understand my invention, I will describe it in connection with the engine shown in the drawing; but I would have it understood that it is equally applicable to any and all styles of blowing-engines.

A represents a cylinder, of any desired size, the heads B of which are cast with the double flanges C and D, sufficient space, however, being left between the flanges for the free play of the valves F and for the passage of the air. The inner head is provided centrally with a stuffing-box for the passage of the piston-rod, while the outer head is provided with a flanged opening, in which the box E, which will be described further on, is situated. The head and flange C are provided at suitable intervals apart throughout their entire surfaces with the inlet-valves F, which latter are screwed directly into the said heads and flanges, and are of such size and placed sufficiently close together to obtain a very large aggregate area of opening for the air to pass through, and thus permit the cylinder to fill instantly when the engine is working at its highest speed. The flanges C are situated at right or practically right angles with the heads of the cylinder, and the flanges D, which are formed integral with the heads, are also situated at right angles to the heads, and parallel or practically parallel with the flanges C. These flanges terminate slightly inside the heads, and are secured to the cylinder by the bolts *a*, and are provided at suitable intervals apart throughout their entire surfaces with the outlet-valves F′, which latter are screwed into the flanges.

The piston H is provided with the wood packing H′, held against the cylinder by springs, for the purpose of preventing any air from escaping past it. This wood packing is provided at suitable intervals apart with small holes, which latter are filled with a composition of principally oils and plumbago.

The piston is constructed with a very broad bearing-surface, to reduce the wear, and the portions thereof on opposite sides of the wood packing are provided with dovetailed grooves, which are also filled with a mixture of oils and plumbago. This compound of oil and plumbago hardens and presents a plumbago surface to the inner surface of the cylinder, thereby dispensing with the use of any other lubricant. This piston is operated by the rod I, the lower end of which is connected to a crank-shaft or forms a continuation of the steam piston-rod. When the piston is moved in either direction, the air is drawn into the interior of the cylinder. At the completion of the stroke the admission-valves automatically close and prevent the escape of air, and the escape-valves, situated in the flanges D, open and allow the air, as the piston advances, to escape from the cylinder into the annular chamber J, situated between the cylinder and casing K. This casing K is provided with an opening, K′, through which the air is conveyed by a suitable pipe to a furnace or other required point.

I make no claim in this application to the construction of the cylinder, piston, and valves, or to the relative arrangement of said cylinder and valves, but reserve the right to claim the same in pending applications, numbered 111,989, filed November 16, 1883, and 127,346, filed April 18, 1884.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A piston for blowing-engines, provided with peripheral grooves for carrying a lubricating-packing.

2. A piston for blowing-engines, provided with wooden packing-rings having holes therein for carrying a lubricating-packing.

3. A piston for blowing-engines, provided with dovetail peripheral grooves, and a mixture of oil and plumbago inserted in said grooves and serving as a lubricator and packing.

4. A piston for blowing-engines, provided with wooden packing-rings and with peripheral grooves, the latter carrying a lubricating-packing.

5. A piston for blowing-engines, provided with wooden packing-rings having holes therein, and with grooves formed on the periphery of the piston on opposite sides of the wooden rings, the said holes and grooves being filled with a lubricating-packing, substantially as set forth.

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

PETER L. WEIMER.

Witnesses:
W. MORRIS WEIDMAN,
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