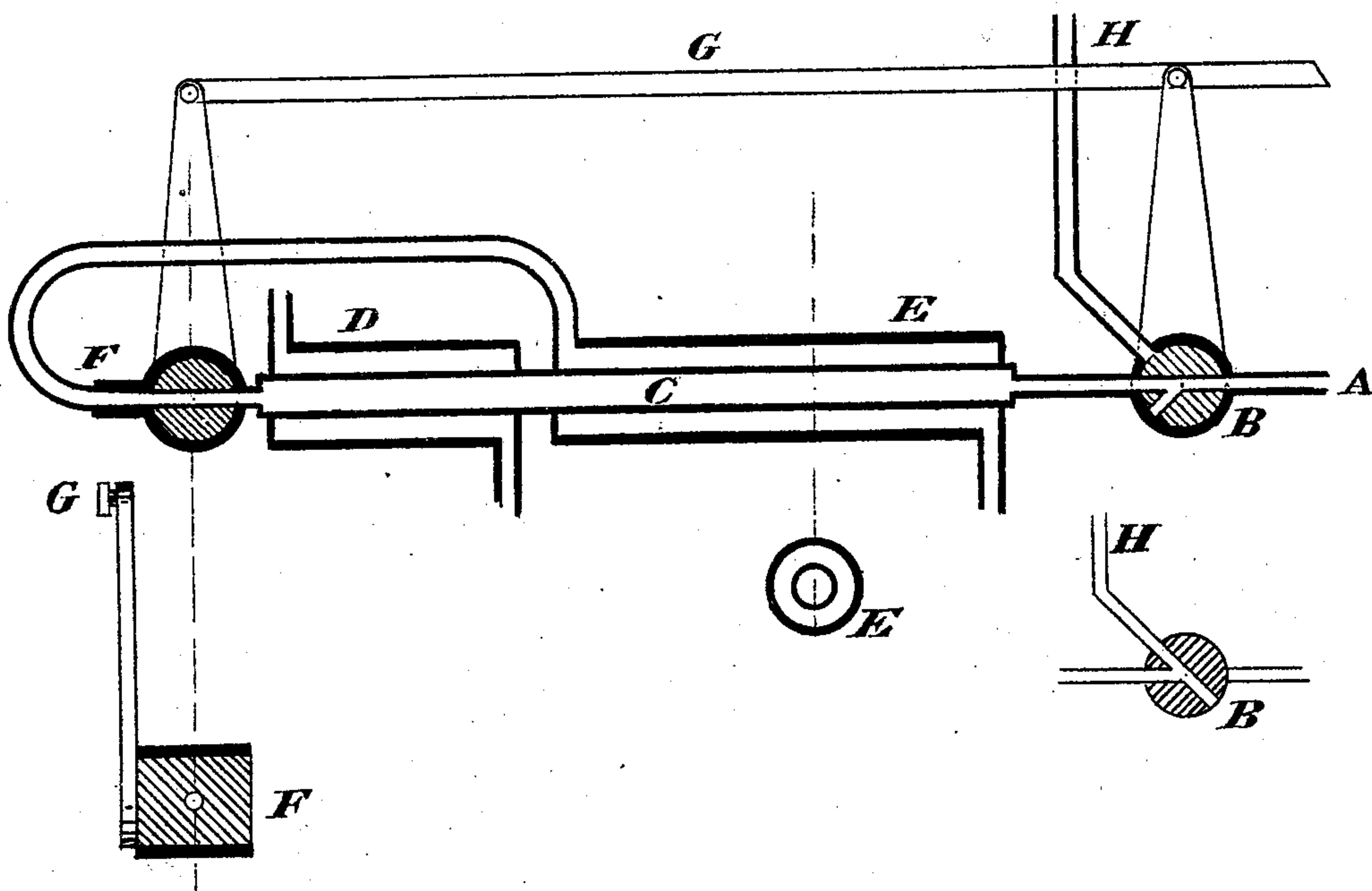


JAMES S. BALDWIN.

Improvement in Engines operated by Heated Liquids.

No. 121,481.

Patented Dec. 5, 1871.



Witnesses.

Wm. B. Lindsey

Chas. H. Skinner

Inventor

James S. Baldwin

UNITED STATES PATENT OFFICE.

JAMES S. BALDWIN, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN ENGINES OPERATED BY HEATED LIQUIDS.

Specification forming part of Letters Patent No. 121,481, dated December 5, 1871.

To all whom it may concern:

Be it known that I, JAMES S. BALDWIN, of Newark, Essex county, New Jersey, have invented an Apparatus for Controlling the Temperature of Liquids for the Production of Power, of which the following is a specification:

My invention relates to an apparatus which will allow successive volumes of suitable liquid to be inclosed in a heated vessel in such a manner that its expansion by heat can only take place through a specific channel, where its power may be utilized. There are many liquids that may be used in this apparatus, but, for brevity, I shall speak of oil as a representative liquid. Linseed-oil increases in volume .08 between 32° and 212° Fahrenheit.

The oil flows from an elevated tank, an accumulator, or other suitable reservoir, through the pipe A and valve B to the cylindrical vessel C, which is surrounded by the jackets D and E. The egress of the oil is controlled by the valve F, which, with B, is actuated by the rod G, as shown. The jacket D is constantly filled with steam or other heating medium.

If, now, C is filled with hot oil, heated by the process about to be described, a suitable movement of the rod G will simultaneously open B and F, and cold oil entering through A will rapidly force out the hot oil from C into the jacket E, where it will assist in heating the contents of C,

while being itself partially cooled. The motion of G being now reversed, B and D will be simultaneously closed and a passage opened through B to the pipe H, which communicates with any machine where the expansive power of the oil can be utilized. It is obvious that a repetition of these operations will furnish successive volumes of oil under the pressure due to its expansion by heat. The rod G may be moved by hand, or it may have a regular reciprocating movement imparted to it by any suitable machine, the frequency of its movements being determined by actual practice in each case. The liquid which flows from E may be returned by a pump to the source which supplies A, and so used over and over. The pipe A may be of considerable length and may pass through a tank filled with cold water; but as there is nothing new in such a device I need not particularly describe it. It is only necessary that in some suitable manner the liquid shall be supplied cold through the pipe A under sufficient pressure to insure its entry into C.

I claim—

The combination of cylindrical vessel C with the jackets D and E, pipe A, and valves B and F, arranged substantially as set forth, as an apparatus for controlling the temperature of liquids.

Witnesses: JAMES S. BALDWIN.

MORRIS B. LINDSLEY,
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