(No Model.)

J. ABELL.

STEAM ENGINE.

No. 510,561. Patented Dec. 12, 1893.

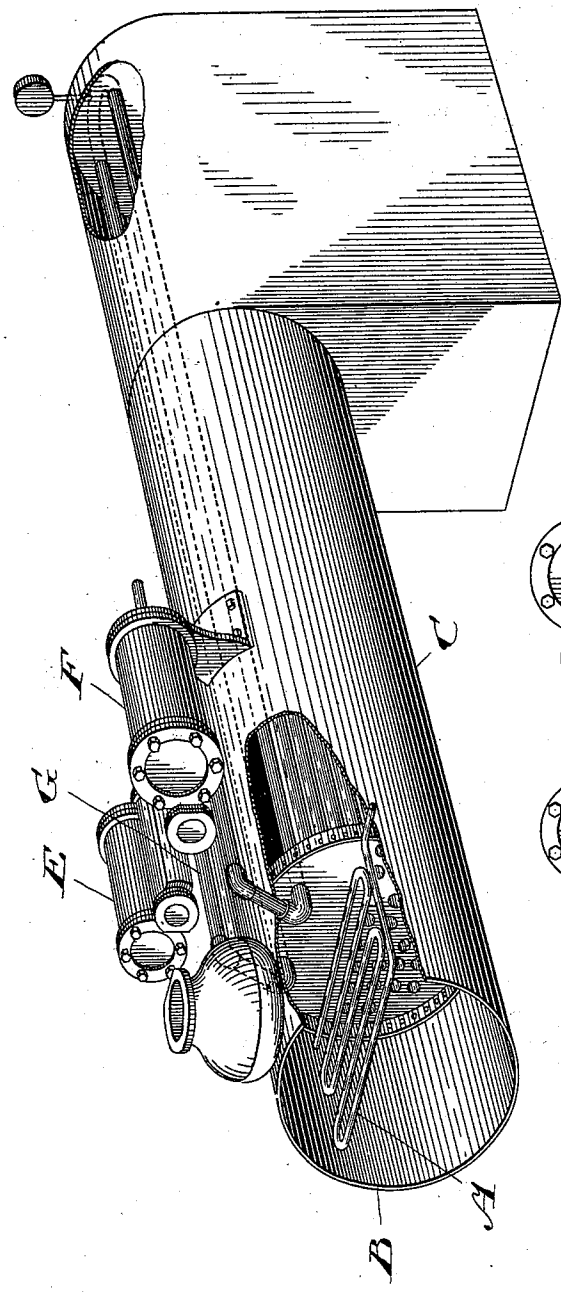

Fig. 1

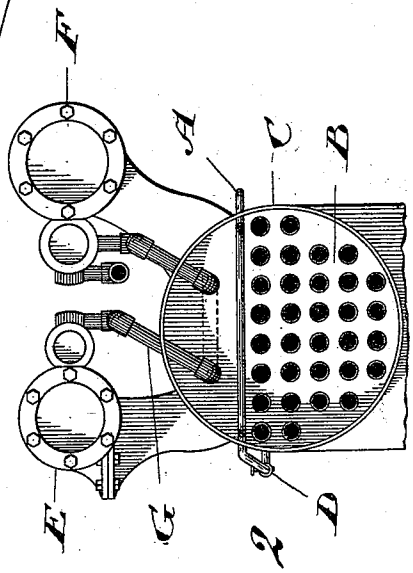

Fig. 2

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ABELL, OF TORONTO, CANADA.

STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 510,561, dated December 12, 1893.

Application filed June 15, 1893. Serial No. 477,744. (No model.)

To all whom it may concern:

Be it known that I, JOHN ABELL, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented a certain new and useful Improvement in Steam-Engines, of which the following is a specification.

The invention relates to an improvement in compound engines and the object of the invention is to provide means by which the steam leaving the first cylinder shall be superheated before it reaches the next cylinder, and it consists in the peculiar construction, arrangement and combinations of parts hereinafter more particularly described and then definitely claimed.

Figure 1, is a perspective view partially in section of a steam boiler provided with my improvements. Fig. 2, is an end view of the same.

In the drawings—A, is a pipe coiled within the smoke box B. This pipe A, leads from the injector or pump, from which the feed water is obtained. The coil shape of the pipe A, holds the water in the smoke-box B, sufficiently long to become thoroughly heated before it can find its way into the interior of the boiler C.

D, is a check valve placed on the pipe A, near its end which enters the boiler C.

E, is the cylinder commonly known as the high pressure cylinder, and F, is the cylinder commonly known as the low pressure cylinder.

G, is a pipe leading from the exhaust port of the cylinder E, down through the steam space of the boiler C. This pipe is preferably carried from the smoke-box end of the boiler to its opposite end, from which it is returned through the boiler and is carried into the steam port of the cylinder F. By this arrangement, I superheat the exhaust steam from the cylinder E, drying and giving fresh life to it before it reaches the cylinder F.

What I claim as my invention is—

1. In a boiler and in combination with high and low pressure cylinders, a pipe running from the first cylinder through the steam space of the boiler, and from the boiler to the second cylinder, whereby the steam is reheated in the steam space in its passage between the two cylinders, substantially as described.

2. In a boiler and in combination with high and low pressure cylinders of a steam engine, a pipe running from the exhaust of the high pressure cylinder to the boiler, through the steam space of said boiler from end to end, and back again through said steam space, and then continuing to the inlet of the second cylinder, whereby the exhaust steam is reheated before being used in the low pressure cylinder, substantially as described.

Toronto, June 2, 1893.

JOHN ABELL.

In presence of—
J. EDW. MAYBEE,
W. G. MCMILLAN.