W. Inglis,

Steam-Engine Attachment,

No. 85,098, Patented Dec. 22, 1868.

Witnesses
Wm. A. Morgan
G. C. Cotton

Fig. 1.

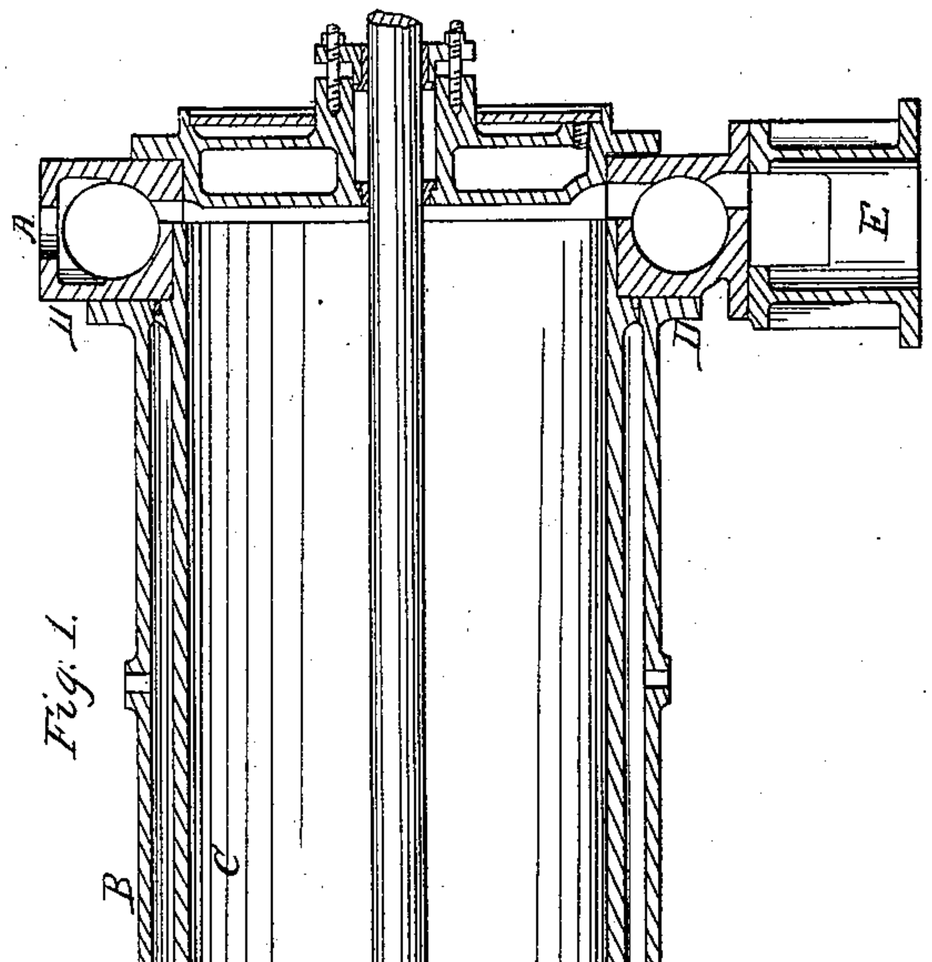


Fig. 2.

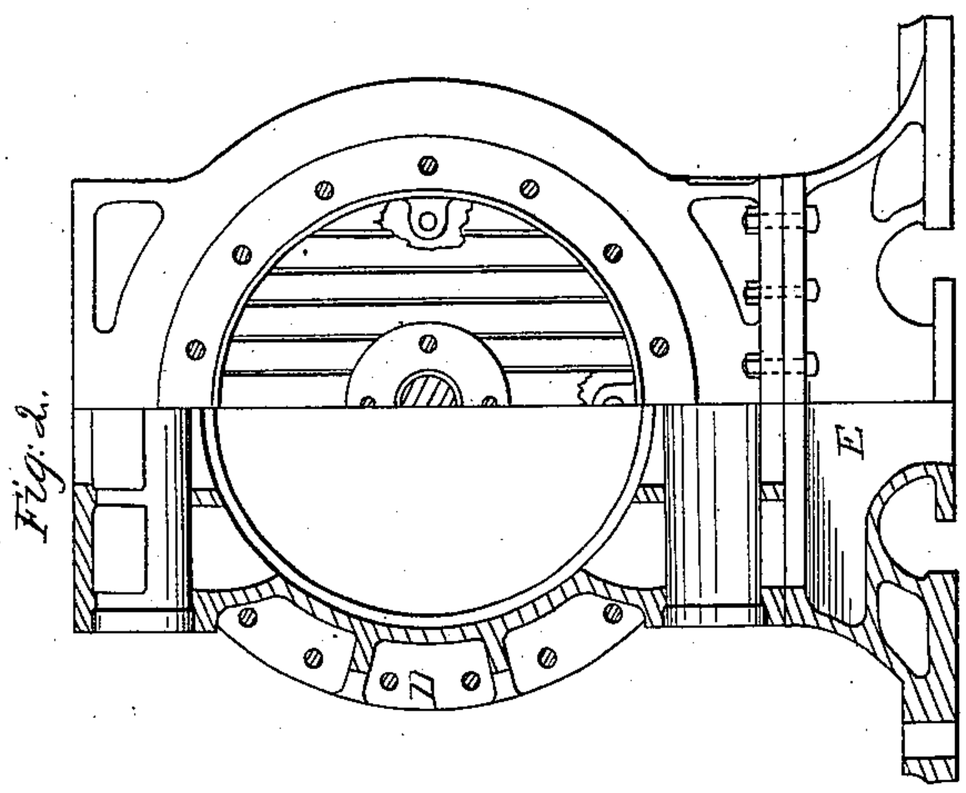


Fig. 3.

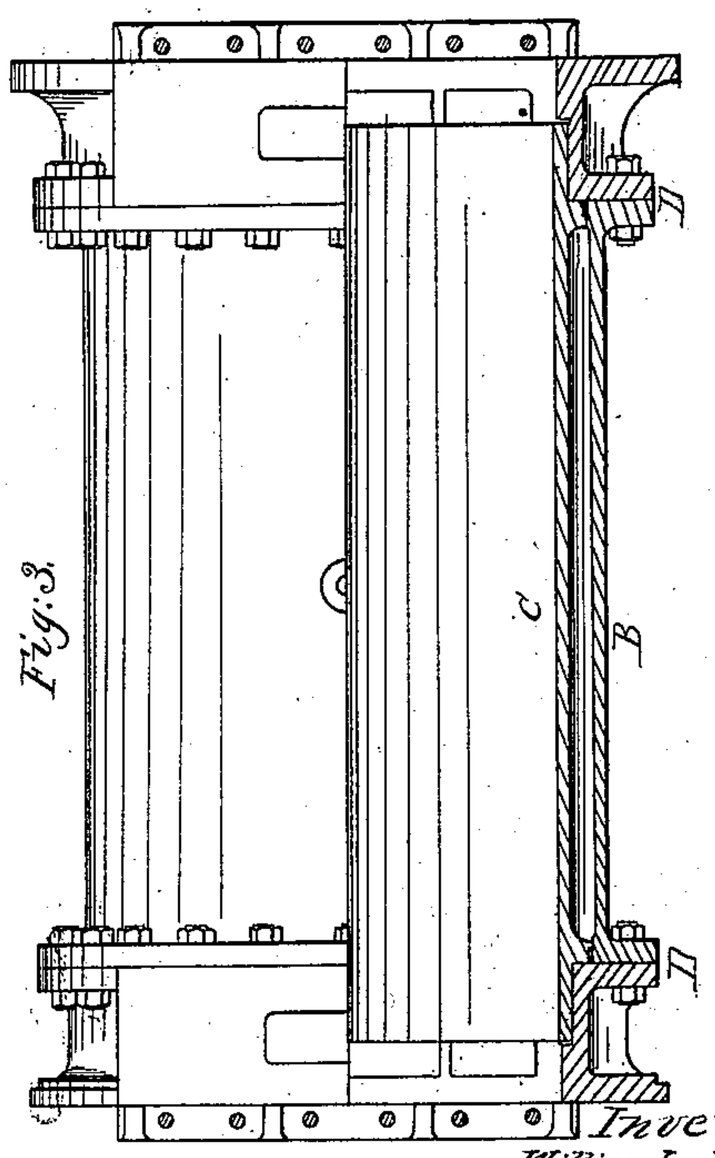
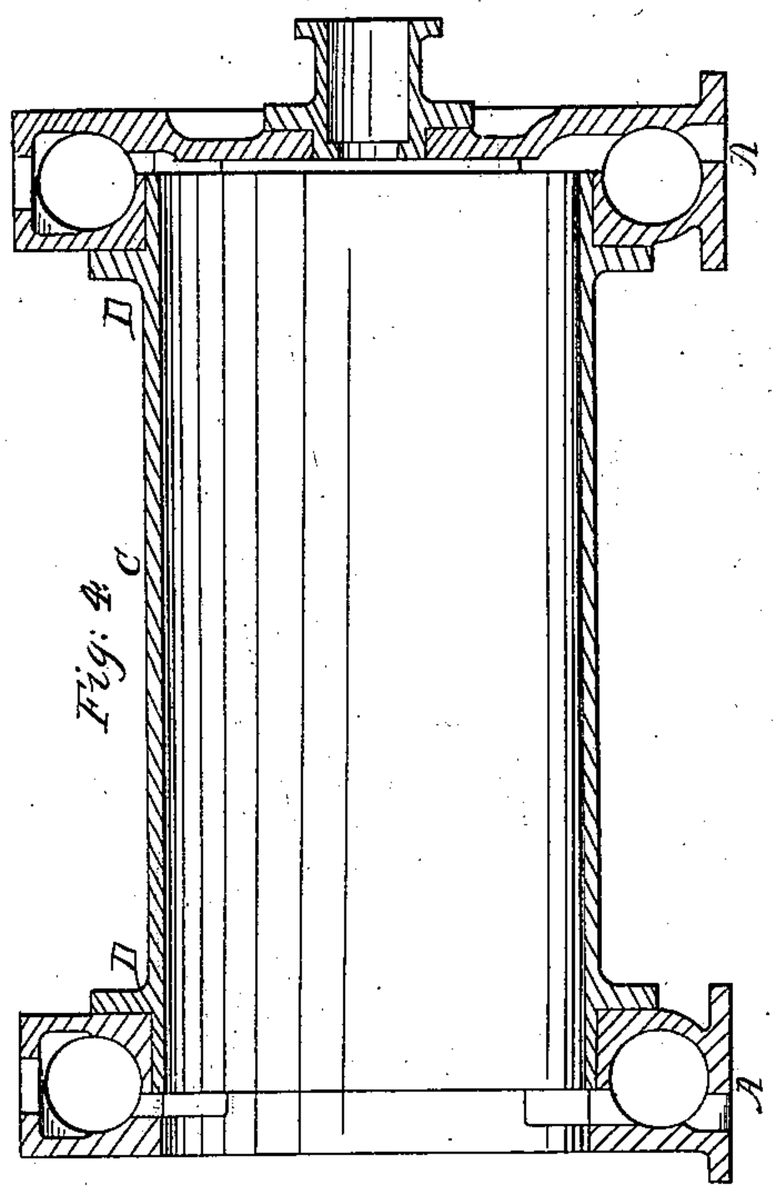


Fig. 4.



Inventor.
William Inglis
per Munn & Co
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United States Patent Office.

WILLIAM INGLIS, OF MANCHESTER, ENGLAND.

Letters Patent No. 85,098, *dated December* 22, 1868

IMPROVEMENT IN STEAM-CYLINDERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM INGLIS, of Manchester, in the county of Lancaster, and Kingdom of England, have invented a new and improved Method of Constructing the Cylinders of Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has for its object, by certain improvements in the constructive details, to render certain kinds of steam-engines more durable, and less likely to get out of order than they have hitherto been, whereby increased convenience, in both constructing and erecting, are secured; and

The invention consists in the construction of the parts as hereinafter more fully described.

Figure 1 represents a steam-jacketed horizontal steam-cylinder.

Figure 2 is an end view, partly in section.

Figure 3 is a plan of the horizontal steam-jacketed cylinder shown in fig. 1, the lower half of which is shown in section.

Figure 4 represents a steam-cylinder, without a steam-jacket.

Similar letters of reference indicate corresponding parts.

Steam-jacketed cylinders have hitherto been cast in a single piece, as a general rule, but, in pursuing this method, there is great risk, from the use of so many cores, and danger of cracking, from the unequal shrinkage, should hard or "close" iron be used.

In cooling, the inner or main cylinder is liable to become annealed, and the result has been cylinders too soft to be durable.

To remedy the difficulty, it has been attempted to bush the cylinder, by casting a separate tube, and slipping it in, but such efforts have not proved successful.

The system pursued by me, and shown in the drawings, overcomes all difficulty, and has many advantages over all other methods.

This improvement is especially applicable to the cylinders of what are known as "Corliss engines," many of which are constructed and used in this country, and consists in the inner cylindrical shell or working-cylinder, cast separate from the steam-jacket, and making a secure steam-joint between the parts, by casting, in separate pieces, the ends containing the valve-chamber.

These several parts are united by face-joints, running around the cylinder, in planes, at right angles to its axis.

The piece containing the valve-chambers for one end is turned internally, to fit upon the end of the cylinder, and it has a joint-face, formed at right angles, to fit up against a flange formed on the cylinder.

The jacket is formed with a face-joint flush with the flange on the cylinder, and the joint of the valve-chamber piece fits up against them both, as against a continuous face.

The same arrangement applies to both ends of the cylinder.

A represents the valve-chamber, at the ends of the ylinder.

B represents the jacket or outer shell.

C is the inner or working-cylinder.

D represents the face-flange ioints.

E represents the exhaust-pipes, leading from each end of the cylinder.

The inner cylinder in this arrangement is such a simple casting, that it can be made as hard as it can be bored without risk.

The separate castings, for the ends and jacket, are also very simple, and easily made.

The separate parts are securely fastened together by bolts, as seen in figs. 2 and 3.

I am aware that casting the ends of cylinders separate from the barrel is not, by itself, new; but, with valve-chambers, as represented, it is believed to be a patentable novelty, as it overcomes what has hitherto proved a very serious difficulty.

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

The construction of the four valve-chambers, the casing B, and the inner steam-cylinder, arranged with reference to each other, and the ingress and egress-ports, substantially as set forth.

The above specification of my invention signed by me, this 11th day of August, 1868.

WILLIAM INGLIS.

Witnesses:

HORACE J. A. PERCIVAL,

JOHN BURNETT.