

Tait & Aris,
Steam-Boiler Fire-Tube.
N^o 58,506. Patented Oct. 2, 1866.

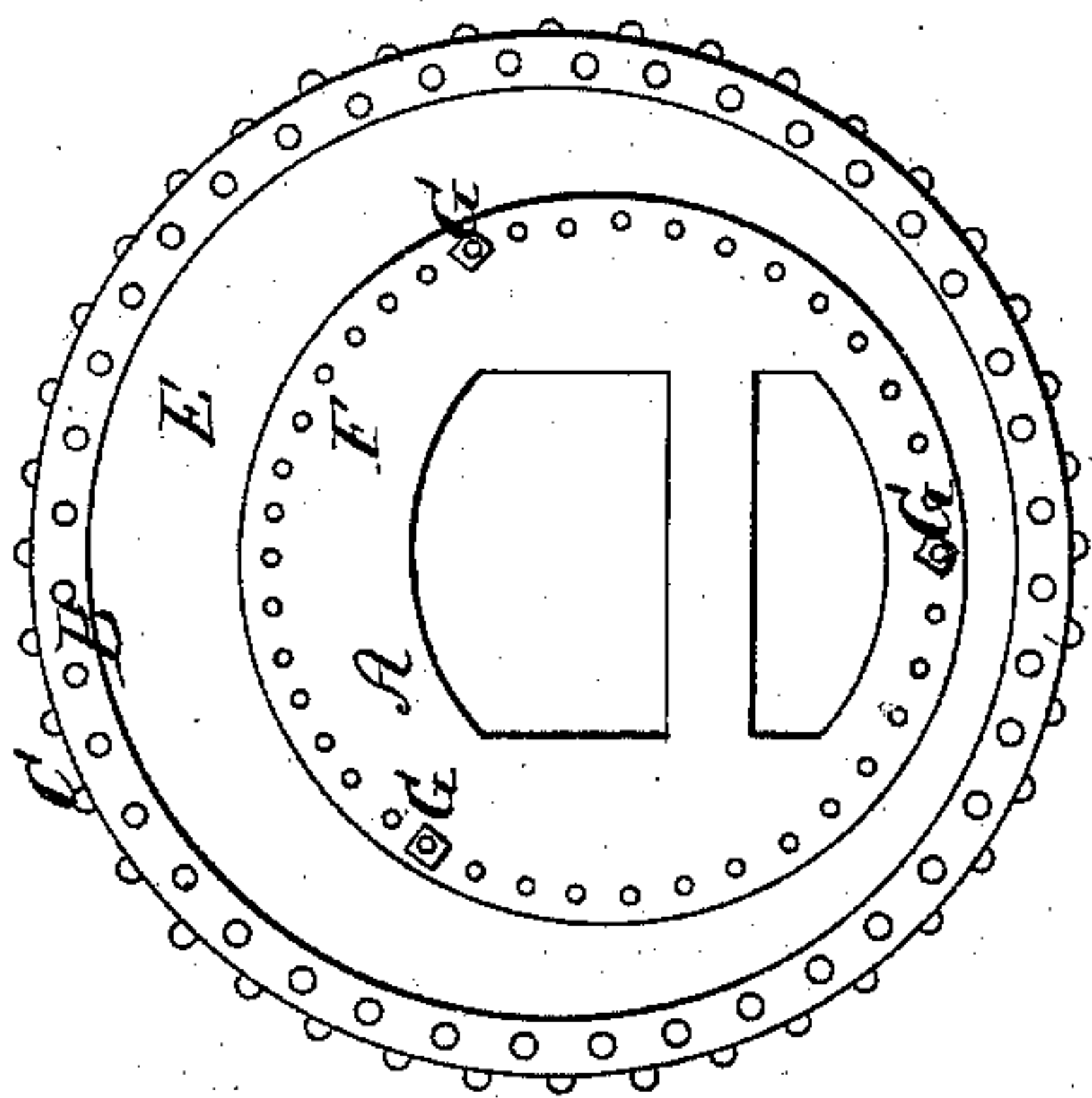


Fig. 3.

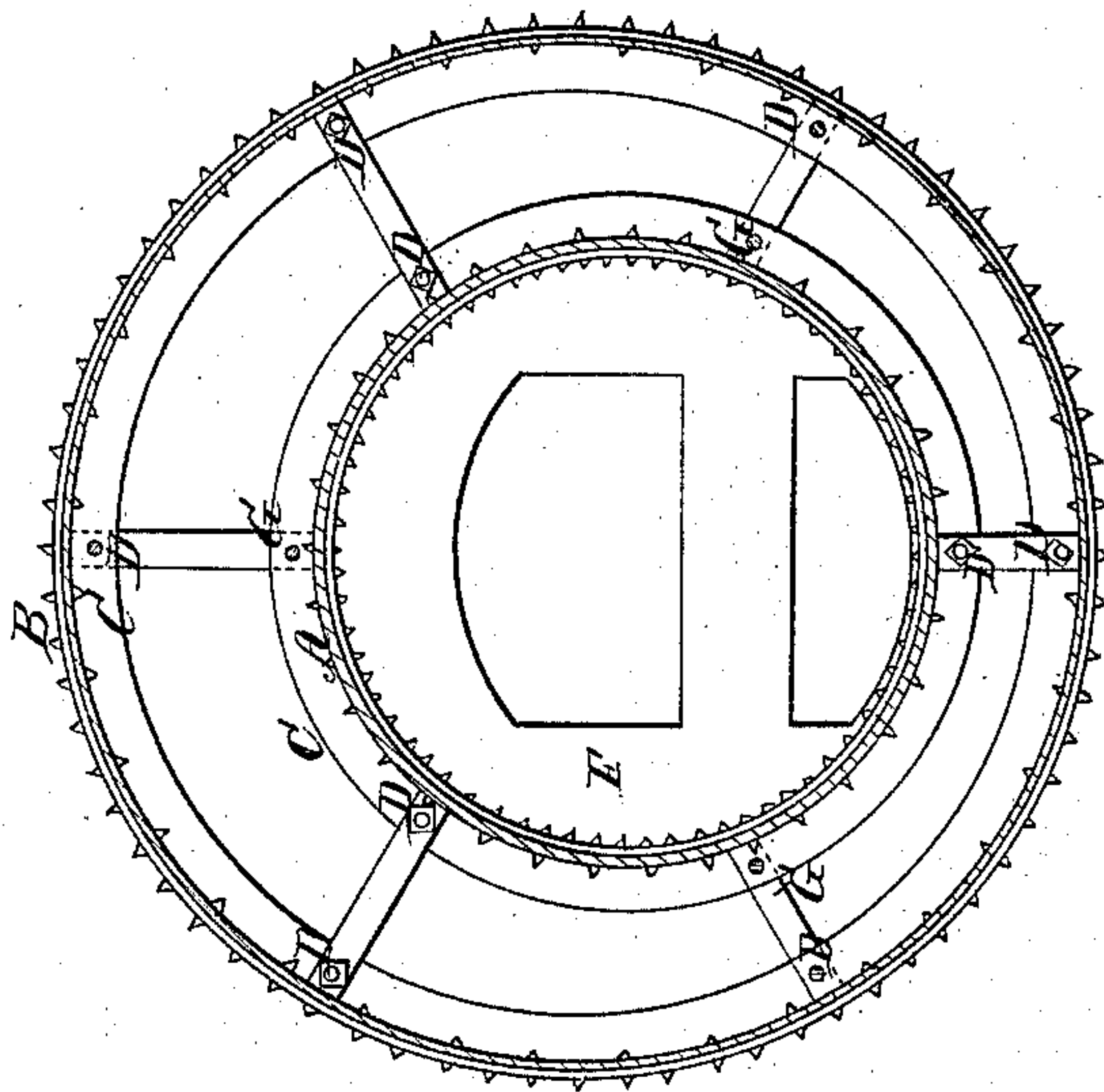


Fig. 2.

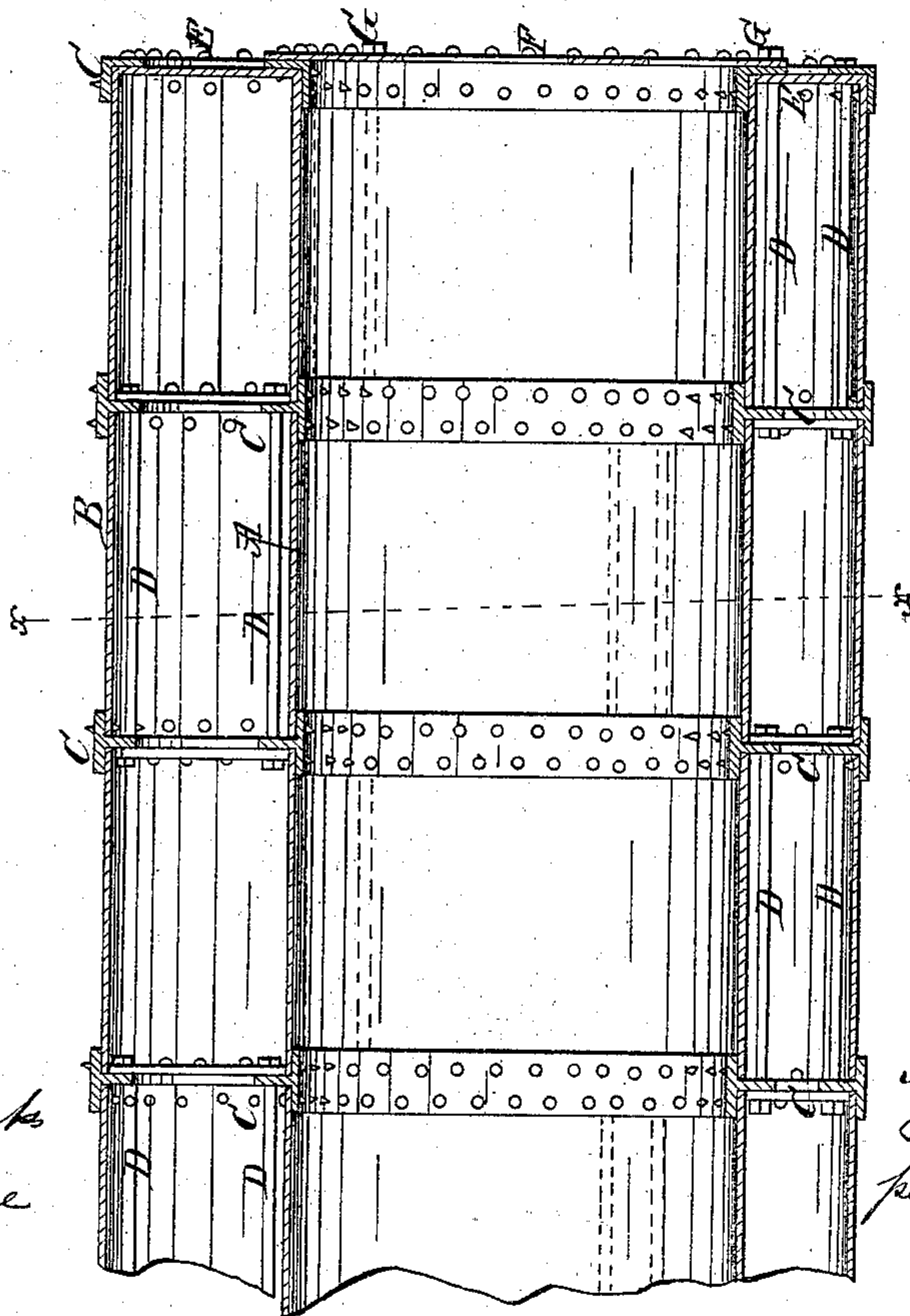


Fig. 1.

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UNITED STATES PATENT OFFICE.

A. H. TAIT AND JOS. W. AVIS, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. 58,506, dated October 2, 1866.

To all whom it may concern:

Be it known that we, AUGUSTUS H. TAIT and JOSEPH W. AVIS, of the city, county, and State of New York, have invented a new and Improved Steam-Boiler; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal central section of this invention. Fig. 2 is a transverse section of the same, taken in the plane indicated by the line *xx*, Fig. 1. Fig. 3 is an end view of the same in a smaller scale than the previous figures.

Similar letters of reference indicate like parts.

This invention relates to certain improvements in the construction of the old cylindrical Cornish boiler, the high character of which for generating steam has been long established, but which has not come in general use, because as at present constructed it is not adapted for high pressures.

This invention consists in the arrangement of angle and T rings welded and turned in the lathe to the proper angle for calking, in combination with a series of cylinders made of boiler-plate and riveted to the angle and T rings in such a manner that by said rings the boiler is strengthened and adapted for high pressures.

It consists, further, in the arrangement of longitudinal bolts or stays, in combination with the angle and T rings, in such a manner that the principal strain exerted by the steam on the boiler is thrown on the rings and stays, and a cheap, durable, economical, and strong boiler is obtained.

A represents the inside and B the outside cylinder, which are both constructed of a series of cylinders of convenient length, made of boiler-plate in the best and strongest possible manner.

The several cylinders which constitute the two cylinders A B are united by a series of angle or T rings, C, which are welded and

turned in the lathe to the proper shape for calking. To these rings the cylinders of boiler-plate are fastened by rivets or any other suitable means, so that the flanges of the angle or T rings overlap the seams on the outside and inside cylinders, as clearly shown in Fig. 1 of the drawings.

The edges of the cylinder of boiler-plate may also be turned off instead of chipping them, as usual, so as to produce a good fit.

The angle or T rings are connected by longitudinal stays or bolts D, which extend from one ring to the other, and by these means the boiler is strengthened and stayed both in a longitudinal and in a radial direction, and the principal strain to which the boiler is subjected by the steam generating in it is supported by the rings and stays, thus producing a strong boiler, which is capable to sustain any reasonable pressure.

The angle-irons at the ends of the boiler serve to sustain also the heads E, which close up the annular space between the inner and outer cylinders, and the head F of the inner cylinder is held in position by bolts G, which extend through the first and second rings, as shown in Figs. 1 and 3. By means of these bolts this head can be easily attached, and it can be so arranged that it can be taken off whenever it may be desirable.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The T-rings C, in combination with the cylinders A B, made in sections and connected to said rings, substantially as and for the purpose described.

2. The longitudinal stay-bolts D, in combination with the rings C and cylinders A B, constructed and operating substantially as and for the purpose set forth.

The above specification of our invention signed by us.

A. H. TAIT.
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Witnesses:

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