

No. 669,390.

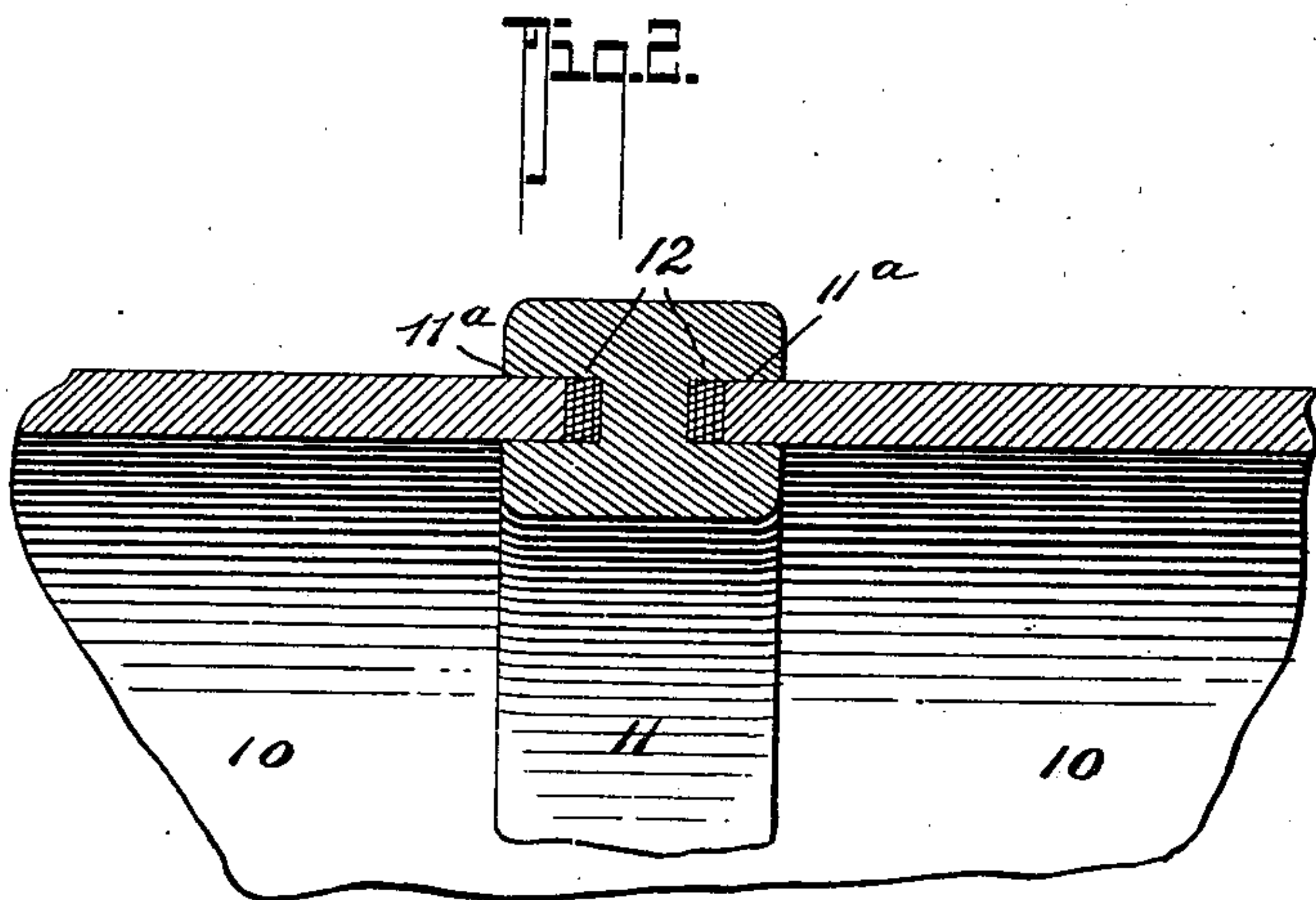
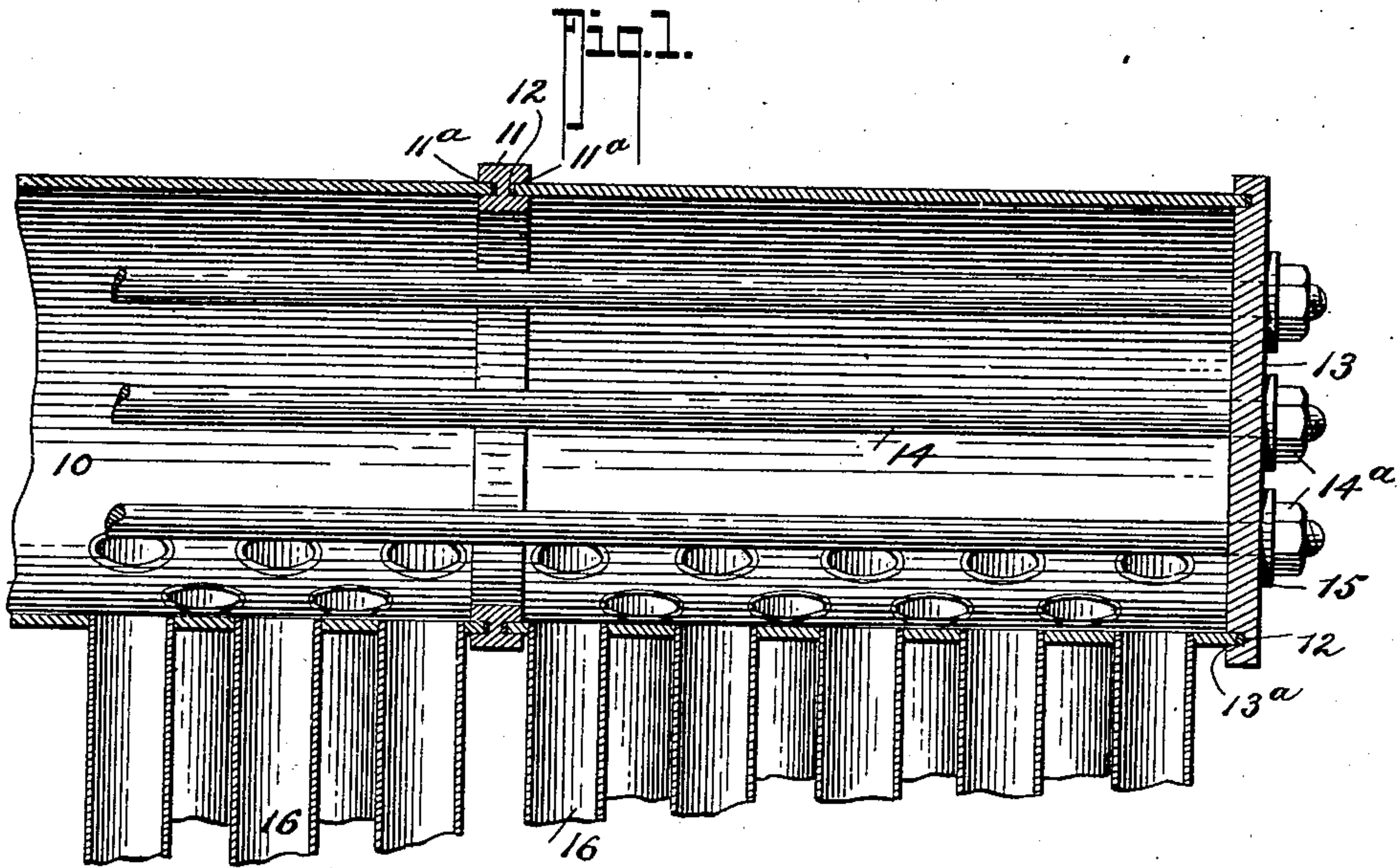
Patented Mar. 5, 1901.

G. H. HARDIE & N. THOMPSON.

SECTIONAL BOILER.

(Application filed Dec. 19, 1899.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

GORDON HENRY HARDIE AND NICHOLAS THOMPSON, OF VANCOUVER,  
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## SECTIONAL BOILER.

SPECIFICATION forming part of Letters Patent No. 669,390, dated March 5, 1901.

Application filed December 19, 1899. Serial No. 740,858. (No model.)

*To all whom it may concern:*

Be it known that we, GORDON HENRY HARDIE and NICHOLAS THOMPSON, citizens of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Sectional Boiler, of which the following is a specification.

Our invention relates to improvements in sectional boilers; and it particularly relates to the construction of the heavier parts that are of such proportion that would offer a serious difficulty in the transportation thereof when not in sections in remote and inaccessible places, such as mining regions and the like; and our object is to provide a means of constructing the heavier portions of a boiler in sections, so that no part of the same will be of a weight that will act as a bar to the transportation of the same, and this we accomplish by having the larger cylinder portions—such as the main reservoir, &c.—constructed in alternate rings and cylindrical sections. The rings are provided with annular recesses on opposite sides thereof for the reception of the ends of the cylinders, and the opposite ends of the built-up cylinder are covered with plates or heads, each having the annular recess therein, and the whole being secured together by one or more stay-rods passing therethrough. We attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a part of a cylinder constructed on the principle of our invention, and Fig. 2 is an enlarged detail of one of the joints.

The sections 10 are made in cylinder form and composed of steel plate or other material that is comparatively light for its strength, and the joining-rings 11 are preferably of forged material provided with the annular grooves 11<sup>a</sup> for the reception of the ends of

the cylinders 10. In coupling the sections of the cylinder together the annular grooves 11<sup>a</sup> are provided with a packing-strip (indicated by the figure 12) of some suitable material to form a tight joint. The opposite ends of the cylinder formed by the sections 10 and the rings 11 are closed by heads 13, having annular grooves 13<sup>a</sup>, similar to the grooves in the rings 11, and these grooves are provided with the packing-strip 12, the whole being secured together by one or more stay-rods 14. These rods pass through apertures in the headpieces and have nuts 14<sup>a</sup> on the ends thereof, which are tightened down on washers 15, having thereunder a packing-washer to make the aperture tight.

The tubes 16, connecting with the lower sides of the sections 10 of the cylinder, illustrate the application of our invention to a pipe-boiler or steam-generator, which is the system that would no doubt be used in remote mining regions where the reduction of the heavy parts is the result to be desired.

Having now described our invention, what we claim as new, and desire to be protected in by Letters Patent, is—

A sectional boiler, consisting of a plurality of cylinders 10, heads 13 fitting on the outer extremities of the end cylinders 10, said heads having grooves 13 to receive the said ends, a ring 11 disposed at the meeting edges of each pair of cylinders 10, said ring having annular grooves 11<sup>a</sup>, in opposite sides to receive the said adjacent cylinder edges, packing members 12, seated on the said grooves 11<sup>a</sup>, and the stay-bolts 14 and nuts 15, all being arranged substantially as shown and for the purposes described.

GORDON HENRY HARDIE.  
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Witnesses:

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