

975,183.

S. M. VAUCLAIN.  
LOCOMOTIVE.  
APPLICATION FILED FEB. 11, 1910.

Patented Nov. 8, 1910.  
6 SHEETS—SHEET 1.

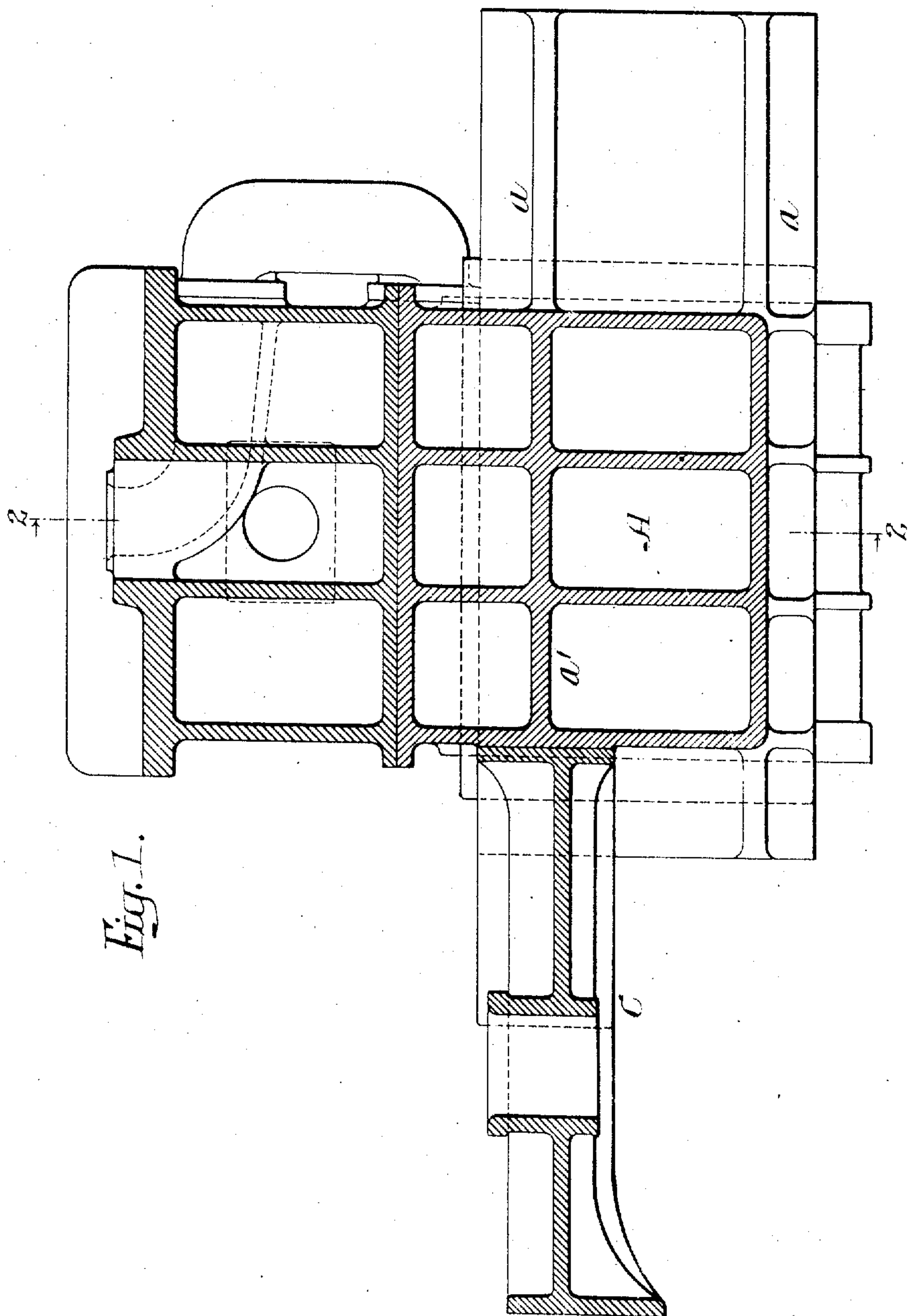


Fig. 1.

Witnesses  
Wills A. Burrage  
Lutuo H. Jones

Inventor  
Samuel M. VaucLain  
by his Attorneys  
Horton & Horton

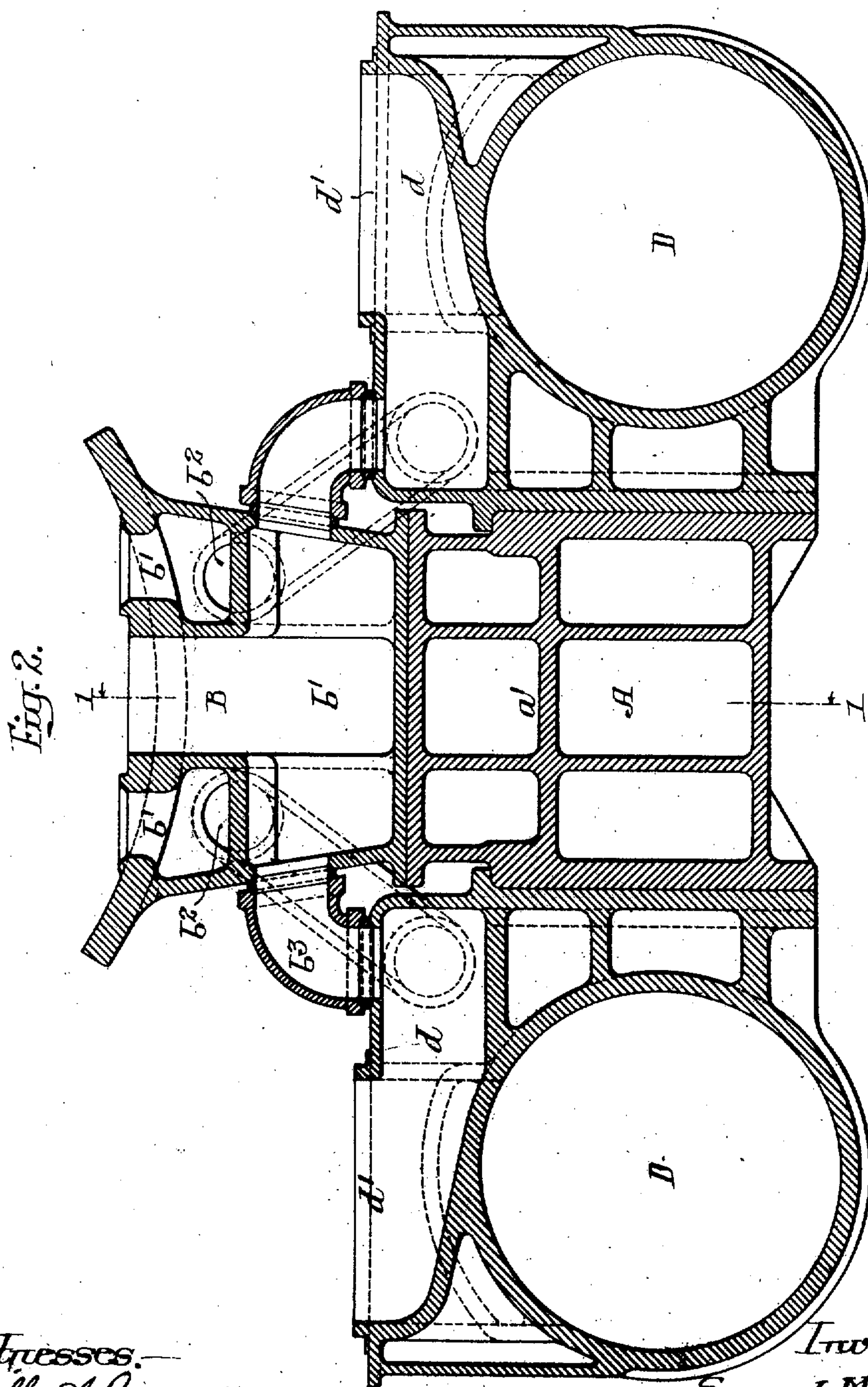
S. M. VAUCLAIN.  
LOCOMOTIVE.

APPLICATION FILED FEB. 11, 1910.

975,183.

Patented Nov. 8, 1910.

6 SHEETS—SHEET 2.



Witnesses—  
Willa A. Burrows  
Titus V. Jones.

Inventor—  
Samuel M. Vauclain  
by his Attorneys—  
Hiram Brown

S. M. VAUCLAIN.

LOCOMOTIVE.

APPLICATION FILED FEB. 11, 1910.

975,183.

Patented Nov. 8, 1910.

6 SHEETS—SHEET 3.

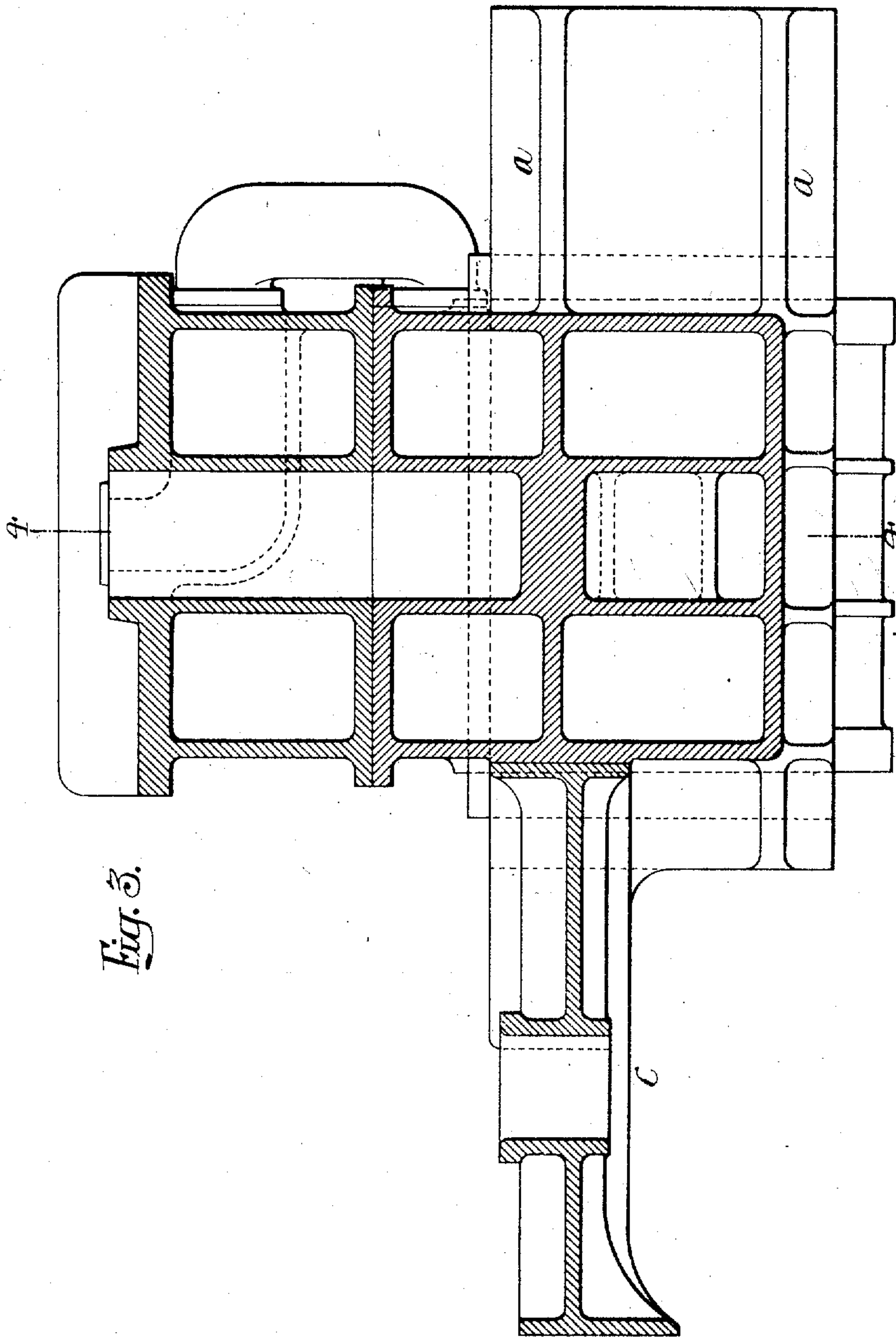


Fig. 3.

Witnesses—  
John H. Jones.  
Wills A. Burrows.

Inventor—  
Samuel M. Vauclain  
by his Attorneys—  
Hiram H. Hiram



S. M. VAUCLAIN.

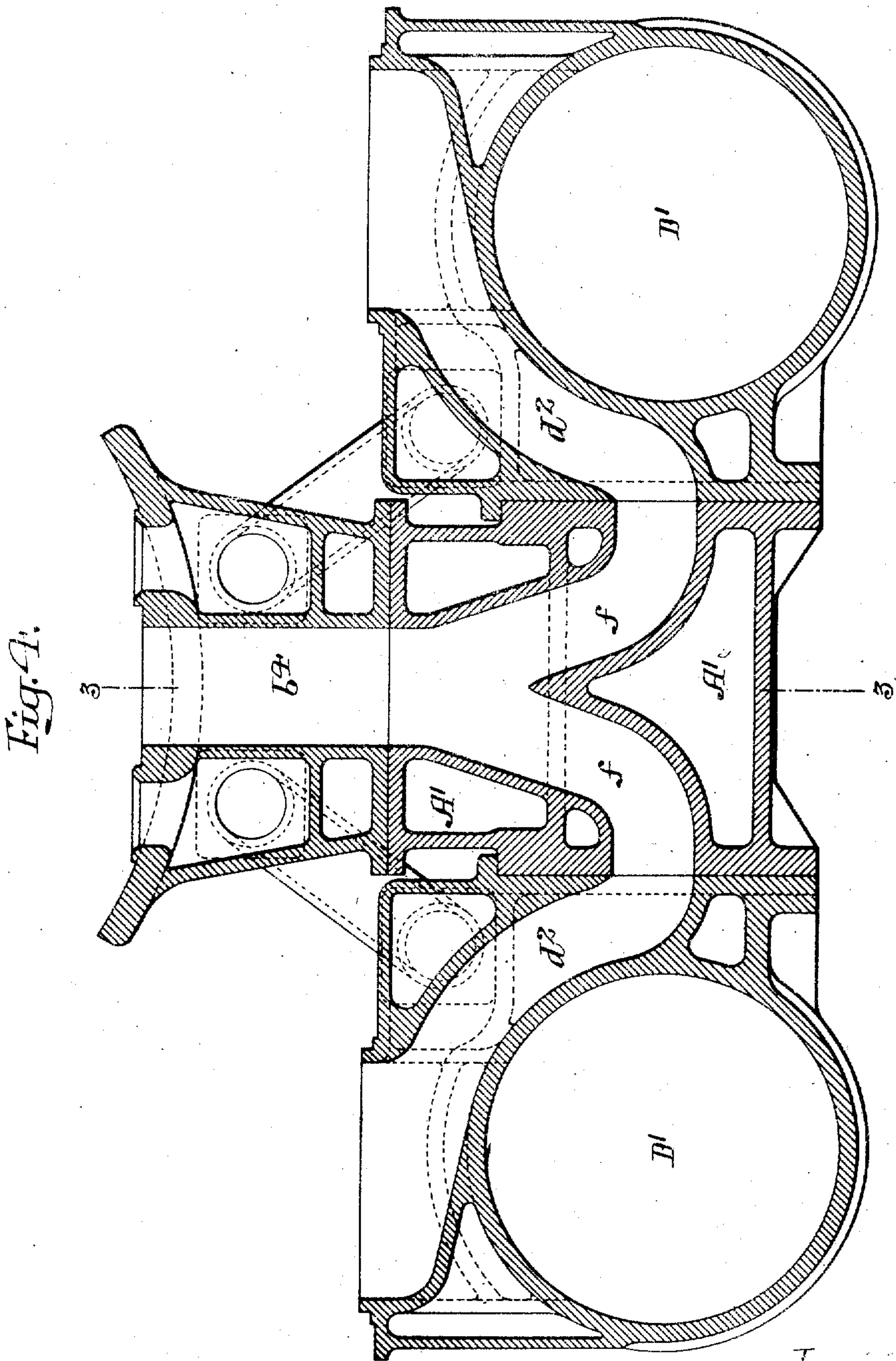
LOCOMOTIVE.

APPLICATION FILED FEB. 11, 1910.

975,183.

Patented Nov. 8, 1910

6 SHEETS—SHEET 4.



Witnesses.

Titus H. Jones  
Willa H. Burrows

Inventor.

Samuel M. Vaclair  
by his Attorneys  
H. W. H. H. H.

975,183.

S. M. VAUCLAIN.  
LOCOMOTIVE.  
APPLICATION FILED FEB. 11, 1910.

Patented Nov. 8, 1910.

6 SHEETS—SHEET 5.

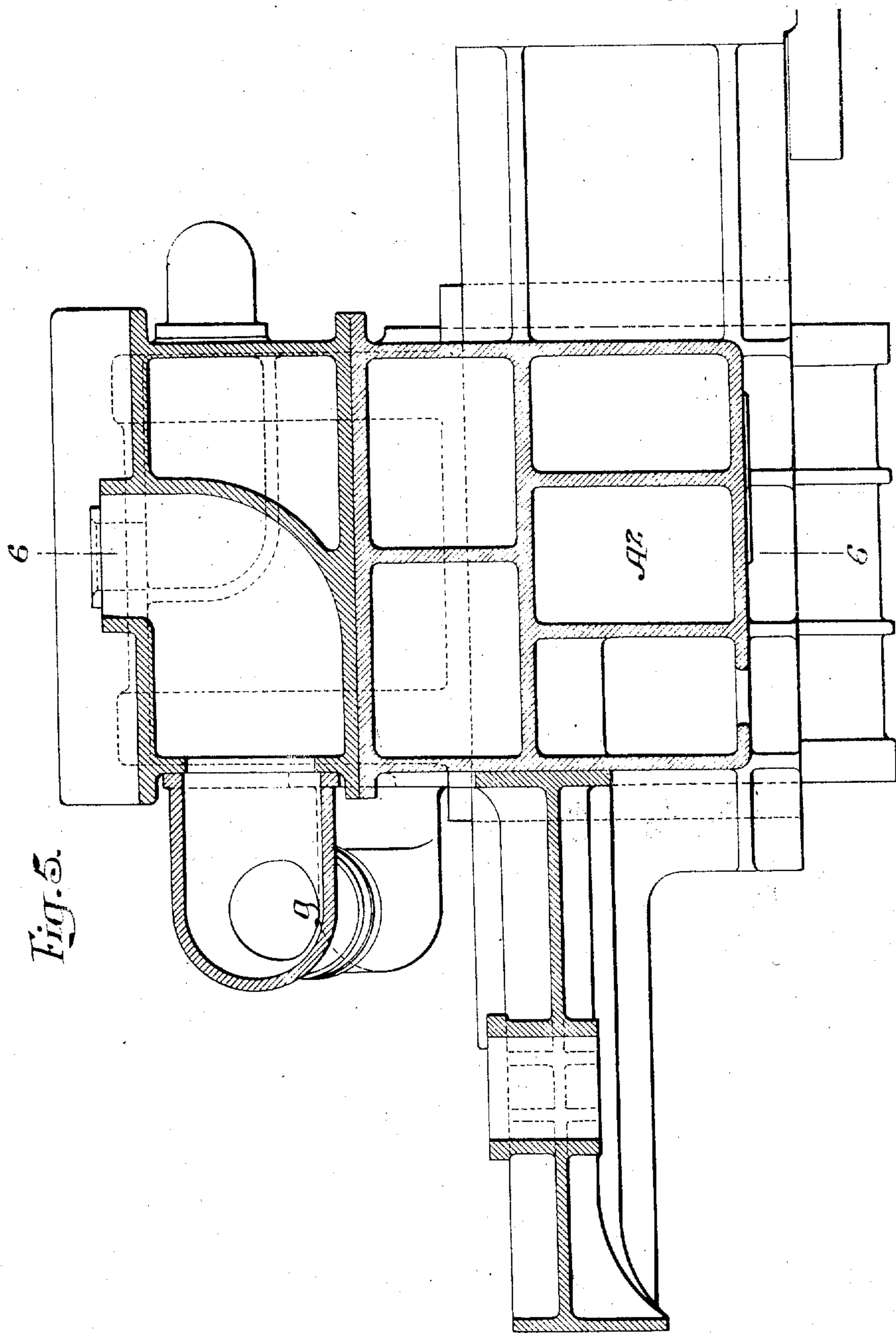


Fig. 5.

Witnesses:

*Titus H. Jones*  
*Wille H. Burrows*

Inventor:

*Samuel M. VaucLain*  
by his Attorneys—  
*Howson & Howson*



975,183.

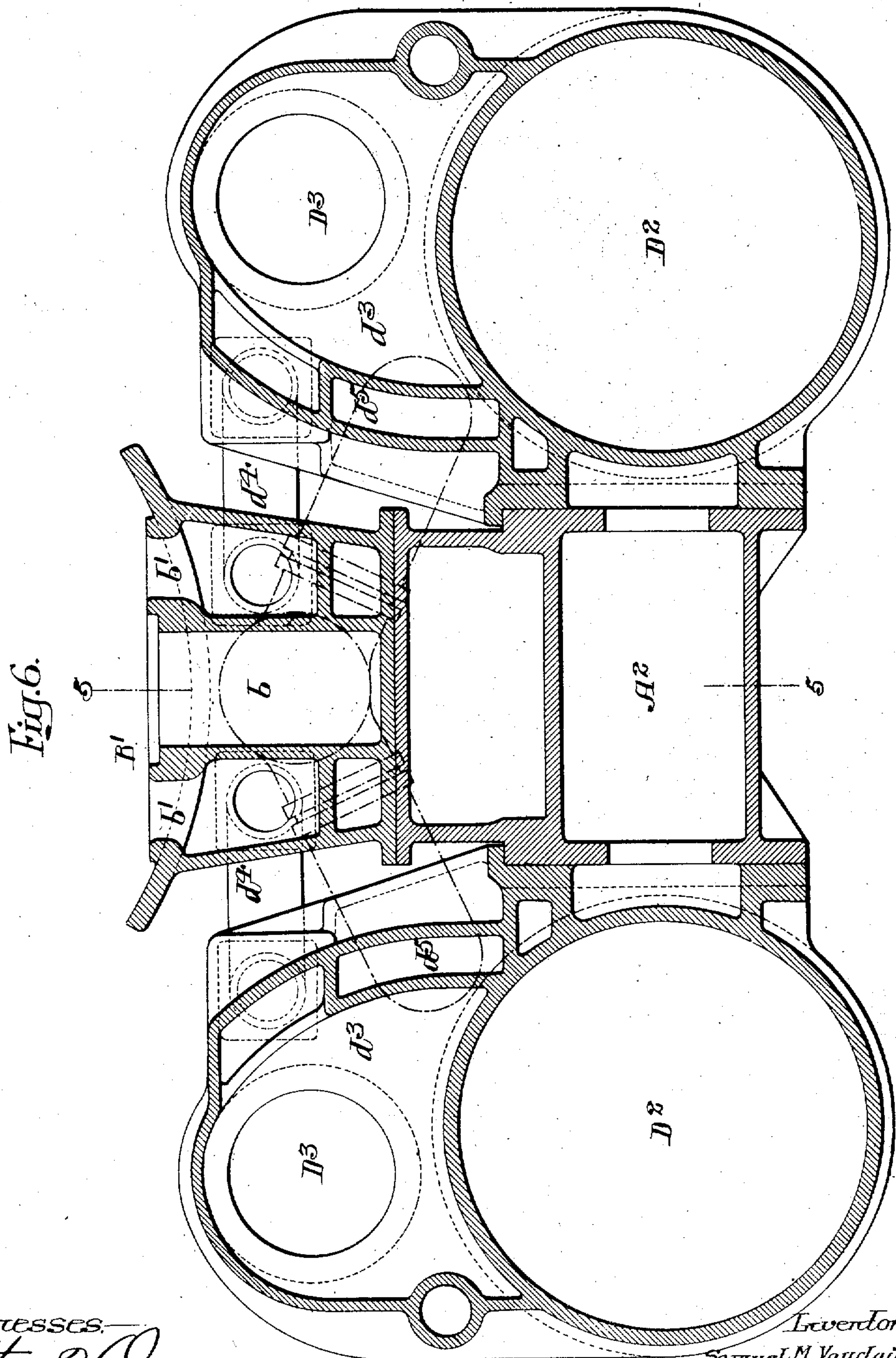
S. M. VAUCLAIN.

LOCOMOTIVE.

APPLICATION FILED FEB. 11, 1910.

Patented Nov. 8, 1910.

6 SHEETS-SHEET 6.



Witnesses:  
*Titus H. Irons*  
*Willa A. Runome*

Inventor  
*Samuel M. Vauclain*  
 by his Attorneys  
*Howan Strom*



# UNITED STATES PATENT OFFICE.

SAMUEL M. VAUCLAIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BALDWIN  
LOCOMOTIVE WORKS, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF  
PENNSYLVANIA.

LOCOMOTIVE.

975,183.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed February 11, 1910. Serial No. 543,367.

*To all whom it may concern:*

Be it known that I, SAMUEL M. VAUCLAIN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Locomotives, of which the following is a specification.

The main object of my invention is to make the parts separate so that they can be more readily handled and can be easily repaired when necessary.

A further object of the invention is to make the frame of steel and the saddle preferably of cast iron; the cylinder castings being made separate and bolted to the steel frame, making a very substantial structure.

In the accompanying drawings:—Figure 1, is a longitudinal sectional view on the line 1—1, Fig. 2, of sufficient of the front end of a locomotive to illustrate my invention; Fig. 2, is a transverse sectional view on the line 2—2, Fig. 1; Fig. 3, is a longitudinal sectional view on the line 3—3, Fig. 4, illustrating a modified arrangement of the ports; Fig. 4, is a transverse sectional view on the line 4—4, Fig. 3; Fig. 5, is a longitudinal sectional view on the line 5—5, Fig. 6, showing my invention as applied to a piston valve engine; and Fig. 6, is a transverse sectional view on the line 6—6, Fig. 5.

In the drawings, Figs. 1 to 4 inclusive, show the invention as applied to a locomotive having ordinary slide valves.

Referring in the first instance to Figs. 1 and 2, A is the front frame of a locomotive. This frame is preferably made of steel and has extensions *a* projecting rearwardly, which are bolted to the side frames of the locomotive. C is the bumper frame secured to the forward end of the front frame A. D, D are cylinders secured to each side of the frame A, as clearly shown in Fig. 2. B is the saddle which is mounted directly upon the front frame A and secured thereto by bolts or other fastenings. This saddle supports the forward end of the boiler and has, in the present instance, a central exhaust passage *b* and lateral steam passages *b'*. These steam passages connect, through pipes *b<sup>2</sup>* shown by dotted lines, with the steam passages in the cylinder castings D, and the exhaust passage *b* communicates, through pipes *b<sup>3</sup>*, with exhaust passages *d* in the cylinder castings. *d'*, *d'* are the valve seats, in the present instance arranged for the reception of the ordinary slide valves,

and the valve chests are mounted upon the cylinder castings. These parts have been omitted as they form no part of the present invention.

I preferably make the front frame A of cast steel and use ribs *a'* to strengthen the casting, and, in the present instance, as shown in Figs. 1 and 2, the steam connections between the cylinders and the saddle are located outside of the frame. The saddle itself I preferably make of cast iron, and this saddle may be reinforced with ribs, if desired, although the walls of the passages are sufficient to materially strengthen the casting.

By this construction I make a very substantial structure which will not only properly support the cylinders, but will also form a substantial support for the forward end of the boiler, and, in the event of any renewals being necessary, or it is found necessary to remove the saddle for any cause, this saddle can be readily detached from the front frame without disturbing the cylinders.

In Figs. 3 and 4, I have shown a modification of the invention which is also applied to slide valve locomotives, and in this modification the exhaust passages *d<sup>2</sup>* of the cylinders D' communicate with passages *f* in the front frame A', and these passages in turn communicate with a central exhaust passage *b<sup>4</sup>* in the saddle. The steam inlet passages are the same as in Figs. 1 and 2.

In Figs. 5 and 6, I have shown my invention as applied to locomotives provided with piston valves. In this construction the valve chambers D<sup>3</sup> form an integral part of the cylinder casting D<sup>2</sup> and the steam passages *d<sup>3</sup>* of the valve chambers communicate through pipes *d<sup>4</sup>* with the steam passages *b'* of the saddle castings, and the central exhaust passages *b* of the saddle castings B' communicate with the exhaust passages *d<sup>5</sup>* of the valve chambers through pipes *g*, as shown in Fig. 5. In this particular construction there are no passages in the front frame.

I claim:—

1. The combination of a front frame of a locomotive forming a continuation of the main frame, two cylindrical castings secured, one on each side of the said front frame, and a saddle detachably mounted on the front frame and supporting the forward end of the boiler.

110

2. The combination in a locomotive, of a front frame having rearwardly extending arms attached to the side frames of the locomotive, cylinder castings mounted on each side of the said frame, steam passages in the said cylinder castings, a saddle casting mounted directly upon the front frame and secured thereto, said saddle being shaped to support the forward end of the boiler and having steam inlet and exhaust passages therein communicating with the passages in the cylinders.

3. The combination in a locomotive, of a front frame made of cast steel and having exhaust passages therein open at each side and connected at their upper ends, cylinder castings on each side of the front frame, the

exhaust passages of the said cylinder castings communicating with the passages of the front frame, and a cast iron saddle mounted upon and secured to the front frame and shaped to support the forward end of the boiler, said saddle having an exhaust passage communicating with the exhaust passage of said front frame, and having steam passages connected to the steam passages of the cylinders.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

SAMUEL M. VAUCLAIN.

Witnesses:

WM. A. AUSTIN,  
HARRY SCHEIB.