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Patented Oct. 21, 1902.

S. M. VAUCLAIN.

MEANS FOR SECURING CYLINDERS AND VALVE CHESTS TO SADDLES.

(Application filed Mar. 7, 1902.)

(No Model.)

Fig. 1.

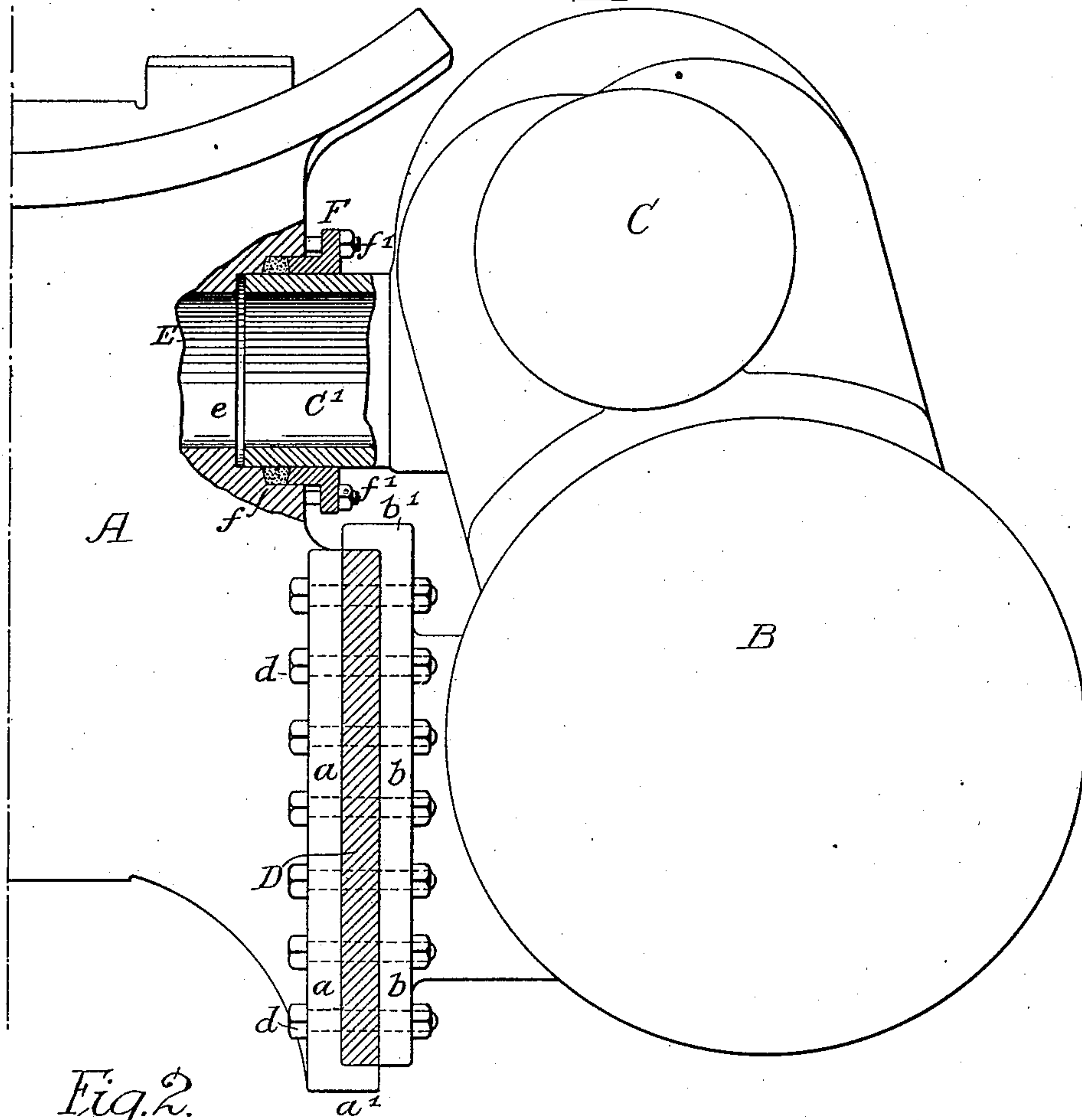
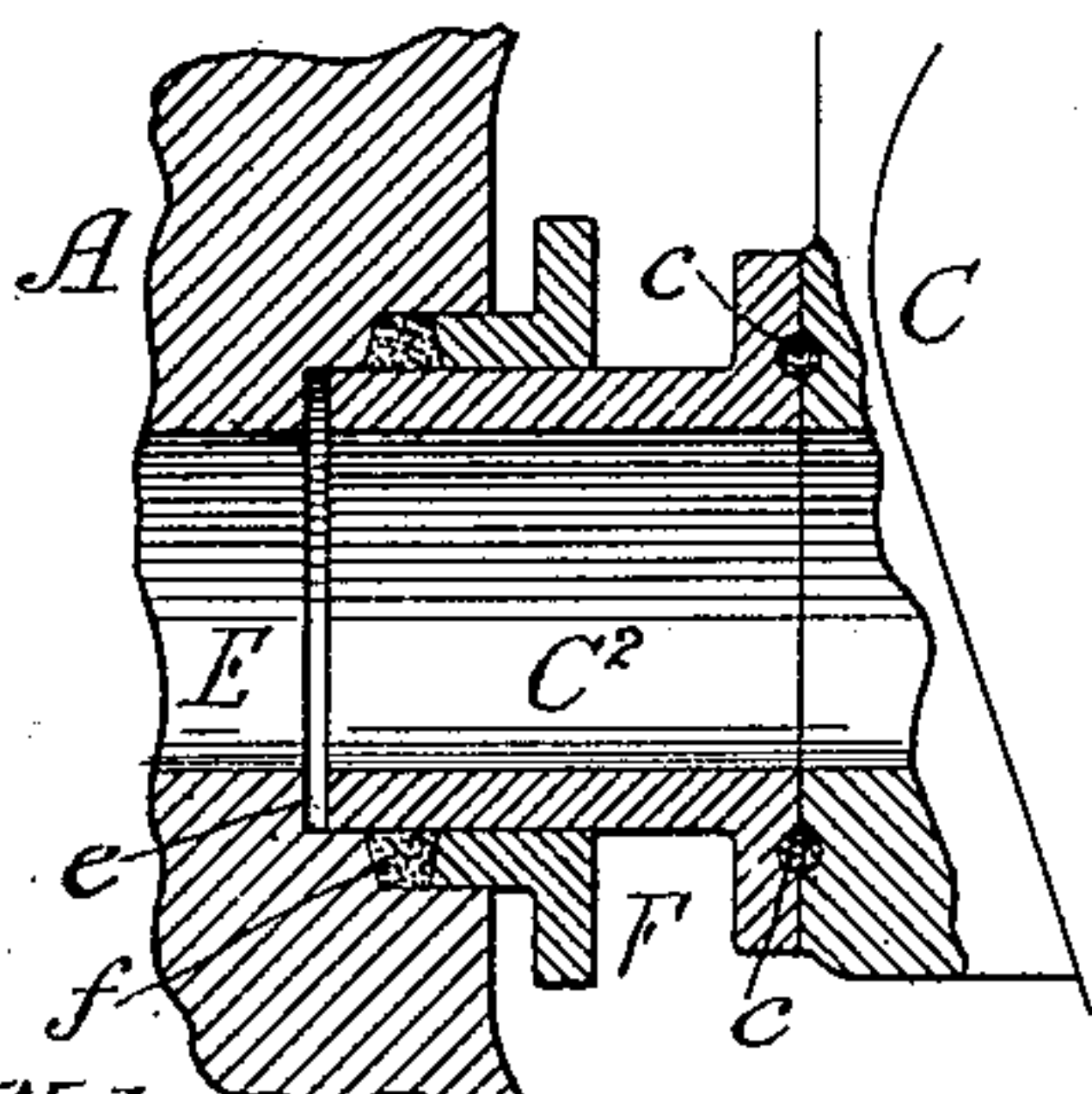


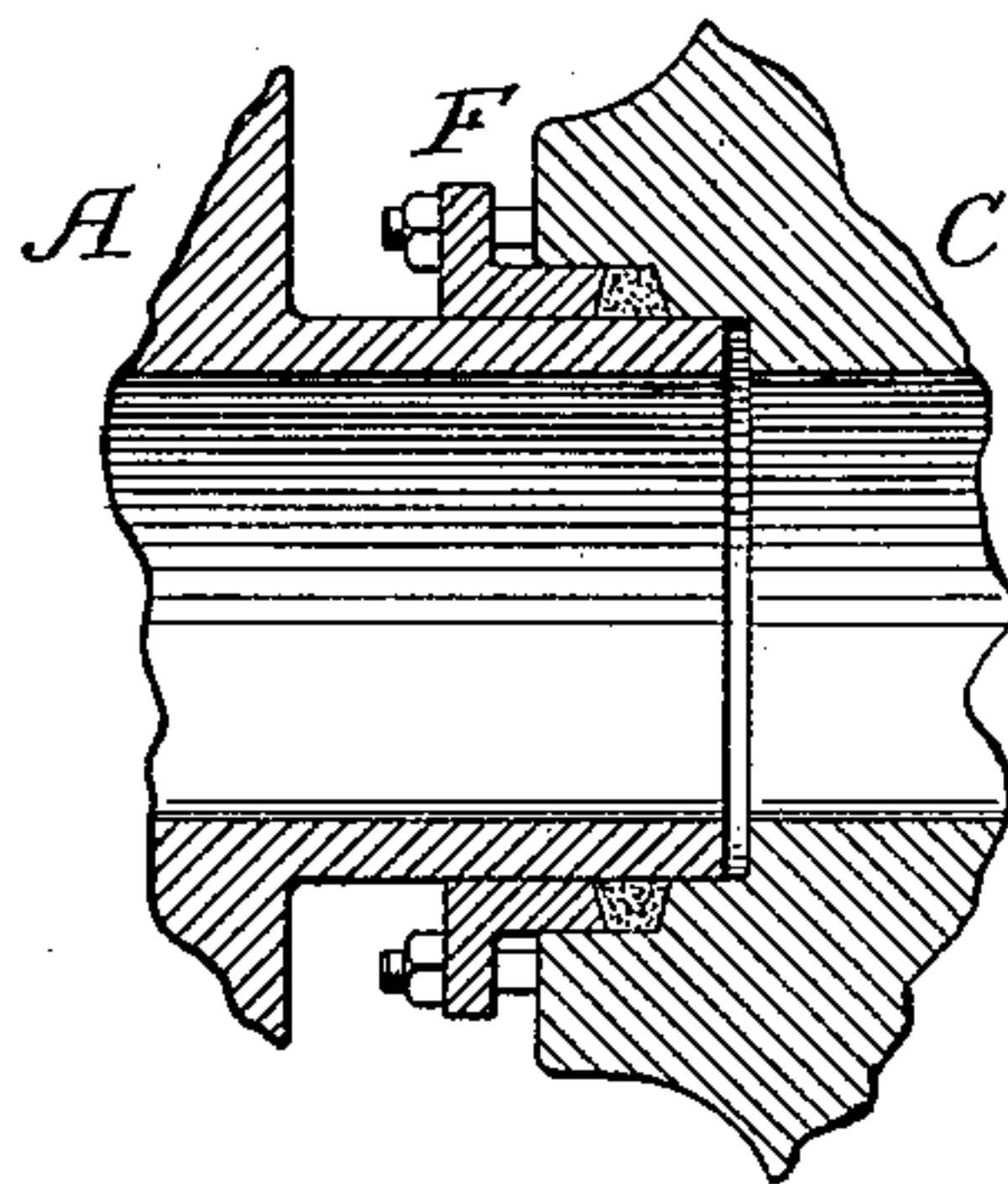
Fig. 2.



Witnesses:-

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Fig. 3.



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UNITED STATES PATENT OFFICE.

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MEANS FOR SECURING CYLINDERS AND VALVE-CHESTS TO SADDLES.

SPECIFICATION forming part of Letters Patent No. 711,886, dated October 21, 1902.

Application filed March 7, 1902. Serial No. 97,112. (No model.)

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 Means for Securing Cylinders and Valve-Chests to Saddles, of which the following is a specification.

The object of my invention is to so couple a cylinder and its valve-chest to the saddle of a locomotive that there will be a tight joint between the steam inlet or exhaust passage of the saddle and the passages leading to or from the valve-chest without interfering with the proper securing of the cylinder-casing to the saddle and to the frame. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is an end view of a locomotive-cylinder and its chest secured to a saddle, part of the view being in section; and Figs. 2 and 3 are views of modifications of my invention.

A is the saddle of a locomotive.

B is the cylinder.

C is the valve-chest, formed in the present instance as an integral part of the casting of the cylinder B.

The cylinder and chest may form part of an ordinary single-cylinder engine or a tandem engine, and the connection between the valve-chest and the saddle may be either that of the high-pressure or the low-pressure passage, or both. Heretofore it has been a difficult matter after the cylinder-casting was secured rigidly in place to the saddle to make a proper joint between the valve-chest and the saddle, and particularly the joint in the steam-supply passage, and owing to the constant jar of the locomotive and the working of the parts this joint would leak more or less and cause considerable annoyance. By my invention I overcome this objection and make a joint between the valve-chest and the saddle which is perfectly tight.

On the saddle A is an extended flange *a*, having a lip *a'* at the lower end extending under the frame D of the locomotive, and on the cylinder-casting B is an extended flange *b*, having a lip *b'* at the upper end extending over the said frame D. A series of bolts *d*

rigidly secure the flanges *a* and *b* to the frame D.

In the present instance extending from the valve-chest C is a cylindrical projection C', forming the live-steam passage to the valve-chest. This projection extends into a cylindrical opening *e*, forming the mouth of the steam-passage E in the saddle A. Surrounding the projection C' is a follower F, which extends into a groove in the saddle containing packing *f*. This follower is secured to the saddle by a series of nuts on stud-bolts *f'*. By this means the follower F can be drawn to compress the packing *f* tightly against the projection C' on the valve-chest C, so as to make a steam-tight joint at this point. When the cylinder-casting is secured to the saddle and the frame, the follower F is backed off, so as to leave the packing loose in order that the projection C' will slide and accommodate itself to the movement of the cylinder-casting; but when the nuts on the bolts *d* are tightened, so as to rigidly fasten the cylinder to the saddle, then the projection C' is in proper position so that the follower can be forced against the packing *f* to make a tight joint.

In the drawings I have simply shown one passage leading from the saddle to the valve-chest, and this passage in the present instance is the initial steam-passage.

It will be understood that in some instances the low-pressure passage of the saddle may be connected to the valve-chest or both the high and low pressure passages may be connected as desired without departing from my invention, and while I have shown a cylindrical projection it may be of any shape desired; but I prefer to use a cylindrical projection.

Other means of fastening the cylinder-casting to the saddle and frame instead of the bolts shown may be used, and the cylinder-casting may in some instances be connected directly to the saddle when the engine-frame is of a different design.

As shown in Fig. 2, the projection C² may be independent of the casing and rigidly secured thereto by bolts or other means, and packing *c* may be used between the two parts. In some instances instead of forming the pro-

jection on the valve-casing the projection may be formed on the saddle, as shown in Fig. 3, which would enter an opening in the valve-chest. In this case the packing and the follower would be carried by the valve-chest.

I claim as my invention—

1. The combination in an engine, of a saddle and a cylinder secured rigidly to the saddle, a valve-chest on the cylinder, and a sliding tubular connection between said valve-chest and the saddle, substantially as described.

2. The combination of the saddle, a cylinder-casting having a valve-chest, means for rigidly securing the cylinder-casting to the saddle, a projection on either the saddle or the valve-chest, packing between the parts, and means for taking up the packing, substantially as described.

3. The combination of a saddle, a cylinder-casting having a valve-chest, means for rigidly securing the cylinder-casting to the saddle, a projection on the valve-chest, a passage in said projection, a passage in the saddle into which the projection extends, and packing forming a tight joint between the projection and the saddle, substantially as described.

4. The combination of a saddle having an extended flange, a cylinder-casting having a valve-chest and also having an extended

flange, bolts securing the flange of the cylinder-casting to the flange of the saddle, a cylindrical projection on the valve-chest, a passage therein leading to the valve-chest, a passage in the saddle into which the projection extends, packing within the saddle and surrounding the projection, and a follower, substantially as described.

5. The combination in an engine, of a saddle, a cylinder having a valve-chest, means for rigidly securing the cylinder to the saddle, a tubular extension rigidly secured to the valve-chest, packing between the extension and the saddle, and means for taking up the packing, substantially as described.

6. The combination in a locomotive-engine, of the frame, a saddle and a cylinder-casting secured rigidly to the frame, a sliding tubular connection between said casting and the saddle, and means for packing said connection from the outside, substantially as described.

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

SAMUEL M. VAUCLAIN.

Witnesses:

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W. H. TUTTLE.