

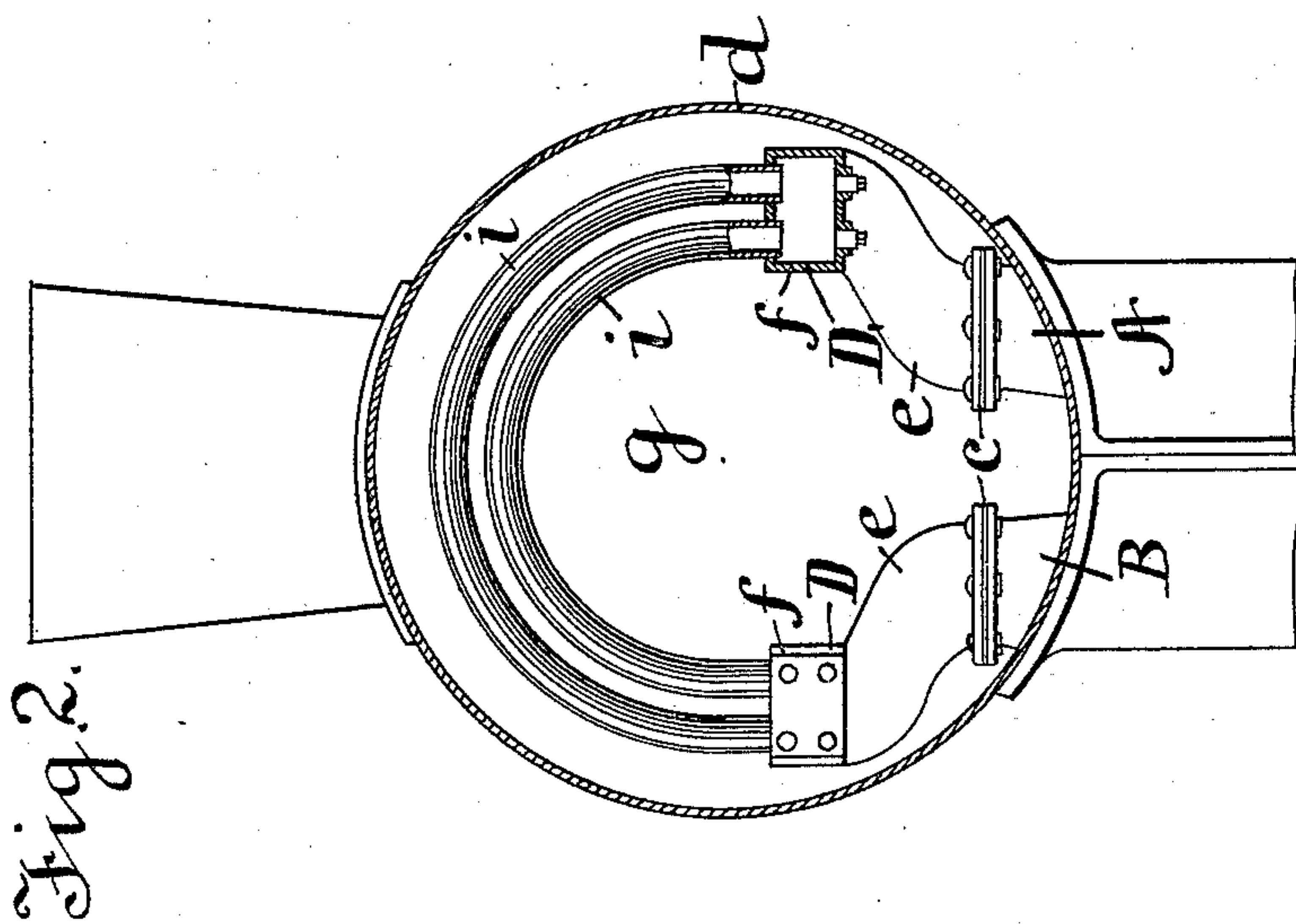
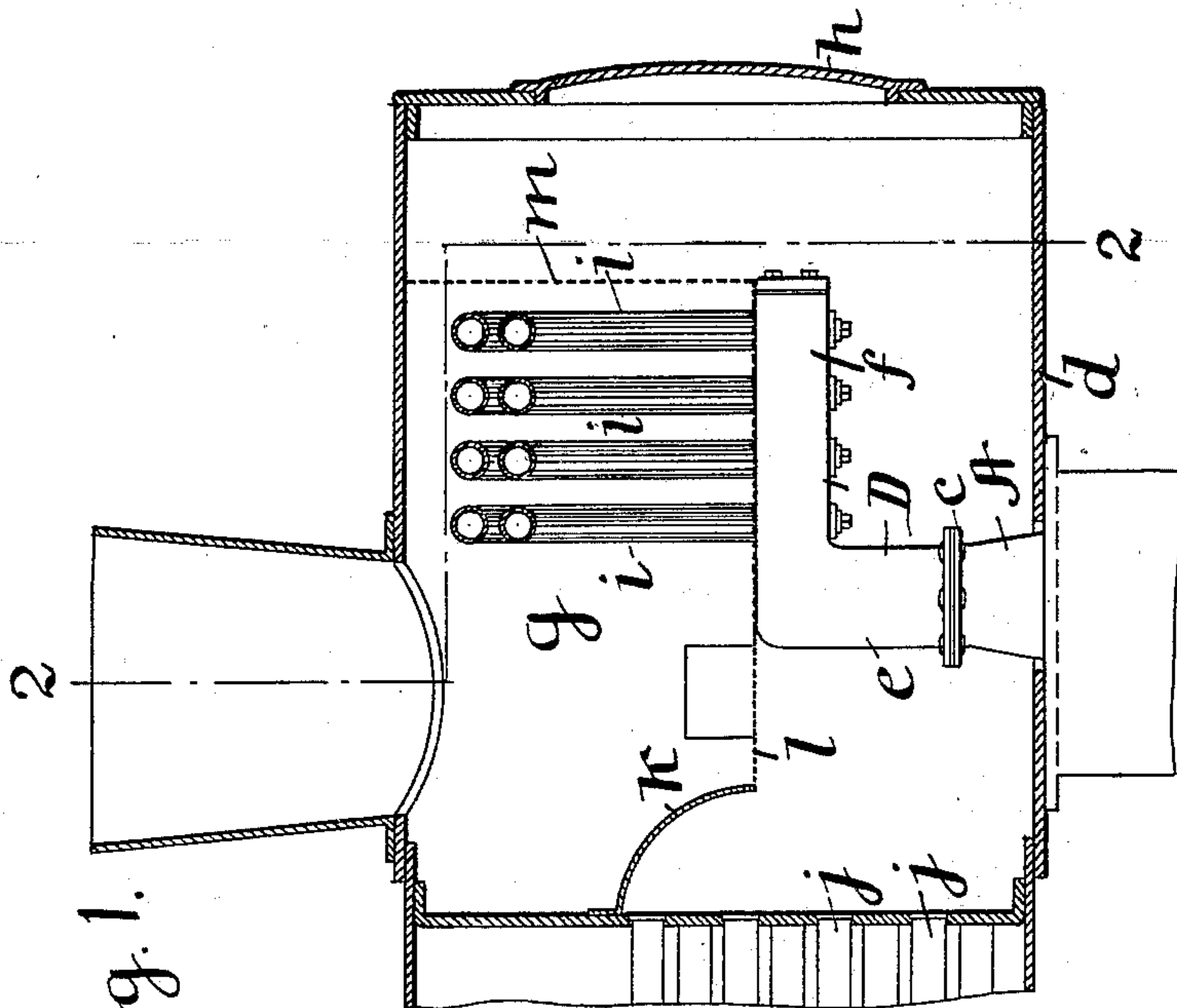
No. 624,360.

Patented May 2, 1899.

C. J. MELLIN.
COMPOUND ENGINE.

(Application filed Apr. 23, 1898.)

(No Model.)



WITNESSES :

J. W. Kimball
C. Sedgwick

INVENTOR
Carl J. Mellen

BY
A. P. Thayer
ATTORNEY.

UNITED STATES PATENT OFFICE.

CARL J. MELLIN, OF RICHMOND, VIRGINIA, ASSIGNOR TO THE RICHMOND
LOCOMOTIVE AND MACHINE WORKS, OF SAME PLACE.

COMPOUND ENGINE.

SPECIFICATION forming part of Letters Patent No. 624,360, dated May 2, 1899.

Application filed April 23, 1898. Serial No. 678,576. (No model.)

To all whom it may concern:

Be it known that I, CARL J. MELLIN, a citizen of the United States, and a resident of Richmond, in the county of Henrico and State
5 of Virginia, have invented certain new and useful Improvements in Compound Engines, of which the following is a specification.

My invention relates to compound engines generally, but more particularly to compound
10 locomotive-engines; and it consists of an improved construction of the receiver in the smoke-box of the boiler for superheating the exhaust-steam from the high-pressure cylinder on its way to the low-pressure cylinder, as
15 hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional elevation through the smoke-box and part of the boiler and also part of my improved super-
20 heating-receiver; and Fig. 2 is a transverse section on line 2 2 of Fig. 1, with a part of the receiver in section.

A represents the exhaust-pipe of the high-pressure cylinder, and B represents the pipe
25 through which the steam passes to the low-pressure cylinder. To each of these I attach at *c*, where they project into the smoke-box, a manifold D instead of the usual conducting-pipe, which being first extended upward a
30 suitable distance and also outward in the part *e*, close to the shell *d*, is in the part *f* prolonged lengthwise in the smoke-box *g*, preferably toward the forward end *h*, and suitably perforated in the upper side for recep-
35 tion of a series of small tubes *i*, bent suitably

to be expanded at their ends into the perforations of the manifolds, respectively, and thus form numerous small conductors for the steam through the heating-space of the smoke-box in a way to greatly increase the amount of
40 heating-surface to which the steam is exposed while passing through. These tubes will preferably be of copper for its better heat-conducting property, but may of course be of any approved material. The special advantages
45 of this form of superheater are its simplicity and cheapness of construction and its non-interference with access to the ends of the boiler-tubes *j* for tightening or renewing them.

A deflecting-plate *k* and wire-netting dia-
50 phragms *l m* are employed to direct the gases for best effects on the superheater.

I claim—

In a compound locomotive-engine the receiver in the smoke-box for the exhaust-steam
55 from the high-pressure cylinder comprising a manifold attached to each of the steam-pipes where they project into the smoke-box and consisting of a part extending upward, and also outward close to the shell of the smoke-
60 box and having a lengthwise extension of the upper portion along the smoke-box, and a series of bent pipes attached at their ends to the upper sides of the said extensions respectively substantially as described.

CARL J. MELLIN.

Witnesses:

A. P. THAYER,
C. SEDGWICK.