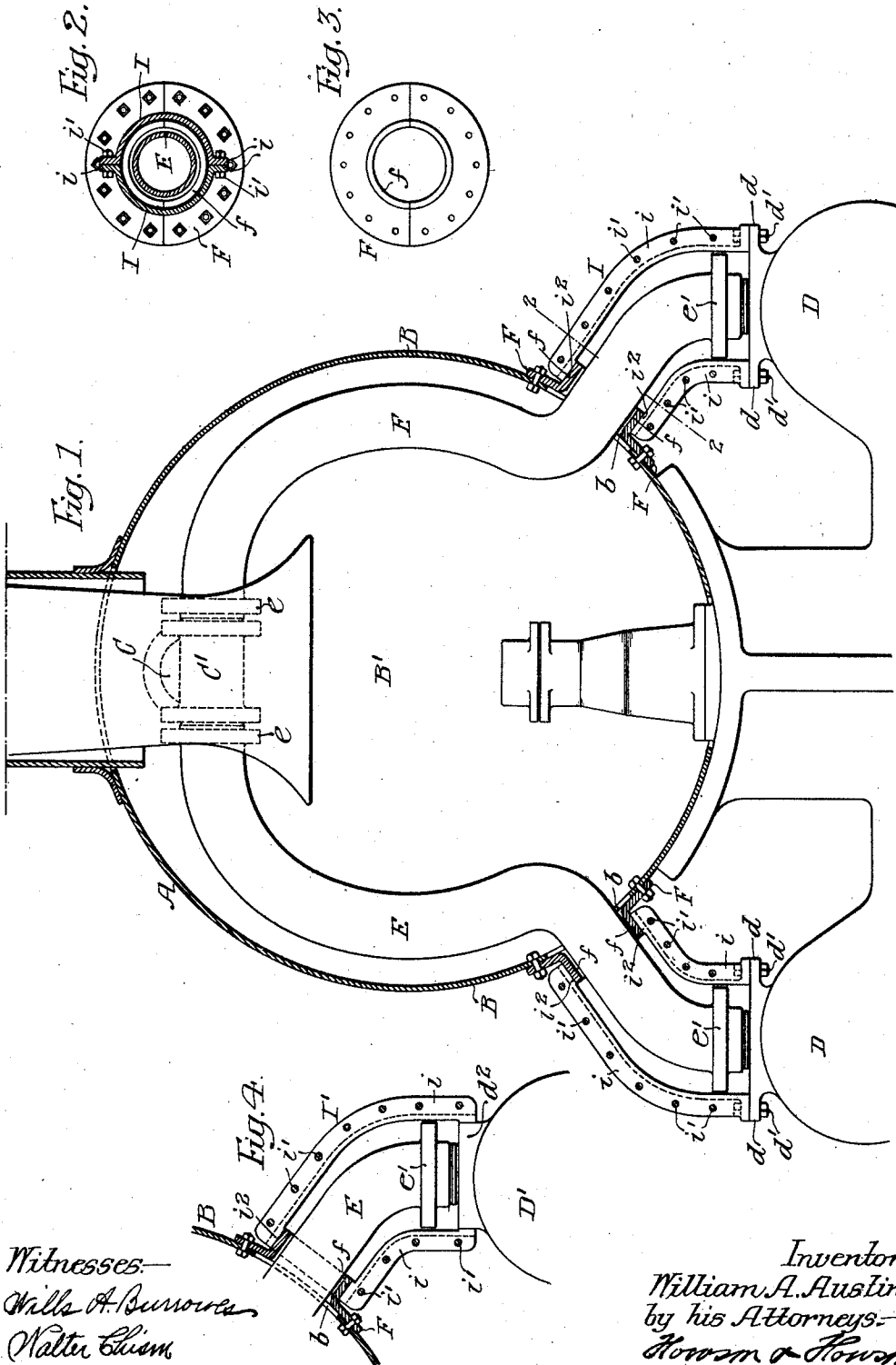


W. A. AUSTIN.
LOCOMOTIVE.

APPLICATION FILED APR. 1, 1911.

998,321.

Patented July 18, 1911.



Witnesses:
Wills A. Burrows
Walter E. Linn

Inventor:
William A. Austin.
by his Attorneys:
Hornum & Howard

UNITED STATES PATENT OFFICE.

WILLIAM A. AUSTIN, OF WAYNE, PENNSYLVANIA, ASSIGNOR TO BALDWIN LOCOMOTIVE WORKS, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LOCOMOTIVE.

998,321.

Specification of Letters Patent. Patented July 18, 1911.

Application filed April 1, 1911. Serial No. 618,338.

To all whom it may concern:

Be it known that I, WILLIAM A. AUSTIN, a citizen of the United States, residing in Wayne, county of Delaware, State of Pennsylvania, have invented certain Improvements in Locomotives, of which the following is a specification.

The object of my invention is to provide means for protecting the steam supply pipes leading from the boiler to the cylinders in the class of locomotives where the supply pipes pass through the shell of the smoke box directly to the steam chest and not through the cylinder saddle.

In the accompanying drawing:—Figure 1, is a sectional view through the smoke box illustrating my invention; Fig. 2, is a sectional view on the line 2—2, Fig. 1; Fig. 3, is a detached view of the two-part ring; and Fig. 4, is a view of a modification.

The great objection to locomotives of the type in which the steam pipes extend from the steam space of the boiler to the cylinder saddles is that they occupy considerable room in the smoke box and prevent access to a great number of the tubes and, especially, the superheater tubes of the type which are built in the boiler, but by connecting the pipes as shown in the drawing access may be had to practically all of the tubes, including the superheater tubes.

A is the boiler at the smoke box end.

B is the shell of the smoke box B'.

D, D are the cylinders.

C is the steam pipe leading from the steam space of the boiler and connected by a header C' to the two curved supply pipes E, E. Each pipe has a flange *e* at the upper end and a flange *e'* at the lower end, and these flanges are bolted respectively to the header C' and to the steam chest of the cylinders D. The pipes, in the present instance, are made of cast metal and they are not finished except at the joints at each end. They pass through enlarged openings *b* in the shell of the smoke box and these openings are of sufficient size to allow for the free passage of the flanges.

F is a flanged ring made in two parts, as shown in Fig. 3, and this flange is bolted to the shell B, as indicated in Fig. 1. The external surface of the flange *f* of the ring F is preferably finished.

I is a two-part casting. Each part has a perforated flange *i* and the two flanges are

secured together by bolts *i'*. In the construction illustrated in Fig. 1, the upper ends of the casing I have an internal, trued surface *i*², which can be clamped tightly on the finished surface of the flange *f*, so that, when the parts are secured in position, there is a tight joint between the casing and the flange. The lower part of each section of the casing I is finished so as to rest on the flange *d* of the cylinder D, and is secured thereto by bolts *d'*, making a tight joint at that point. The finished surface of the casing is subject to variation in shape, and spherical or other tight joints may be used if considered desirable.

By this construction, there is formed a chamber through which the steam pipe E extends and this pipe, being less in diameter than the opening in the ring F, provides the means for free communication between the chamber and the smoke box, so that the steam pipes are protected and the steam is not chilled while passing from the boiler to the cylinder.

In Fig. 4, I have illustrated a modification in which the casing I' has an internal annular surface at the lower end, similar to that at the upper end, and this surface fits over a flanged surface *d*² on the cylinder casing D'. The steam pipe E can be readily removed, when necessary, by simply detaching the bolts which secure the two parts of the casing together and removing the ring F, after which the pipes can be detached and readily removed.

I claim:—

1.. The combination in a locomotive, of the shell of a smoke box having an enlarged opening at one side, a cylinder having a steam chest, a casing, a steam pipe connected with the steam space of the boiler and extending through the opening of the shell of the smoke box and coupled to the steam chest of the cylinder, with an inclosing casing for that portion of the pipe between the shell of the smoke box and the steam chest, said casing being of greater diameter than the pipe so as to allow for the free circulation of the smoke box gases between the pipe and the casing.

2. The combination in a locomotive boiler, of a shell for the smoke box, said shell having an enlarged opening at one side, a cylinder having a steam chest, a steam supply pipe communicating with the steam space of

the boiler and extending through the opening in the shell of the smoke box and coupled to the steam chest of the cylinder, a two-part ring secured to the shell and surrounding said pipe, said ring being of greater diameter than the pipe, with a two-part casing coupled to the said ring and to the steam chest of the cylinder and inclosing that portion of the steam supply pipe between the shell of the smoke box and the steam chest.

3. The combination in a locomotive, of a shell inclosing a smoke box and having an enlarged opening at each side, a cylinder at each side of the locomotive, each cylinder having a steam chest, a steam supply pipe communicating with the steam space of the boiler and a header connected to the supply pipe, with two steam pipes extending, one from each end of the header down the side of the smoke box and through the openings in the smoke box and attached to the steam chest of the cylinders, a two-part casing for that portion of each steam pipe between the

smoke box shell and the steam chest, said casing being greater in diameter than the pipe and the space between the pipe and the casing communicating with the smoke box.

4. The combination in a locomotive, of a smoke box shell having an enlarged opening therein, a cylinder having a steam chest, a steam pipe extending through the opening in the smoke box shell and attached to the steam chest, a two-part flanged ring secured to the smoke box shell and encircling the pipe, said ring being of greater diameter than the pipe, with a two-part casing inclosing that portion of the pipe between the smoke box shell and the steam chest and clamped to the flanges of the ring and secured to the steam chest.

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

WILLIAM A. AUSTIN.

Witnesses:

CHARLES W. FINGLE,
LOUISE A. GARDNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."