

500
W. S. G. Baker,

Exhaust Mechanism for Locomotives.

N^o 23,999. Patented May 17, 1859.

Fig 1

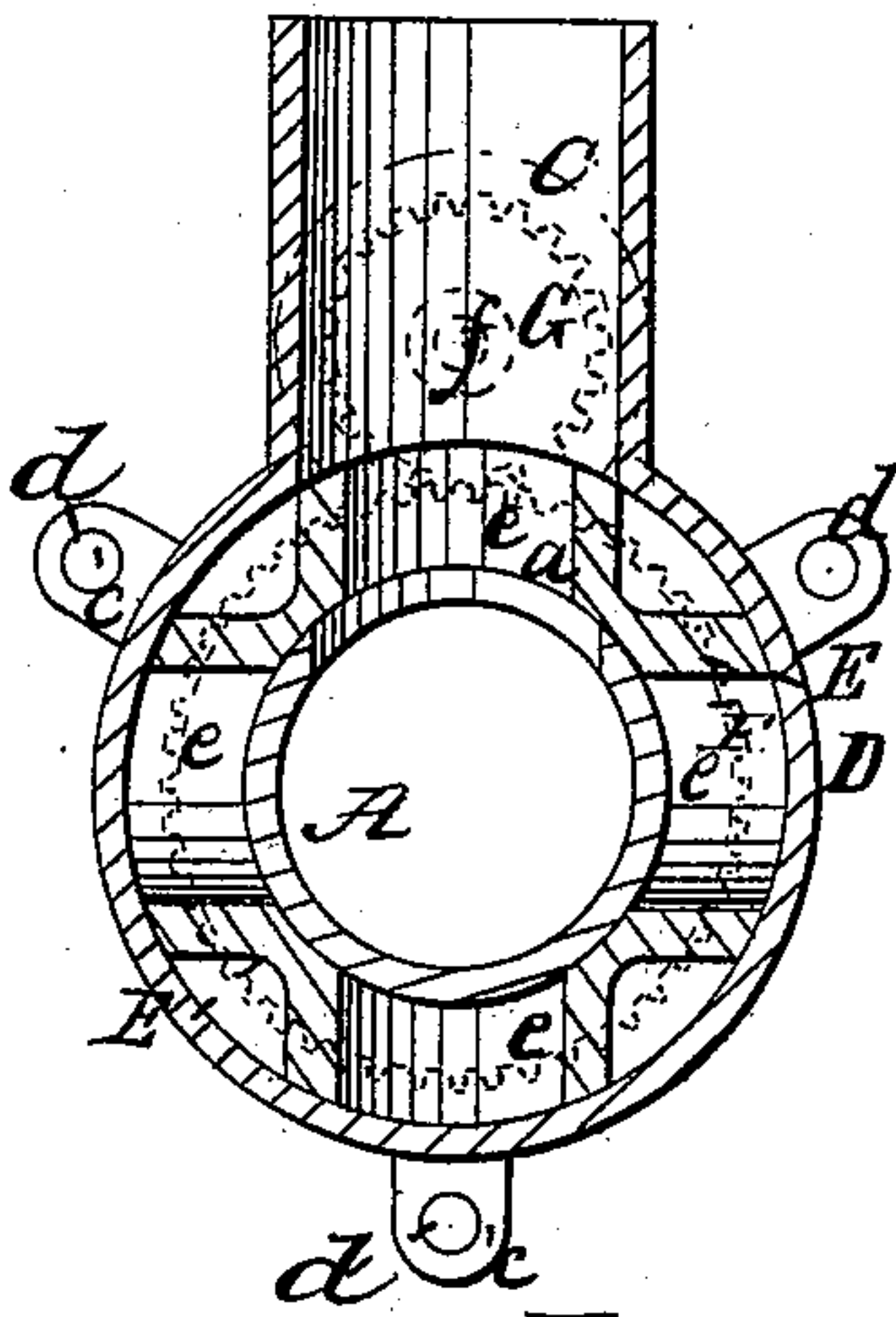
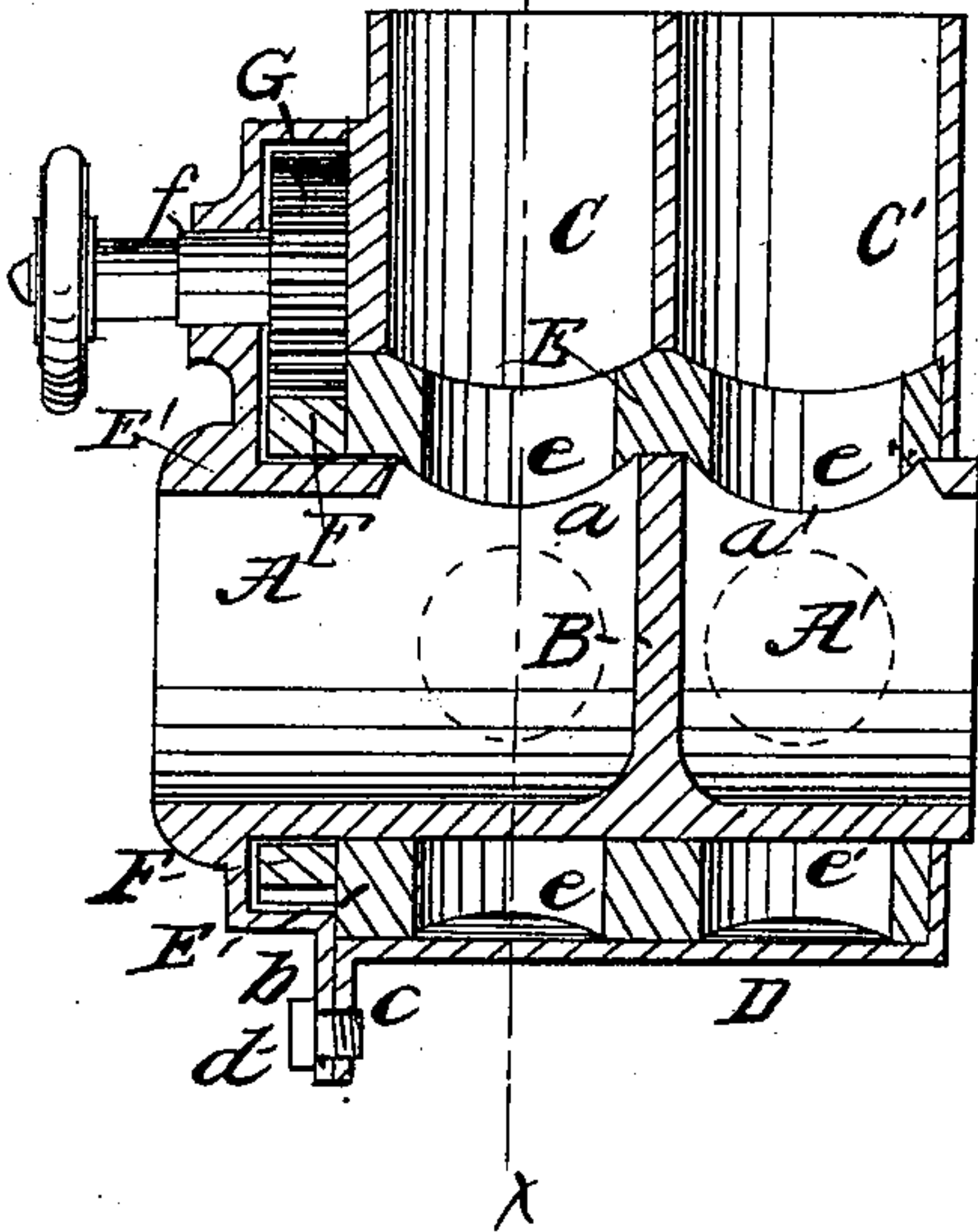


Fig. 2



Witnesses:

Inventor.

S. C. Hayes
W. H. Purdy,

Wm S. G. Baker.

UNITED STATES PATENT OFFICE.

WILLIAM S. G. BAKER, OF CHICAGO, ILLINOIS.

VARIABLE EXHAUST OF LOCOMOTIVE-ENGINES.

Specification of Letters Patent No. 23,999, dated May 17, 1859.

To all whom it may concern:

Be it known that I, W. S. G. BAKER, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved
5 Variable Exhaust for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specifica-
10 tion, in which—

Figure 1, represents a vertical transverse section of my exhaust, the line *x, x*, Fig. 2, indicating the plane of section. Fig. 2, is a longitudinal central section of ditto.

15 Similar letters of reference in both views indicate corresponding parts.

This invention consists in arranging over the exhaust pipe a rotary cylindrical plug with different sized openings which are
20 brought to correspond with the openings in the exhaust pipe and with the openings of the pipes leading therefrom to the chimney by means of gear wheels which are easily operated from the engineer's stand and the
25 whole is so arranged that the exhaust steam from the two cylinders is kept separate until it reaches the chimney and that the opening of the exhaust pipe for each cylinder is varied separately.

30 To enable those skilled in the art to fully understand, make and use my invention I will proceed to describe its construction and operation.

A, A', are the ends of the exhaust pipes
35 leading from the two cylinders of a locomotive engine or from some other double cylinder steam engine, and these two ends are divided by a partition B, and they are provided with openings *a, a'*, which lead to
40 short tubes C, C', which are rigidly attached to a shell D, and which leads into the chimney or smoke stack of the engine. The exhaust pipes A, A', are secured to the shell D by means of a cap E', which is provided
45 with ears *b* to correspond to similar ears *c*, which are attached to the shell D, and which give room for the screws *d*. Between the

shell D, and the outside of the exhaust pipes A, A', is room enough left for a cylindrical plug E, which fits nicely over the pipes 50 A, A', and into the shell D, and which is provided with a series of openings *e, e'*, of different size which correspond in their position to the position of the openings *a, a'*, and attached to the end of this plug is a cog- 55 wheel F, which is covered by the cap E', and which gears in a pinion G, which is attached to an arbor *f*, which has its bearing in the cap E' and which is operated from the engineer's stand. The proportion of the pin- 60 ion G and of the cog-wheel F, is such that for each half revolution of the pinion a new set of openings *e, e'*, in the plug is brought to register with the openings *a, a'*, and with the tubes C, C'. By these means the disad- 65 vantage existing with all the other variable exhausts now in use, namely, that the engineer can not know for certain when the variable openings register with the openings of the exhaust pipes, is in a great measure 70 avoided, and any spring arising, if the plug should bind, is made up by making the openings *a, a'*, and the tubes C, C', considerably larger than the openings *e, e'*, so that even if the openings don't register quite perfect 75 the steam passes out through the openings *e, e'*, without obstruction. And, at the same time, the exhaust steam from one cylinder is not obstructed by the exhaust steam from the other one, as both exhausts are kept entirely 80 separate until they pass up into the chimney.

What I claim as new and desire to secure by Letters Patent is:—

The plug E arranged in combination with the shell D, and with the exhaust pipes 85 A, A', of a double cylinder steam engine, in such a manner that the exhaust of each cylinder can be varied while both are separate from each other, substantially as and for the purpose specified.

WM. S. G. BAKER.

Witnesses:

S. I. HAYES,
W. H. PURDY.