

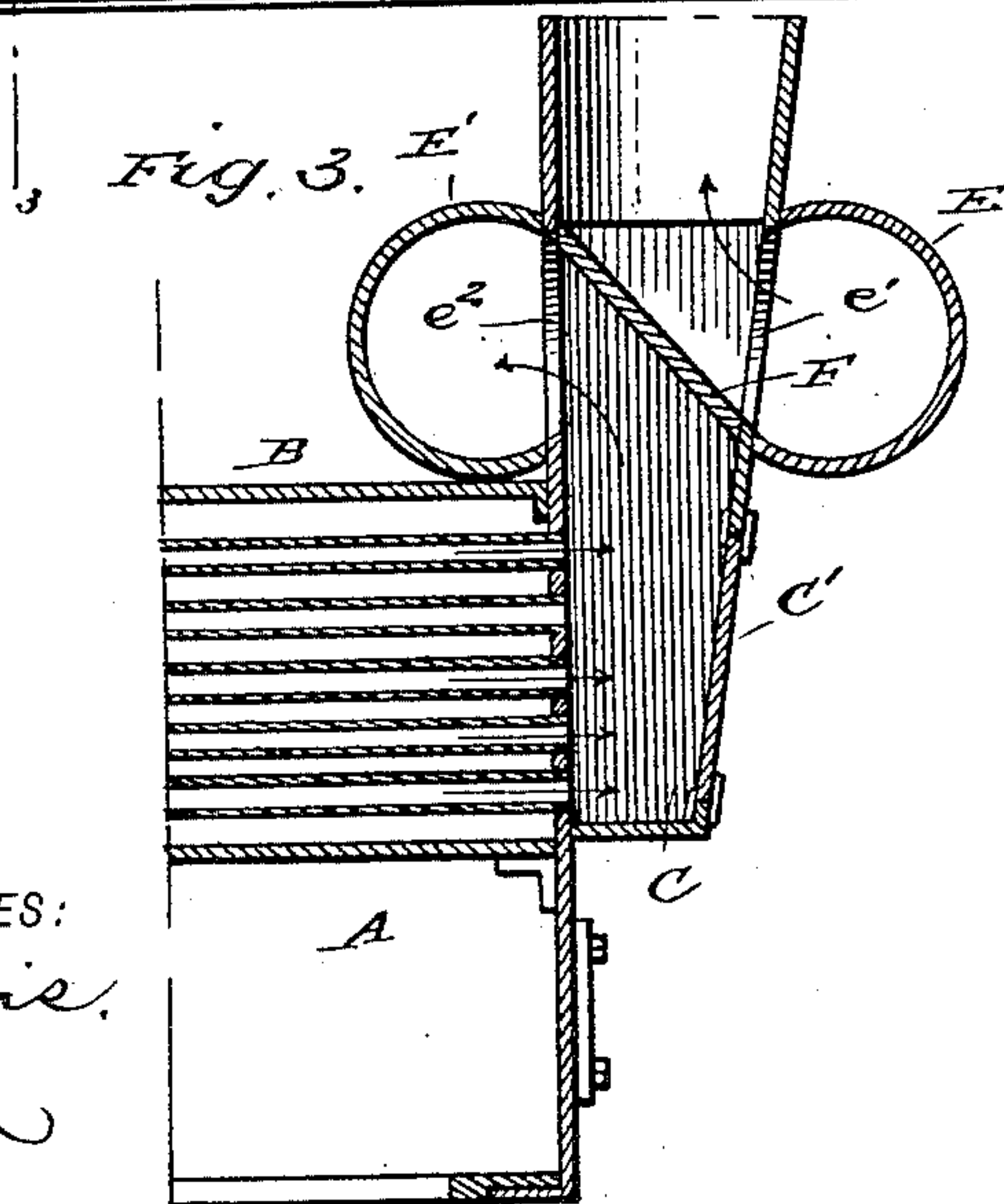
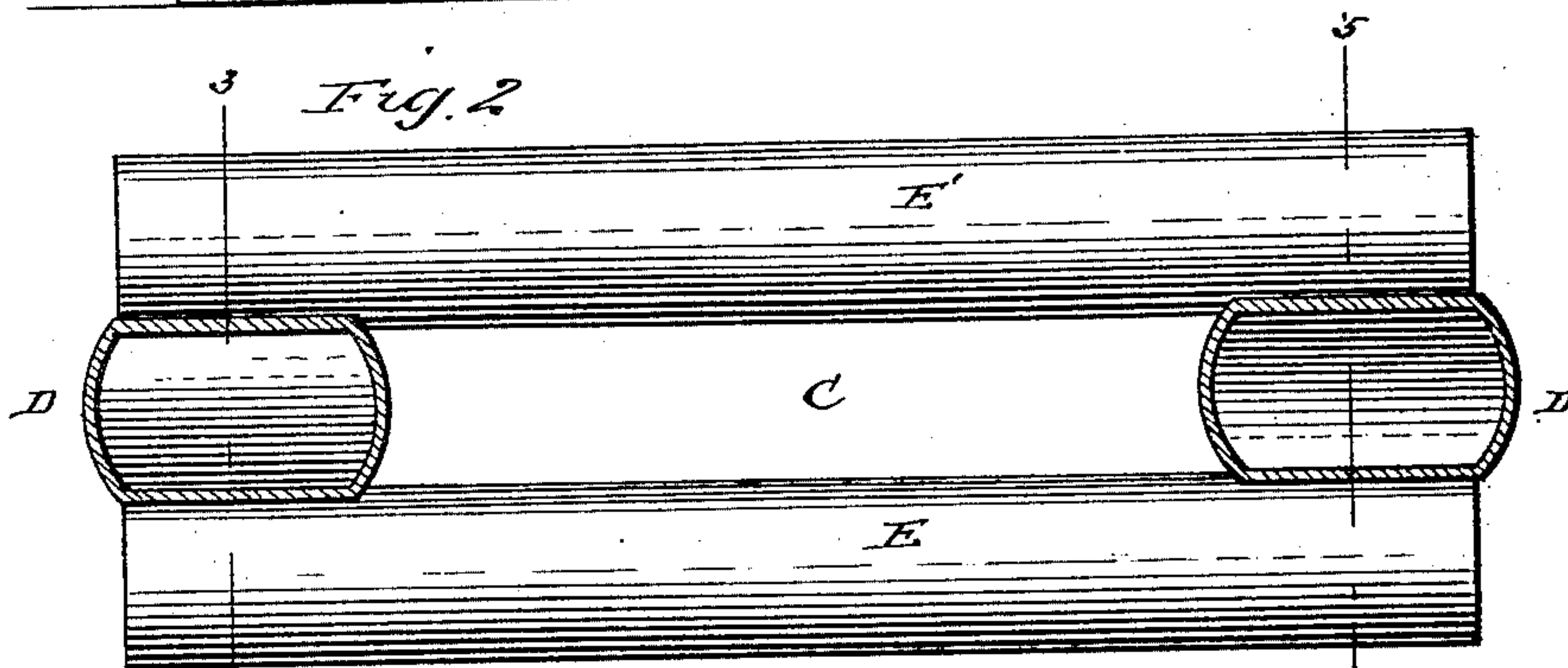
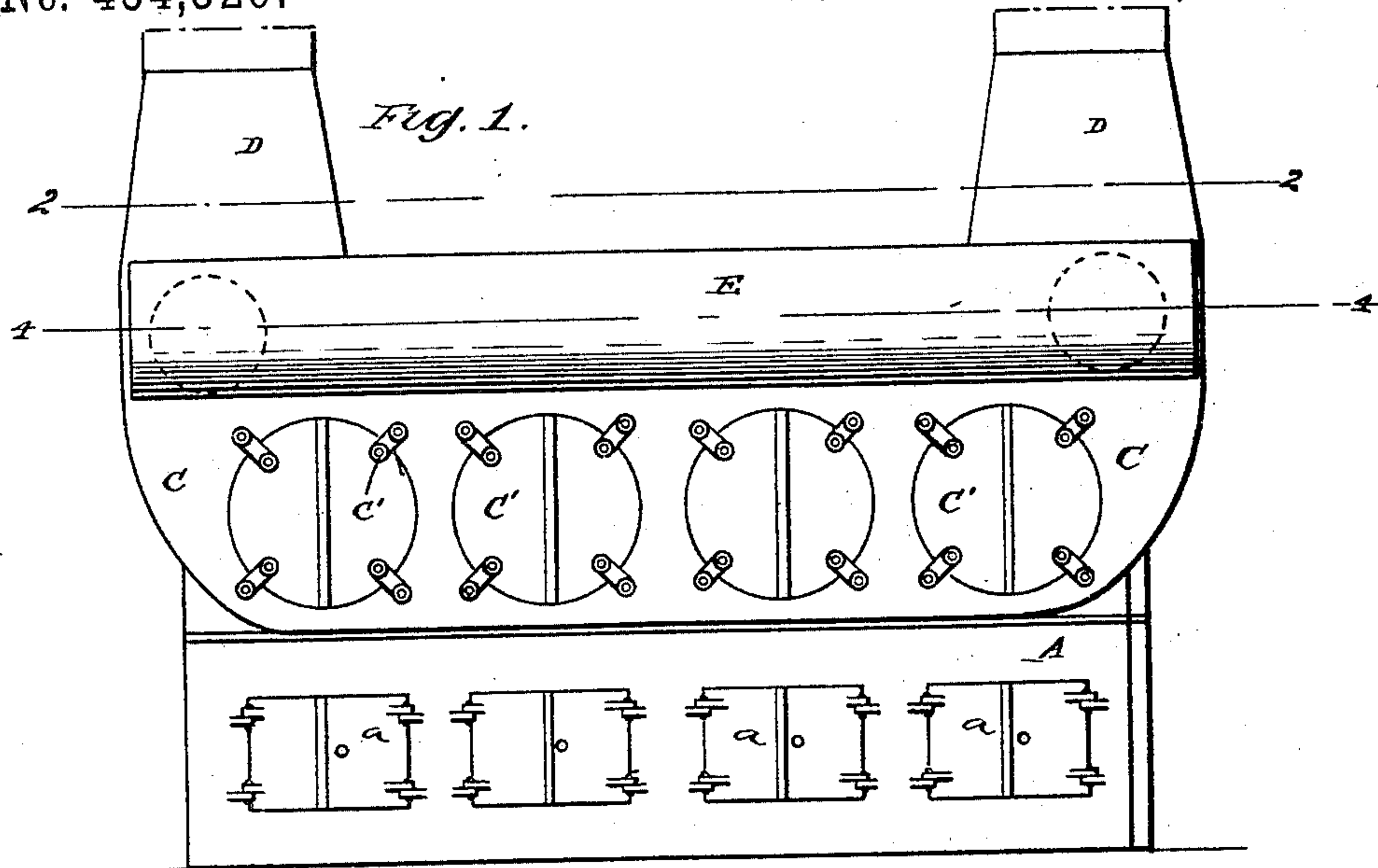
(No Model.)

2 Sheets—Sheet 1.

J. B. BROLASKI.  
STEAMBOAT SMOKE STACK.

No. 454,326.

Patented June 16, 1891.



WITNESSES:

*W. R. Davis.*  
*C. Sedgwick*

INVENTOR:

*J. B. Brolaski*  
BY *Munn & Co*  
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

J. B. BROLASKI.  
STEAMBOAT SMOKE STACK.

No. 454,326.

Patented June 16, 1891.

Fig. 4.

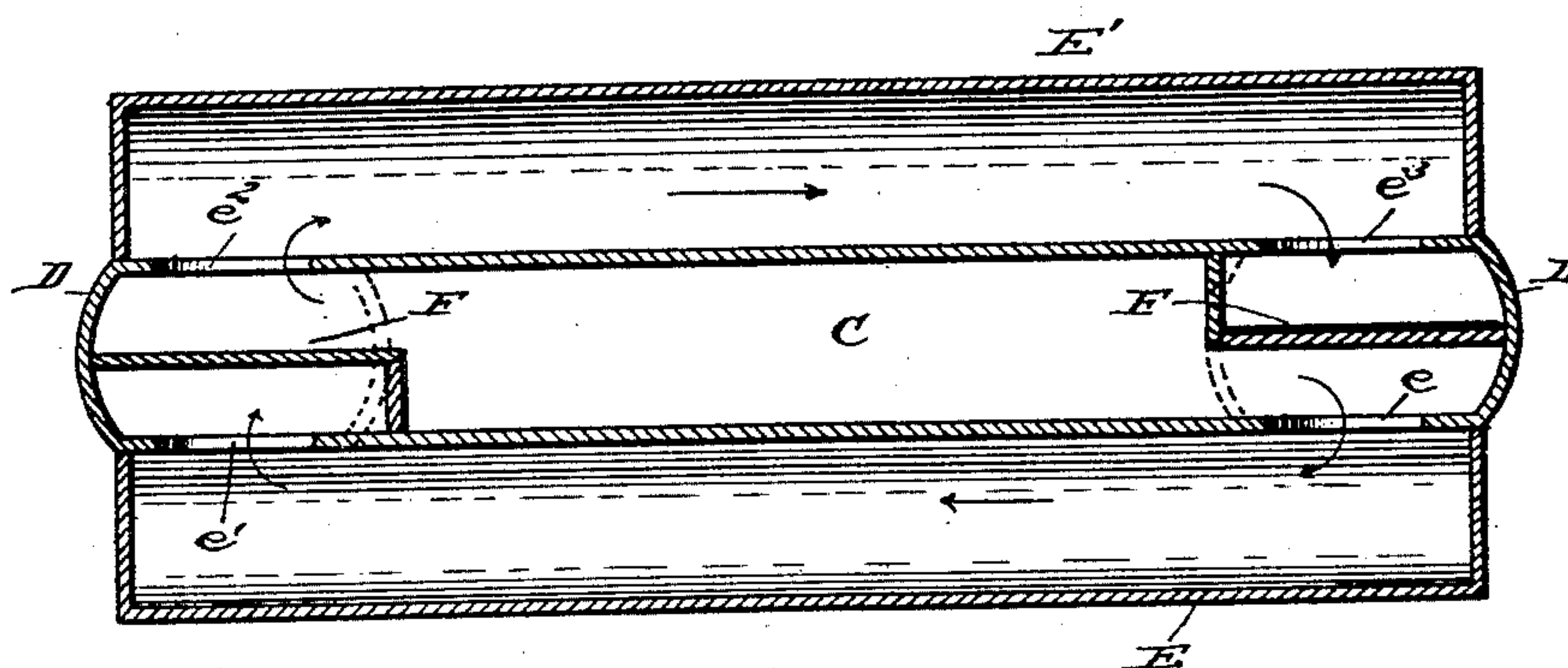
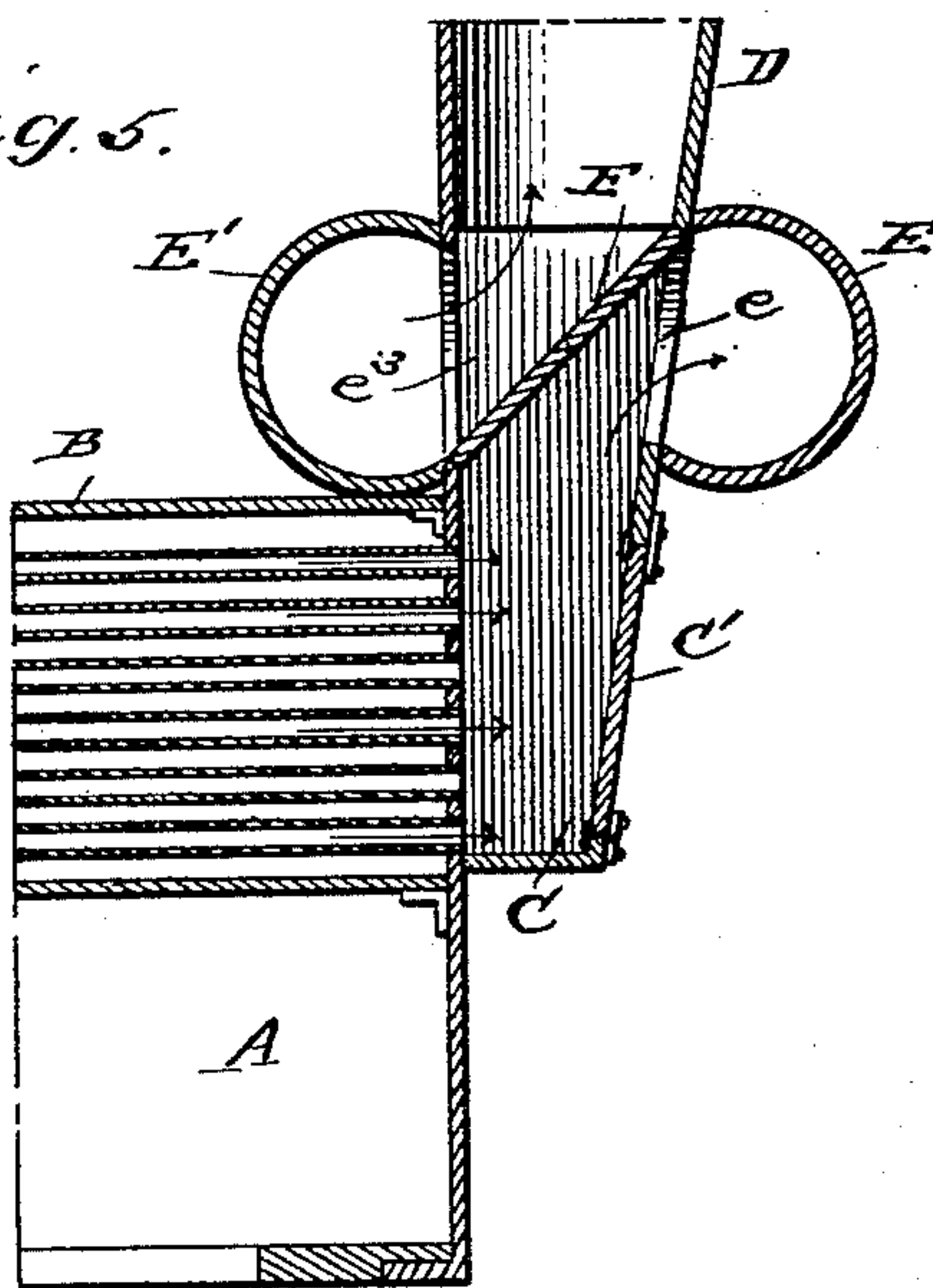


Fig. 5.



WITNESSES:

*W. R. Davis.*  
*C. Sedgwick.*

INVENTOR:

*J. B. Brolaski*  
BY *Munn & Co.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOSEPH B. BROLASKI, OF ST. LOUIS, MISSOURI.

## STEAMBOAT SMOKE-STACK.

SPECIFICATION forming part of Letters Patent No. 454,326, dated June 16, 1891.

Application filed January 15, 1891. Serial No. 377,862. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH B. BROLASKI, of St. Louis, in the State of Missouri, have invented new and useful Improvements in Steamboat Smoke-Stacks, of which the following is a full, clear, and exact description.

My invention relates to improvements in smoke-stacks for steamboats, and especially for that class of steamboats which are used for river navigation.

It is customary to provide steamboats with tall smoke-stacks in order to give the necessary draft to the furnaces, and as navigable rivers are usually provided with numerous bridges it is necessary that the smoke-stacks be hinged, so that they may be lowered when a bridge is approached, in order that they may pass beneath it without injury. That construction entails considerable expense and useless weight, and, moreover, much time and labor are lost in adjusting the smoke-stacks, and they are also greatly exposed to the wind.

The object of my invention is to obviate these difficulties by producing smoke-stacks which will be short enough to pass beneath any bridge, which will not be exposed to the wind, and which will have at least as good a draft as the tallest steamboat smoke-stacks of ordinary construction.

To this end my invention consists in parallel smoke-stacks extending horizontally across the front and rear of the smoke-box on a plane with the top of the boiler, and from thence vertically through the upper portion of the steamboat. This construction will be hereinafter fully described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of an ordinary steamboat boiler-furnace provided with smoke-stacks embodying my invention. Fig. 2 is a sectional plan of the same on the line 2 2 in Fig. 1. Fig. 3 is a vertical section on the line 3 3 in Fig. 2. Fig. 4 is a horizontal section through the horizontal smoke-stacks and smoke-box on the line 4 4 in Fig. 1, and shows at each end one-half of the diagonal deflecting-plate. Fig. 5 is a vertical section on the line 5 5 in Fig. 2.

In the drawings, A represents the ordinary furnaces, which may be of any approved construction and which are provided with the usual doors *a*, through which the fires are fed, and above the furnaces are the boilers B, which also are of the common form and which have at the end a smoke-box C, into which the smoke enters from the boiler-flues, and from each end of which extends vertically a short smoke-stack D, the smoke-stacks being tall enough to extend well above the vessel, but not far enough to interfere with any bridge or other object. The smoke-box C is provided in front with doors C', which are held in place by suitable hinges and fastenings and which afford means for cleaning out the smoke-box and boiler-flues. Extending horizontally on either side of the smoke-box C and near the top of the same are smoke-stacks E E', with dome or removable ends to afford means for cleaning out, (not shown,) the front smoke-stack E having openings *e* and *e'* at opposite ends into the smoke-box, and the smoke-stack E' having similar openings *e*<sup>2</sup> and *e*<sup>3</sup>. These openings in the smoke-stacks align with the vertical smoke-stacks D, and opposite the openings in each end of the horizontal smoke-stacks are deflecting-plates F, which extend diagonally across the smoke-box beneath the smoke-stack D, and these deflecting-plates force the smoke to pass through one of the horizontal stacks to the vertical stack at the opposite end of the smoke-box, so that there will be as long a draft as if the furnaces were provided with the ordinary tall smoke-stacks. For instance, the smoke entering the box C near the opening *e* in the horizontal stack E will be prevented by the deflecting-plate F from passing upward through the adjacent stack D and will be forced to pass through the opening *e* into the stack E, and from thence through the opening *e'* into the vertical stack D on the opposite side of the furnaces, and from thence into the outer air, and it will be readily seen that the combined length of the horizontal stack E and one of the vertical stacks D is greater than the length of the ordinary tall smoke-stack. The smoke in the opposite end of the smoke-box is deflected into the opposite horizontal stack E' and passes through the openings *e*<sup>2</sup> and *e*<sup>3</sup> into the vertical stack D on the opposite side of the



furnace, where the movement is accelerated by the heat of the deflectors F, and from thence into the outer air.

I have shown in the drawings two vertical  
5 stacks and two horizontal stacks connected therewith, as it is customary to provide steamboats with two smoke-stacks; but it is obvious that the system may be duplicated and carried out to any extent.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A steamboat smoke-stack having a portion of its length extending horizontally across  
15 the front and back of the smoke-box above the boiler-furnaces and connecting with the vertical smoke-stack, substantially as described.

2. The combination, with the boiler-fur-  
20 naces, of a smoke-box arranged at one end

thereof, connecting with vertical smoke-stacks arranged at opposite ends of the smoke-box, horizontal smoke-stacks arranged on each side of the smoke-box and having openings into the same near opposite ends, 25 said openings aligning with the vertical smoke-stacks, and deflector-plates arranged diagonally between the openings in the horizontal stacks, substantially as described.

3. The combination, with the boiler-fur- 30 naces, of a smoke-box arranged to receive the smoke from the same and provided with doors, as shown, and the horizontal smoke-stacks E E', opening from opposite ends of the smoke-box, substantially as described.

JOSEPH B. BROLASKI.

Witnesses:

ROBERT RUTLEDGE,  
GEO. J. CHAPMAN.