

(No Model.)

2 Sheets—Sheet 1.

S. T. WELLMAN.

CUTTER FOR REVOLVING PUDDLING FURNACES.

No. 285,861.

Patented Oct. 2, 1883.

Fig. 1.

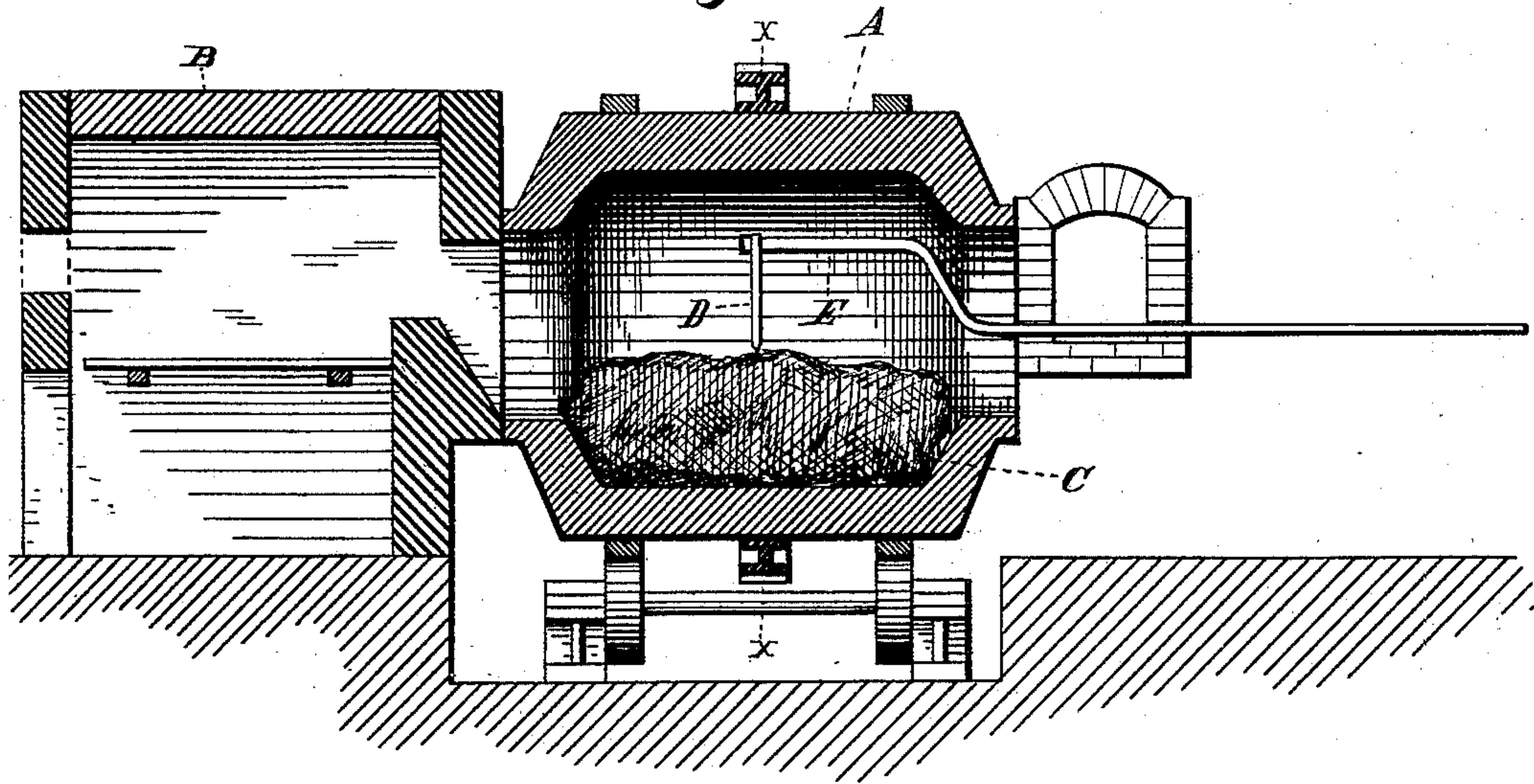
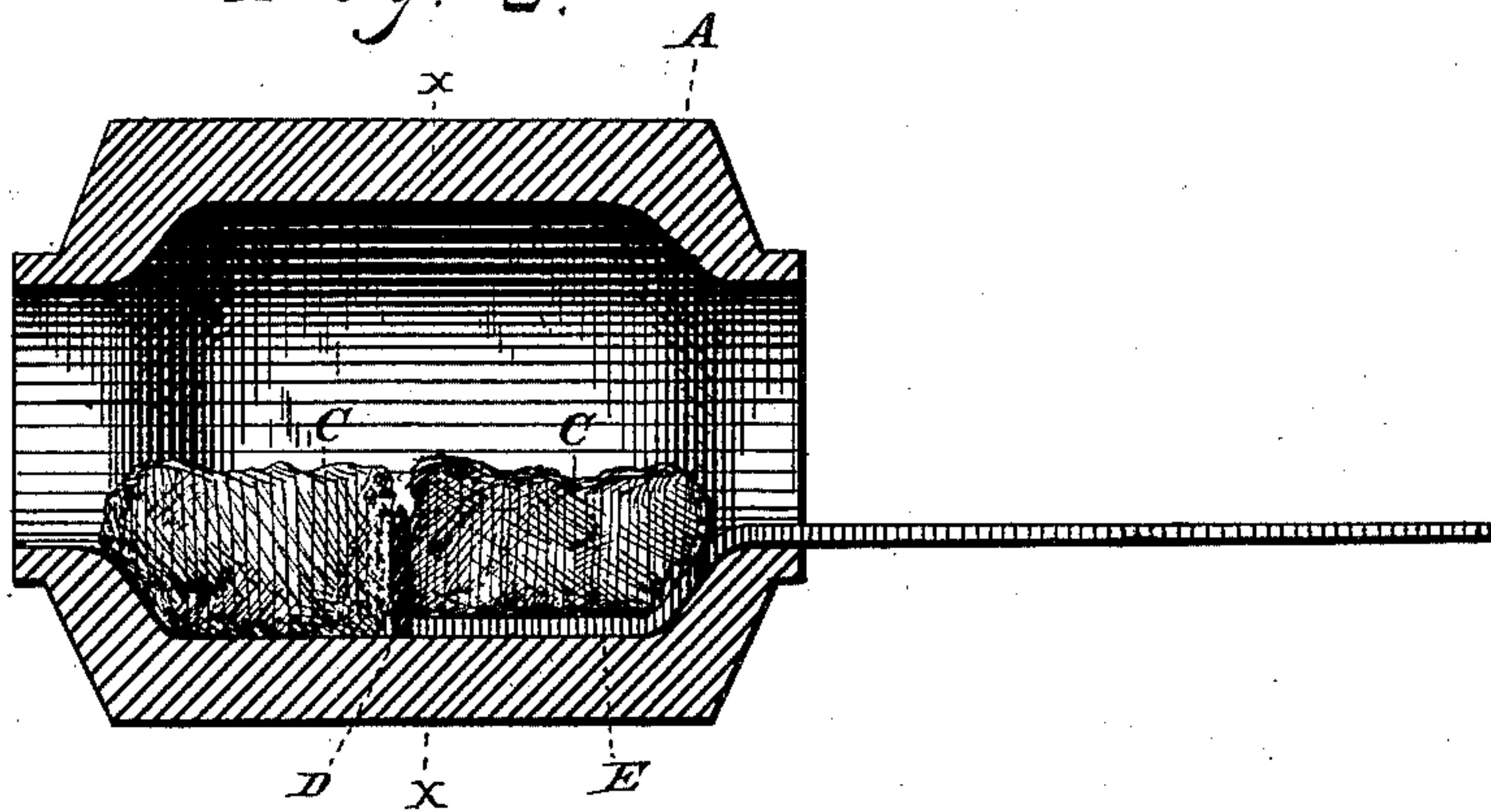


Fig. 2.



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Fig. 3.

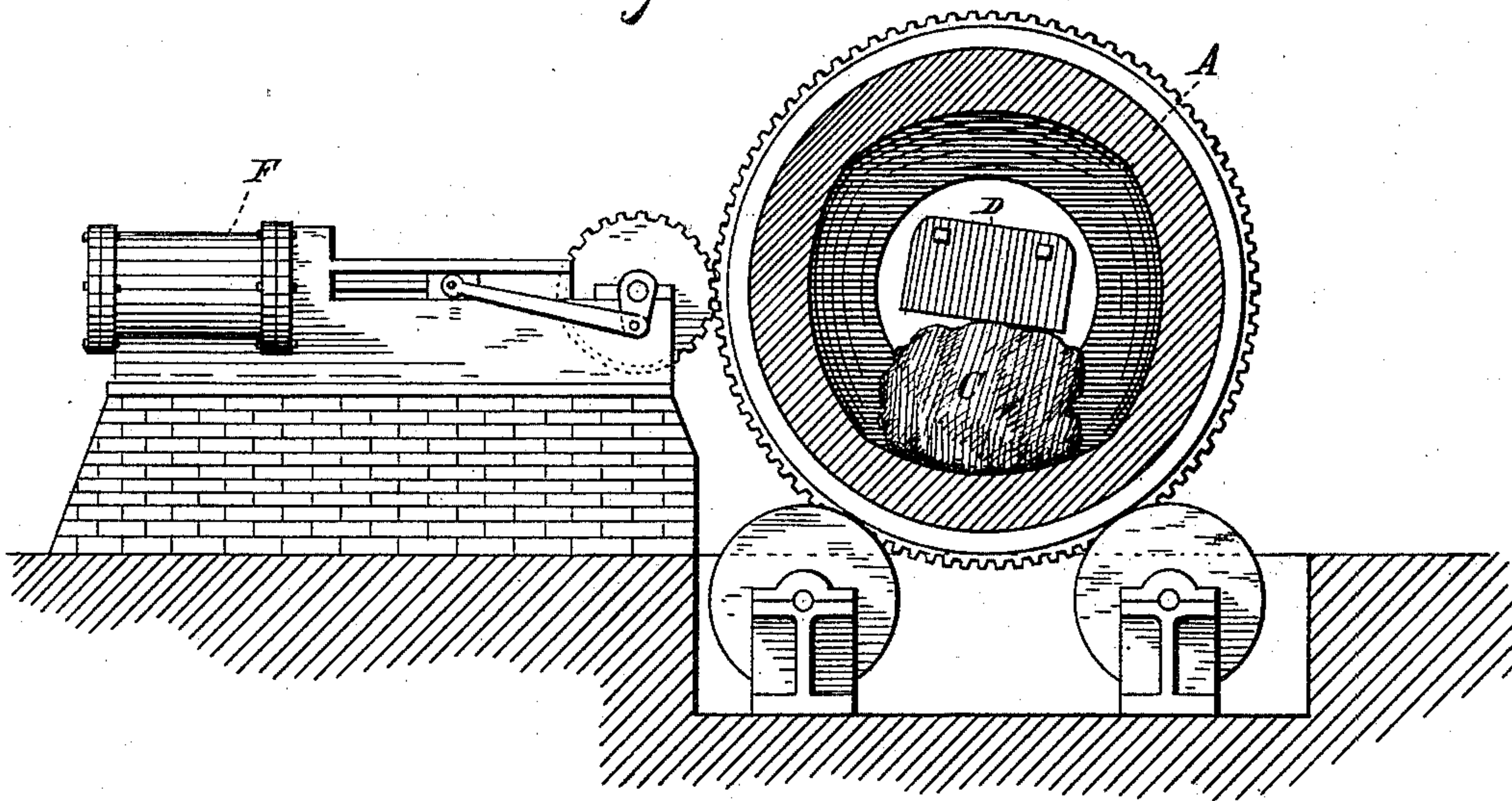


Fig. 4.

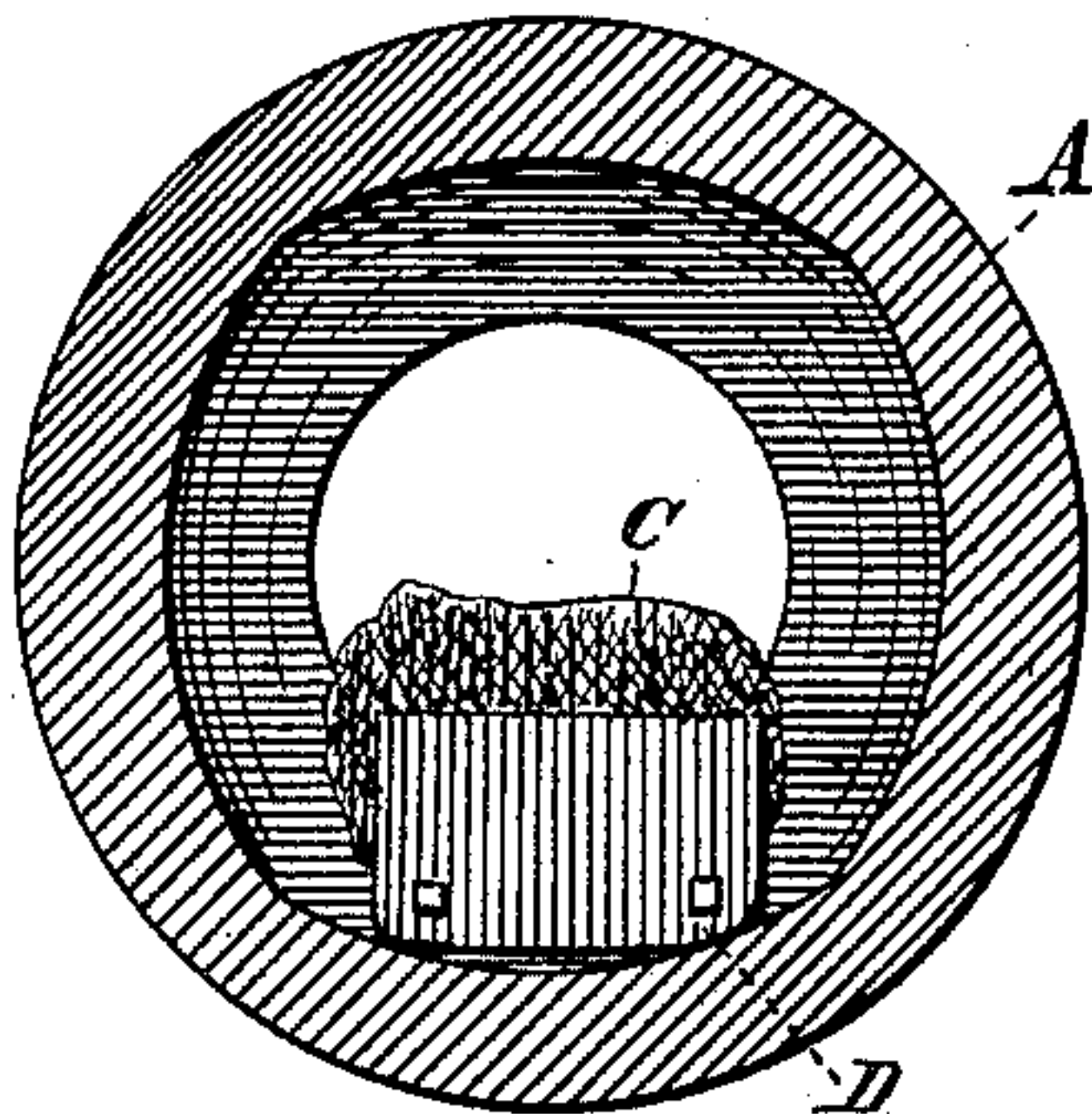


Fig. 5.

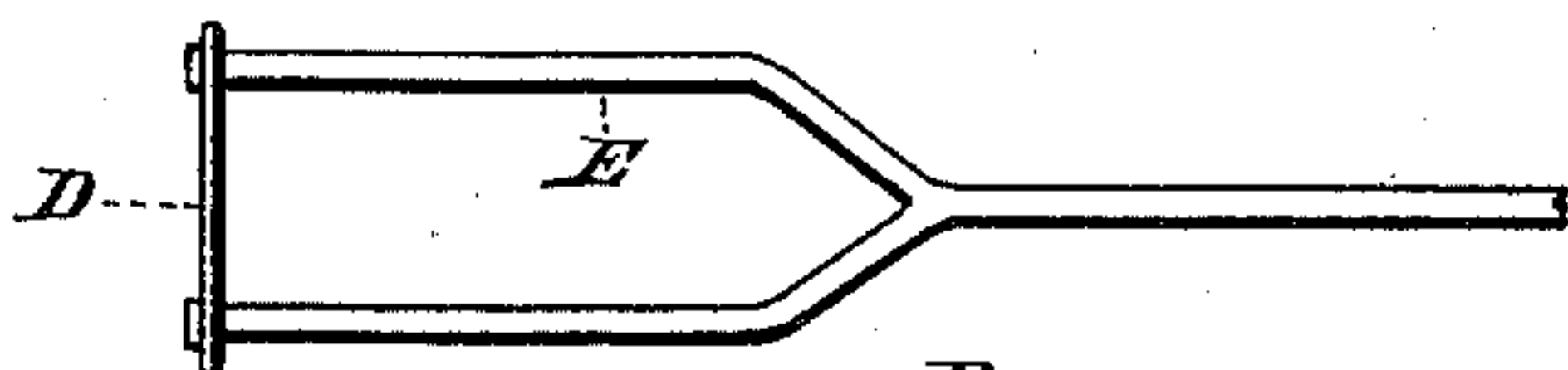


Fig. 6.

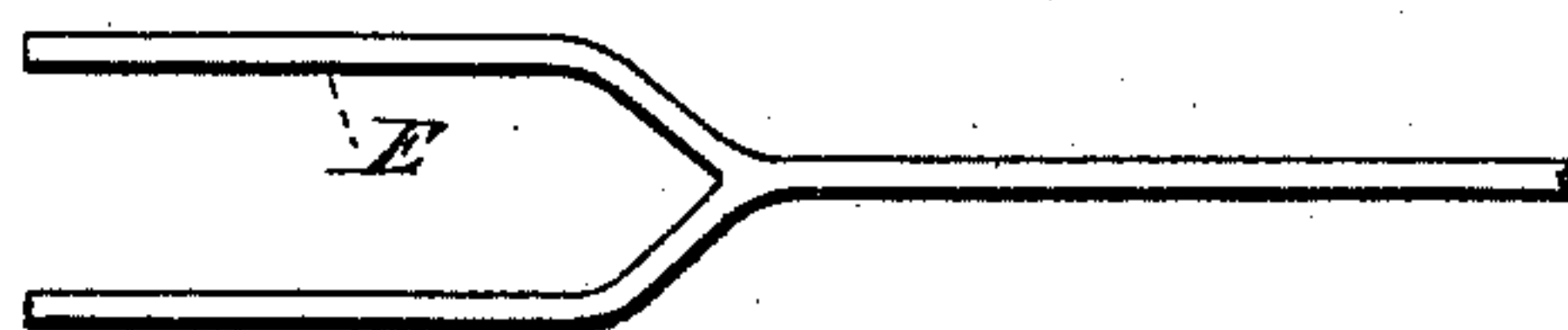


Fig. 8.

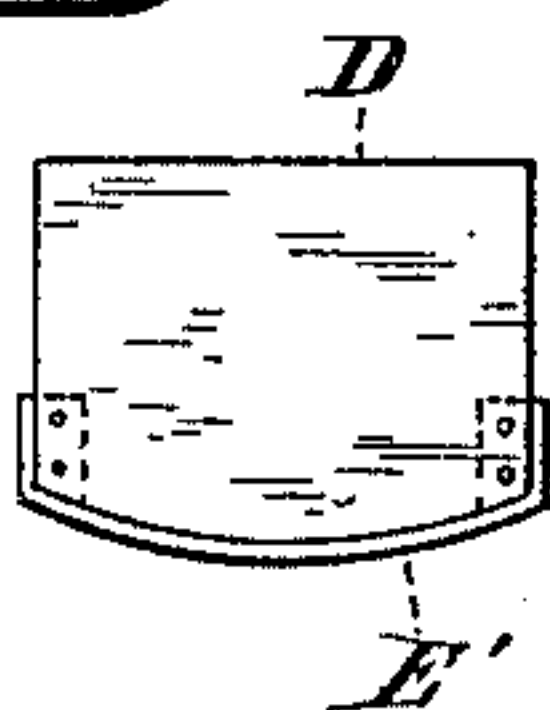
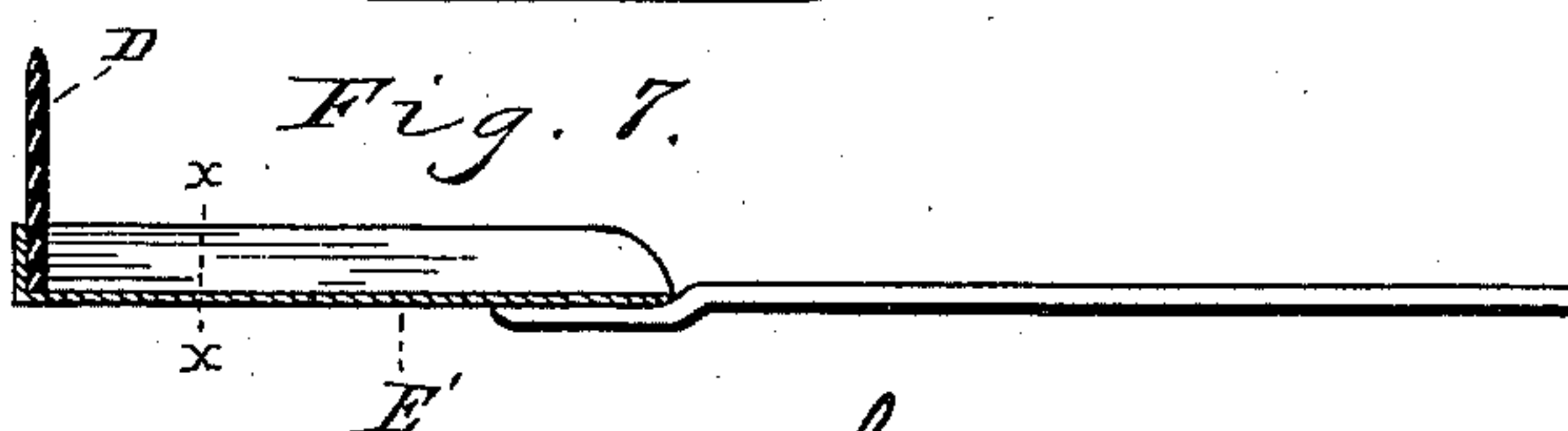


Fig. 7.



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UNITED STATES PATENT OFFICE.

SAMUEL T. WELLMAN, OF CLEVELAND, OHIO.

CUTTER FOR REVOLVING PUDDLING-FURNACES.

SPECIFICATION forming part of Letters Patent No. 285,861, dated October 2, 1883.

Application filed January 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL T. WELLMAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Cutters for Revolving Puddling-Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in cutters for revolving puddling-furnaces; and it consists in certain features of construction and combination of parts, as will be herein after described, and pointed out in the claims.

When in the process of making iron the revolving puddling-furnace is used, it is found that the puddle-balls are frequently of such size that they are difficult to remove from the furnace, and if removed, are too large to be worked by the ordinary machinery for that purpose. I have therefore invented a cutter that may be inserted in the furnace and so placed that the puddle-ball will roll onto the cutter and be severed thereby. The cutter is attached to a fork that receives the severed end of the puddle-ball on its prongs, and by means of which the said ball is removed from the furnace. The cutter may be placed so as to sever the puddle-ball at any desired point, and by repeating the operation the puddle-ball may be cut into the required number of pieces. The said fork and its attached cutter may be suspended in chains and operated by a crane or other suitable device, so that puddle-balls or parts thereof of a required size may be readily removed from the furnace.

I am aware that some attempts have been made to sever the puddle-balls in the furnace by a cutter attached to the furnace. Such a device, however, is impracticable for various reasons, to wit: By remaining constantly in the furnace the cutter is soon wasted by the heat; also, you cannot control it. It may sever puddle-balls that are sufficiently small already, or sever them in the wrong place, and the severed end behind the cutter is difficult to remove. For these reasons any cutter that is attached to the inside of the furnace will be about worthless.

In the drawings, Figure 1 is a horizontal vertical sectional view of a revolving puddling-furnace with a puddle-ball at the bottom and the fork and cutter inserted in the furnace, ready for operation. Fig. 2 shows the furnace after a part of a revolution has brought the puddle-ball on top of the cutter and has been severed thereby. Fig. 3 is a cross-section on the line of xx , Fig. 1. Fig. 4 is a cross-section on the line of xx , Fig. 2. Figs. 5, 6, 7, and 8 are detailed views, showing the cutter and fork.

A represents a revolving puddling-furnace; B, the fire-chamber; C, the puddle-ball; D, the cutter, and E the fork to which the cutter is attached. F represents the engine by which the said furnace is rotated.

The operation of my device is as follows: When the puddle-ball is in condition to be removed from the furnace, the combined cutter and fork are placed with the edge of the cutter resting on the puddle-ball at the place where it is desired to sever the said ball, as shown in Figs. 1 and 3. The cutter is held in contact with the puddle-ball until the rotation of the furnace brings the puddle-ball on top of the cutter. The puddle-ball is in an almost melted condition, and is therefore very soft, but is also very heavy. Its own gravity, therefore, is sufficient to force itself onto the cutter and be severed thereby, as shown in Figs. 2 and 4. It will be seen that the severed end rests on the fork and is ready to be lifted from the furnace. Next, a fork, either with or without a cutter attached, is placed by the side of the remaining portion of the said ball, which, by the rotation of the furnace, as aforesaid, is rolled upon the fork in position to be removed from the furnace.

In Fig. 6 is shown a fork suitable for removing the whole or parts of puddle-balls from the furnace. In Fig. 5 is shown the same kind of fork with the cutter attached. In Fig. 7 is shown another manner of construction, where the plate E' takes the place of the prongs of the fork. The said plate is bent on about the same circle as the inside of the furnace, and is attached to the cutter D, as shown in Fig. 8.

What I claim is—

1. The combination, with a fork adapted for

use in puddling-furnaces, of a cutter secured thereto, whereby the puddle-balls may be severed and the severed ends of the same removed, substantially as set forth.

- 5 2. The combination, with a cutter for severing the puddle-balls within a revolving furnace, of a fork to which said cutter is secured, said fork being so constructed and arranged relative to the cutter that when the puddle-
10 ball is severed its severed end will rest upon

said fork ready for removal, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 13th day of January, 1883.

SAMUEL T. WELLMAN.

Witnesses:

C. H. DORER,

ALBERT E. LYNCH.