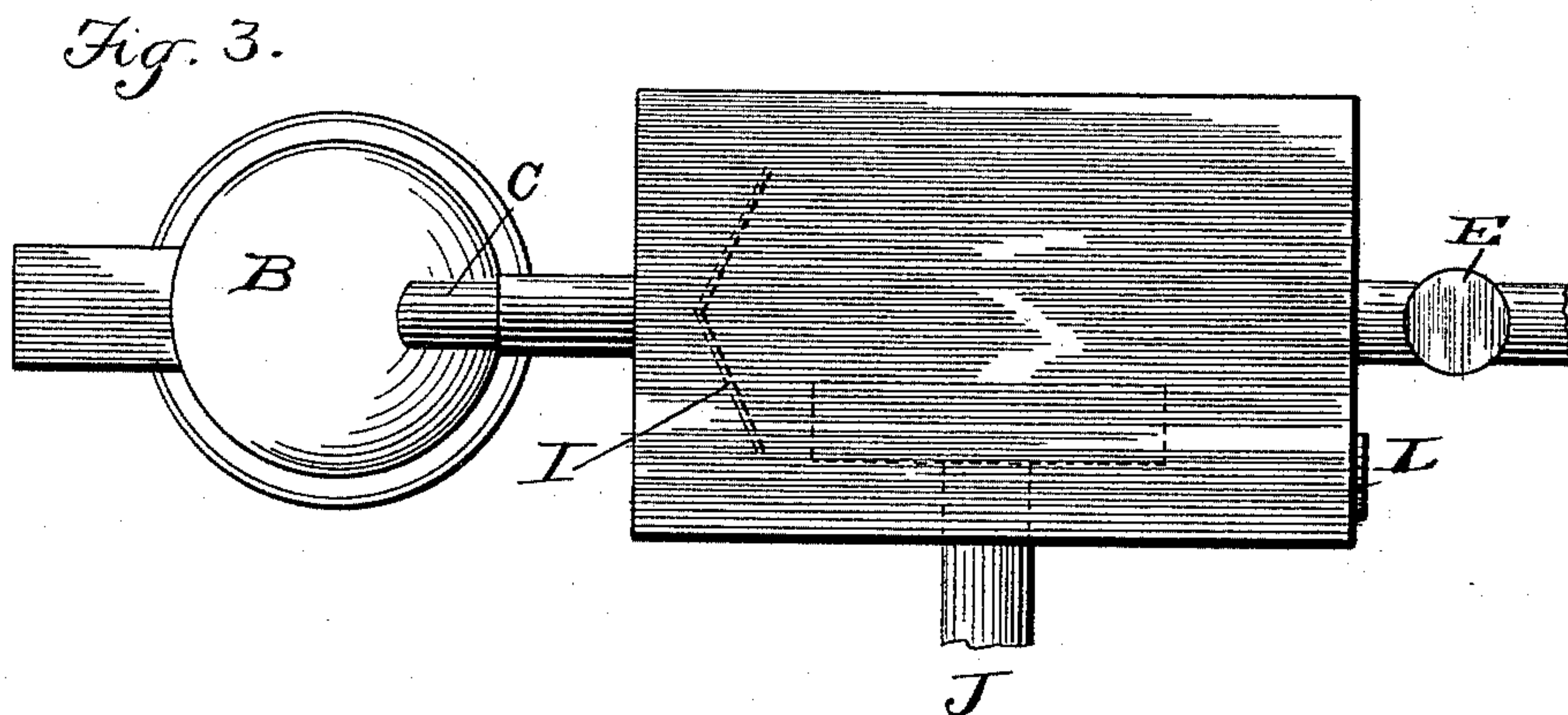
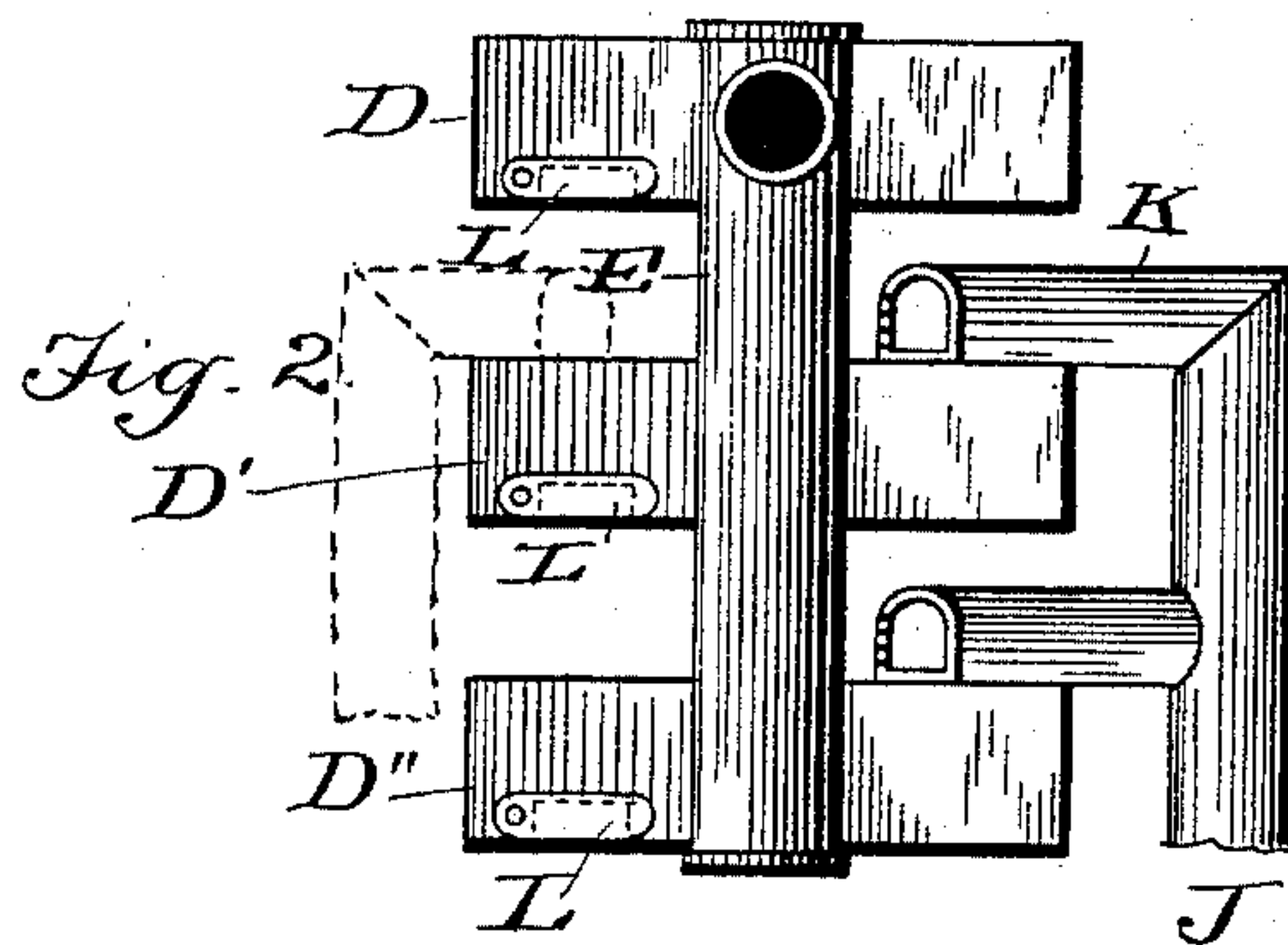
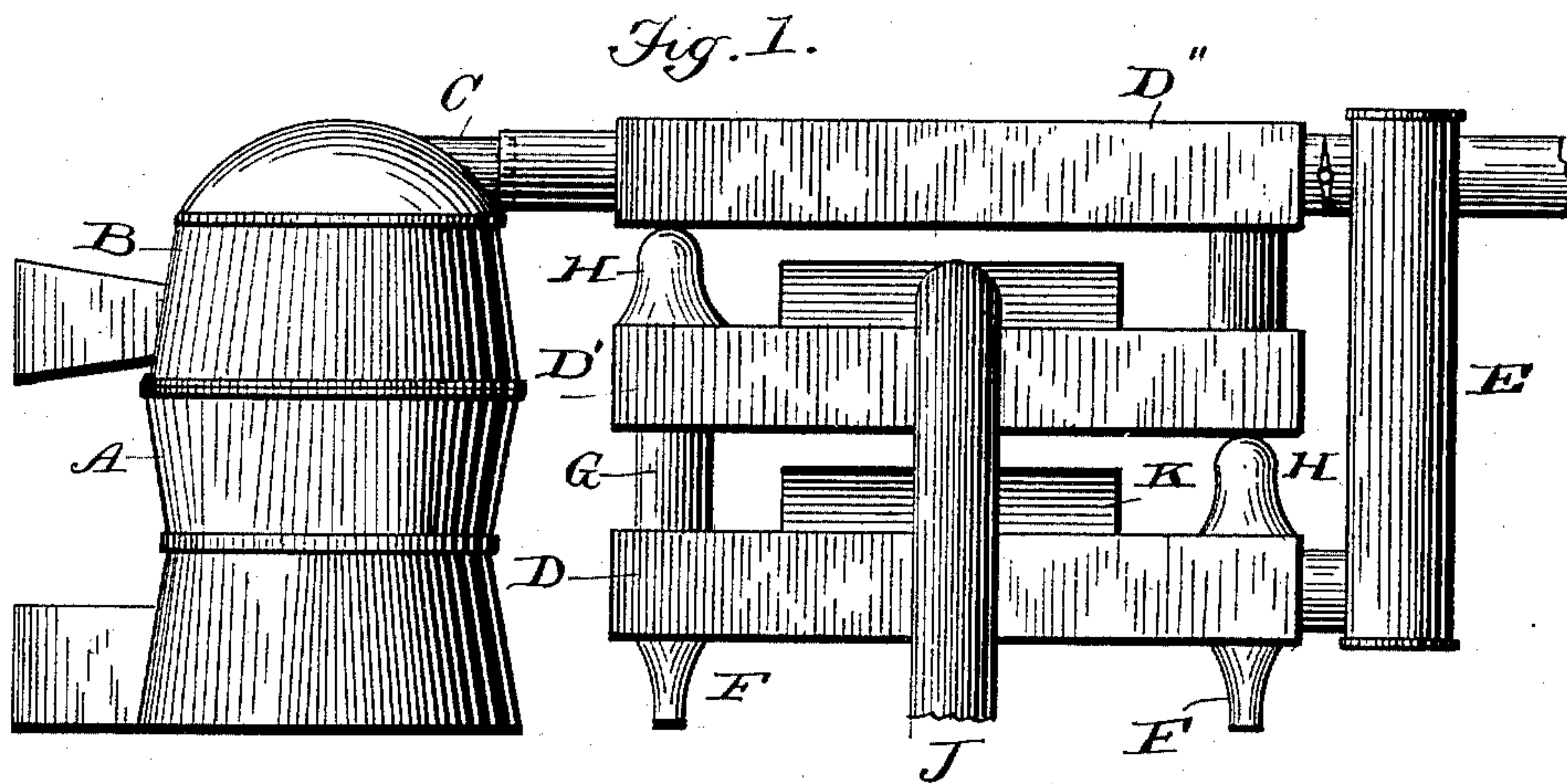


(No Model.)

G. T. MOE.  
FURNACE.

No. 485,966.

Patented Nov. 8, 1892.



Witnesses  
Thos. E. Robertson.  
W. E. Glendaniel.

George T. Moe Inventor  
By T. J. W. Robertson  
Attorney



# UNITED STATES PATENT OFFICE.

GEORGE T. MOE, OF PHILADELPHIA, PENNSYLVANIA.

## FURNACE.

SPECIFICATION forming part of Letters Patent No. 485,966, dated November 8, 1892.

Application filed February 8, 1892. Serial No. 420,736. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE T. MOE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This improvement relates to that style of furnaces provided with a horizontal heating-drum arranged behind the fire-pot and dome and particularly adapted to be used in positions where there is but little room to be obtained in a vertical direction; and the object of the improvement is to make this style of furnace more convenient and economical in operation.

20 To this end the invention consists in the peculiar construction, arrangement, and combinations of parts hereinafter more fully described, and then definitely claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a furnace constructed according to my improvement with the casing removed the better to show the construction. Fig. 2 is a back elevation of the same with a slight modification indicated in dotted lines. Fig. 3 is a plan of the same.

30 Referring now to the details of the drawings by letters, A represents the fire-pot and B the dome, having in the rear a collar C, which is connected to the upper one of a series of flat horizontal radiators D D' D'', the upper and lower ones being connected with the smoke-pipe E. The lower radiator D is provided with suitable standards or legs F and is connected by a collar G with the radiator D' immediately above it, and said radiator D' is connected by a similar collar with the top radiator D''. Between these radiators at or near the ends, opposite to the ends where the collars G are set, are supports H, of any suitable form or construction. Each radiator is provided with a deflector I, arranged near that end of it which first receives the products of combustion—that is to say, the upper and lower ones have the deflectors at the end near the furnace, while the middle radiator D' has its deflectors at the opposite end, as the products of combustion enter it at that end. These deflectors are for the purpose of deflecting the incoming currents of gases from the furnace and

spreading them over the entire surface of the radiators. 55

At J is shown a pipe or duct, which may be connected with the cold-air duct or any other suitable supply of air and is connected with air-distributing pipes K, set between the radiators D and D' and also between the radiators D' and D''. These pipes rest upon the radiators and are flat on their lower sides, so as to have considerable contact with the radiators, by which means they become heated, and thus partially heat the air that passes through them, and which air as it leaves said pipes becomes thoroughly heated by contact with the radiators. I consider these distributing-pipes as an important improvement in this style of furnace, as otherwise the air entering at the ordinary air-duct will rise beneath the lower radiator and will then be deflected toward the sides, and thus pass up without coming in contact with the heating-surface between the radiators. The pipe or duct J may be connected with the room above and take the cold air from the floor of that room; but if this is done care should be taken to set the register for inlet of the heated air at a point above that at which the air is taken from the room. In some cases I carry the air-ducts on opposite sides of the radiators, as shown by dotted lines in Fig. 2. Each radiator should of course be provided with a "clean-out" place, as shown at L. These radiators are preferably made of cast-iron with the usual sand-joints; but other material may be used, if preferred. 90

What I claim as new is—

1. The combination, in a furnace, of horizontal radiators arranged in tiers and cold-air ducts set between the radiators, arranged to deliver the air beneath the bottoms of the upper radiators, substantially as described. 95

2. The combination, with the radiators of a hot-air furnace, of cold-air ducts resting on said radiators and having flat bottoms to absorb heat from said radiators, substantially as and for the purpose specified. 100

In testimony whereof I affix my signature, in presence of two witnesses, this 30th day of January, 1892.

GEORGE T. MOE.

Witnesses:

THOS. E. ROBERTSON,  
T. J. W. ROBERTSON.