

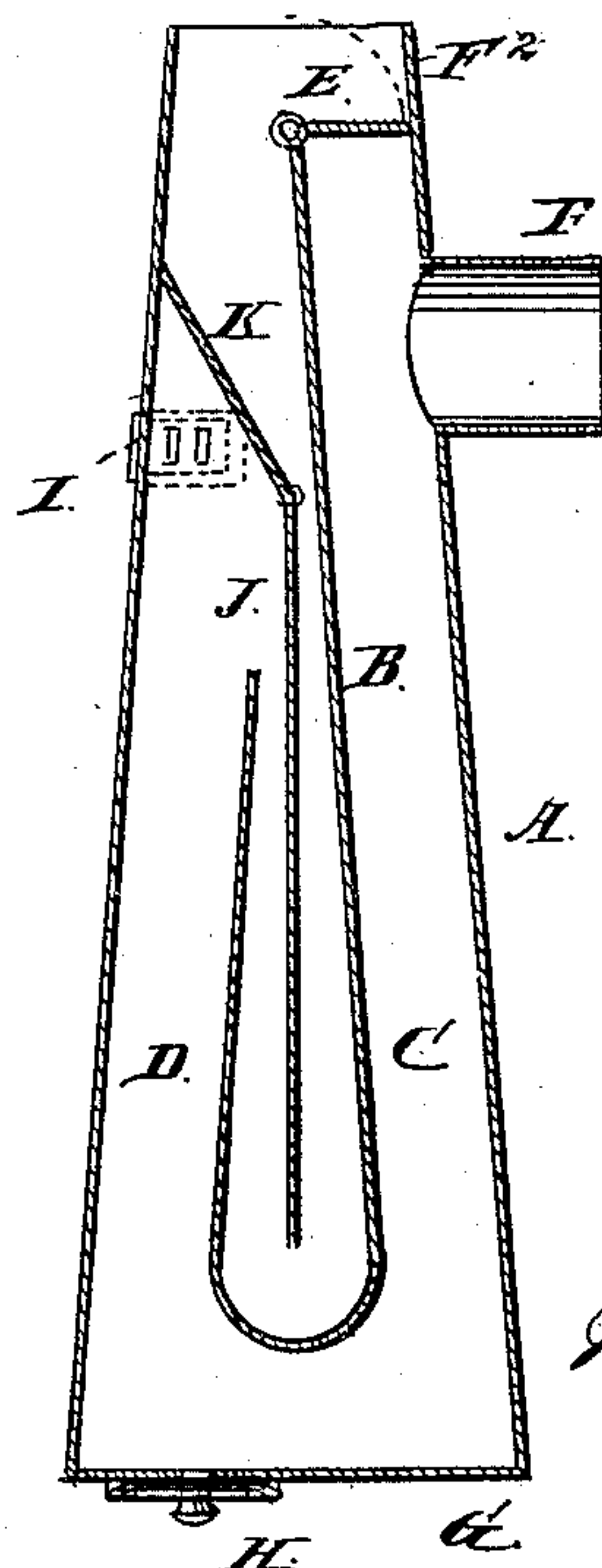
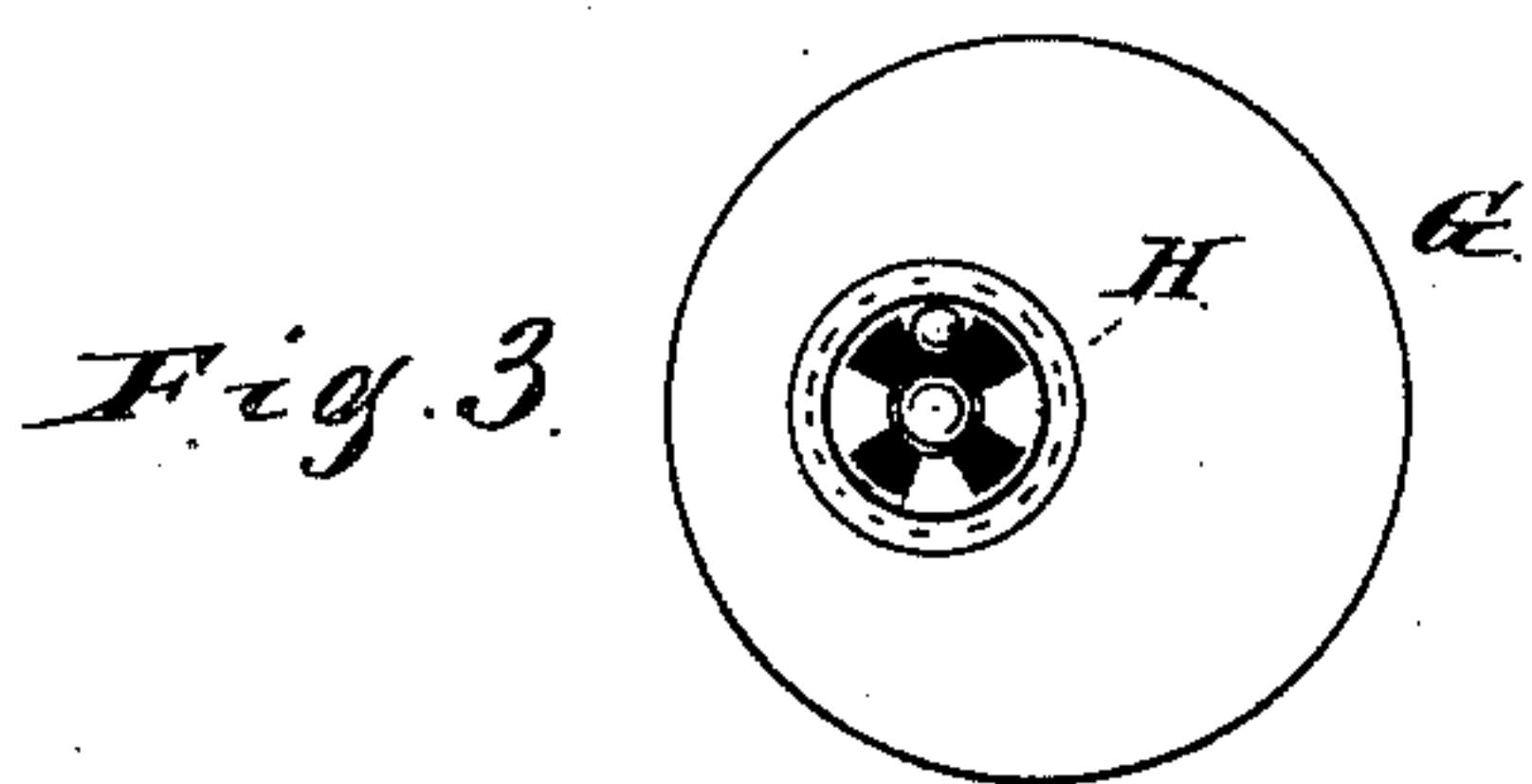
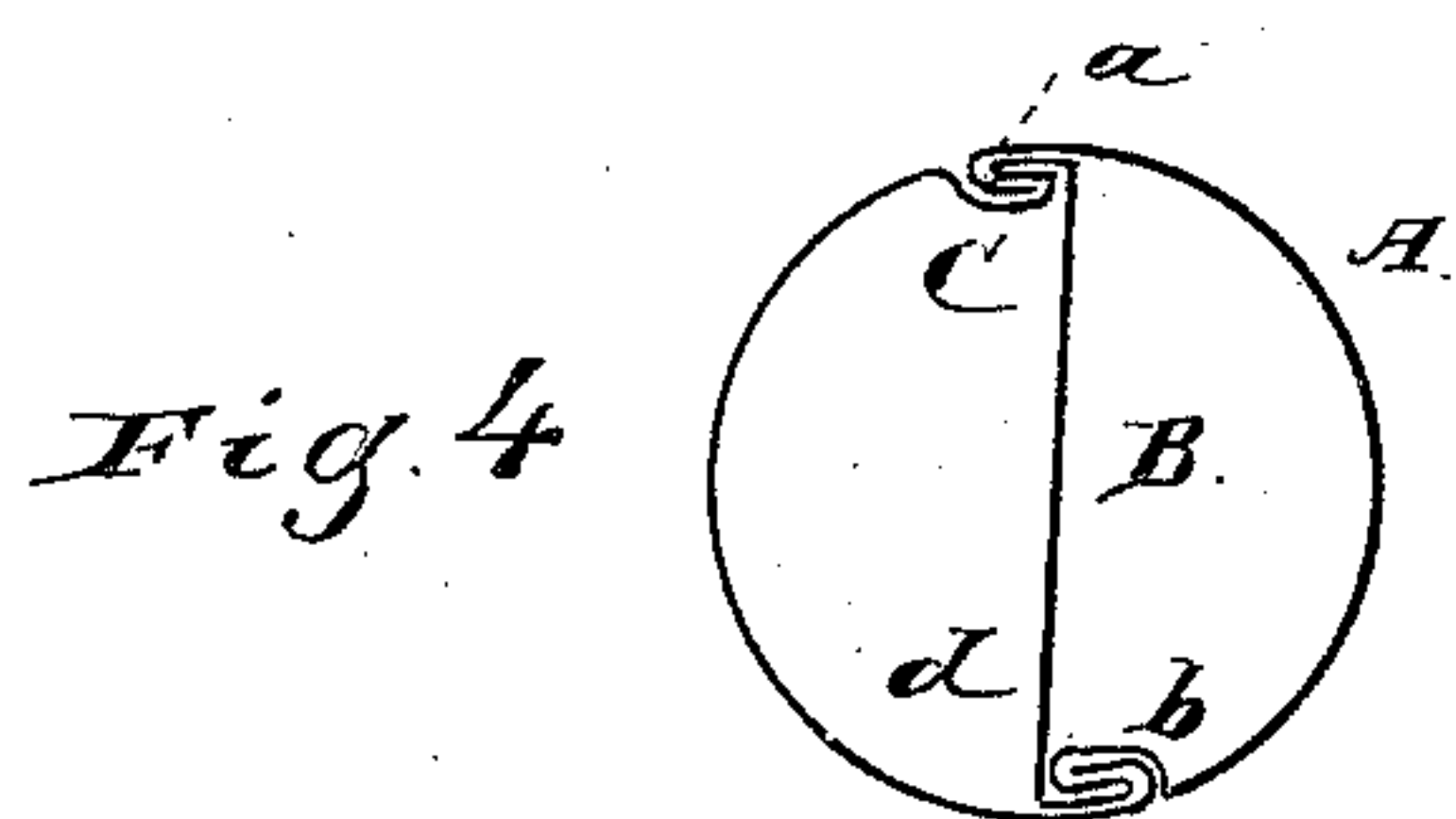
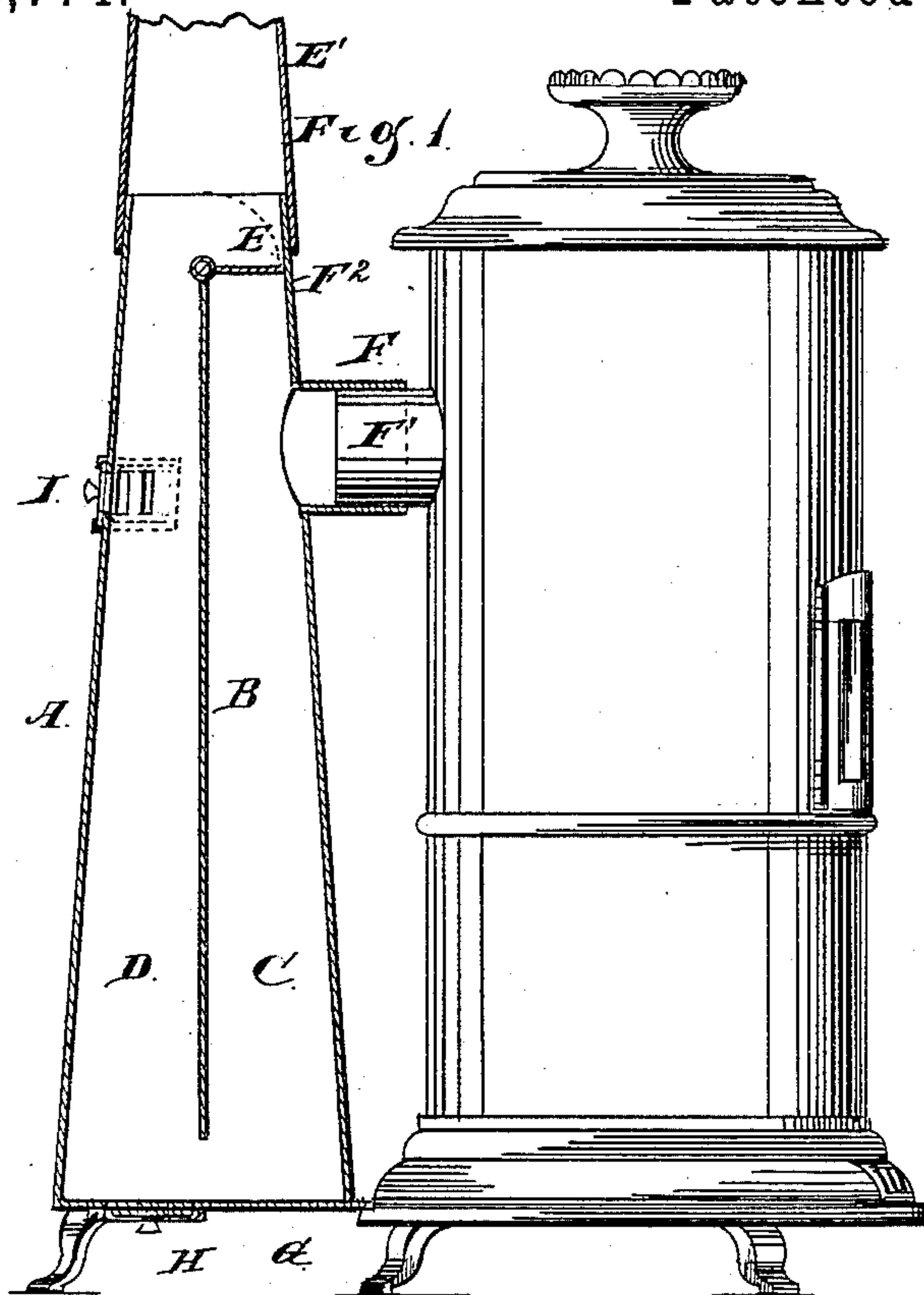
(No Model.)

M. G. McGUIRE.

HEATING ATTACHMENT FOR STOVES.

No. 318,774.

Patented May 26, 1885.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

MICHAEL G. McGUIRE, OF CHICAGO, ILLINOIS.

## HEATING ATTACHMENT FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 318,774, dated May 26, 1885.

Application filed January 13, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL G. McGUIRE, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Heating Attachments for Stoves, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section applied to a common stove; Fig. 2, a vertical section showing a modified form of the interior partition; Fig. 3, an under end view, and Fig. 4 a cross-section.

The object of this invention is to construct and apply a heating attachment to a stove, so that the heated products of combustion, after they have escaped from the stove, will be carried down toward or near the floor before ascending for their final exit, and to provide the attachment with such dampers and registers that the movement of the current can be controlled and cold or additional air admitted to consume gases which may escape in sufficient quantity to burn.

The object of my invention I accomplish in the manner and by the construction and combination of devices hereinafter described and claimed.

In the drawings, A indicates the exterior casing or shell; B, the partition; C D, flues or passages; E, damper; F, connecting side pipe or joint; G, base-plate; H I, air passages or registers, and J K secondary partitions and damper.

The shell A is usually made of sheet or stove-pipe iron, somewhat conical in form, as shown, and will constitute a downward extension of the stove-pipe, the latter being connected with the upper open end of the shell. The degree of enlargement toward the bottom will or may depend upon the kind of fuel used in the stove to which it is to be applied. If it is to be used in connection with a wood-stove, eight inches in diameter at the bottom will be sufficient for a shell formed at the top to receive a section of six-inch pipe. From eight to ten inches will also be a sufficient enlargement for anthracite or hard coal, while from ten to twelve inches is preferable for bituminous or soft coal, and in burning wood I have obtained

good results with a cylindrical instead of a conical attachment. The tapering form of the shell or pipe section, as described, brings the enlarged end at the bottom, and thereby serves to spread the flame at this point, so that I avoid burning out the partition or shell where the flame passes around the shell, which might occur were the flame concentrated by making the shell of the same diameter throughout.

As shown in Fig. 4, the shell and partition are both formed from a single piece of sheet-iron, the edge of the partition being bent, as at *a*, while on the opposite side it is folded, as at *b*, and then passes around until the edge *a* is reached, where it is again folded, so as to lock the edge or end *a*, and again carried around and the opposite edge or end bent, as at *d*, to enter the fold *b*. When these folds or crimps are compressed, the edges or ends *a b* are locked in position, and a device is formed which is not affected by the contraction or expansion of the metal, and one which will hold its shape and form better than when put together by rivets. The shell, however, may be formed and crimped or folded so as to receive a separate partition, if desired, and, if desired, the entire device may be made of light cast-iron, which will be desirable for some forms of stoves.

The end plate, G, and registers H I are of cast-iron in the form shown; but the form may be varied.

The pipe section or shell A is constructed with a laterally-projecting tubular neck, F, for engaging the ordinary pipe-collar, F', of a stove, for suspending the shell, and this neck is only of such length as to properly engage the pipe-collar, in order to bring the shell in close proximity to the stove, whereby the heat radiated from the latter materially contributes to the heating of the shell. The pipe section or shell is formed above the lateral tubular neck into an upwardly-projecting tubular shank or extension, F<sup>2</sup>, containing the damper E, and serving to connect with the stove-pipe E', the partition B rising past the neck F into the shank or extension F<sup>2</sup>, so as to support the damper and act in conjunction therewith above the neck which secures the shell to the pipe-collar.

I term the device a "suspension attach-



ment," in that it hangs from the pipe-collar, and ordinarily no supporting feet or legs will be used.

In operation, when the damper E is in the position shown, the products of combustion pass down the flues C, across the plate G, and ascend the flue D to a pipe connected with the chimney or final exit, and the damper E will ordinarily remain in the position shown; but for starting fires it may be turned upward to give a direct draft.

It will be seen that the register H is located at the bottom of the stove-pipe extension composing the heater, so that a current of cold air can be turned in, which in and of itself has a tendency to carry or bring down the products of combustion from the stove, and by the use of this damper the draft can be thoroughly regulated, and the air passing in at this point, as I have found by actual test, frequently causes the attachment or device to operate as a gas-burner, a flame being formed as the products of combustion pass under the partition B from the flue C. This control of the currents can be further regulated by the register I; but for cheap forms of attachments this register I may be omitted, as the control given by the register H will be sufficient.

The partition J and damper K are only applied in cases where the draft is unusually strong, as the devices produce better results when the products of combustion do not pass too rapidly through it. When the damper K is thrown over against the partition B, the device of Fig. 2 does not differ in its operation from that of Fig. 1; but when thrown down, as shown, a second return of the products of combustion is caused, thus checking a strong draft without letting too much air through the register.

I have found by actual test that this attachment results in a material saving of fuel, and a marked increase in the heating effect of the fuel consumed. As the natural tendency of heated air is to rise, by bringing the heated products of combustion down near the floor outside of the stove, the warming of the lower colder portions of the room is greatly facilitated and increased, and by letting a portion of the cold

air through the heating attachment the device also operates to some extent as a circulator or means of escape of the colder air, so that the stratum of warmer air reaches the floor much sooner than it otherwise would.

In the form shown the device is circular its entire length; but it may be made oval or flattened at the lower end, to avoid projecting too far into the room. The device may be applied to stoves having a vertical pipe-collar by the employment of an additional elbow at the tubular neck F.

I am aware that partitions for doubling the movement of the current of heated products of combustion have been heretofore applied to stove pipes and drums located on top of the stove and in sections of pipe above the stove; but these devices do not bring the otherwise wasted heat down to or near the floor, and cannot be used as circulators for the exterior air.

I do not claim, broadly, the partition B and damper E; but

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

1. The suspension pipe-section A, having the lateral tubular neck F and upward tubular shank or extension F<sup>2</sup>, in combination with a register, H, at the bottom of the pipe-section, the partition B, extending past the neck and into the tubular shank or extension, and the damper E, pivoted to the upper end of the partition, substantially as described.

2. The tapering pipe-section A, having its largest diameter at the bottom, and provided with the bottom register, H, and tubular neck F, in combination with the partition B, extending above the neck, and a damper, E, also above the neck, substantially as described.

3. The suspended pipe-section A, having one or more diving-flues and one or more ascending flues, in combination with the bottom register, H, and the register I in the upper portion of the pipe-section, substantially as described.

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Witnesses:

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