

(No Model.)

W. H. WHITTIER.
HAY AND STRAW FURNACE.

No. 272,110.

Patented Feb. 13, 1883.

Fig. 1.

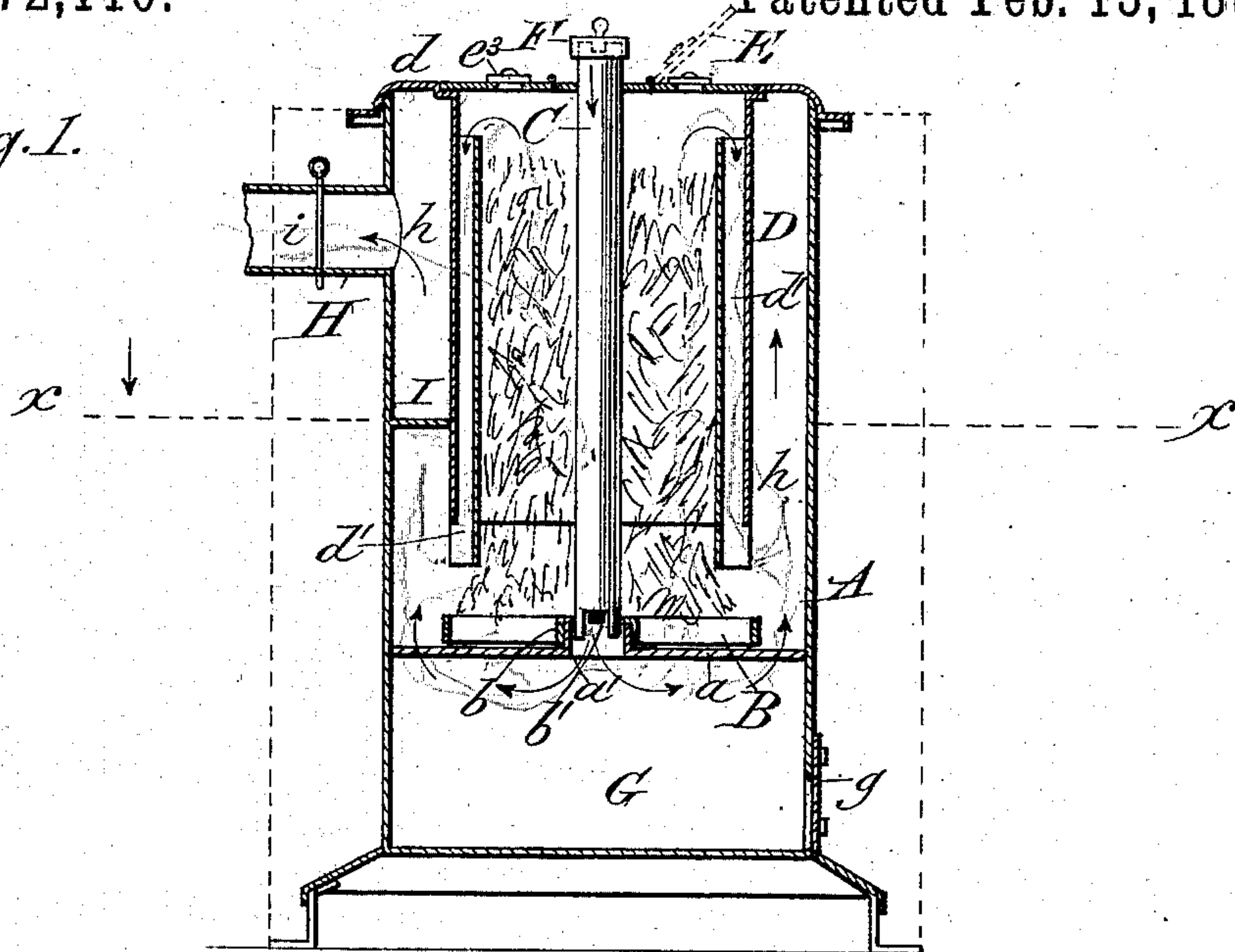


Fig. 2.

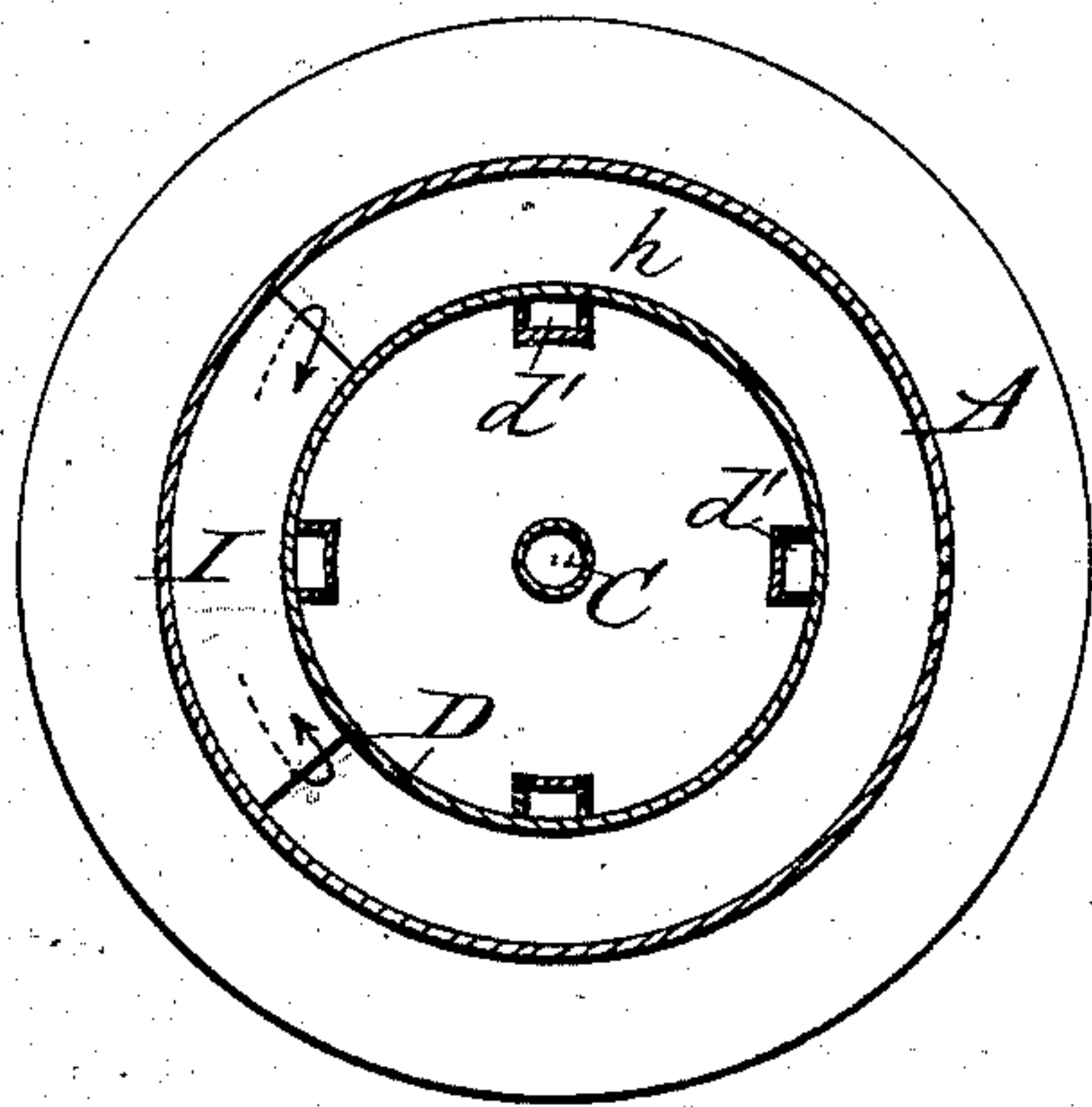


Fig. 6.



Fig. 5.

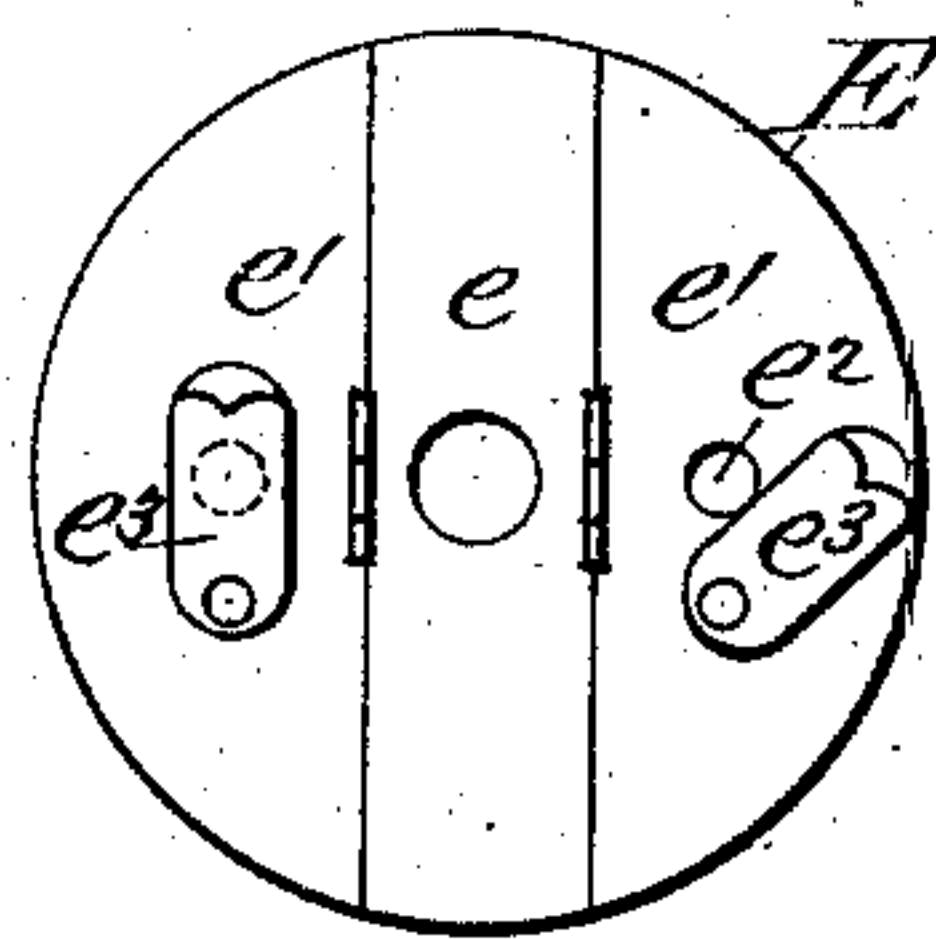


Fig. 3.

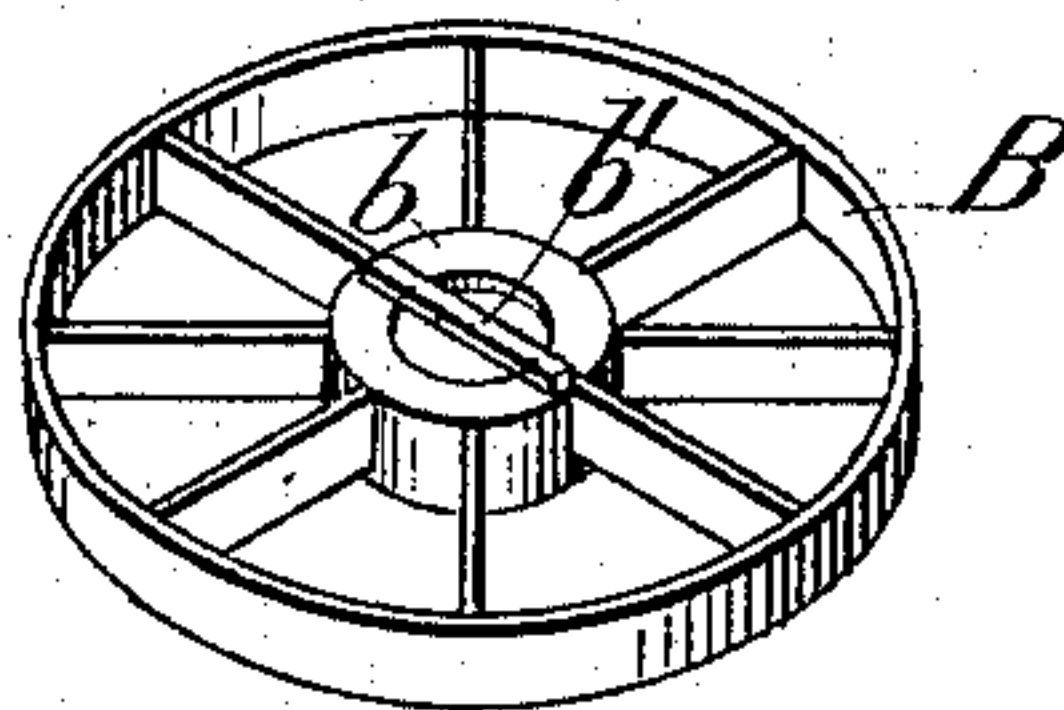
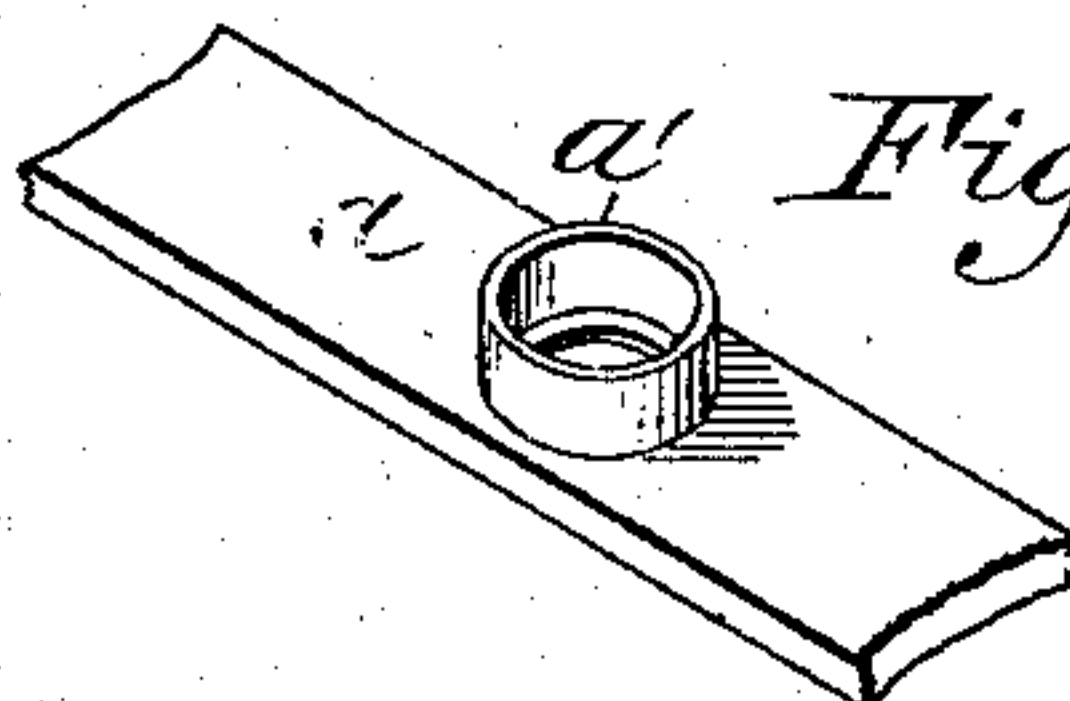


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

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HAY AND STRAW FURNACE.

SPECIFICATION forming part of Letters Patent No. 272,110, dated February 13, 1883.

Application filed November 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WHITTIER, a citizen of the United States, residing at Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful Improvements in Hay and Straw Furnaces; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to stoves or furnaces for burning hay, straw, cornstalks, or other light fuel; and it consists in the construction, arrangement, and combination of parts, as hereinafter more fully described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a sectional elevation of my improved stove or furnace. Fig. 2 is a horizontal section on the line *xx* of Fig. 1. Figs. 3 and 4 represent respectively a perspective view of the revolving grate and of its supporting-bar. Fig. 5 is a plan view of the furnace-cover, and Fig 6 is a view of the central draft-tube detached.

Like letters of reference are used to designate the same parts in the several views.

My invention consists of a cylindrical shell, A, having near its lower end a transverse bar, *a*, for supporting the revolving grate B. This grate is made in the form shown in Fig. 3, and has a central flanged cap, *b*, that fits over an annular flange or projection, *a'*, on the supporting-bar *a*, as shown in Figs. 1, 3, and 4. The cap *b* is provided with openings to receive the lower end of the central draft-tube, C, Fig. 6, which is notched at *c* to fit over a bar or lug, *b'*, that is formed on the top of the cap-piece.

The shell or drum A is provided with an inwardly-projecting or annular flanged top, *d*, from which is suspended an inner cylindrical shell or magazine, D, that is open at both ends and provided internally with vertical draft-tubes *d'* *d'*, as shown in Figs. 1 and 2. This magazine or inner shell is closed at the top by a cover, E, which consists of a central transverse plate, *e*, that is perforated for the

passage of the draft-tube C, as shown at Fig. 5, and to which is hinged on each side a lid, *e'* *e'*, having draft-openings *e''*, that may be closed by the pivoted slides or covers *e'''*. The upper end of the central draft-tube, C, is notched at *c'*, for the engagement therewith of a cap, F, as shown in Fig. 1, said cap being arranged to admit the access of air and prevent the escape of smoke.

Beneath the grate B is a spacious ash-pit, G, which is provided with a door, *g*, as shown in Fig. 1. The annular hot-air space *h*, between the inner and outer shells or drums, A and D, is provided on one side, beneath the smoke exit or pipe H, with a deflecting-plate, I, that serves to divert the upward current of smoke and heat on that side before escaping. The smoke-pipe H is provided with an ordinary damper, *i*, by which the draft may be regulated.

It will be observed that the draft-tubes *d'* *d'* on the inner side of the inner shell, D, are made to extend from near the upper end of said shell or magazine to a point slightly below the lower end of the same, where they open outwardly into the hot-air space *h* between the furnace-shells, and thus afford a ready means of carrying off the smoke and gases of combustion, so that no trouble will be experienced, even if the grate should become clogged.

It will be seen that the draft is downward through the tube C and grate B, and thence upward into the smoke-space *h*, while the smoke and gas also pass into said space either through the tubes *d'* or directly at the grate-line. The fuel, which is fed to the furnace through the lids *e'* *e'*, is consumed at the base, and does not require to be held down by weights, springs, or other like contrivances. If desired, the furnace may be inclosed in an outer casing of masonry or metal, as represented by dotted lines in Fig. 1.

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

1. The combination of the drum A, magazine D, grate B, having lug *b'*, central draft-tube, C, having notched ends *c* *c'*, and the cap F, substantially as shown and described.

2. The combination, with the drum A, hav-

ing an inner deflecting-plate, I, and a cross-
bar, *a*, provided with annular flange *a'*, of the
grate B, having flanged cap *b*, provided with
lug *b'*, the magazine D, having draft-tubes *d'*
5 *d'*, the cover E, consisting of a plate, *e*, hav-
ing hinged lids *e' e'*, and the central draft-
tube, C, having notches *cc'*, and cap F; all sub-
stantially as and for the purposes described.

In testimony whereof I affix my signature in
presence of two witnesses.

WILLIAM H. WHITTIER.

Witnesses:

J. F. HANSON,

IRVING MCKENNAN.