(No Model.)

M. HAMILTON.

HAY AND STRAW BURNER.

No. 438,075. Patented Oct. 7, 1890.

Fig. 1

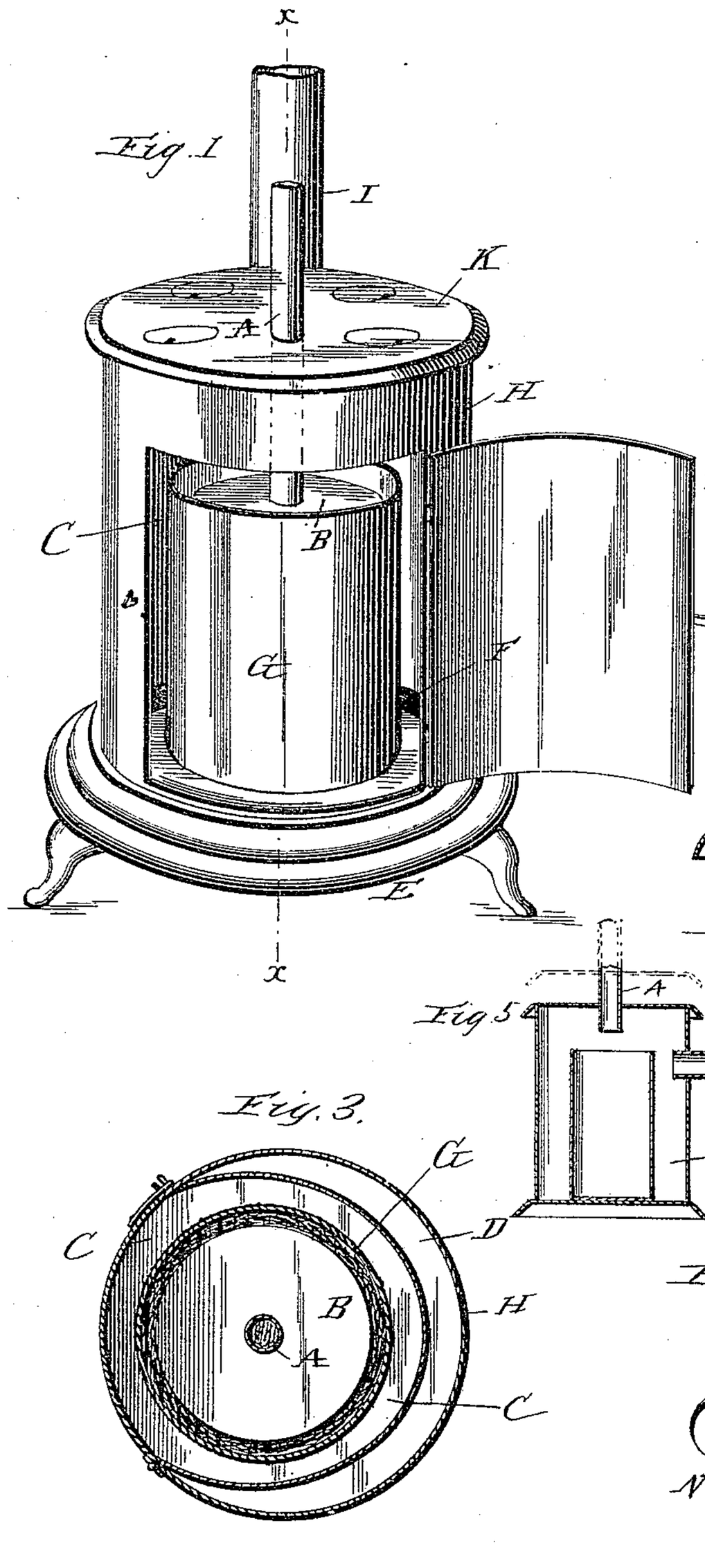


Fig. 2

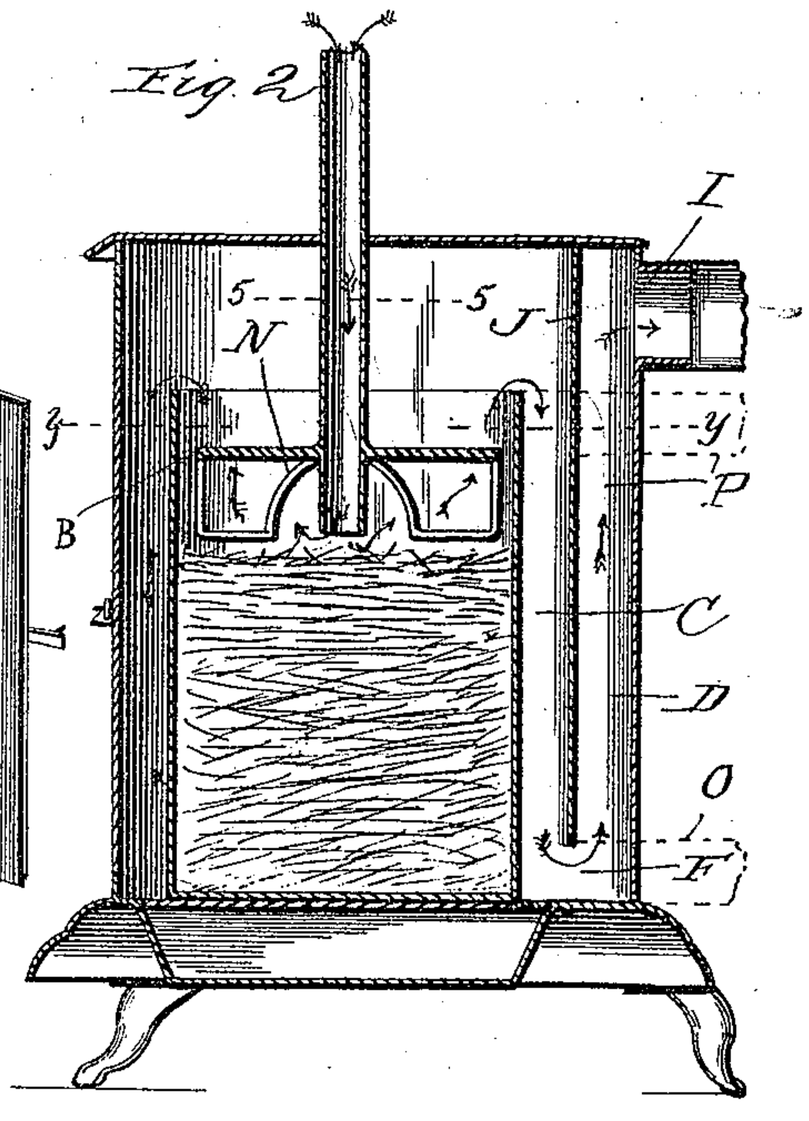


Fig. 5

Fig. 6.

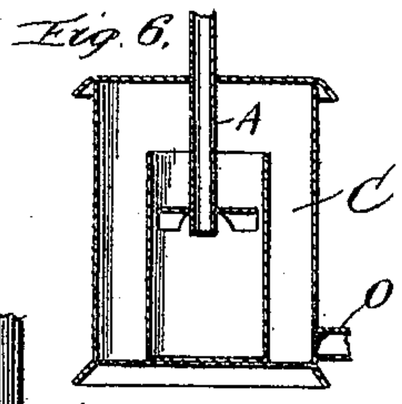
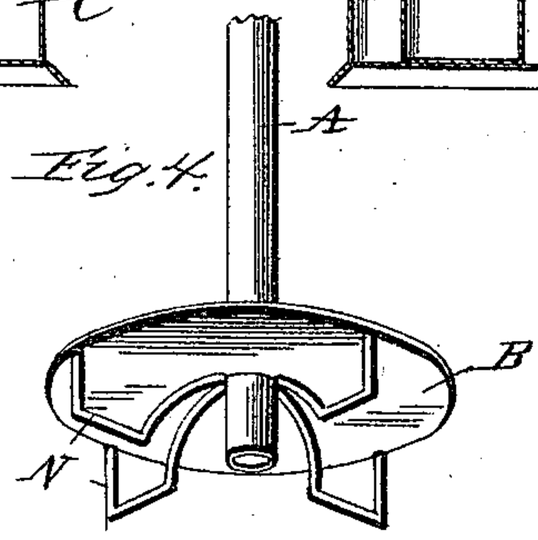


Fig. 3.

Fig. 4.



Witnesses:
H. Raeder
Van Buren Hillyard.

Inventor
Montgomery Hamilton

By Wis Attorneys
R.S. & A.L. Lacey

UNITED STATES PATENT OFFICE.

MONTGOMERY HAMILTON, OF ROCK RAPIDS, IOWA.

HAY AND STRAW BURNER.

SPECIFICATION forming part of Letters Patent No. 438,075, dated October 7, 1890.

Application filed August 13, 1889. Renewed August 7, 1890. Serial No. 361,355. (No model.)

To all whom it may concern:

Be it known that I, MONTGOMERY HAMILTON, a citizen of the United States, residing at Rock Rapids, in the county of Lyon and State of Iowa, have invented certain new and useful Improvements in Hay and Straw Burners; 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 of reference marked thereon, which form a part of this specification.

This invention relates to stoves for burning hay, straw, cornstalks, chaff, and other light combustible material.

The object of this invention is to apply the draft from above to the flame on the top of the body of fuel in the magazine, thereby economizing fuel and providing a simple construction.

The improvement consists of the novel features which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a front elevation in perspective of a stove embodying my invention, the door being open to show the internal structure. Fig. 2 is a vertical section on the line X X of Fig. 1. Fig. 3 is a horizontal section on the line Y Y of Fig. 2. Fig. 4 is a perspective view of the follower. Fig. 5 is a detail view showing the smoke-pipe communicating with the top of the space surrounding the magazine. Fig. 6 is a detail view showing the smoke-pipe leading from the bottom of the space which surrounds the magazine.

The stove comprises the shell H, having the top K and the base E, the magazine G, supported on the base E and air-tight at its lower end, and the follower B, having the draft-tube A. The magazine G is smaller than the shell, thereby leaving a space C between the opposing sides of the said shell H and magazine G, and is shorter than the shell, so as to leave a space in between its top edge and the stove-top K. The space between the shell and magazine is enlarged at one side of the stove, and is divided by the deflector or partition J into two vertical spaces C and D. The smoke-pipe I communicates directly with the space P. The partition or deflector J is secured at its top to the stove-top K and at each edge to the shell H, its lower edge being free and terminating short of the base E to leave the communicating space F. The follower B is constructed to leave an air-space between its edge and the sides of the magazine, and is preferably smaller than the magazine, so as to leave said space continuous. The draft-tube A is connected with the follower centrally, and projects below the same some distance. The spacers N on the under side of the follower serve to maintain the proper space between the fuel and the follower, and incline on their inner sides away from the draft-tube C, and are approximately vertical on their outer sides. There may be as many spacers N as necessary to properly support the follower.

The magazine is by preference made removable, so that it can be taken out at the side through the open door, but it might be stationary, the top of the stove being removed, as shown by dotted lines in Fig. 5, when it is desired to refill or place fuel in the magazine. I prefer to make it removable, and provide the door in the stove, as shown, through which it may be taken out or replaced. The door fits close, so that when closed the space C will be tight.

The follower is placed on the top of the fuel, which is ignited and burns on the top.

The air for supporting combustion is fed through the tube A into the combustion-space between the fuel and the follower and is spread by the follower in every direction, fanning and keeping life in the fire. The smoke and hot air pass up around the follower into space C, below partition J into space D, and out through the smoke-pipe I. In some cases the smoke-pipe will be carried directly into the bottom of the space C, as shown in Fig. 6 and at O in Fig. 2 by dotted lines. As the fuel burns the follower will gravitate, the spaces N preserving the necessary combustion-space. The ashes being light a considerable quantity will be carried with the hot air and smoke out through the pipe I. The small quantity of ashes remaining will not interfere with the free burning of the fuel.

In adapting the burner to a cook-stove the hot air will be taken direct from the top of

the magazine, as shown in Fig. 5 and at P in Fig. 2 by dotted lines, and conducted through the stove (not shown) in the usual way.

It will be understood that the stove is provided with the ordinary dampers for regulating the draft.

The vital point of the invention is burning the fuel on the top and a draft-tube for supplying the air necessary to support combustion directly to the fuel from above. Hence it is immaterial, so far as the essence of the invention is involved, whether this draft-tube is stationary or adapted to follow the fuel as it is consumed, or whether it is provided with the follower B or not.

The draft-tube might be cut off on the line 5 5 of Fig. 2 and as shown in Fig. 5, but it is preferred to have the follower attached, inasmuch as it serves to distribute the air over the top of the fuel, thereby effecting an even burning of the same.

Practical demonstrations show that this method of burning the fuel produces very little or no smoke, the combustion being nearly perfect, the gases evolved burning with a bluish flame around the edges of the follower.

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

1. A stove for burning light fuel from the top downward, having a magazine closed at its sides and bottom and having its top open and in communication with the smoke-pipe and having a draft-tube for supplying air to the top of the fuel, substantially as and for the purpose described.

2. In a stove for burning the fuel from the top downward, the combination, with the magazine closed at its sides and bottom and having connection at its top with the smoke-pipe, of the draft-tube for supplying air to the top of the fuel, and a spreader for distributing the air over the entire surface of the fuel, substantially as described.

3. In a stove for burning the fuel from the top downward, the combination, with the magazine open at its top only, of the draft-tube for supplying air to the top of the fuel, and the spreader connected with the said draft-tube and having a space between its edge and the inner wall of the magazine to allow of the escape of the products of combustion, substantially as described.

4. The combination, with the magazine closed on its sides and bottom and having communication at its top with the smoke-pipe, of the draft-pipe for supplying air to the top of the fuel, the spreader carried by the said draft-pipe, and the spacers connected with the spreader for maintaining a predetermined distance between the top of the fuel and the said spreader, substantially as described.

5. The combination, with the stove and the magazine closed at its bottom and sides and open at its top, of the draft-tube passing through the top of the stove and adapted to supply air to the top of the fuel, said tube being free to gravitate and follow the fuel as the latter is consumed, substantially as described.

6. The hereinbefore-described stove for burning light fuel, comprising the shell H, having door M and stove-pipe I, and having partition J, the latter fitting close at its top and edges to the top and sides of the shell H, and having space F at its bottom, the magazine G, closed at its sides and bottom and open at its top, the draft-pipe A, passing loosely through the top of shell H, for supplying air to the top of the fuel in the magazine, the spreader, and spacers at the lower end of the said draft-pipe, substantially as and for the purpose described.

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

MONTGOMERY HAMILTON.

Witnesses:
V. B. HILLYARD,
S. A. TERRY.