

(No Model.)

R. R. BUEHLER.
HOT AIR REGISTER.

No. 521,973.

Patented June 26, 1894.

Fig. 1.

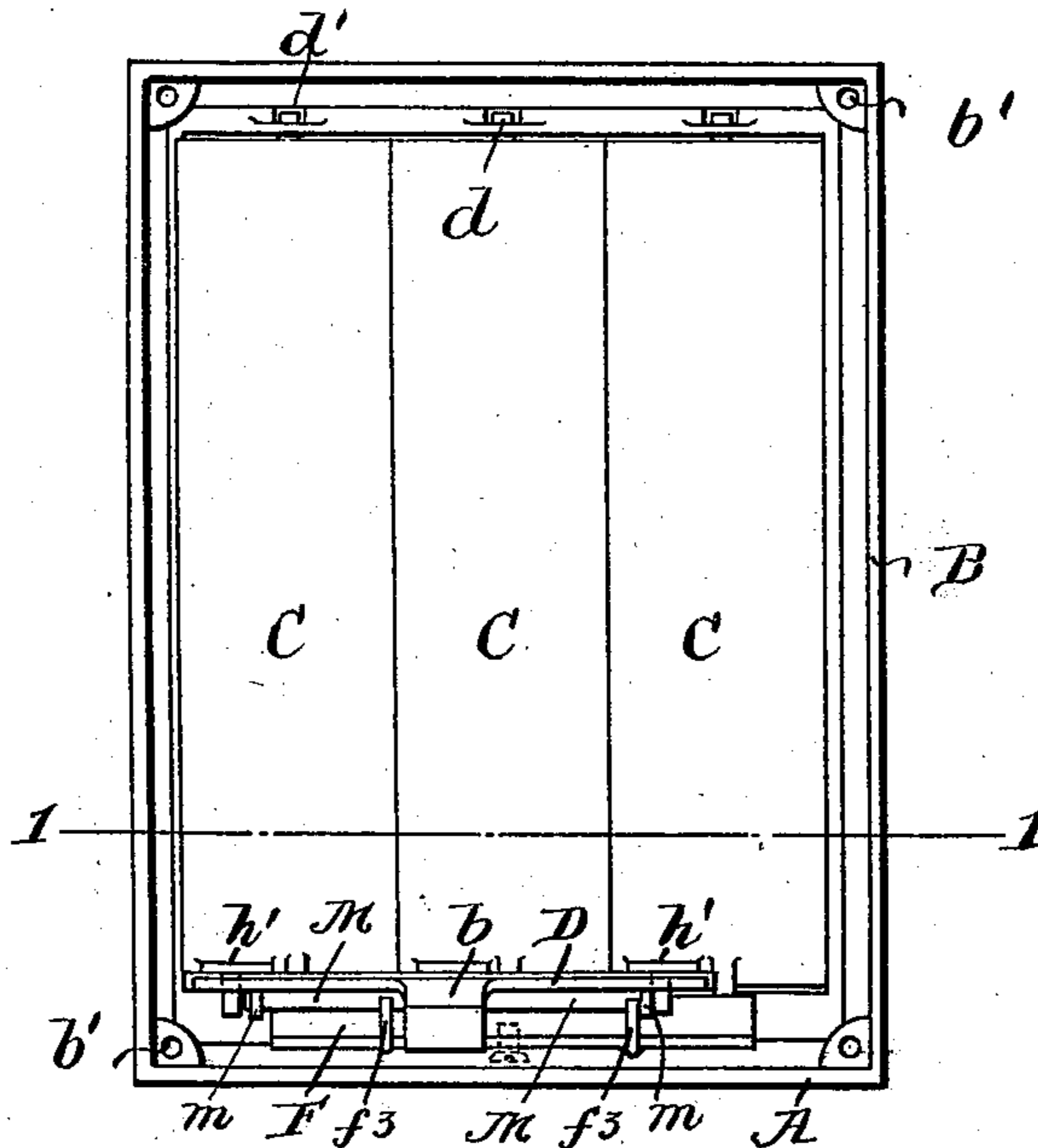


Fig. 2.

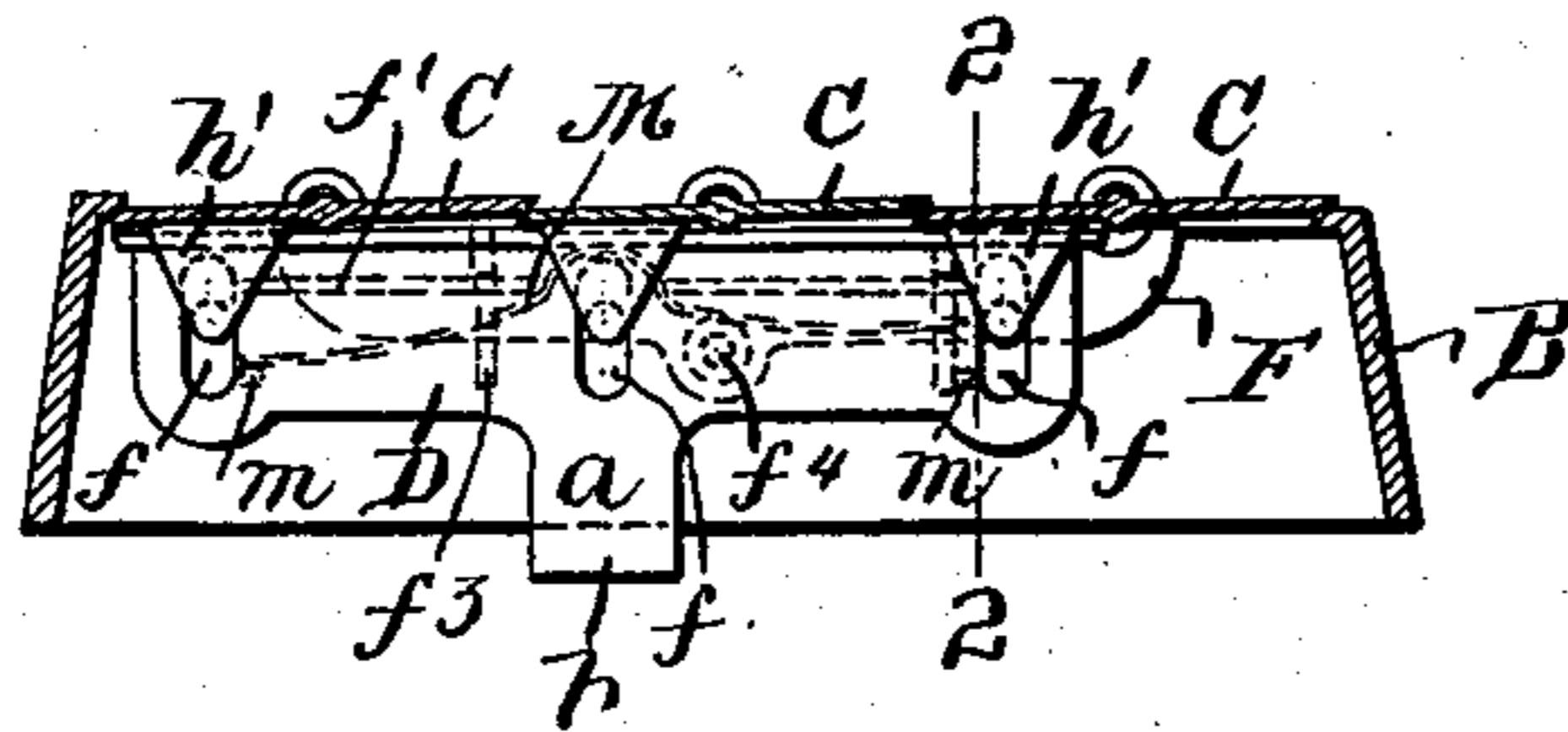


Fig. 3.

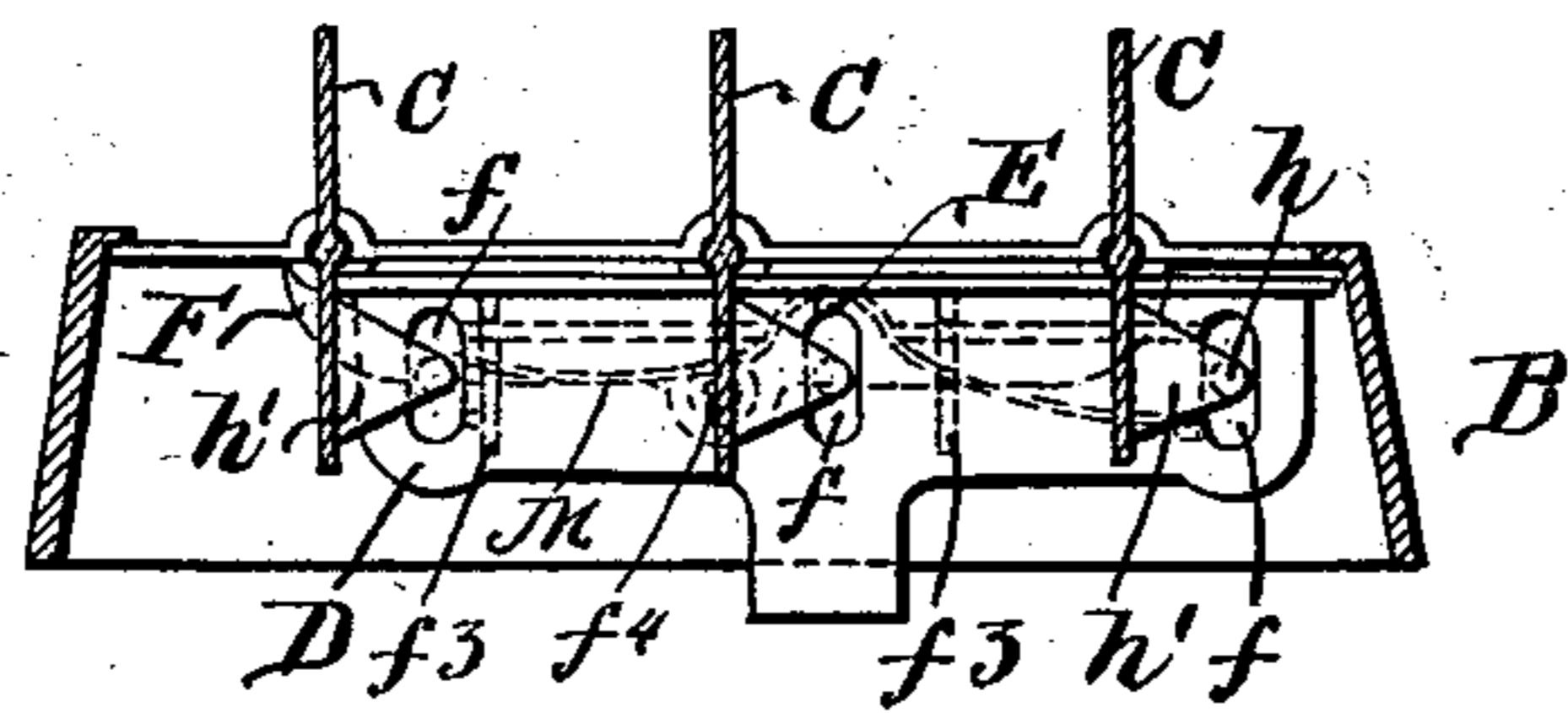


Fig. 5.

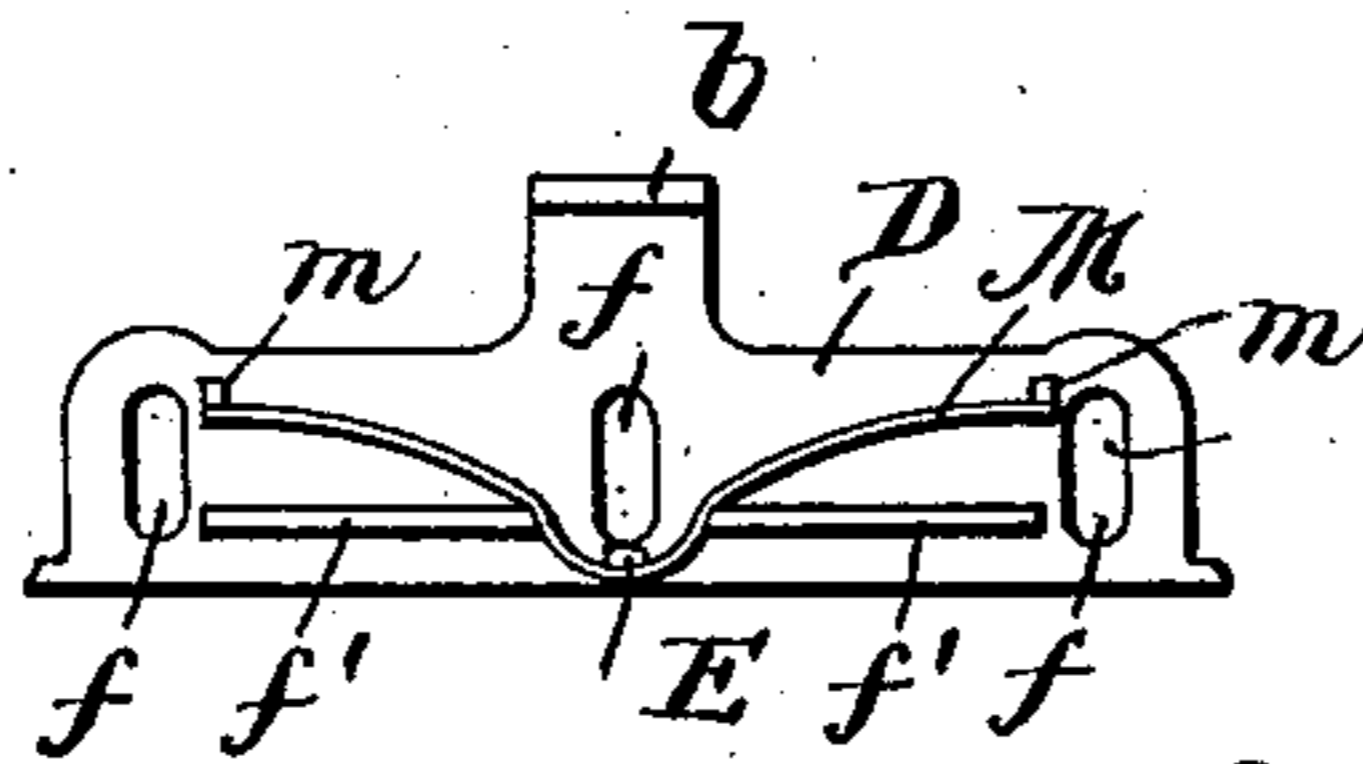


Fig. 6.

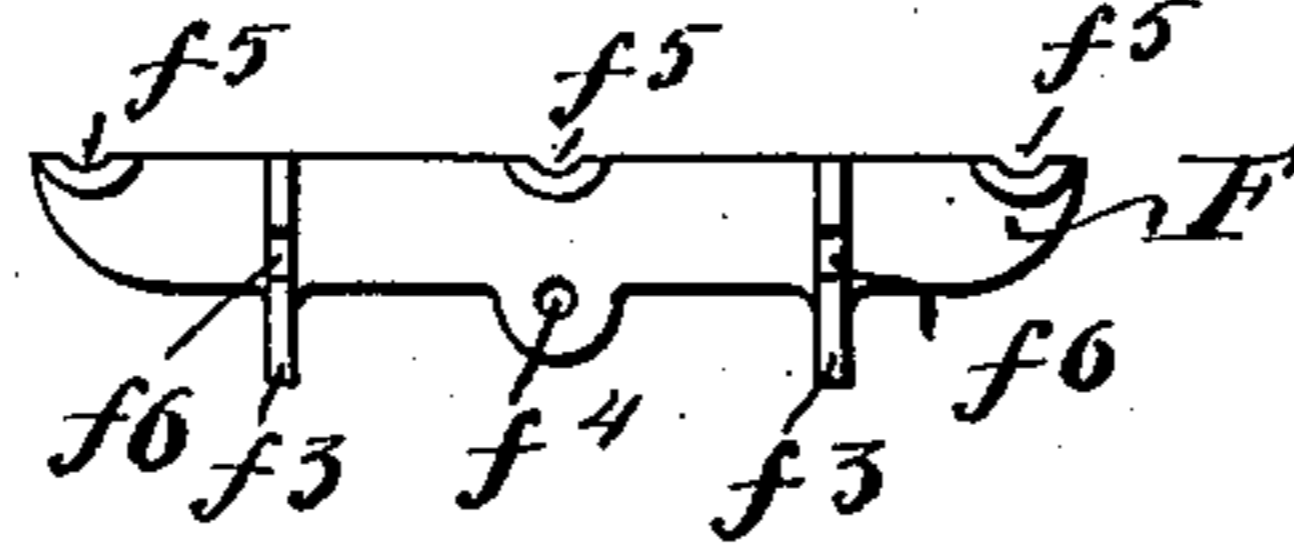
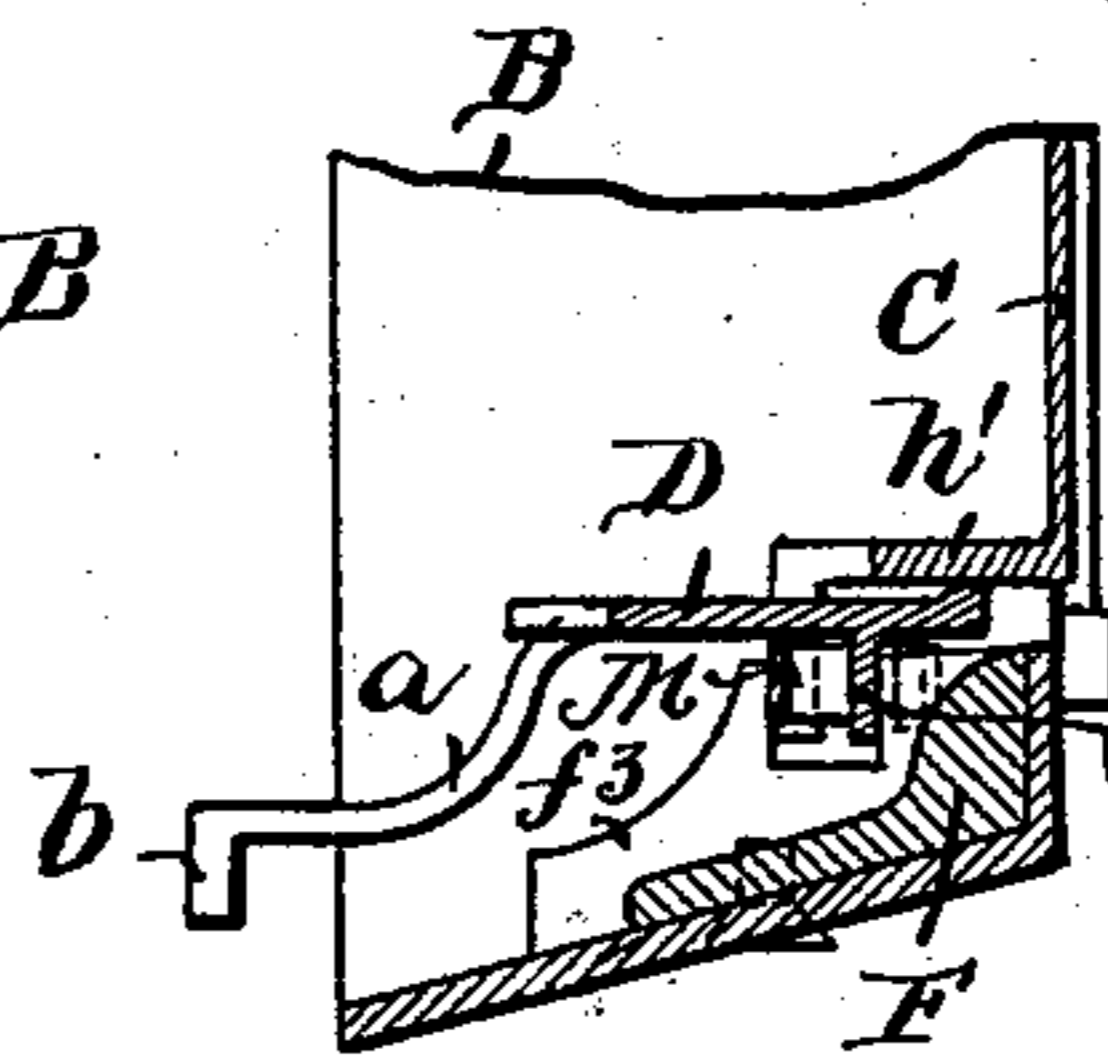


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 521,973, dated June 26, 1894.

Application filed March 8, 1894. Serial No. 502,816. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH R. BUEHLER, a citizen of the United States, residing in the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Registers for Hot-Air Flues, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to registers for heater flues and consists of the combination with a register constructed on the principle of a set of wings or fans mounted on a laterally reciprocating sliding rod or bar, of spring mechanism whereby the fans or wings may be held in an open or closed or partly opened position by means of the rod whereon the same are mounted being laterally reciprocated against a yielding spring pressure, and hence more positive action of the parts is produced.

In the accompanying drawings illustrating my invention, Figure 1 is a front view of the register, with the usual open work front plate removed. Fig. 2 is a lateral sectional view on the line 1—1 of Fig. 1, showing the register closed. Fig. 3 is a like view, showing the register open. Fig. 4 is a section on the line 2—2 of Fig. 2. Fig. 5 is an elevation, from the under side, of the sliding connecting rod; and Fig. 6 is a plan view of the guide piece for the sliding connecting rod and the spring mechanism controlling the reciprocation of the same.

My improvements are shown applied to a register of the general character and construction described in Letters Patent of the United States granted to Thomas Devlin *et al.* as assignees of William H. Myers, No. 501,019, dated July 4, 1893, and reference may be made thereto for a description of the general construction of the register.

As shown therein and in the drawings hereto annexed, the frame B is open front and back, and of sufficient depth to allow of a free movement of the wings or fans C. The front of the frame B is intended to be covered by the usual open work or latticed plate A shown in Fig. 1 of said recited patent of Myers; said

plate being secured to the frame B by screws entering the threaded holes b' (see Fig. 1) at the four corners of the frame; which is slotted at a at its base to allow of the free lateral reciprocation therein of the knob b of the sliding connecting rod D hereinafter mentioned upon which the fans or wings are mounted.

The frame B is constructed with a ledge or rim provided at top and bottom with recesses d' into which the pins d of the wings or fans C are inserted, as described in said prior patent. Means for rotating the pins of the fans, and for guiding the lateral reciprocation of the connecting rod D, whereby the fans are operated, is provided in the form of a guide bracket shown in position in Fig. 1, and separately in plan view in Fig. 6. Its construction does not differ from that shown and described in said prior patent to Myers, in which the semi-circular recesses f^5 form, with the semi-cylindrical recesses d' in the base of the frame B, a cylindrical recess as a bearing for the bearing pins d of the wings C. This guide bracket F is fastened down to the frame B by a screw passing down through it at f^4 into the frame, and it is provided with two guide bars f^3 slotted at f^6 for the purpose hereinafter mentioned. In said prior patent of Myers, the connecting rod, the under face of which is shown in Fig. 6 of said patent, was provided with two guide bars $f' f'$ which fitted in the recesses f^6 of the guide bracket, and other guide bars f^2 were provided parallel to the first and fitting over the outer edge of the guide bars f^3 to steady the motion of the connecting rod, but these guide bars f^2 are dispensed with by me. Recesses f are provided in the connecting rod D to receive the projecting actuating pins h whereby the fans are partially rotated on their pivot pins d . The connecting rod D is constructed, as shown in under face view in Fig. 5 of the drawings, with a knob, as before; with recesses f , as before, to receive the actuating pins h of the fans, and with guide bars f' , but without the guide bar f^2 shown in Fig. 6 of the Myers patent. Said connecting rod D is also provided with a pin E centrally between the two

guide bars f' and below the same, and also may have two other steadying pins m, m near the two end recesses f in the flat portion of the plate D, but these latter are not essential except for convenience in holding the spring M while the parts are being put together. Around the pins E is sprung a flat metal spring M, which is thus held in place by the same and partly by the ends of the bars f' .

When the parts are assembled, the spring M as well as the guide bars f' of the connecting rod, pass into the recesses f^6 in the guide bars f^3 of the guide bracket F, and are guided thereby and therein in the lateral reciprocation of the connecting rod. The wings or fans are provided in addition to the bearing pins d at each end, with additional actuating pivot pins h as before, mounted on the end of the projecting arm h' , of such form that they shall always be in a line with the parallel bearing pivot pins d (see Figs. 2 and 3).

The parts being put together, the operation of the device is as follows:—The knob B of the connecting rod D projects through the slot of the open work frame. The actuating rod D is reciprocated thereby, thus the actuating pins h of the wings or fans fitting in the recesses f of the connecting rod, are carried thereby. The spring M secured to the under face of the connecting rod D is reciprocated in the slots f^6 of the guide bracket F, and being of curved form, is thus reciprocated against its resilient pressure, and the connecting rod D is guided partly thereby and partly by the guide bars f' which are reciprocated in said slots f^6 of the guide bracket F. The fans are partially rotated in an arc of a circle, and the bearing pins thereof as well as the connecting actuating pins, are reciprocated in parallel planes. Thus by the lateral reciprocation of the connecting rod, its guide bars f' and its spring M working in the recesses f^6 of the guide bracket, the connecting rod is laterally reciprocated against a constant spring pressure which operates to hold the fans fixedly in any position in their

arc of rotation, or fully opened or closed, as may be desired.

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

1. In combination, a supporting frame, a series of wings or fans having bearing pins d adapted to rotate in recesses in the frame and with a projecting arm h' carrying an actuating pin h ; a laterally reciprocating connected rod D in which said actuating pins are mounted and having guide bars $f' f'$ and a double curved spring M, secured on its under face by the pin E and the bars $f' f'$; and a guide bracket F provided with guiding recesses f^6 adapted to receive the said guide bars f' and spring M of the connecting rod, whereby the latter is reciprocated against a yielding spring pressure, and in a horizontal plane parallel to the line of bearing pins; substantially as and for the purpose described.

2. In combination, the supporting frame B, provided with bearing recesses d' , the guide bracket F having transverse guide bars f^3 slotted at f^6 ; a connecting rod D carrying knob b and having slots f , guide bars f' , pins m, m , and E, and a double curved spring M retained against pressure by said pins and guide bars f' ; wings or fans provided with bearing pins d and a projecting arm h' carrying actuating pin h adapted to rest in the recess f of the connecting rod D, whereby the same may be reciprocated laterally against the yielding pressure of the spring and be guided by the recesses f^6 of the guide plate, and the fans actuated by said connecting rod be partially rotated by a spring controlled movement of the rod; substantially as described.

In testimony whereof I have hereunto affixed my signature this 27th day of February, A. D. 1894.

RUDOLPH R. BUEHLER.

Witnesses:

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