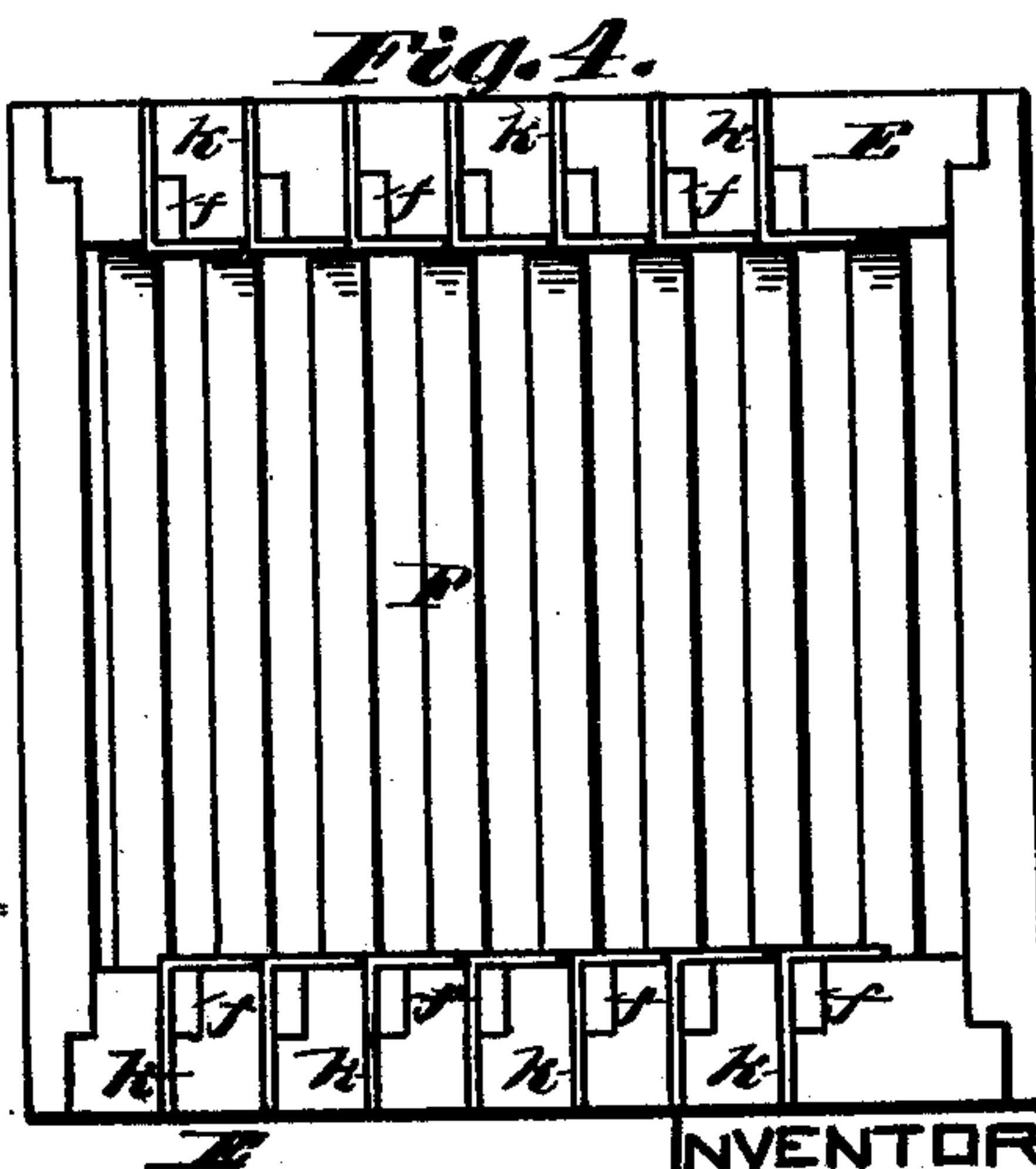
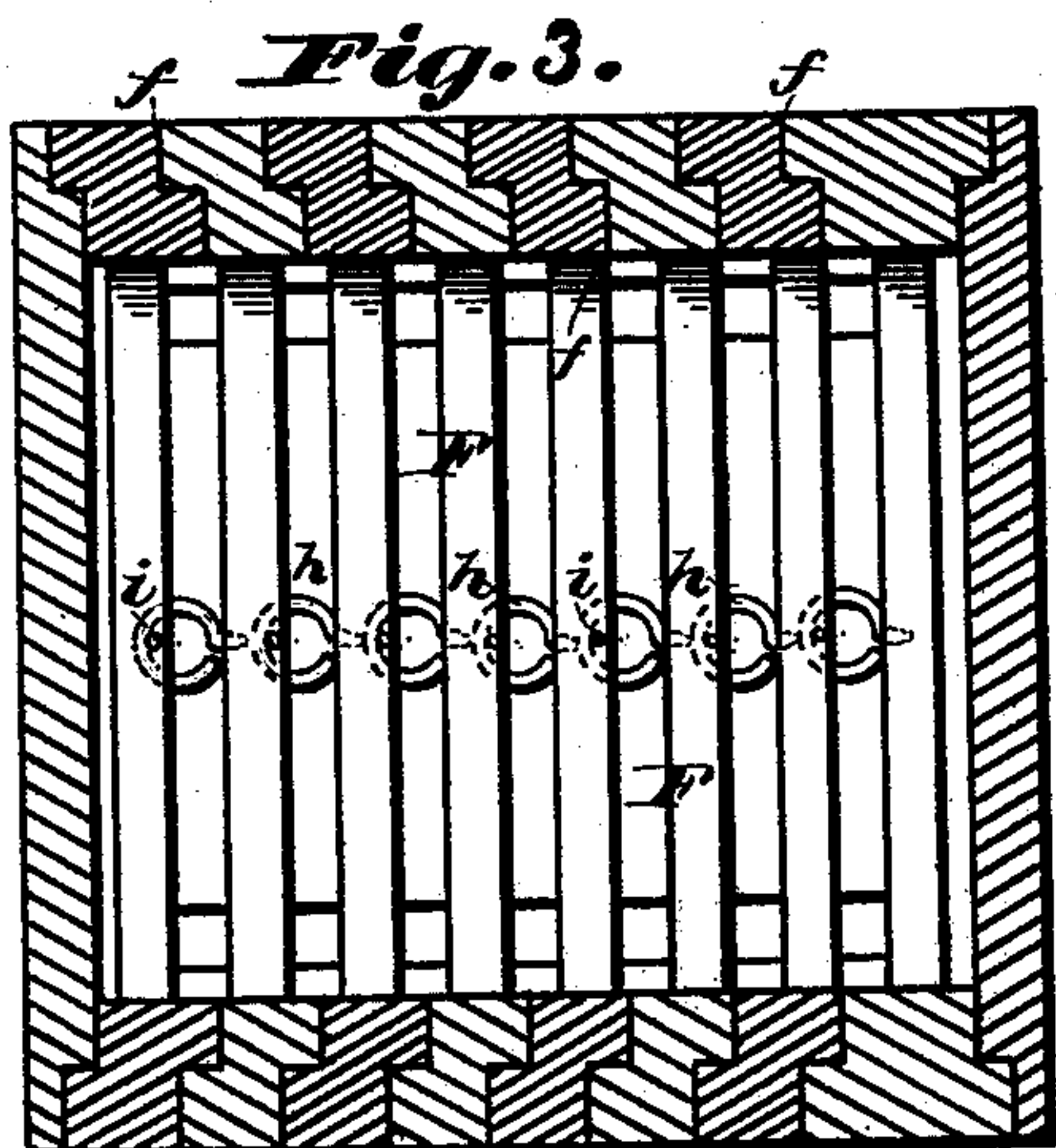
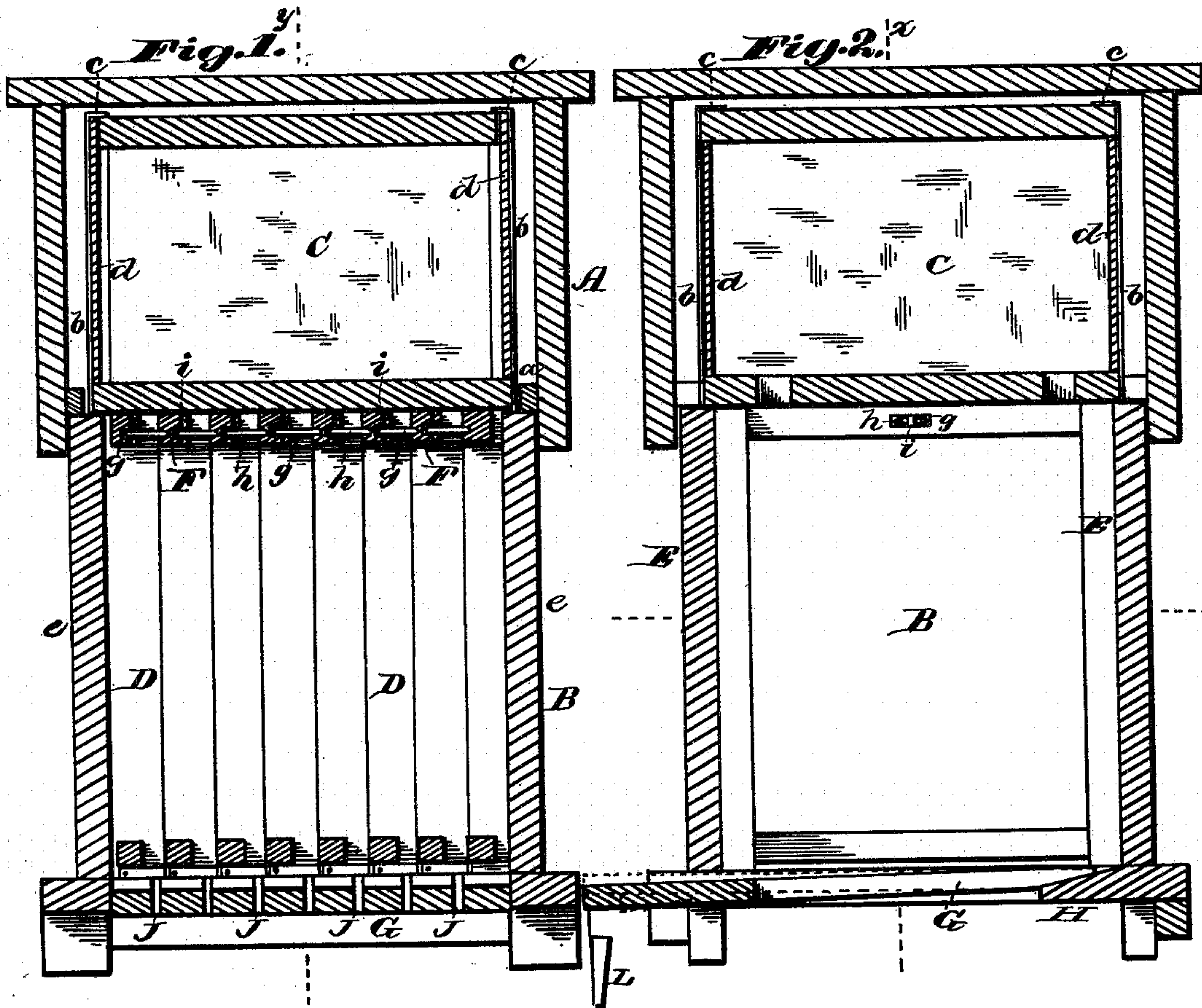


A. H. RUSSELL.

BEE-HIVE.

No. 187,911.

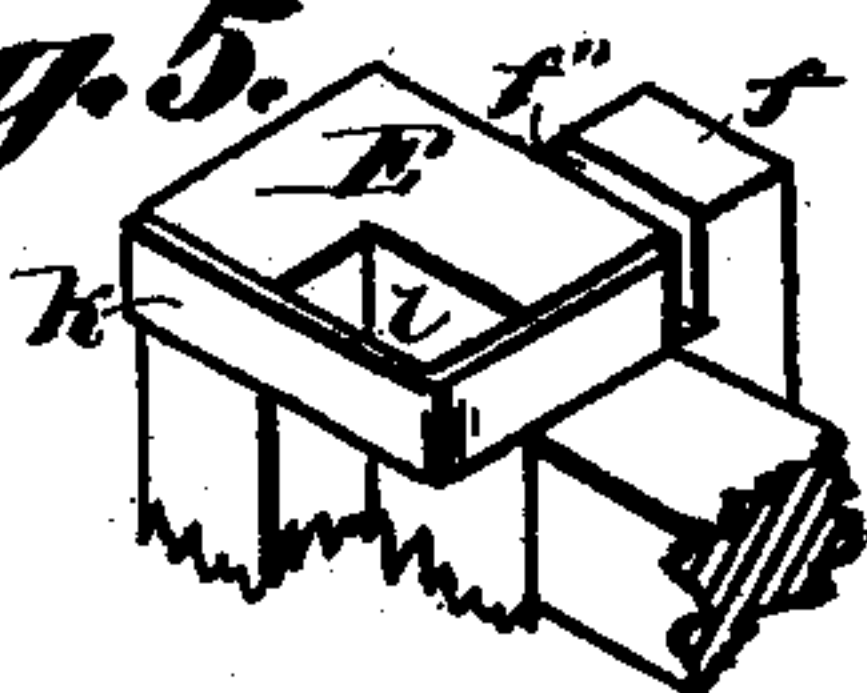
Patented Feb. 27, 1877.



WITNESSES:

Jas. F. Duttonel.  
W. B. Brown

Fig. 5.



A. H. Russell.  
PER  
A. S. Abbott.  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ALBERT H. RUSSELL, OF ADRIAN, MICHIGAN.

## IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. **187,911**, dated February 27, 1877; application filed January 19, 1877.

*To all whom it may concern:*

Be it known that I, A. H. RUSSELL, of Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Bee-Hives; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in a bee-hive the honey-box whereof is constructed with metallic corners, each having a lip capable of being bent to allow of the insertion, removal, and securing of the glass sides in the same. It also consists in constructing the comb-frames with rabbeted edges that interlock to form a continuous series of frames, and securing such rabbeted comb-frames together by loops or eyes and pins or equivalent means at the top and tongues and sockets at the bottom, so that any one frame of the series may be readily removed and replaced.

It also consists in a removable bottom board, constructed to fill the office of a ventilator, stand, bottom board, fly-hole, and center board, and rendered adjustable to inclose the bees or permit their ingress and egress.

In the drawing, Figure 1 is a central vertical cross-section of my hive. Fig. 2 is a longitudinal vertical section. Fig. 3 is a top view of the comb-frames and sides of the hive. Fig. 4 is a bottom view of the same, and Fig. 5 is a perspective view of one of the lower corners of a comb-frame, showing the tongue and socket thereon.

The letter A designates the top or cover of the hive, having slats *a* therein, whereby the said cover is made to rest upon the body B of the hive. These slats are removable, so as to permit the lowering of the cover upon the body B, and thereby form a double-wall hive for winter use. Within the cover A is placed the honey-box C, which, of course, will be removed when the hive is to be converted into a winter-hive, as just described. This honey-box has glasses *d* therein sliding in metallic corner-pieces *b*, and these corner-pieces, which may be of suitable flexible metal, are constructed with a projecting portion, *c*, that is bent down upon the box to keep the glasses in place, and is capable of being turned up or

back to permit of the insertion or removal of the glasses without breaking the box or taking it to pieces—a provision that will be readily appreciated.

The sides *e e* of the body B of the hive may be attached to or form part of the comb-frames D. These comb-frames have their side pieces E made with an inside and outside rabbet, *f*, whereby when a number of such frames are brought together they interlock, as shown in Fig. 3, to form a continuous series of frames, and also two close sides of the body of the hive. The upper cross-bars F of the frame are constructed with a socket, hook, or equivalent device, *g*, on one side, and provided with an eye or tongue, *h*, on the other side, so that the tongue or eye of one frame shall enter the socket or engage the hook of the next adjacent frame, whereby the two, or a series, will be locked together. If, as in the hive illustrated in the drawings, an eye and a socket be employed to thus unite the frame, a pin, *i*, may be driven through the bar F, so as to pass through the eye when in place in the socket, and thereby prevent the frames being separated.

The lower ends of the side bars or pieces E of the frames are provided with a right-angled strap or piece of metal, *k*, which, extending across one of the rabbeted portions, forms a socket, *l*. The projecting portion *f* of the side pieces opposite this socketed portion is provided with a kerf or groove, *f''*, which is adapted to fit into the socket *l* like a tongue, and over the metal strap *k* of the adjacent frame, as shown in Fig. 4, these details of construction being fully illustrated in Fig. 5. G is a bottom board arranged to slide in the opening J of the body and have its rear end rest upon the shelf H. This board is slotted longitudinally as indicated in the cross-section thereof, Fig. 1, and the longitudinal section, Fig. 2. This board may be provided with a wedge, L, for insertion under it, so as to raise it closely against the bottom of the hive, so as to shut in the bees; but when said wedge is not used the board remains sufficiently far below the hive as to admit the free ingress and egress of the bees with respect to the hive.

By making the comb-frames as herein de-

scribed—that is to say, with rabbeted sides, and providing them with devices whereby they may be closely and intimately united, a casing for such frames is dispensed with, and the cost of manufacture thus reduced and the hive materially simplified.

What I claim is—

1. The comb-frames of a bee-hive, having rabbeted interlocking side pieces, and secured together by loops on one frame, entering and secured in sockets in the next adjacent frame, substantially as described.

2. The rabbeted comb-frames, provided with a socket, *l*, and tongue *f'* at the lower ends of their sides, the said tongues of one section entering the sockets of the next adjacent sec-

tion, so as to lock the frames together, substantially as described.

3. Comb-frames having rabbeted side pieces combined with eyes and pins at their upper, and tongues and sockets at their lower, ends, respectively, whereby such frames can be intimately united or connected in forming a continuous series of frames, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALBERT H. RUSSELL.

Witnesses:

JOHN H. GOFF,

JOHN WELLMAN.