

H. KELLER.
Fanning Mill.

No. 237,438.

Patented Feb. 8, 1881.

FIG. 1.

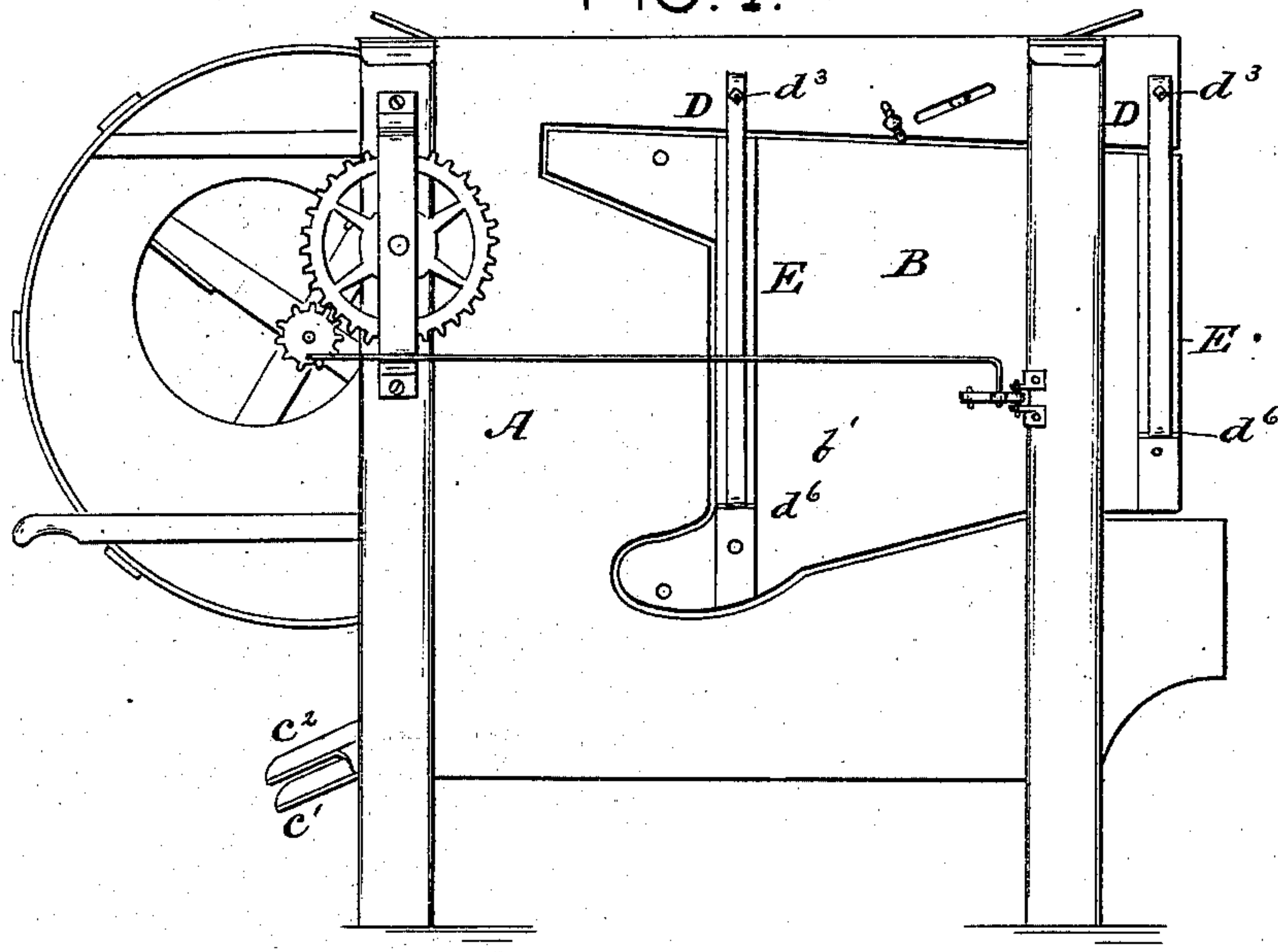
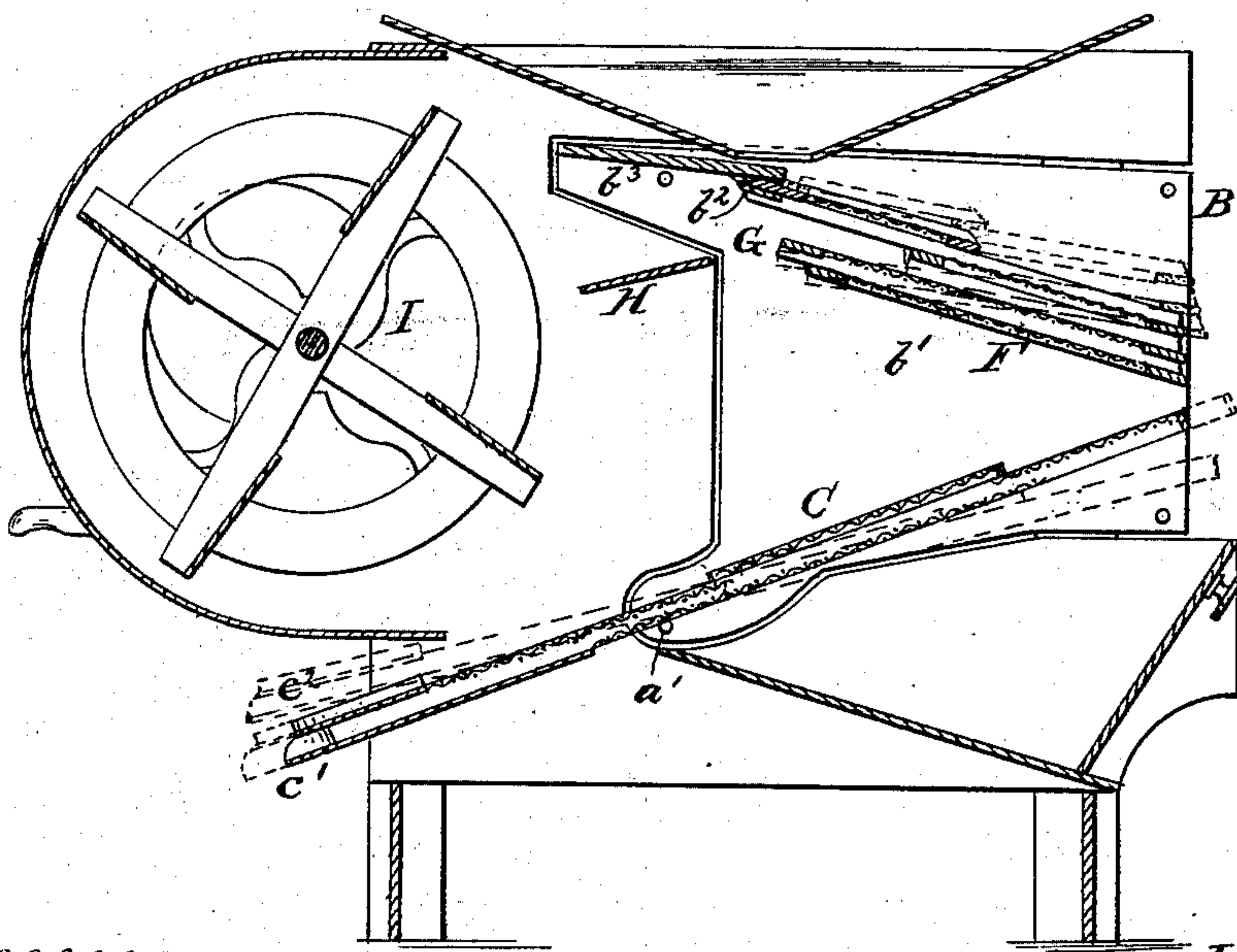


FIG. 2.



Witnesses:
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L. A. Dent.

Inventor:
Henry Keller,
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FIG. 3.

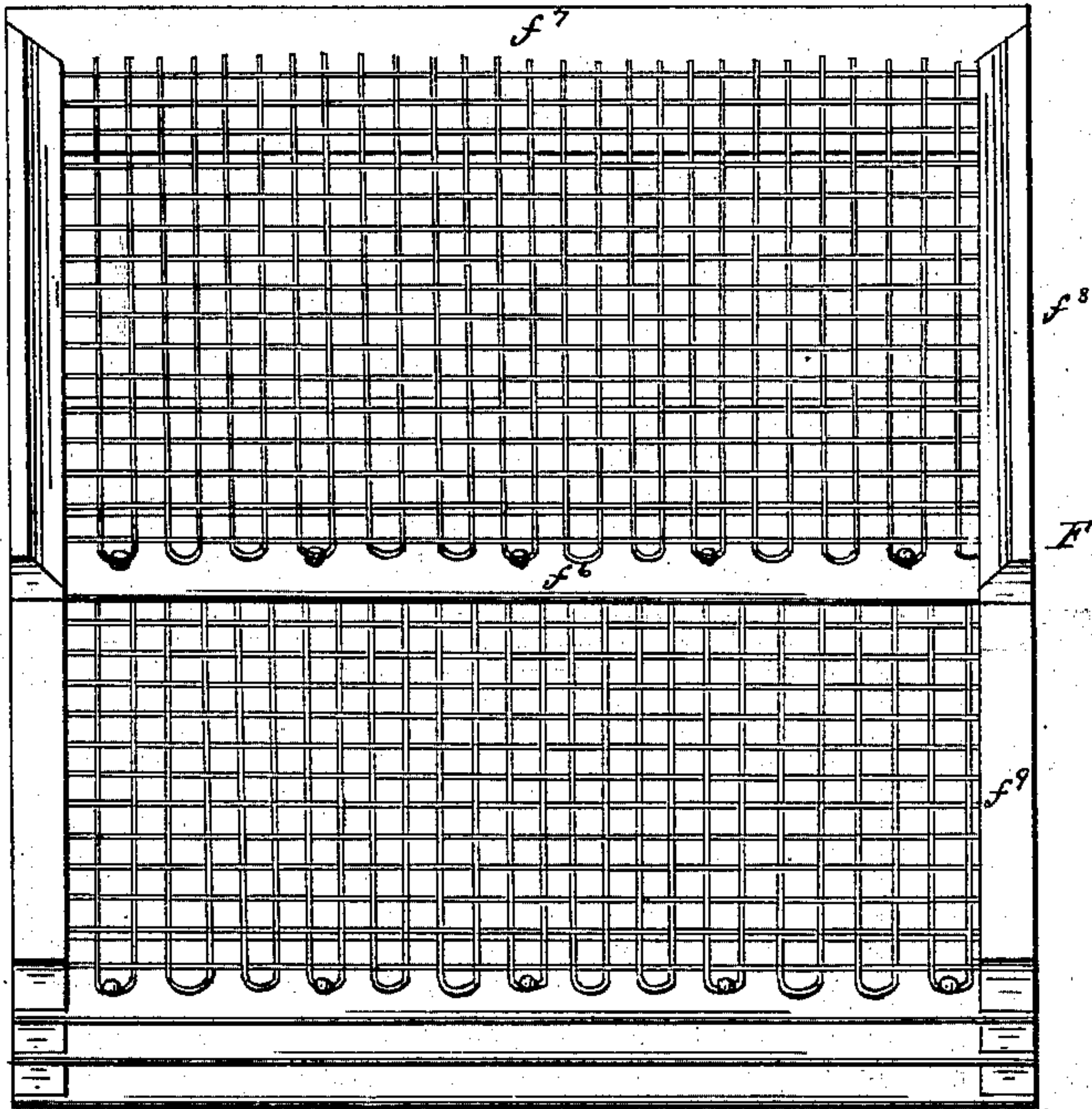
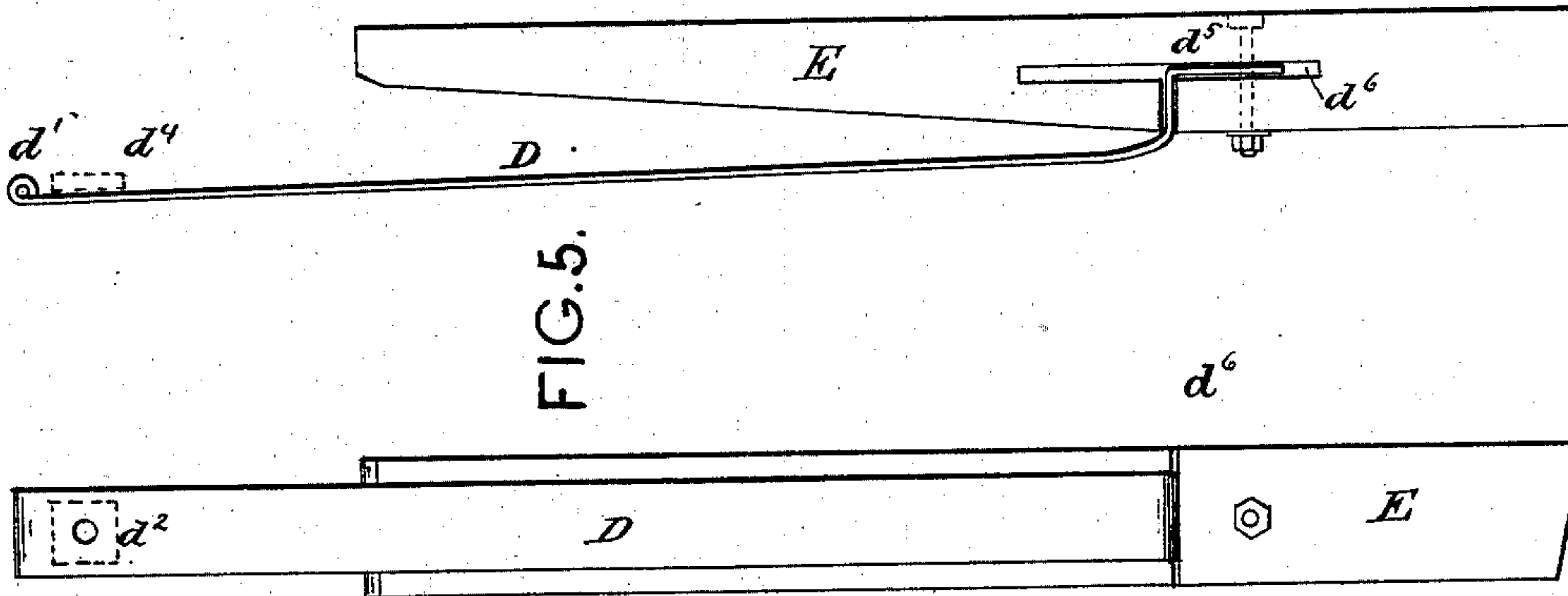
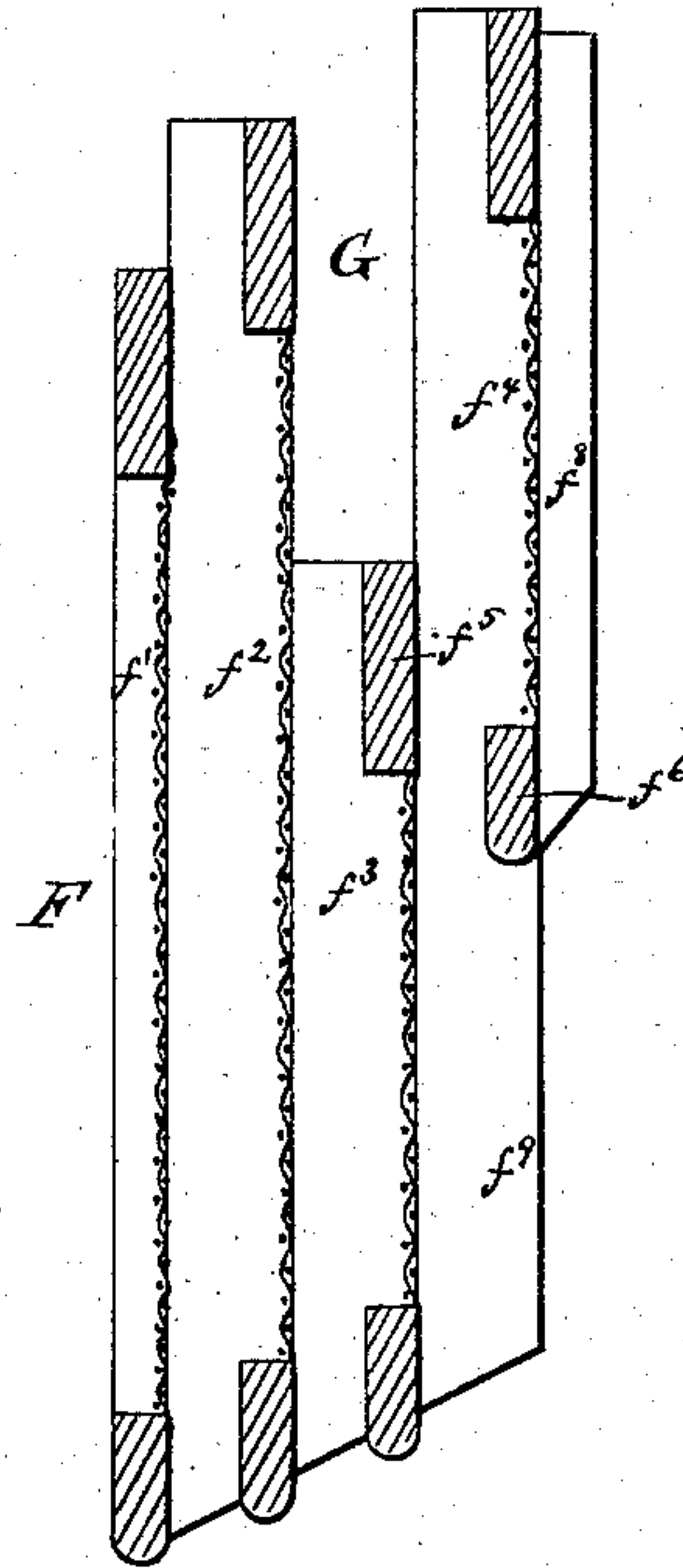


FIG. 4.



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UNITED STATES PATENT OFFICE.

HENRY KELLER, OF SAUK CENTRE, MINNESOTA.

FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 237,438, dated February 8, 1881.

Application filed February 6, 1880.

To all whom it may concern:

Be it known that I, HENRY KELLER, a citizen of the United States, and resident in Sauk Centre, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Fanning-Mills; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in reciprocating fanning-mills.

It consists in the peculiar construction and method of attaching the hanger by which the shoe is supported, which will be hereinafter fully explained, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation, and Fig. 2 is a vertical longitudinal section, of a mill having my improvements attached thereto. Fig. 3 is a plan of the nest of sieves; Fig. 4, a vertical longitudinal section of the sieves, and Fig. 5 shows the construction of the hanger and the batten or framing-strip of the shoe.

A is the main frame of the mill, in which is supported the shoe B.

C is the screen, placed within the shoe and supported on a rod, a' , passing through the inner lower ends of the side boards, $b' b'$, of said shoe. The screen is held in place by suitable clamping-nuts on the ends of the rod a' , which bear on the outer side of and press the sides $b' b'$ against the edges of the said screens. The screen may be given any desired pitch by raising or lowering either end, as indicated in dotted lines; and having the rod a' under and near its center, the degree of pitch is more easily regulated than it would be if the screen turned on a pivot placed at its end. The screen may also be moved longitudinally through the machine, as indicated in dotted lines, so that the rear ends may be readily set outward from the rear end of the nest of sieves above it, or may be set farther under the end of said sieves, so that any trash or oats or other undesirable matter will not be caught and carried down into the measure with the clean wheat. The screen, it will be seen, being supported, as de-

scribed, is capable of a vertical and of a longitudinal adjustment in the shoe, and it will be further seen that these adjustments are secured without the aid of grooves in the side boards, b' , of the shoe. The screen also shakes laterally with the lateral movement of the shoe, and is provided with grading-screens and with double discharge-spouts $c' c''$, by which the two grades of grain may be delivered into different measures.

D is the hanger by which the shoe B is suspended in the frame A. It is made of substantial hoop-iron. On its upper end I form a small loop, d' , bent so that it rests against the side of the frame A, and serves as a fulcrum or bearing, and holds the hanger off from the side of said frame. It is also provided with a hole, d^2 , through which the retaining screw or bolt d^3 is put. In fastening the hanger to the mill-frame I place below it a small nut, d^4 , (indicated in dotted lines, Fig. 5.) This nut or washer is same thickness as the depth of the loop d' , and holds the hanger so that the latter cannot be bent inward at this point. The bolt d^3 may be loosened or tightened, and the tension or stiffness of the hanger thereby diminished or increased. The lower end, d^5 , of the hanger is bent into the L shape shown, so that it will slip into an L-slot, d^6 , cut in the batten E, fixed on the side of the shoe. By preference the end of the hanger and the slot are formed as shown. It will, however, be understood that the L of the hanger could be formed by turning the end upward instead of downward, and by forming the slot d^6 in a corresponding manner the two parts can be united with great facility. When the L end of the hanger is inserted in the L-slot it is held by any suitable retaining means—as, for example, small buttons fixed on the edges of the batten, so that they will turn across the slot d^6 , or by a small bolt passed through the batten and through a hole in the end of the hanger, as shown in Fig. 5. Ordinarily the L end will hold its place without retaining buttons, screws, or other means; but I usually provide the retaining means to be employed, if desired or needed. I employ four hangers, arranged two on each side of the shoe. By connecting the hanger in the manner described the point of permanent or rigid attachment is

within the batten, and there is a slight play between the fulera above and below the horizontal portion of the L end d^5 , which gives to the batten, and through it to the shoe, a greater vibratory movement than can possibly be obtained by attaching the lower end of the said hanger to the outer side of said batten in the ordinary manner.

F is the sieve, which is composed of a series of riddles secured together in well-known manner, forming a "gang" or "hurdle" sieve, as shown. The two under sieves, $f^1 f^2$, are of ordinary form and arrangement. Other sieves may be placed under and secured to these, if desired, in the well-known manner, or the lower sieve, f^1 , may be entirely dispensed with. The two upper sieves, $f^3 f^4$, are arranged in a different manner from the sieves in the ordinary gangs. They are made a little more than half the width of the gangs from front to rear, and are arranged so that the cross-bars $f^5 f^6$ of their frames overlap each other. The sieve f^3 is placed on the top, and with its outer end flush, or nearly flush, with the outer end of the sieve f^2 , as shown. This places the cross-bar f^5 near and slightly in rear of a line drawn centrally across from side to side of the under sieve, f^2 . The upper sieve, f^4 , is placed so that its rear end is flush with, or nearly flush with, the rear end of the sieve f^2 , while its forward end bar, f^6 , overlaps the bar f^5 , and is on, or nearly on, the central cross-line above described. The sieves f^2, f^3 , and f^4 , arranged as described, form a wind sack or pocket, G, between them and in the rear end of the gang or hurdle. The blast is gathered in the pocket G and is redistributed to the sieves by the peculiar arrangement, so that the cleaning process is much better effected. A portion of the accumulated blast in the pockets is directed along the sieve f^2 , below the sieve f^3 ; another portion is directed above the cross-bar f^5 and under the cross-bar f^6 , while another portion passes upward through the sieve f^4 . The sieves $f^3 f^4$ have

guide-strips $f^8 f^9$ fixed on them, to prevent the grain from being shaken off at the sides. The gang is placed in the shoe by slipping the edge of the rear cross-bar, f^7 , of the top sieve, f^4 , between the lip b^2 and the agitating-board b^3 on the inner upper portion of the shoe B. The outer end of the gang may be raised or lowered, as indicated in full and dotted lines in Fig. 2.

H is the wind-board, arranged with reference to the fan I and gang F so that the blast will be thrown into the pocket G.

The grain is delivered from the hopper and is distributed, by the agitating-board b^3 , onto the sieve f^4 , where it is partially cleaned. It then drops onto the sieve f^3 , which movement reagitates and stirs it up, so that the blast between the bars $f^5 f^6$ acts with greater efficiency and removes a greater amount of dirt than could possibly be done were the sieve f^4 extended over the entire length of the sieve f^3 , as in ordinary gangs. By this construction and arrangement of the sieves $f^3 f^4$, as described, I prevent the sagging in the centers thereof which occurs invariably in the upper sieves of the ordinary gangs. The wind-web in my sieves is short, and the cross-bars $f^5 f^6$ are arranged so that they support the greater weight of the grain.

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

In a fanning-mill, the combination, with the batten B, having the L-slot d^6 and fixed on the shoe B, of the hanger D, having its upper end fixed to the main frame A, and having its lower end, d^5 , made L-shaped and adapted to be inserted in the slot d^6 , substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY KELLER.

Witnesses:

P. B. TURPIN,
C. M. SITES.