

(No Model.)

B. W. TUTTLE.

FLOUR BOLT.

No. 331,265.

Patented Nov. 24, 1885.

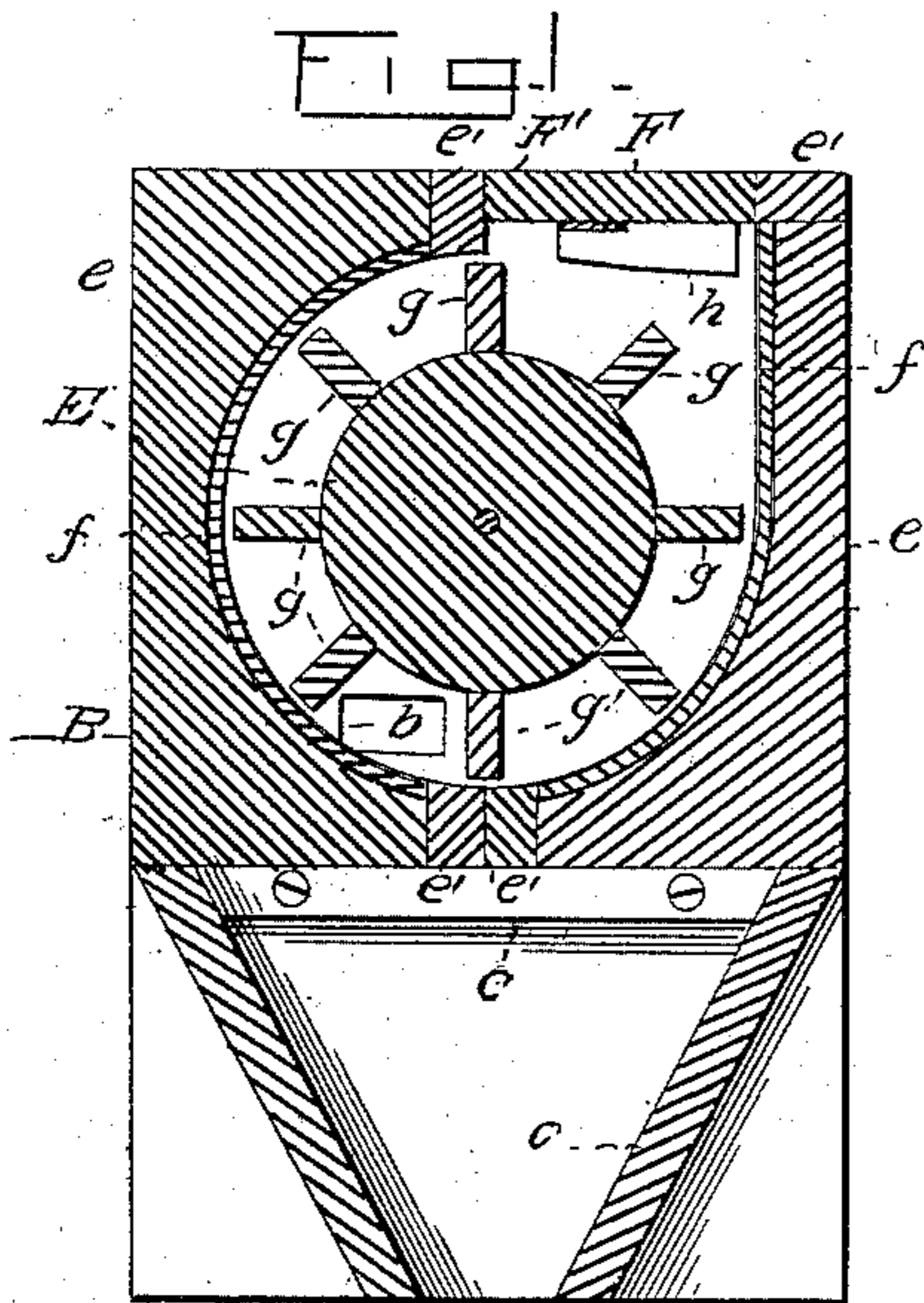


Fig. 1.

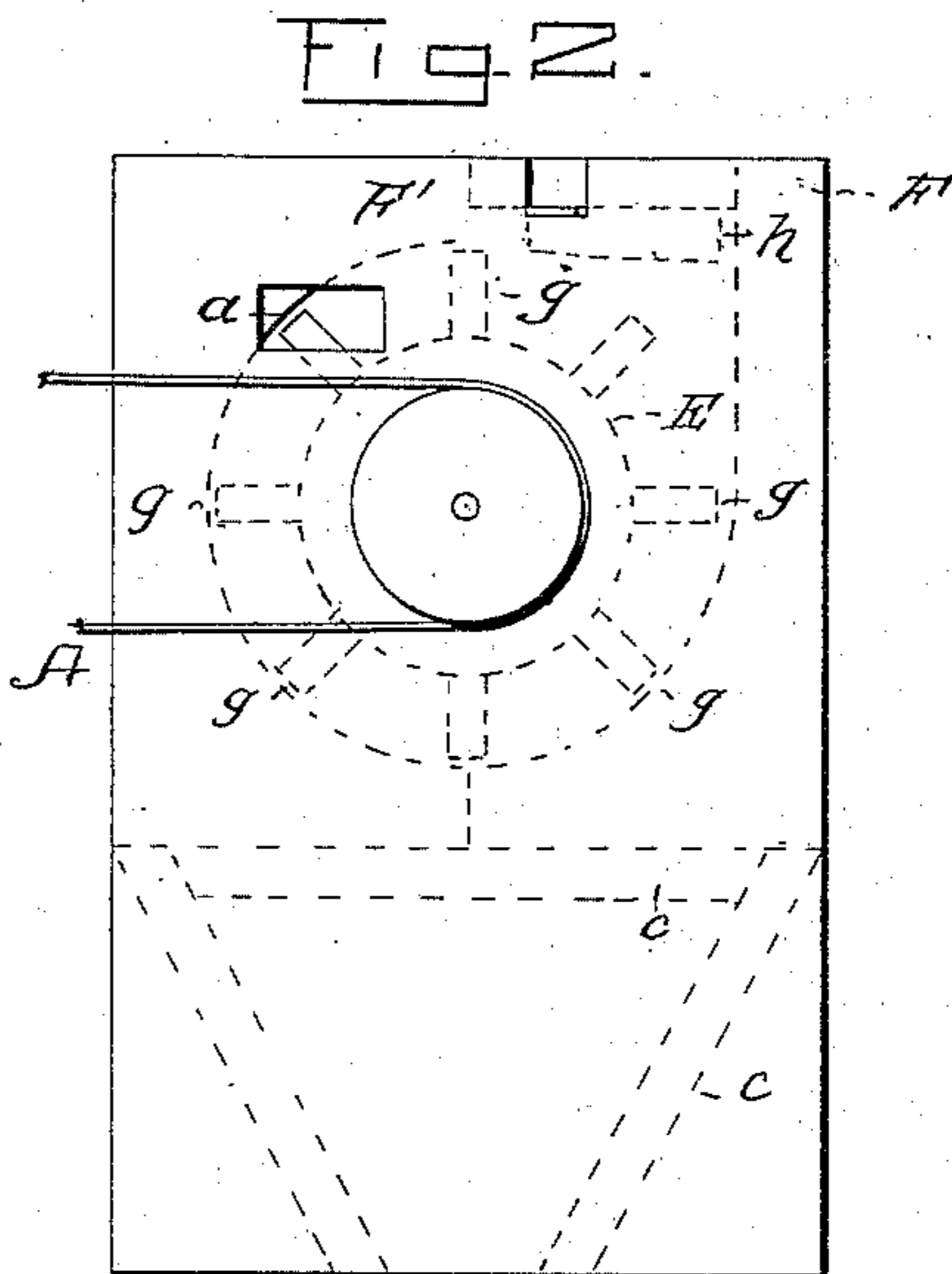


Fig. 2.

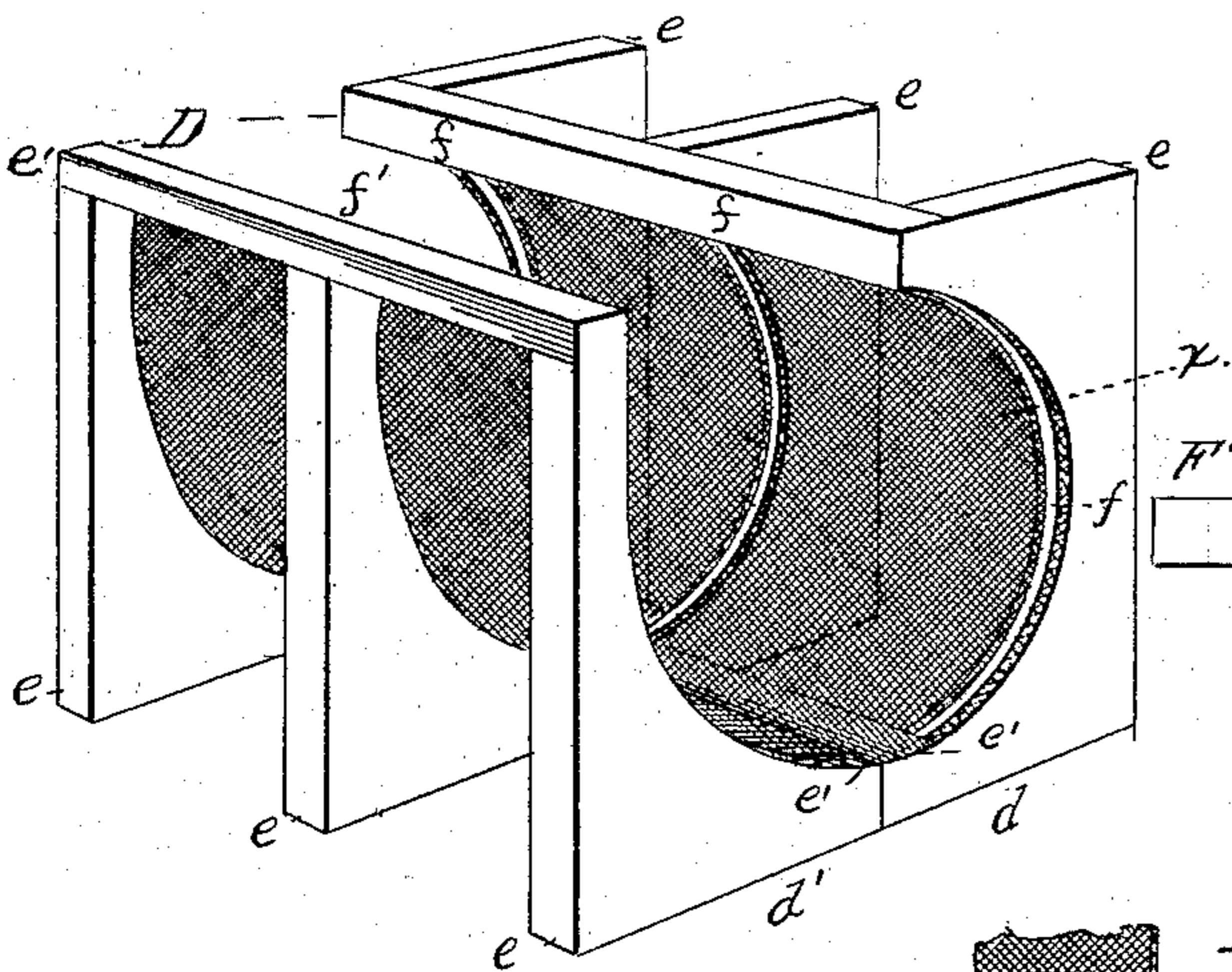


Fig. 3.

Fig. 4.

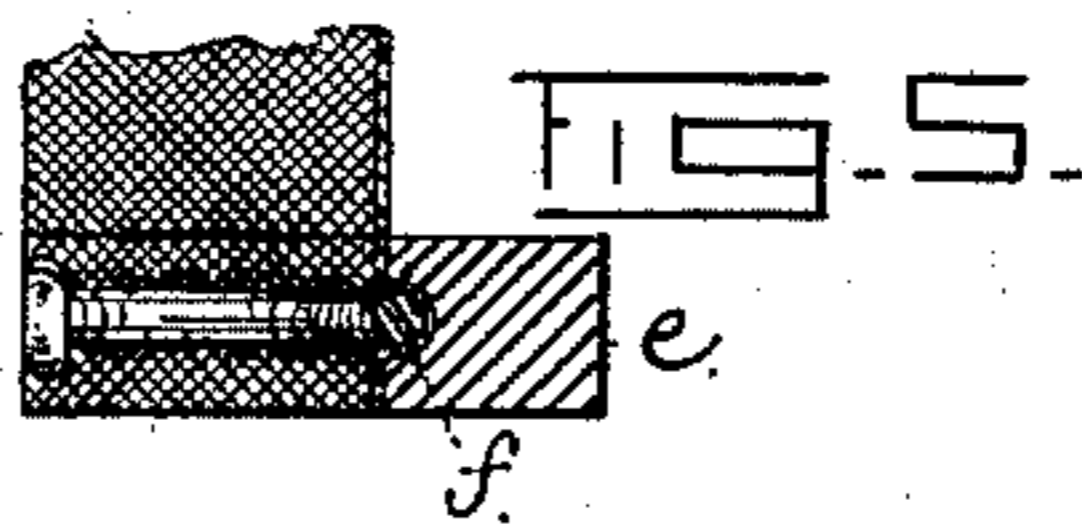
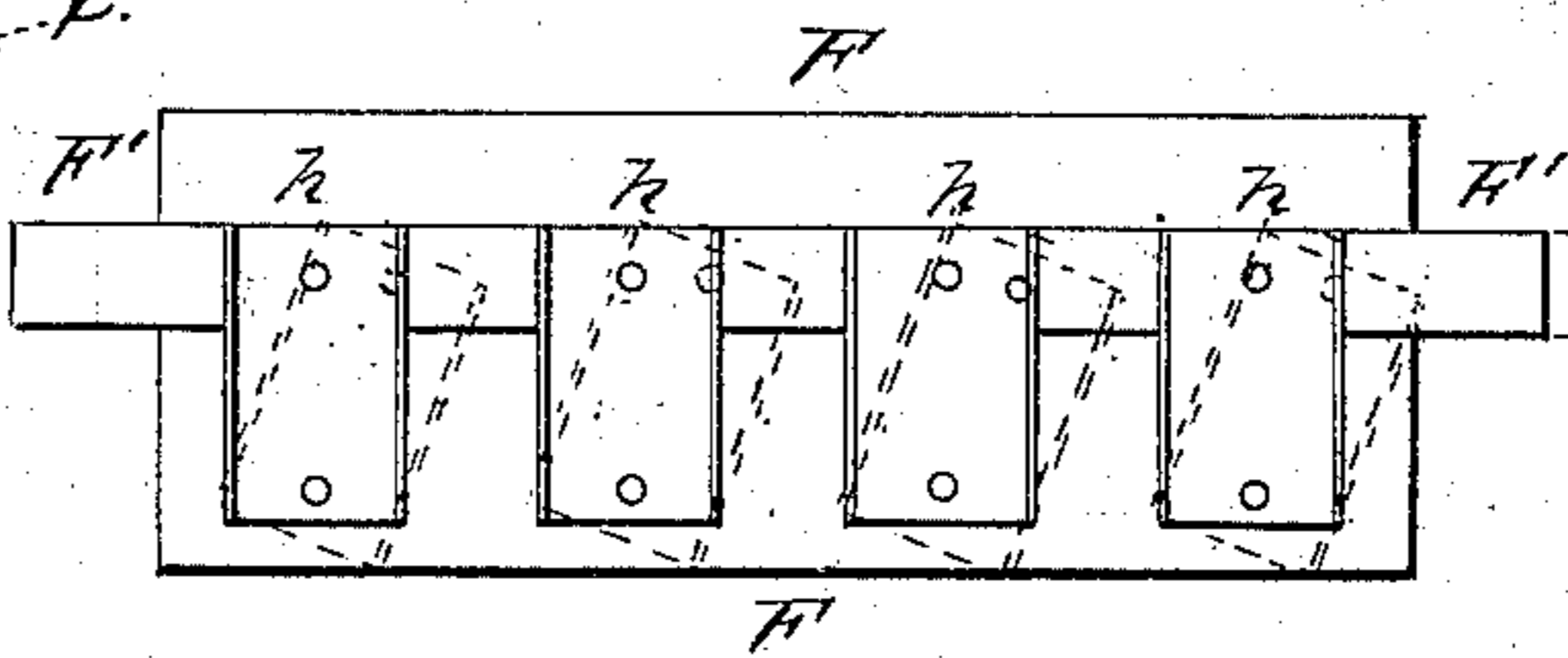


Fig. 5.

WITNESSES:

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FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 331,265, dated November 24, 1885.

Application filed February 17, 1885. Serial No. 156,183. (No model.)

To all whom it may concern:

Be it known that I, BEERI W. TUTTLE, of Council Hill, in the county of Jo Daviess and State of Illinois, have invented a new and useful Improvement in Flour-Bolts; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 The improvements which constitute this invention are intended to facilitate the bolting of flour and to effect a better and more rapid separation of the bran and coarser particles; and they relate to the beater, the bolting-
15 screen, and means for feeding or conveying the meal from the feeding to the discharge end at any desired rate of speed; and the novelty of my invention consists in the construction, arrangement, and combination of these parts,
20 all as more fully hereinafter described and claimed.

For a more thorough understanding of these improvements and the result of their construction and combined arrangement attention is invited to the accompanying drawings, in which—

Figure 1 is a vertical transverse section of a machine constructed in accordance with my invention; Fig. 2, an end elevation of the feeding end of the machine with other parts represented in dotted lines; Fig. 3, a detail of the bolting-screen in perspective; Fig. 4, a detail of the adjustable chutes, and Fig. 5 a detail on the line *x x* of Fig. 3, showing the
35 means for securing the bolting-cloth to its frame.

Similar letters denote corresponding parts throughout the several views.

For convenience I have illustrated and shall only describe such parts of the bolt as constitute my invention, and, accordingly, A represents the feed and B the discharge ends of the machine, the former having an inlet-opening, *a*, near its upper end and the latter
45 an opening or outlet, *b*, near its center and a little above the bottom of the bolting-screen, presently to be described.

In the bottom of the machine, between the feed and the discharge ends, is a hopper, C, having at each end, next to the ends of the machine, a bar, *c*, which, together with the sides of the hopper, supports the bolting-screen D.

This screen does not move in any direction, but, on the contrary, is made stationary on its supports, and consists of two sections, *d* and *d'*.
55 The section *d* is semi-cylindrical in form, and consists of a frame composed of the concaved ribs *eee*, connected at their ends by the straight bars *e' e'*, and a covering of bolting-cloth which is secured on the inside of the frame
60 by wires *f f f* pressed with the cloth into grooves cut in the concaved edges of the ribs and secured at their ends by staples or other suitable means. The section *d'* of the screen is not of the same form as the section *d*; but
65 its lower end is made concave while its upper portion is gradually made straight. It is composed of a frame with bolting-cloth secured to the same by wires, as in the other section. These sections when united form or
70 constitute a bolting-screen cylindrical for about two-thirds of its circumference with the remaining one-third straight, and between its upper ends is an intervening space, *f'*, which is filled by a strip of material provided with
75 chutes, presently to be described. By making this bolting-screen with a straight upright portion all meal which is thrown against it and is not sufficiently fine to pass through re-
80 bounds from the force with which it is thrown, and falls upon the rotary beater, (presently to be described,) and is carried gradually (not in a mass) to the bottom of the screen, from which it is again and again carried around by the
85 beater until it reaches the discharge end of the machine, where the bran and such particles which have not been sufficiently reduced to pass through the upright portion of the screen are discharged into suitable hoppers
90 located at this end of the machine.

E denotes the rotary beater, arranged within the bolting-screen and mounted on a shaft having end bearings in the ends of the machine with a driving-pulley on one end for belt connection with the motive power. This
95 beater consists of a solid drum provided on its circumference with paddles *g g*, arranged parallel around the same at a uniform distance apart, whereas other beaters of this character are composed wholly of paddles, and
100 the intermediate spaces allow the meal to fall in a mass to the bottom of the bolting-screen, while by this beater it is evenly spread over the various parts and is gradually carried to

the bottom, and the paddles suffer no unusual strain in the revolution of the drum, and the cloth of the screen is prevented from becoming clogged.

5 In the intervening space, f' , between the two ends of the bolting-screen, is placed a board, F , provided on its under side with a series of chutes, $h h$, which are pivoted at one end to the board F and at the other end to a strip, 10 F' , which extends at each end through the ends of the bolting-chest, and by which strip these chutes are adjusted at any angle of inclination for the purpose of carrying the meal at any desired rate of speed from the feeding to 15 the discharge end of the machine. The greater the angle of inclination to which these chutes are adjusted the faster will the meal be carried to the discharge end. It will be observed that these chutes may be divided, so as to feed 20 one portion of the meal fast and the other slow. These adjustable chutes are asserted to be of special advantage and benefit in flour-bolting, for, as heretofore, great difficulty has been experienced in getting the meal to move 25 toward the discharge end, and all attempts to facilitate this operation have proved unsuccessful for the reason that the meal would remain where it was fed in and would travel in the same circuit until enough accumulated to 30 force itself toward the discharge end.

The advantage asserted for the construction of the bolting-screen is that the bran and coarser particles of the flour when thrown against the upright portion do not fall in a 35 mass, but gradually fall into the bottom or cylindrical portion and are again and again carried around by the beater and passed through the chutes until they are discharged.

The result of the combined arrangement of 40 the bolting-screen, beater, and adjustable chutes is that no flour escapes bolting, and it is better separated and more rapidly operated upon and discharged.

What I claim, and desire to secure by Letters Patent, is—

1. A flour-bolt comprising a rotary beater, a partly-cylindrical bolting-screen with a straight upright portion, and a series of adjustable chutes completing the circumference of said screen, substantially as described. 45 50

2. In a flour-bolt, the combination of a rotary beater, and a bolting-screen consisting of a semi-cylindrical section and another section made straight, with a slight curve at one end, substantially as described. 55

3. The bolting-screen D , composed of the grooved concave ribs $e e$, the end connecting-bars, $e' e'$, the bolting-cloth, and the wires $f f$, pressed tightly with the cloth into the grooves of said ribs and secured substantially as described and shown. 60

4. In a flour-bolt, the combination of the stationary bolting-screen D , made in two sections, with a straight upright portion, and the solid rotary beater E , substantially as described. 65

5. In a flour-bolt, the stationary bolting-screen D , made in two sections with a straight upright portion, the solid rotary beater E , and the series of adjustable chutes $h h$, arranged above the latter and between the two sections of the bolting-screen, substantially as described. 70

6. In a flour-bolt, the combination of the bolting-screen D , having a straight upright 75 portion, the solid rotary beater E , the adjustable chutes $h h$, and the bolting-chest having the feed-opening at one end, near its top, and the discharge-opening near its center, at the opposite end, substantially as described. 80

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

BEERI W. TUTTLE.

Witnesses:

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PETER J. RAU.