

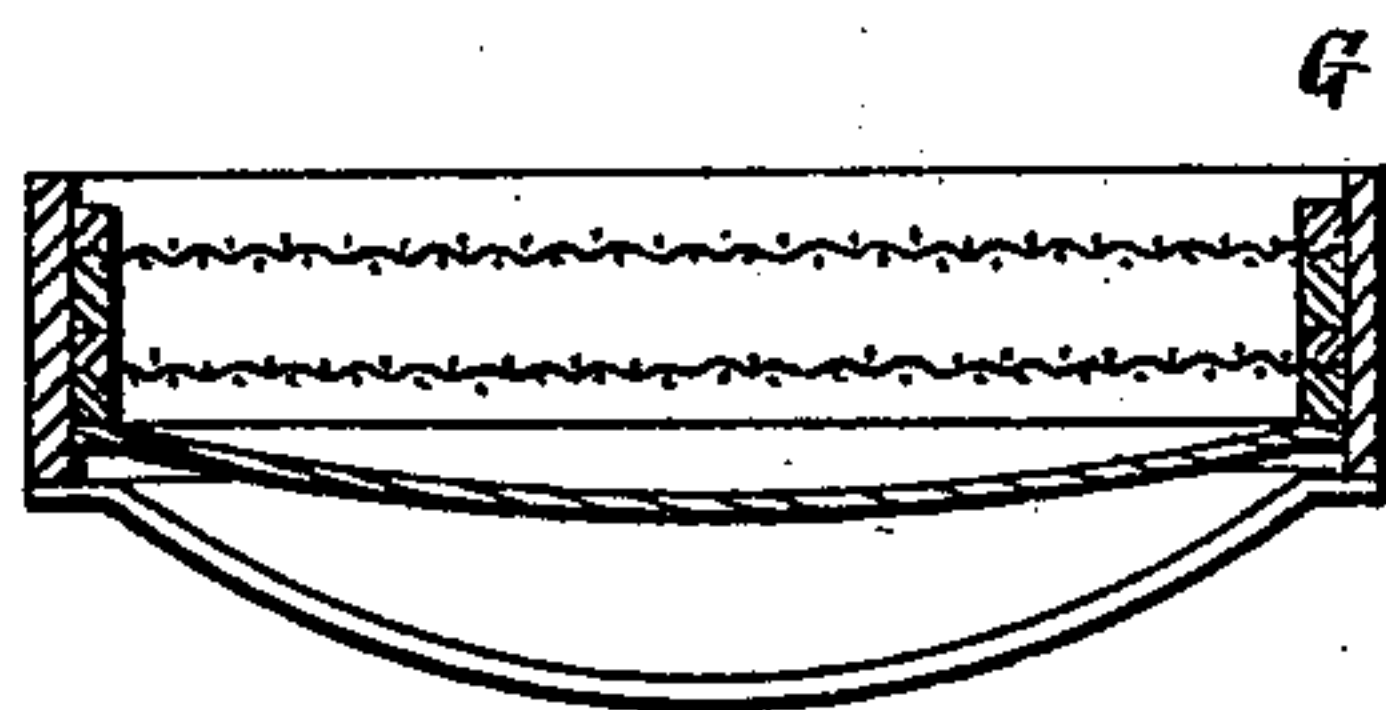
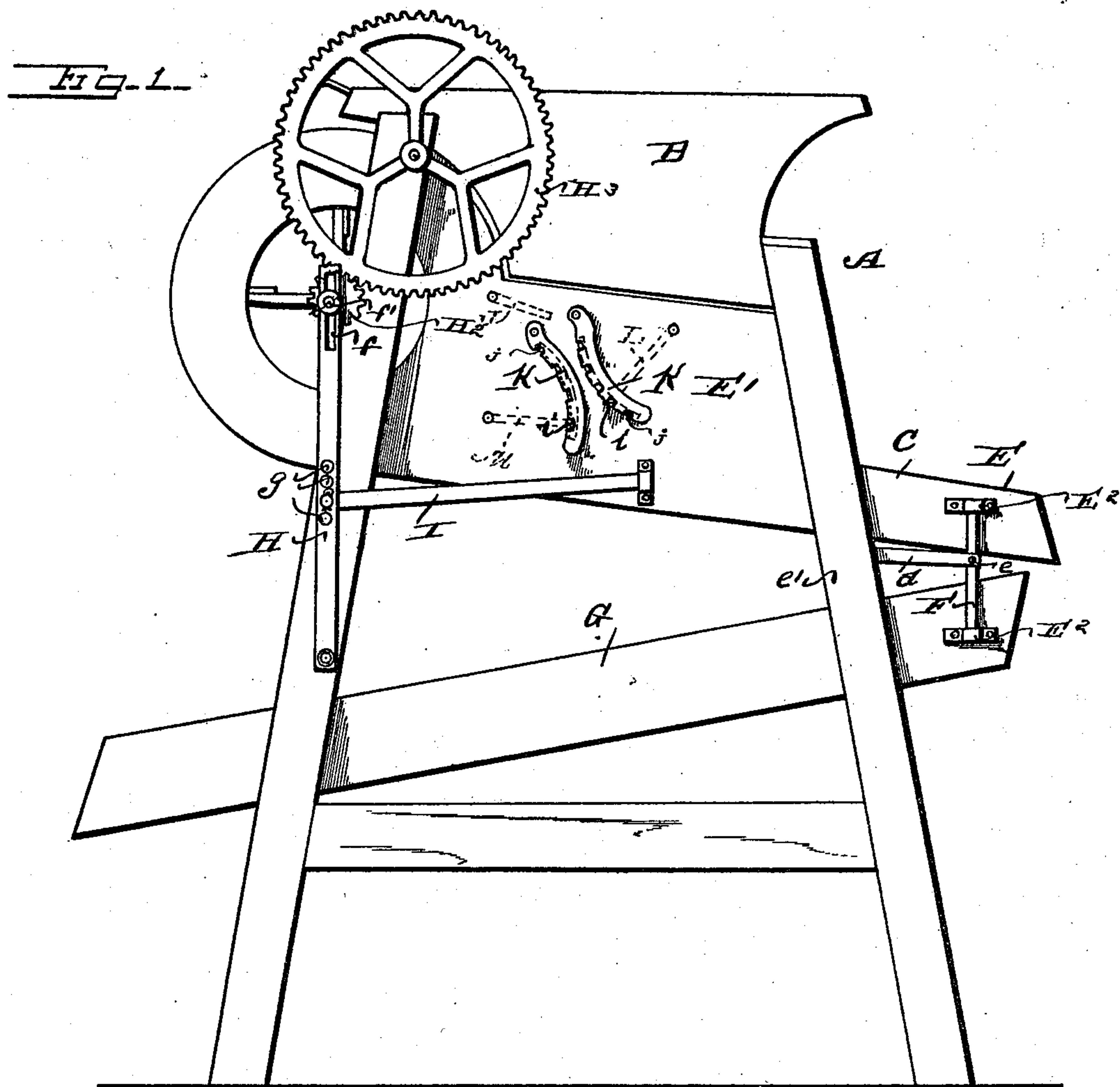
(No Model.)

2 Sheets—Sheet 1.

J. C. BENSON.
GRAIN SEPARATOR.

No. 504,466.

Patented Sept. 5, 1893.



WITNESSES

Jesse Heller.
Philip C. Massi.

INVENTOR

J. C. Benson

By E. W. Anderson

his Attorney

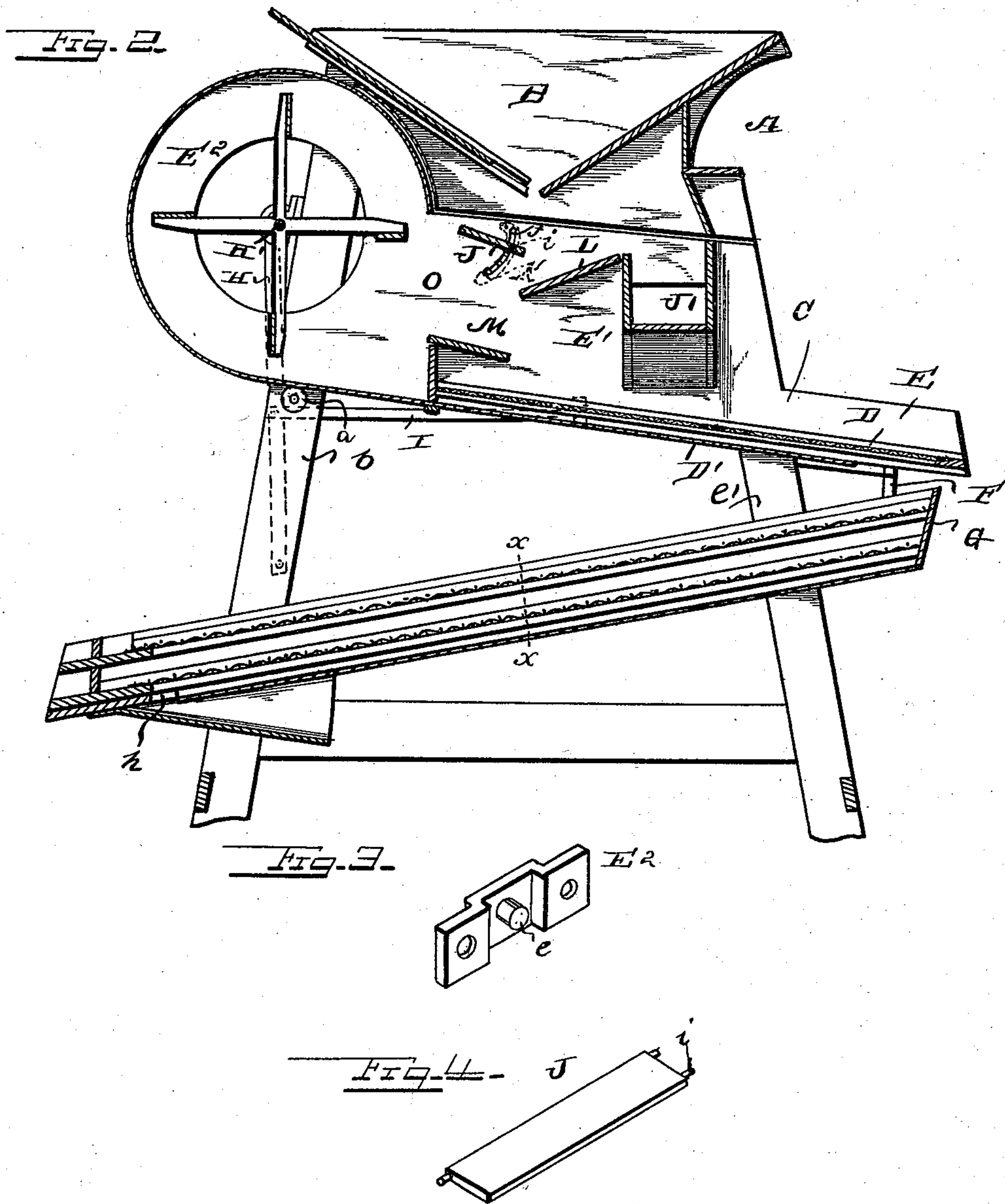
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UNITED STATES PATENT OFFICE.

JAMES C. BENSON, OF ALCONY, OHIO.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 504,466, dated September 5, 1893.

Application filed December 8, 1892. Serial No. 454,479. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. BENSON, a citizen of the United States, and a resident of Alcony, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Grain-Separators; 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation. Fig. 2 is a vertical longitudinal section. Figs. 3 and 4 are detail views, and Fig. 5 is a detail view of the lower shoe in cross section.

This invention has relation to certain new and useful improvements in grain cleaners, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the accompanying claims.

Referring to the accompanying drawings, the letter A designates the frame of the mill or cleaner, having supported thereon a hopper B.

C designates the upper or chaffing shoe, carrying the screen D, and the grain board D', extending underneath said screen to a point near the rear end thereof. The frame E of said shoe forms an integral part of the casing E', and the blast chamber case or drum E², as shown, said casing, drum and shoe being supported by the rollers a, a, carried by the legs or standards b, b, and by the bars or links F, F', one of which is connected at its upper end to each side of the rear portion of the upper shoe, and at its lower end to the upper portion of the lower or grading shoe G, the intermediate portions of said bars or links working loosely on pivot studs or journals e, carried by irons d affixed to and projecting from the legs or standards e', e'.

Secured to the outer face of each standard or leg b, is a bar or strap H, the upper portion of which is formed with an elongated vertical slot f, said slot engaging a crank pin f' on the respective ends of the fan shaft H'. The pin f' at one end of the shaft H' is carried by a small pinion H² on said shaft which pin is engaged by the driving gear wheel H³, and

drives said shaft and fan. In the lower portion of each of said bars or straps is a series of holes g, any one of which is designed to be engaged by a pin or stud on a bar I, which at its opposite portion is secured to the casing E'. The bar I is secured to the casing by means of a bracket plate E³, (Fig. 3), having an integral pivot stud e which engages the end of said bar. Similar bracket plates may also be used for connecting the bars or links F, F', to the casing. It will be apparent that when the blast wheel or fan is revolved, through this connection a vibratory reciprocating motion will be imparted to the upper shoe, which movement will be communicated oppositely to the lower shoe through the bars or links F, F'; also that by varying the point of connection at g, this movement may be regulated to suit the character of the grain being operated upon. The lower shoe which extends the entire length of the frame, is provided with usual arrangement of grading screens and discharges, the bottom of the shoe being concaved in order to direct the fine seeds toward the center thereof, and cause them to be discharged through the opening h in the lower bottom portion thereof.

J is a grain board, situated transversely of the grain passage, just below the discharge of the hopper, and pivoted at its upper edge at each end in the casing E'. At one end, said board has a stud or pin projection i, which projects through the casing and works in an arcuate slot j therein.

K is a notched curved bar, or segment rack, pivoted to the outer face of the casing, and so arranged that its notches or teeth will engage and support the stud or pin i, thus providing for different adjustments of the board J, to suit the grain being cleaned, and to direct the chaff into the chaff chute J', which discharges at one side.

L is a second and similar board, which is hinged at the opposite side of the grain passage from the board J, and which is inclined oppositely to the board J. This board is provided with means for its adjustment similar to those for the board J. Said boards J and L also act in conjunction with a third board M which is hung in the blast chute O, and is adjusted in the same manner, to regulate the direction and character of the blast.

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

1. In a grain cleaner, the combination with
5 the upper or chaffing shoe, the casing, and
the drum, all in one frame and movable together, of the fan shaft, having the crank
pins thereon, the bars or straps H, H, one on
each side and secured to the legs or standards
10 at their lower portions, their upper portions
having each an elongated slot engaging said
pins, the bars I, one on each side and adjust-
ably connected at one end to said bars H, and
at the other end affixed to the said casing,
15 the lower shoe, and the pivoted links or bars
connecting said lower shoe with the upper
shoe, substantially as specified.

2. In a grain cleaner, the combination with
the lower shoe, the hopper having the grain
20 discharge, and the fan, of the transverse
grain boards J and L, one situated on each

side of the grain passage underneath the hop-
per, and inclined oppositely to each other, the
wind board M operated in connection with
said grain boards, and means for effecting 25
and securing the independent adjustment of
each of said boards, substantially as specified.

3. In a grain cleaner, the combination with
the hopper and the grain passage therefrom,
of the transverse pivoted boards J and L, situ- 30
ated one upon each side of said passage, un-
derneath the hopper, means for effecting and
securing the independent adjustment of each
of said boards, and a chaff chute in front of
and below the board L, said chaff discharging 35
at one side, substantially as specified.

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

JAMES C. BENSON.

Witnesses:

JAMES H. BOWLES,
WILL E. FLOYD.