

(No Model.)

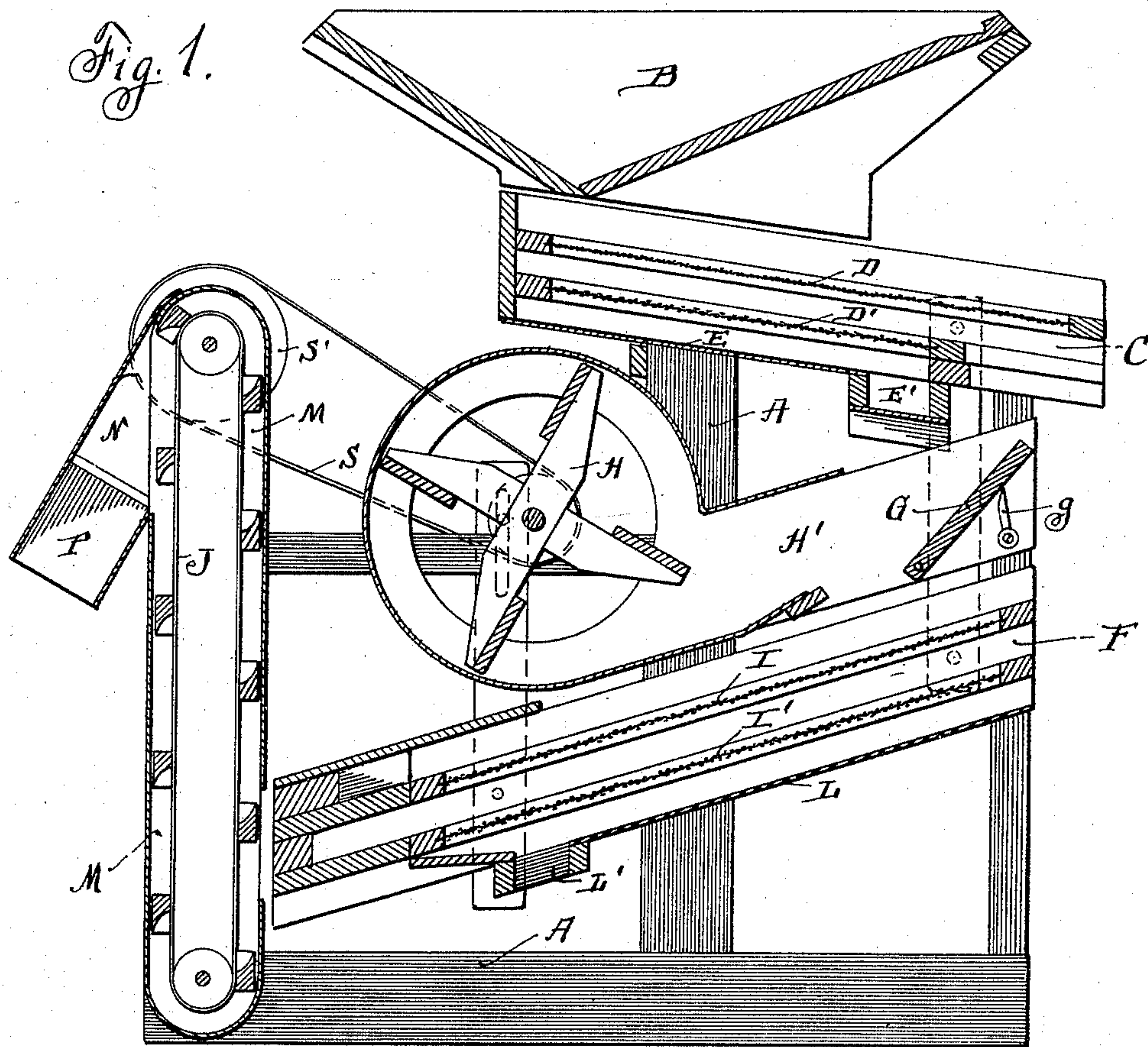
2 Sheets—Sheet 1.

J. F. HATFIELD.

COMBINED GRAIN CLEANER, FANNING MILL, AND ELEVATOR.

No. 526,623.

Patented Sept. 25, 1894.



WITNESSES

Geo. M. Anderson
Philip C. Mason

INVENTOR

Jas F. Hatfield
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His Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

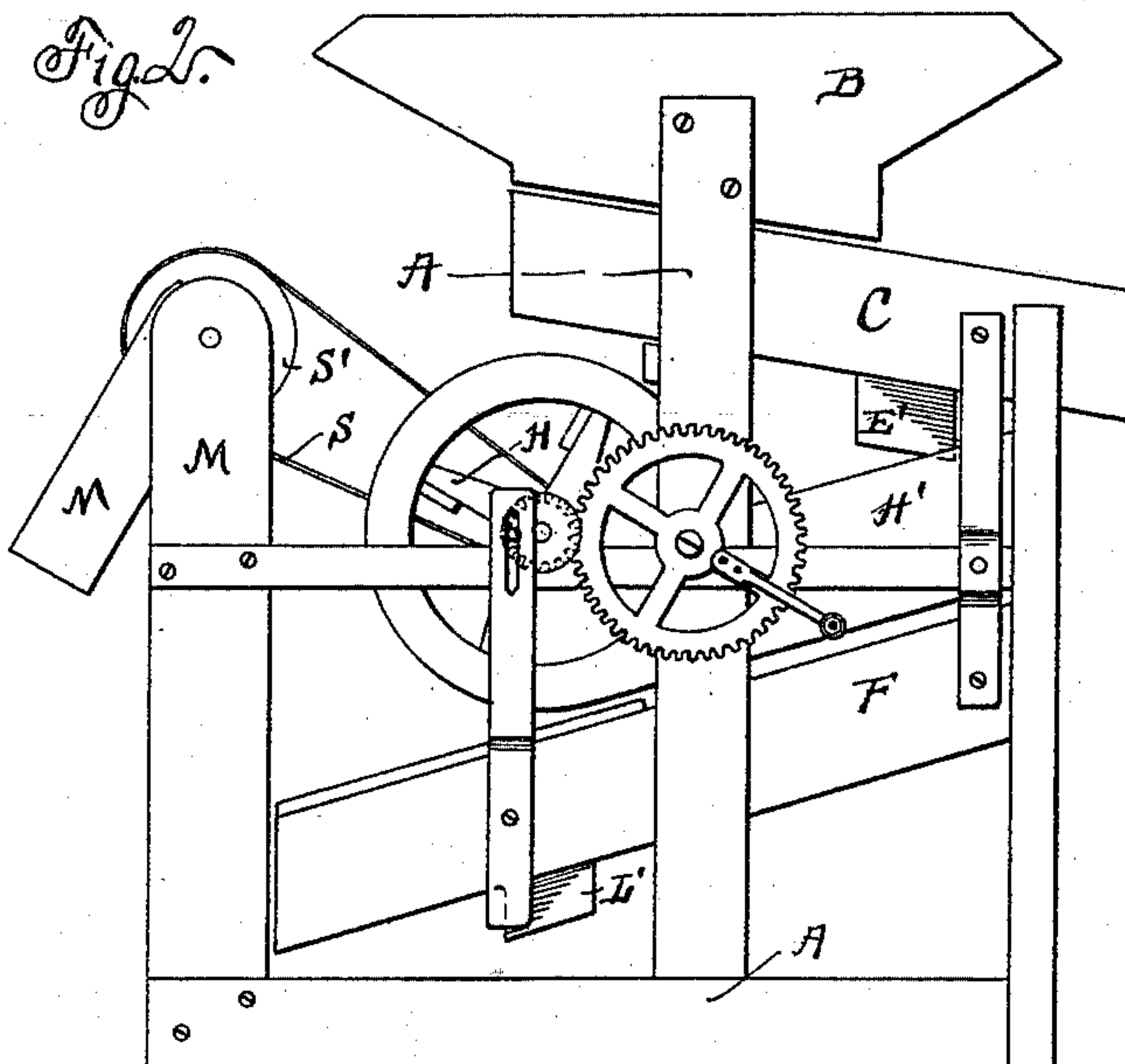
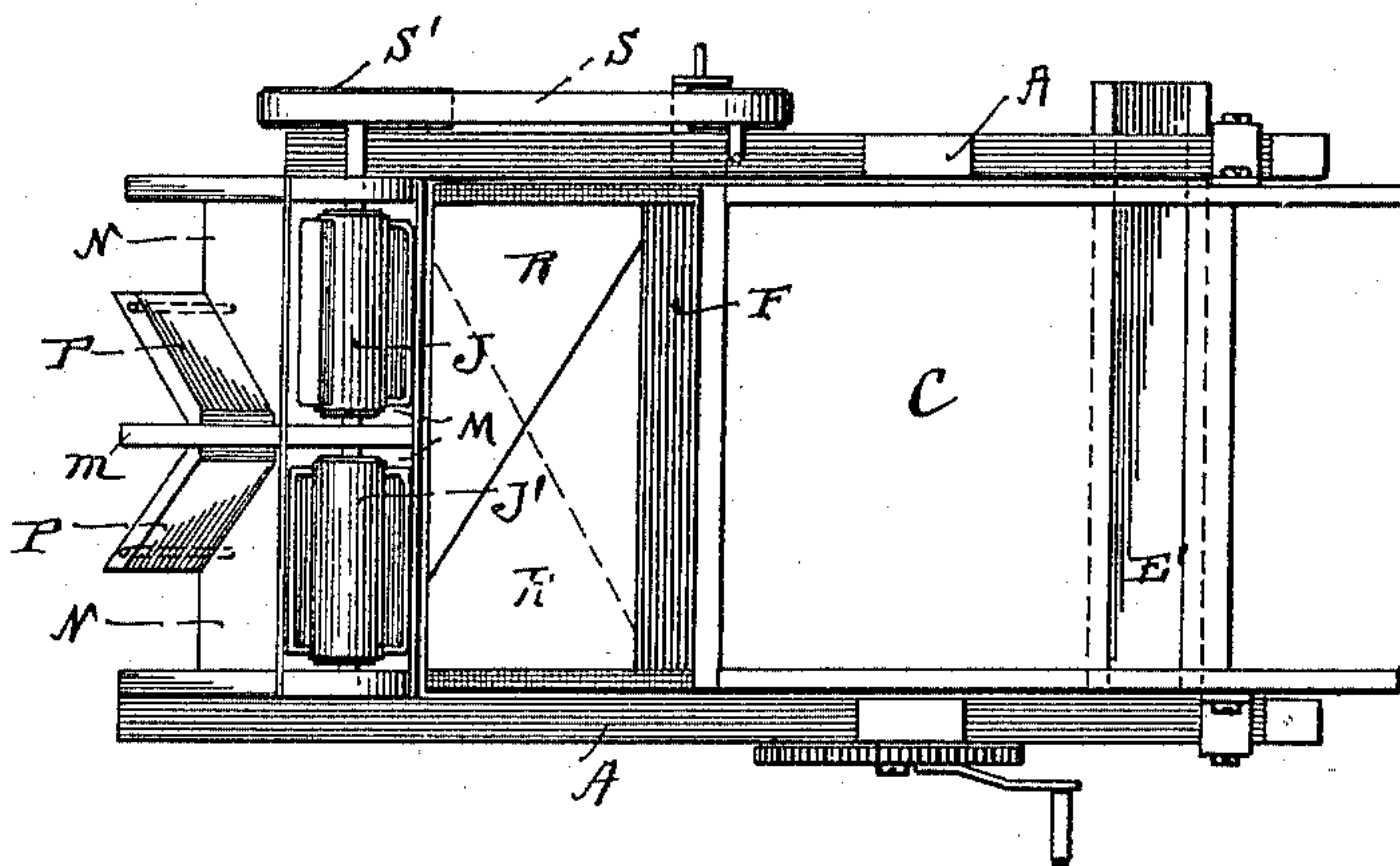


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES F. HATFIELD, OF DUBLIN, INDIANA.

COMBINED GRAIN-CLEANER, FANNING-MILL, AND ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 526,623, dated September 25, 1894.

Application filed January 17, 1894. Serial No. 497,178. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. HATFIELD, a citizen of the United States, and a resident of Dublin, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in a Combined Grain-Cleaner, Fanning-Mill, and Elevator; 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 vertical section of a mill embodying my invention. Fig. 2 is a side elevation of the same; and Fig. 3 is a plan view with the hopper and fan casing removed.

This invention has relation to certain new and useful improvements in combined grain cleaners, fanning mills and grain elevators, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claim.

An object of the invention is to provide means in a machine of this character for removing to a large extent the cheat and other extraneous matter from the wheat, or other grain being treated, before the lower or separating shoe is reached, thus lightening greatly the work to be performed by the said shoe, and resulting in the cleaning of the second grade of wheat as thoroughly as the first grade is cleaned.

A further object consists in the provision of means whereby the different grades, after separation, are elevated into sacks, auxiliary means being provided for keeping the two grades separate, or for mixing them, as may be desired.

Referring to the accompanying drawings, the letter A indicates the frame of a machine embodying my invention, and supporting a stationary hopper B.

C designates the upper or chaff shoe, which has two screens therein, D, and D', the upper screen D being substantially the full length of the shoe, and designed to carry off the chaff from the grain as the latter falls thereon from

the hopper. The lower screen D' is considerably shorter than the upper screen, and has underneath it a grain board E at the lower portion of which is a transverse inclined chute E', which discharges at one side of the machine. This screen D' catches the wheat, and lets the cheat and other foreign matter through onto the board E, and into the spout E'. The wheat, instead of being dropped from the screen directly onto the lower or separating shoe F, is delivered onto a transverse inclined grain board G, which is pivoted in the frame of the mill, and is capable of adjustment to different degrees of inclination. This board may be held at the proper adjustability by means of a small pivoted arm or dog g, engaging its under face, or by any other suitable means.

H is the blast wheel of the usual character, the blast passage H' being so situated as to direct the blast against the said board G, and against the grain as it falls thereon. By means of this arrangement, a further separation of the cheat and other foreign matter is effected before the grain reaches the lower shoe, onto which it passes from the said board.

The lower shoe F is provided with an upper screen I and a lower screen I', in the usual manner, to effect the separation of the first and second grades, or of different kinds of seeds. The upper screen I catches the first grade, and delivers it onto a conveyer belt J. The lower screen I' catches the second grade, and discharges it onto a second conveyer J'. Whatever cheat and foreign matter remain in the second grade at the time it is received by the screen I' pass through said screen onto the lower grain board L, and are discharged by a spout L' in the bottom of the mill.

Owing to the fact that the two separations of the cheat have been made before the screen I' is reached, it will be evident that the work of the screen is greatly lightened, and that the second grade wheat is discharged as perfectly cleaned as is the first.

The two conveyer belts J and J' are arranged side by side in a vertical transverse chute or chamber M, constructed on the frame of the mill, and provided with a depending spout N at its upper portion into which the grain is discharged from the said conveyers.

This spout is divided by a central partition *m*, and in each division there is a pivoted, reversible, button or strip *P*. By throwing these buttons to the center, one sack hung on the spout may be made to catch the grain from both belts, thus mixing the grades; but by throwing them over to the sides, a sack may be hung at each side, to catch the two grades separately.

10 The screens *I, I'* have each a grade strip *R* at their discharge ends to carry the grain to the respective belts. By reversing the grade strips, both grades may be delivered onto one belt.

15 Both the upper and the lower shoes are supported in such a manner as to permit them the usual vibratory movement, which is imparted by suitable connections with the fan shaft. The conveyer belts are carried by pulleys or rollers at the top and bottom of the chute or chamber *M*, and motion may be imparted thereto by means of a belt *S* from a pulley on the fan wheel shaft to a pulley *S'* on the shaft of the upper conveyer pulleys or rollers.

It will be understood that by the use of suitable screens, different varieties of seeds and grains may be treated, and proper separation effected.

30 Having thus described my invention, what

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

In a grain cleaner and elevator, the combination of an upper shoe, having an upper and a lower screen, the lower screen being shorter 35 than the upper, a grain board underneath said lower screen, the inclined chute at the lower end of said board, a transverse inclined adjustable grain board onto which the grain falls from said shoe, means for directing an upward 40 blast against said board, a lower shoe onto which the grain falls from said board, its separating screens, a vertical transverse chute or chamber *M* constructed on the frame of the mill, the two vertical conveyer belts *J, J*, 45 working side by side, in said chute or chamber and arranged to receive each the grain from one of the screens of the lower shoe, a depending spout *N* at the upper portion of said chute or chamber, a central partition *m* 50 in said spout, and a pivoted button or strip in each of the divisions formed by said partition, substantially as specified.

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

JAMES F. HATFIELD.

Witnesses:

JOSIAH REYNOLDS,

ALBERT BURR.