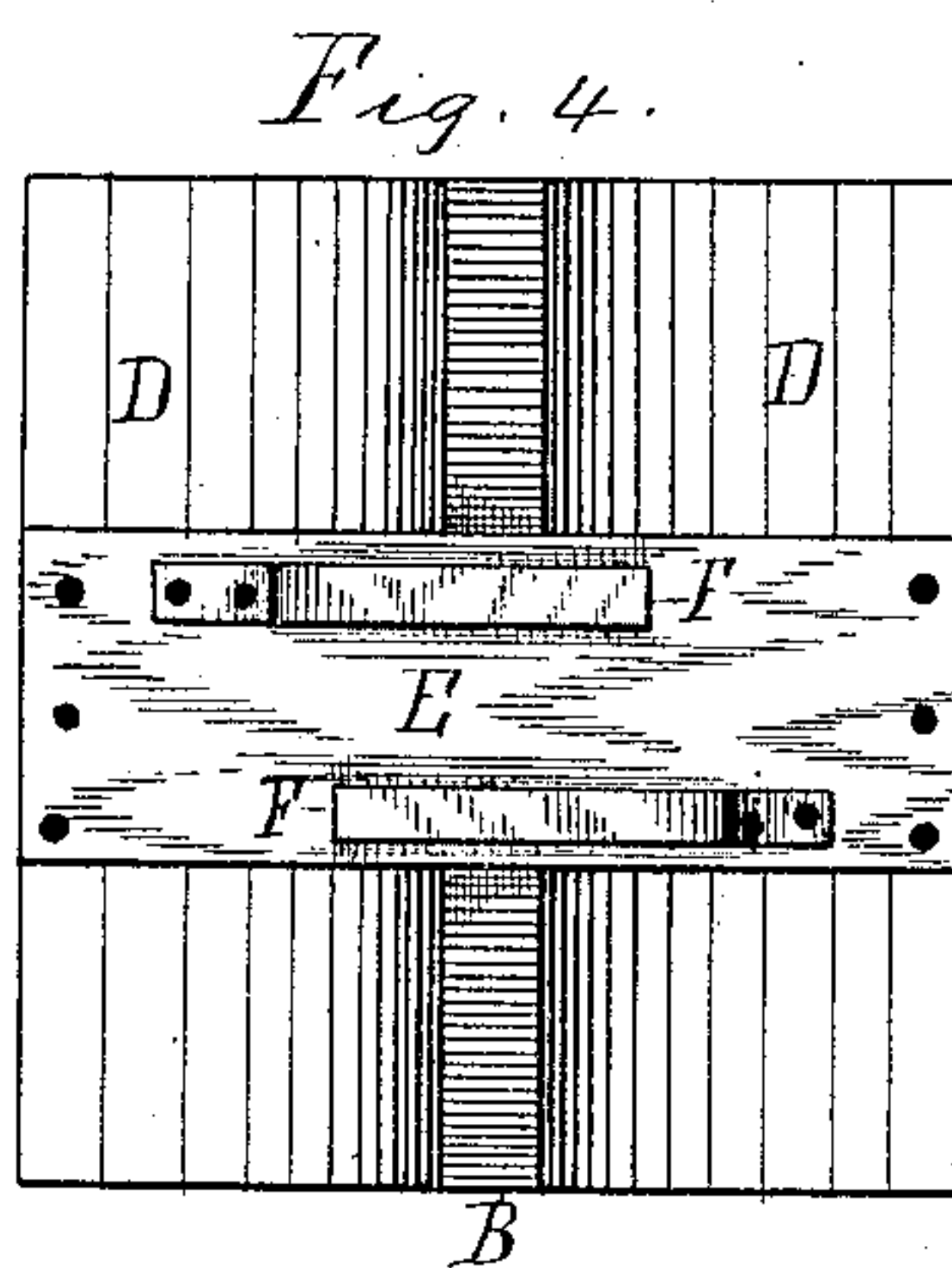
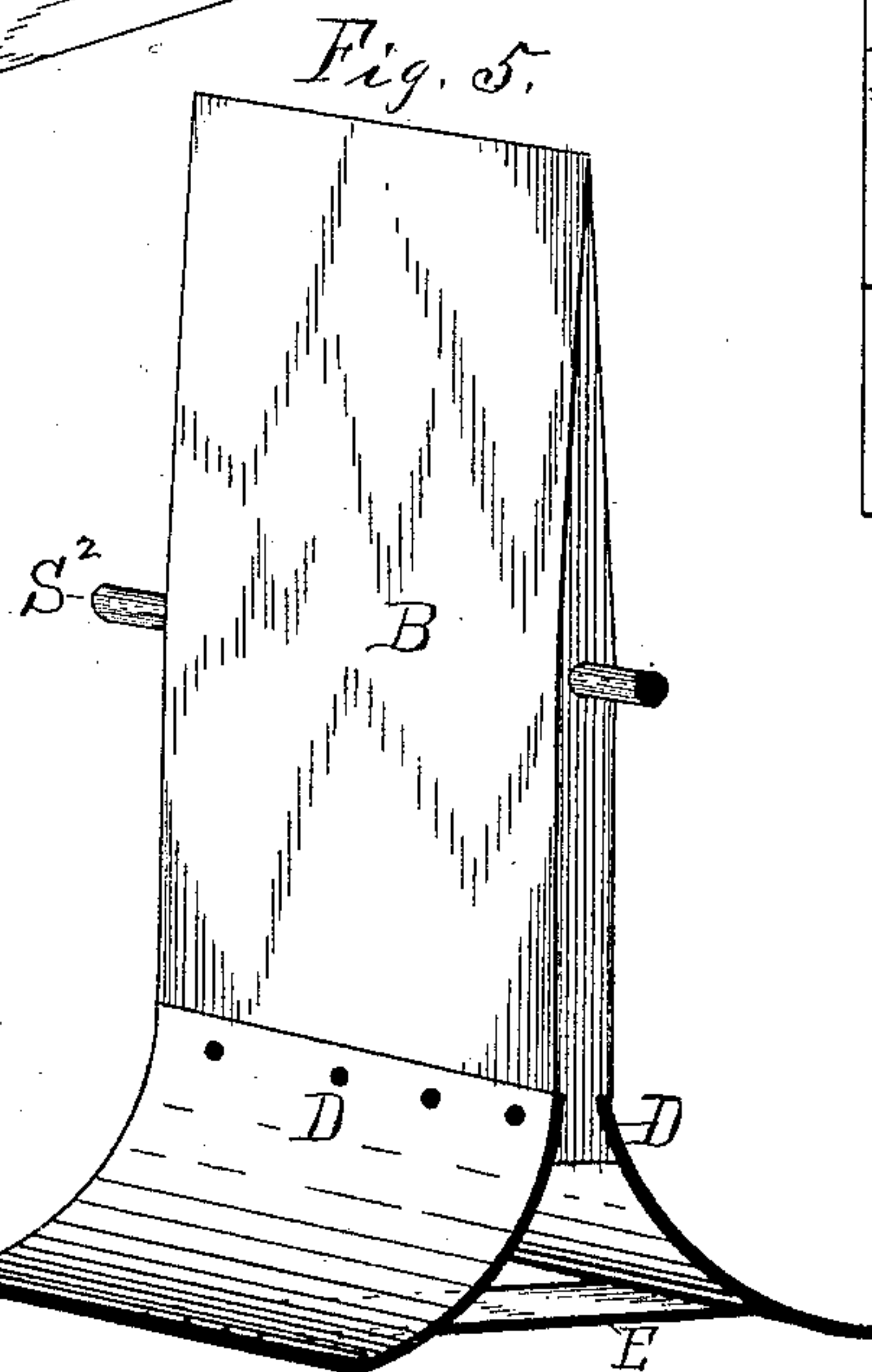
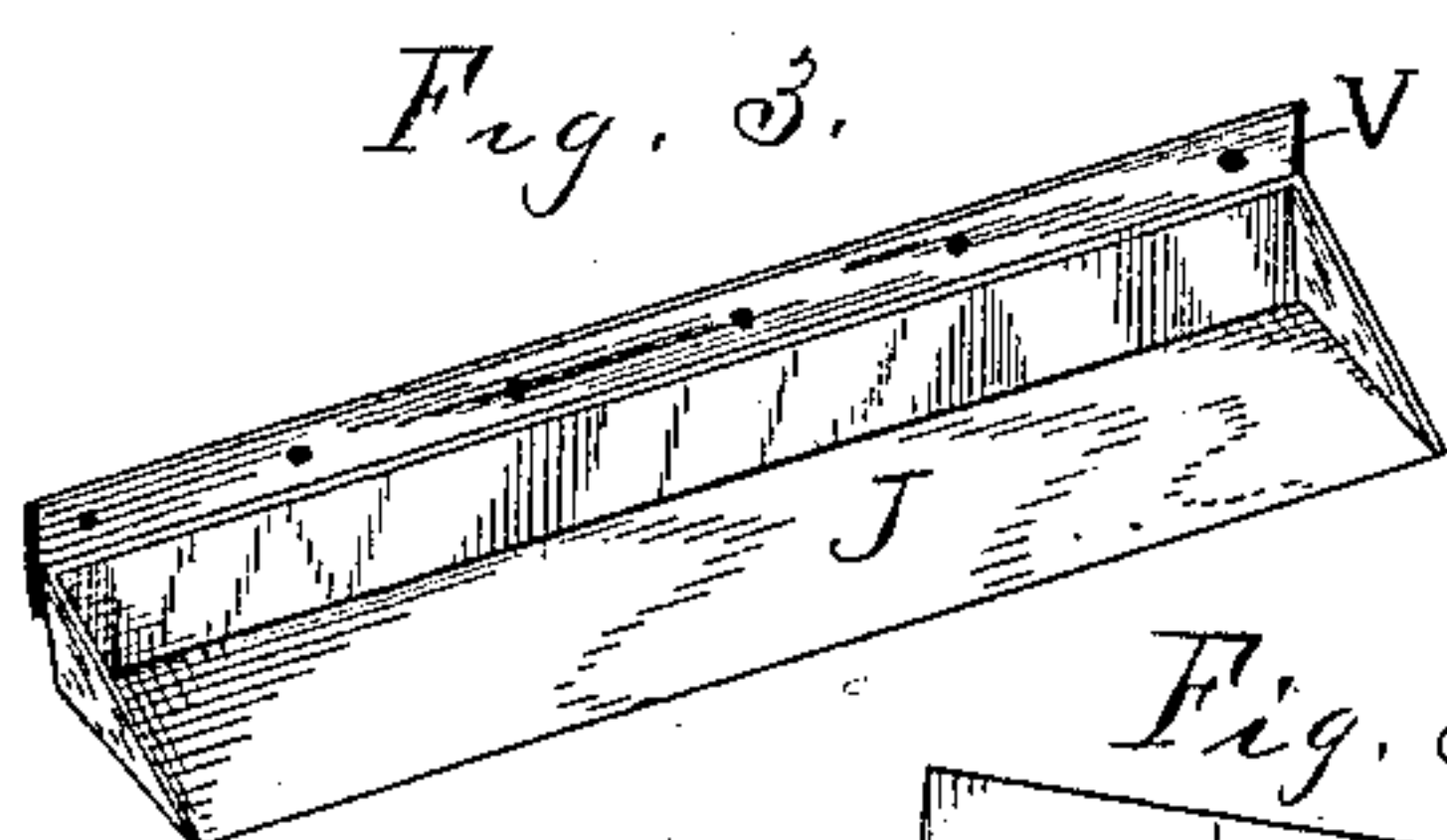
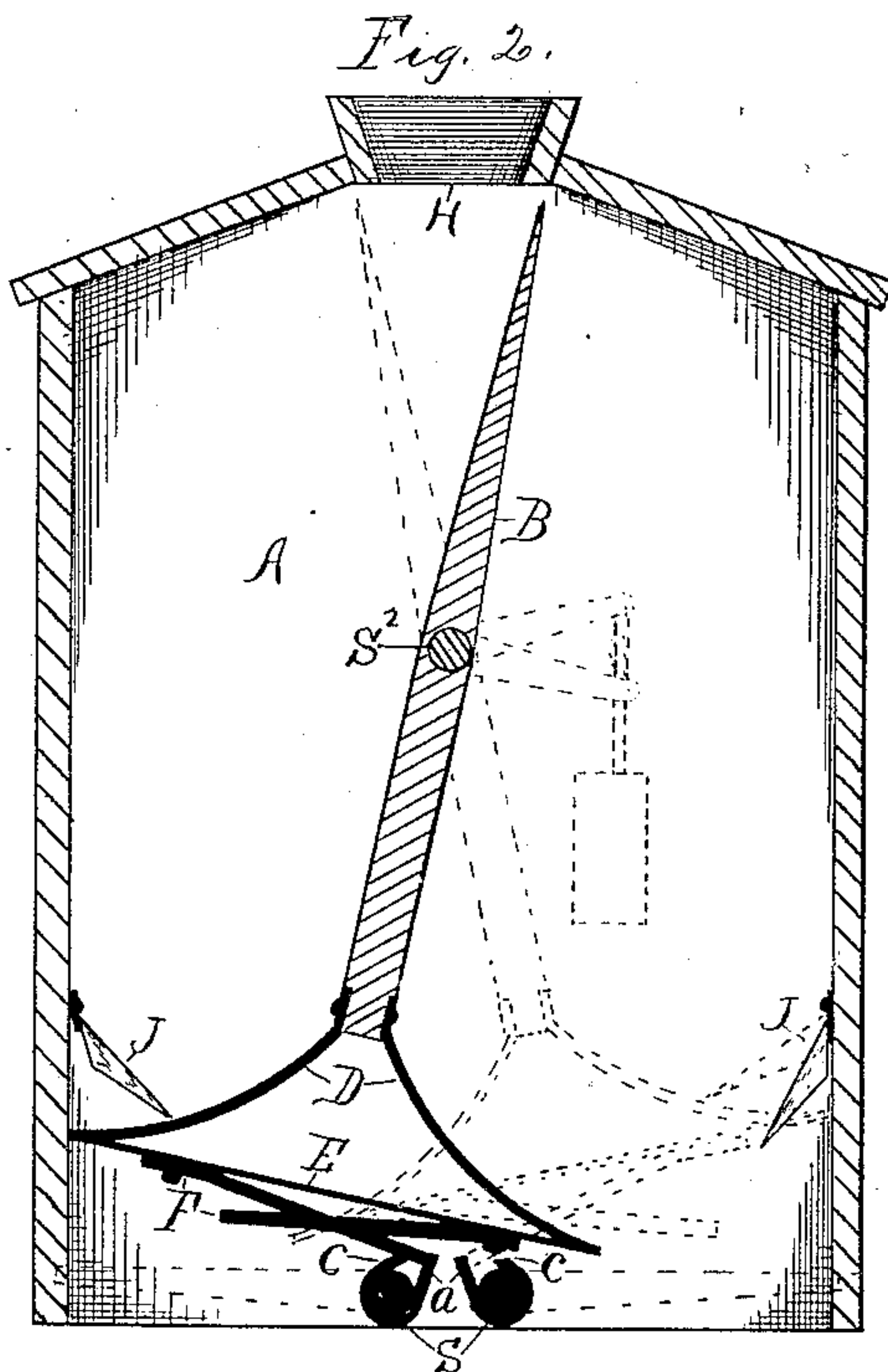
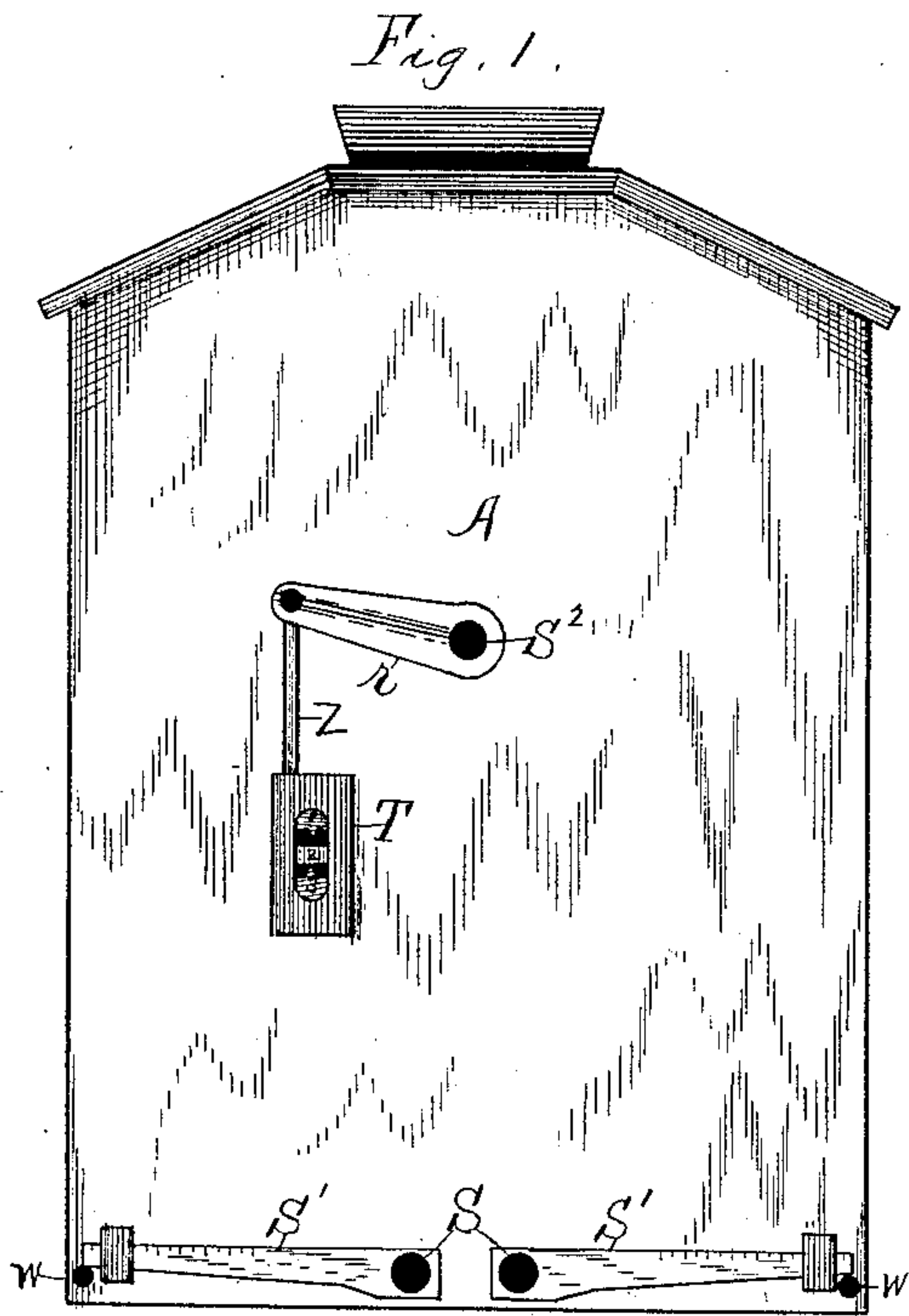


(No Model.)

E. L. WELLS.
AUTOMATIC GRAIN WEIGHING MACHINE.

No. 407,383.

Patented July 23, 1889.



Witnesses
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EDGAR L. WELLS, OF MARSEILLES, ILLINOIS.

AUTOMATIC GRAIN-WEIGHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,383, dated July 23, 1889.

Application filed May 6, 1889. Serial No. 309,745. (No model.)

To all whom it may concern:

Be it known that I, EDGAR L. WELLS, a citizen of the United States of America, residing at Marseilles, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in an Automatic Grain Weighing and Registering Machine, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is an end elevation of the machine. Fig. 2 is a central vertical cross-section of the machine. Fig. 3 is a perspective view of one of the aprons to be hinged to the inner side walls of the machine. Fig. 4 is a bottom plan view of the oscillating valve; and Fig. 5 is a perspective view of the oscillating valve detached from the machine.

This invention relates to that class of grain weighing and registering machines designed to be attached to a separator to weigh and register the number of bushels or other quantities of grain that passes through it from the separator, and also is intended to be used in a mill or other place where it may be desired to weigh grain and keep tally of the amount passing through the machine.

Referring to the drawings, A represents the outer case of the machine, having an inlet-hopper H arranged in its upper part through which grain is admitted.

B is an oscillating valve arranged centrally within the case on a rock-shaft S^2 , passing through it about midway between its ends, the said shaft being boxed at either end in the sides of the case, and is for conducting the incoming stream of grain alternately to either side of the valve to the receptacle formed between said valve and the side walls of the case.

D D are flanges concaved on their upper side and secured at their upper edges, respectively, to the lower end—one on either side of valve B—in such manner that their lower edges, respectively, project outward from said valve, as shown particularly in Fig. 5, and form, respectively, the bottom of the grain-receptacles. These flanges are shown as concaved on their upper side, but may be of any other form desired, so they will serve their purpose.

E is a cross-plate connecting said flanges about centrally on their under side, to which cross-plate is secured a pair of spring-arms FF, arranged out of line with each other and having their free ends project at an angle from said plate and in opposite directions from each other, as shown in Figs. 2 and 4.

S S are a pair of rock-shafts arranged parallel with shaft S^2 and valve B, one at either side of the center of the case, and boxed therein at each end. Said shafts S S are each provided with extending arms $a c$ for respectively and alternately being engaged by the extending ends of arms F. One end of each of said shafts S S projects through to the outer side of case A, and are each provided with scale-beams $S' S'$, the outer ends of which are supported on the rests W W. The outer ends of said scale-beams are free to move upward when overcome by weight of grain bearing on the flanges D of the oscillating valve B.

J J are aprons respectively hinged by means of a flexible strip V to the inner side walls of the case parallel with said valve and immediately above the point of contact between said flanges D and the side walls of the case, as shown particularly in Fig. 2, and in such manner that said aprons will be alternately engaged at their lower under sides by said flanges for the purpose of closing the space between the case and flanges so no grain may fall through between them until the proper quantity has been admitted and its weight oscillates the valve and lets the grain fall. Shaft S^2 extends through at one end to the outer side of the case, and is provided with a crank r on such extending end, which crank connects with a tally-box T, through the medium of link Z, in such manner that the oscillations of said crank, operated by the oscillating valve B, will cause said tally to register the number of bushels or other quantity of grain that passes through the machine.

Any kind of a tally device may be used with this machine, so that no further description of the tally will be necessary.

In operation, after attaching the machine by means of a suitable spout to a separator or other grain-receptacle so as to discharge in the hopper H, the scale-weights are set along on the scale-beams at the proper place to indicate the number of pounds of grain it is de-

sired to weigh at each operation. The machine being set, as shown in Fig. 2, grain admitted at the hopper II will fall at the left side of the valve B and rest on the left flange D, which is of the proper form and size to fill all the space between said valve and the case forming the bottom of the grain-receptacle. When a sufficient quantity of grain has been admitted corresponding in weight to the amount indicated on the scale-beam as set, its weight will overcome the scale-beam and cause the valve B to change position to that shown in broken lines in Fig. 2, drop the grain thus delivered, and direct the incoming grain to the opposite side of said valve to the opposite grain-receptacle in consequence of the upper end of said valve changing to the opposite side of the hopper, and thus repeat the operation just described. The arms F, secured to the under side of the valve, have their extending ends rest alternately against the arms *a a* on shafts S S, for the purpose of holding the valve alternately in either position until the weight of the grain will cause said arms F to press against arms *a* with sufficient force to partially rotate said shafts alternately and overcome the scale-beams attached to their outer ends, as stated, and simultaneously cause arms F to disengage from arms *a* and permit the valve to change position, as shown in broken lines in Fig. 2, causing opposite arm F to engage opposite arm *a*. The shorter arms *c c* operate as fulcrums to assist in disengaging arms F from arms *a*, and said arms are made to have sufficient spring, so their extending ends may be elevated sufficiently to permit them in their backward movement to pass over the extending ends of arms *a* and fall down behind them and hold the valve in the proper position in either direction, as shown in Fig. 2.

It will be seen that the grain may enter the machine in a constant stream and be discharged, weighed, and a tally kept of the number of bushels or other quantity automatically and without any particular attention of the operator.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In the grain weighing and registering machine shown and described, in combination with the case and the oscillating valve having the arms F F, the rock-shafts S S, respectively having the arms *a* and fulcrum-arms *c* and the scale-beams S' S', substantially as and for the purpose set forth.

2. In the grain weighing and registering machine shown and described, in combination with the case A and oscillating valve B, having the flanges D D, the aprons J J, respectively hinged to the side walls of the case immediately above the point of contact of said flanges with the case and in such manner as to alternately engage therewith, substantially as and for the purpose set forth.

3. In the grain weighing and registering machine shown and described, in combination with the outer case A, the oscillating valve B, arranged on shaft S², passing about centrally through said valve and boxed at either end in the ends of the case, flanges D D, respectively secured to the lower outer sides of said valve, forming alternately with the sides of said case and said valve the grain-receptacles, the scale-beams S' S', and the means, substantially as specified, for alternately connecting the lower part of said valve and scale-beams, substantially as and for the purpose set forth.

4. In the grain-weighing machine shown and described, in combination with the case A, having a grain-inlet at its upper end and an open bottom, the valve B, arranged centrally and vertically therein and oscillating from a point at about its center, so the upper end will move under said inlet and cause grain to fall to either side thereof, and the side flanges D D, secured to the lower outer sides of said oscillating valve and forming alternately the floor of the grain-receptacle, having sides formed of said case and valve, substantially as and for the purpose set forth.

5. In combination with the case A, having the inlet-hopper II at its upper end, the oscillating valve B, having the concave side flanges or bottoms D D, plate E, connecting said flanges, arms F, secured to said plate and having their free ends project in opposite directions, shaft S², shafts S S, having respectively the arms *a c*, and the aprons J J, substantially as and for the purpose set forth.

6. In combination with the case A, having the inlet-hopper II and an open bottom, the oscillating valve B, having the concave flanges D D, the aprons J J, the shaft S², having crank *r*, pitman Z, and tally T, shafts S S, respectively having the arms *a c* and scale-beams S' S', and the arms F F, substantially as and for the purpose set forth.

EDGAR L. WELLS.

Witnesses:

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