(No Model.) 2 Sheets—Sheet 1.

S. HAMILTON.

THRASHING MACHINE AND SEPARATOR.

No. 287,925. Patented Nov. 6, 1883.

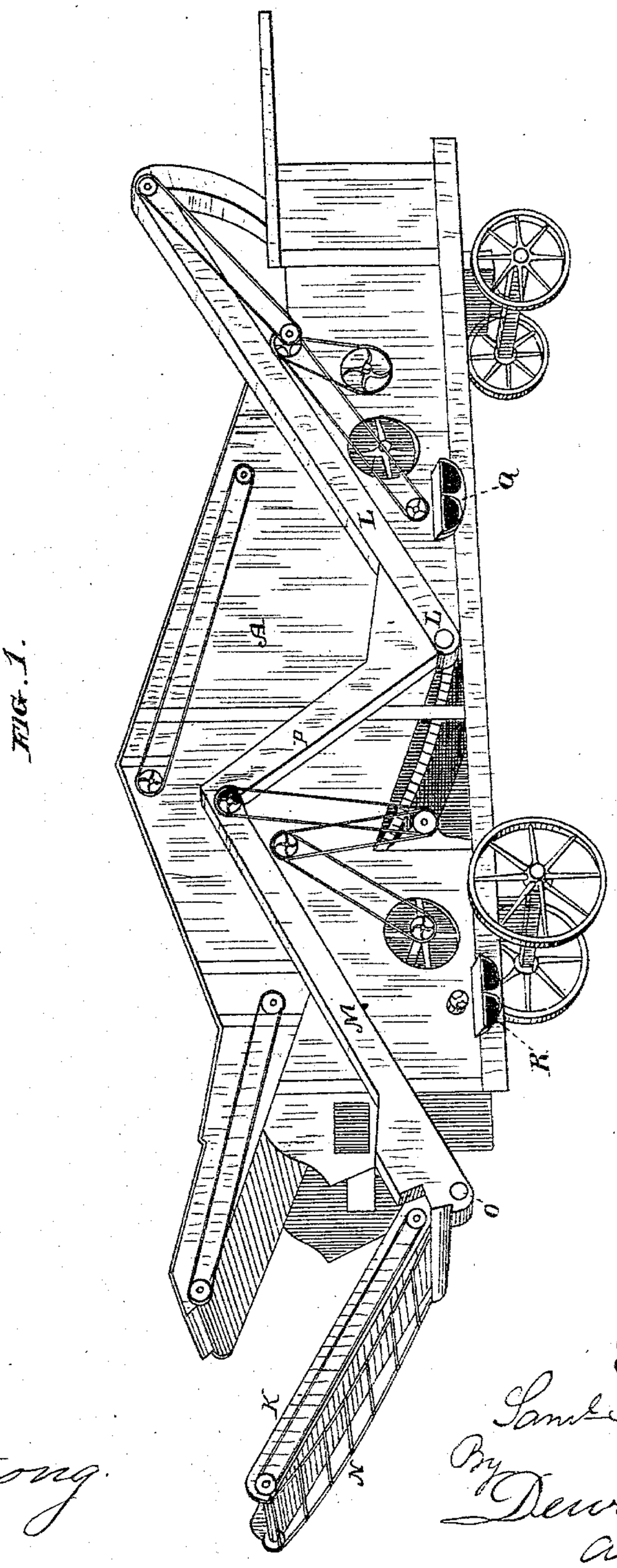

FIG. 1.

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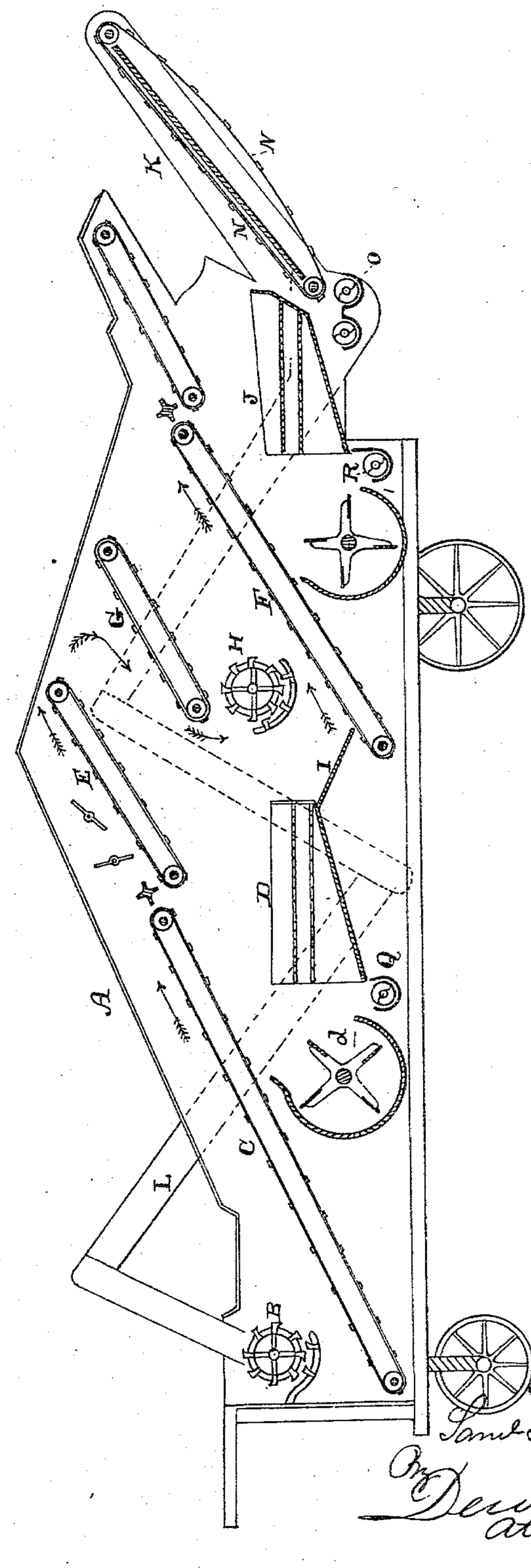
FIG. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL HAMILTON, OF SALINAS, CALIFORNIA.

THRASHING-MACHINE AND SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 287,925, dated November 6, 1883.

Application filed August 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HAMILTON, of Salinas, county of Monterey, and State of California, have invented an Improvement in Thrashing-Machines and Separators; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in thrashing-machines and separators; and it consists of a duplex arrangement, whereby the straw and waste from the straw-carrier and cleaning-shoe, respectively, are conveyed through a second and similar apparatus, the two being continuous and automatic, all as hereinafter described, and specifically pointed out in the appended claims.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an exterior view of my apparatus, showing the return-elevators and the sacking-spouts. Fig. 2 is a longitudinal vertical section taken through the center of the apparatus.

It is a fact well known to those familiar with the art that the cylinder of a thrashing-machine is capable of thrashing from two to three times as much grain as the cleaning-shoe can separate and clean, and if the thrashing-cylinder is fed up to its capacity, or forced, the mass of straw becomes so great that, in addition to the grain which goes to the shoe not being properly cleaned, much is so entangled with the straw that it is never separated or gets to the shoe at all, but is lost by being carried out at the tail end with the straw.

My invention consists in a means for duplicating the processes through which the grain and straw pass by an automatic and continuous mechanism, in which A is the frame-work of my machine. B is a thrashing-cylinder, to which the straw may be delivered by any form of self-feeding or other mechanism which will do the work. From this cylinder the straw and grain pass up a carrying-belt, C, in the usual manner, and the grain falls from its upper end upon the cleaning-shoe D, with the usual riddles, screens, and sieves, while the straw is carried onward by a straw-carrier, E. From the upper end of this straw-carrier the straw is delivered upon a second carrying-belt or draper, F, either directly or, as shown in the present case, by an intervening carrier, G, which runs in the reverse direction beneath the carrier E, and delivers the straw beneath it upon the carrying-belt F. In the present case a second thrashing-cylinder, H, is introduced at this point, and when the machine is fed so that the first cylinder fails to thrash all the grain this second cylinder completes the work. The passage of the straw through the first cylinder, over the grain-belt, straw-carrier, and the supplemental belt G, distributes it and delivers it evenly and free from bunches to the second cylinder or belt. The second belt, F, extends forward to a point nearly or quite beneath the rear end of the cleaning-shoe D, and a direction-board, I, guides the waste from the shoe D to the belt F, which carries it up along with the straw received from the carrier E, (or the second thrashing-cylinder when one is used.) The grain which is separated from the straw by this operation falls from the upper end of the belt F upon a second cleaning-shoe, J, while the straw is finally discharged at the rear end of the machine by the straw-carrier K. The unthrashed heads from the first shoe D are carried out by an auger or screw and delivered to the return-elevator at L, while anything to be returned from the rear shoe, J, is delivered to a return-elevator, M.

The open belt N, which receives the chaff from the rear shoe and discharges it at the rear, as shown, has a tight bottom, and any grain which may have been blown from the shoe J upon it will run down into an auger at O, just behind the one which discharges from the shoe J. The elevator M discharges the heads and other substances to be returned into the boot P along with the material from the shoe D, and the whole will be returned and delivered by elevator M to the first cylinder, B, to be again run through.

Q is the sacking-spout, through which the grain from the shoe D is discharged into the sacks, and R is the rear spout, through which grain is discharged from the rear shoe.

By this construction I am enabled to put more straw through the thrashing-cylinder, as I do not depend upon a single cleaning and separating apparatus. The straw, when delivered at the rear end of the first straw-carrier, is reversed and carried backward by a rapidly-moving carrier, and in this process is very

evenly distributed, so that there are no bunches whatever when it enters the second portion of the apparatus. It also loosens and separates any grain which may be entangled with the straw, so that when the straw is finally discharged by the straw-carrier it is entirely free from grain. The grain and chaff which fall upon the first cleaning-shoe, D, are subjected to a strong blast from the fan *d*, the design being to make a complete separation of the lighter from the heavier grain, so that all that passes through the riddles of the first shoe will be full, heavy, and of the best quality. I am enabled to do this because all the grain which escapes from the first shoe is received upon the second carrying-belt and passed through the second cleaning-shoe. The straw, being more evenly distributed when it reaches this point, can be more easily separated, and the amount of grain being so much reduced, all parts of this second apparatus can be run at a much slower rate of speed. Consequently the separation is complete, and all the grain is saved in the second shoe without being blown over.

My cleaning mechanism in no way resembles any device in which two or more cleaning-shoes are combined in one machine, so that all the grain passes from one directly through the other, as in my machine only a portion passes through one shoe, while the remainder is carried off with the chaff, to be subsequently recovered by the final process. It will be obvious that this successive mechanism may be extended further, if desired, in the same manner.

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

1. In a thrashing-machine, the thrashing-cylinder, carrying-belt, straw-carrier, and cleaning-shoe D, in combination with the carrying-belt to receive straw from the first carrier, cleaning-shoe J, and straw and chaff carrier, substantially as and for the purpose herein described.

2. In a thrashing-machine, and in combination with the thrashing-cylinder, carrying-belt, and cleaning-shoe, a second shoe, supplemental carrying-belt to receive the waste from the shoe and deliver it upon the second shoe, and a second straw and chaff carrier, substantially as herein described.

3. In a thrashing-machine, and in combination with the thrashing-cylinder, carrying-belt, cleaning-shoe, and straw-carrier, a supplemental thrashing-cylinder, means to deliver the straw from the first straw-carrier to the same, a supplemental carrying-belt, cleaning-shoe, and a final straw and chaff carrier, substantially as herein described.

4. In a thrashing-machine, and in combination with a main thrashing-cylinder, carrying-belt, cleaning-shoe, straw-carrier, a supplemental thrashing-cylinder, and a supplemental carrying-belt, an intermediate carrier running in the reverse direction, and delivering straw from the first straw-carrier to the supplemental cylinder, substantially as herein described.

5. In a thrashing-machine, a thrashing-cylinder, carrying-belt, and cleaning-shoe, in combination with a supplemental carrying-belt, cleaning-shoe, and straw and chaff carrier, and an intermediate chute or directing-board by which the waste from the first shoe may be delivered upon the second carrying-belt, substantially as herein described.

6. In a thrashing-machine, a thrashing-cylinder, carrying-belt, cleaning-shoe, and a grain-spout connected with the same, in combination with a supplemental carrying-belt receiving the waste from the first shoe, a second shoe to which said belt delivers, and a supplemental grain-spout connected therewith, substantially as herein described.

7. In a thrashing-machine, and in combination with a main and supplemental thrashing and cleaning mechanism, as shown, the connected return-elevators M and L and the augers discharging into them at L, M, and O, substantially as herein described.

In witness whereof I have hereunto set my hand.

SAMUEL HAMILTON.

Witnesses:
W. H. CLARK,
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