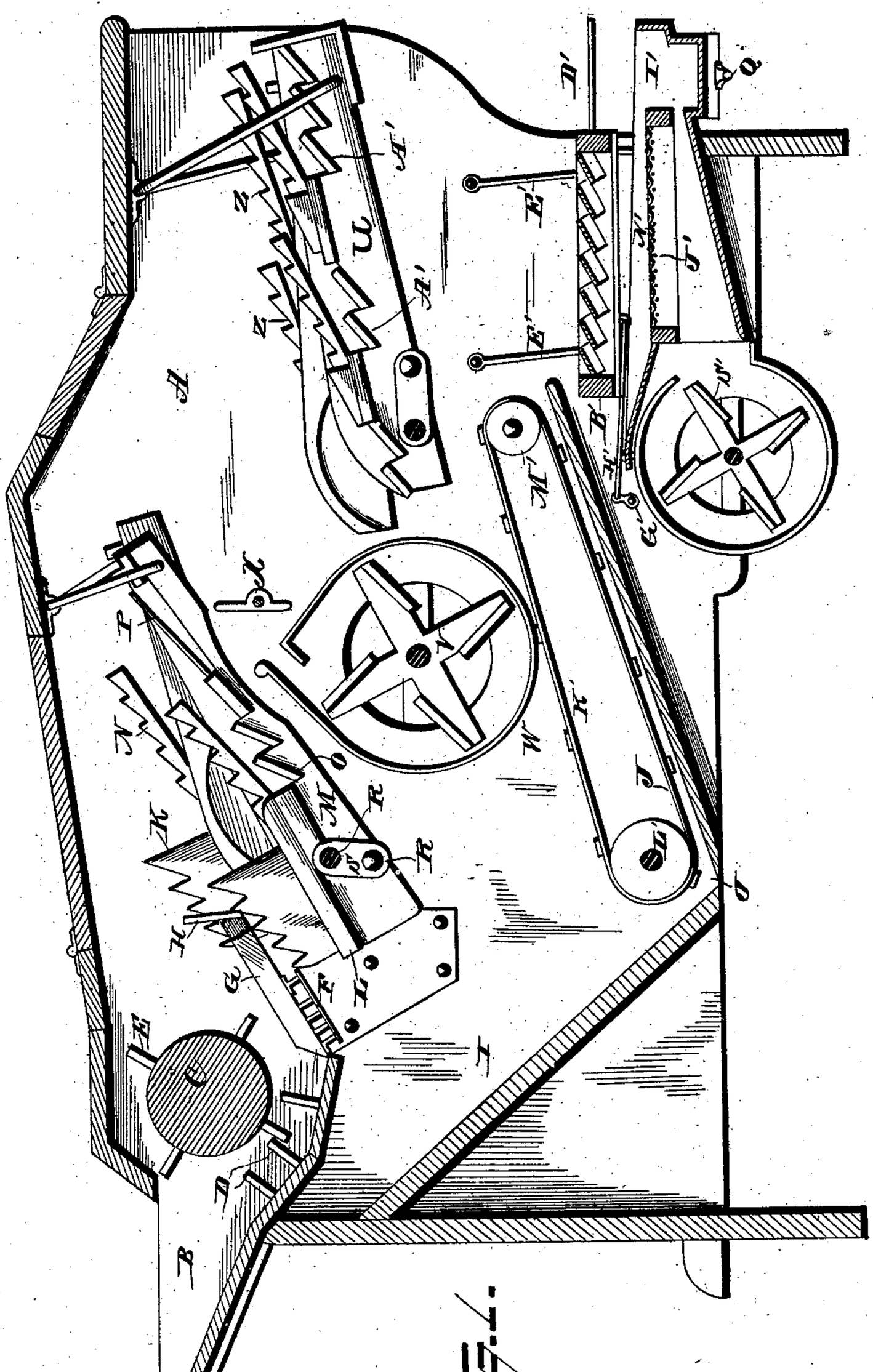
(No Model.) 3 Sheets—Sheet 1.

D. LIPPY.

THRASHING MACHINE.

No. 293,755. Patented Feb. 19, 1884.



WITNESSES

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(No Model.) 3 Sheets—Sheet 2.

D. LIPPY.

THRASHING MACHINE.

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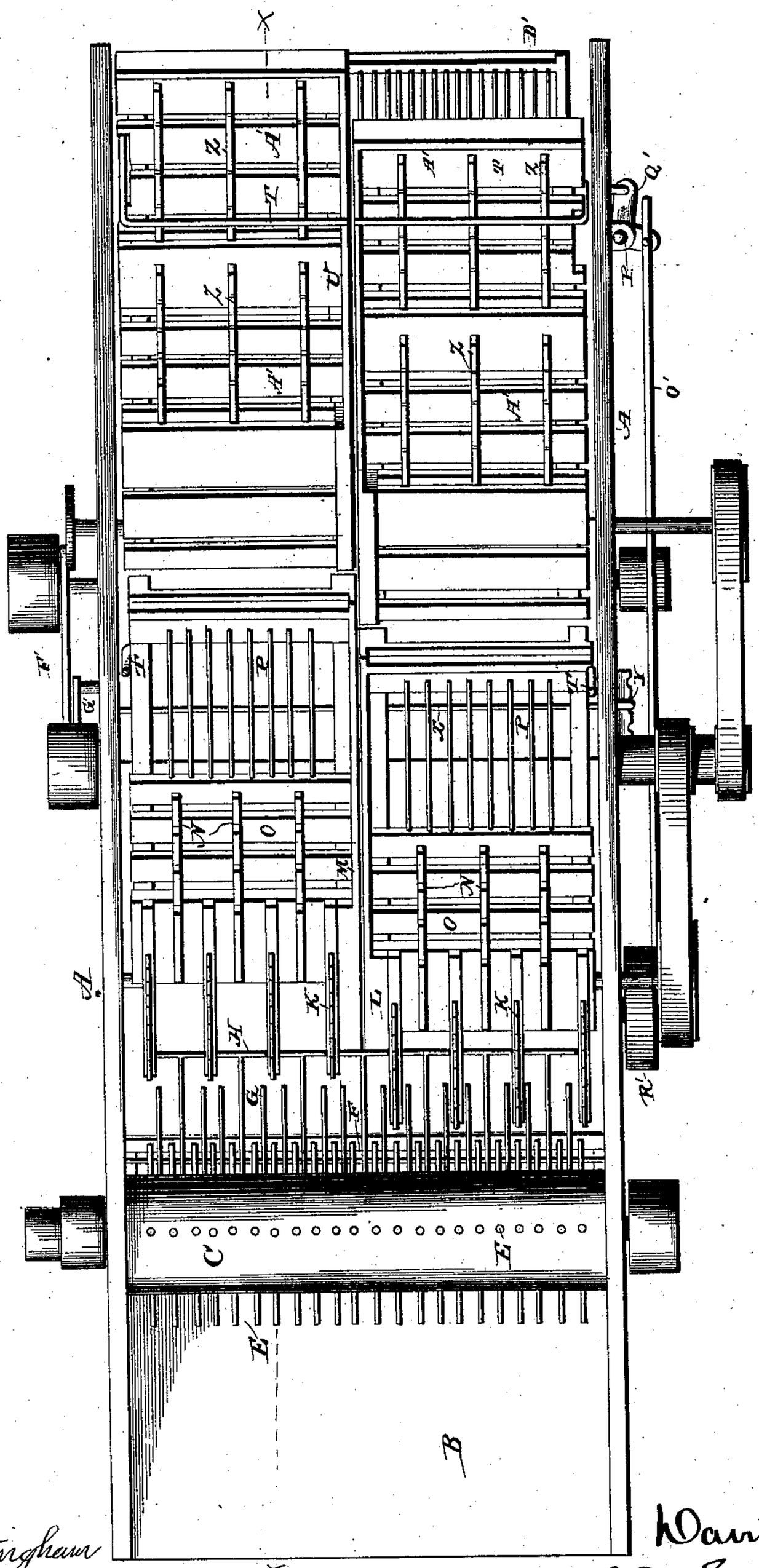

Fig. 2.

WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

D. LIPPY.

THRASHING MACHINE.

No. 293,755. Patented Feb. 19, 1884.

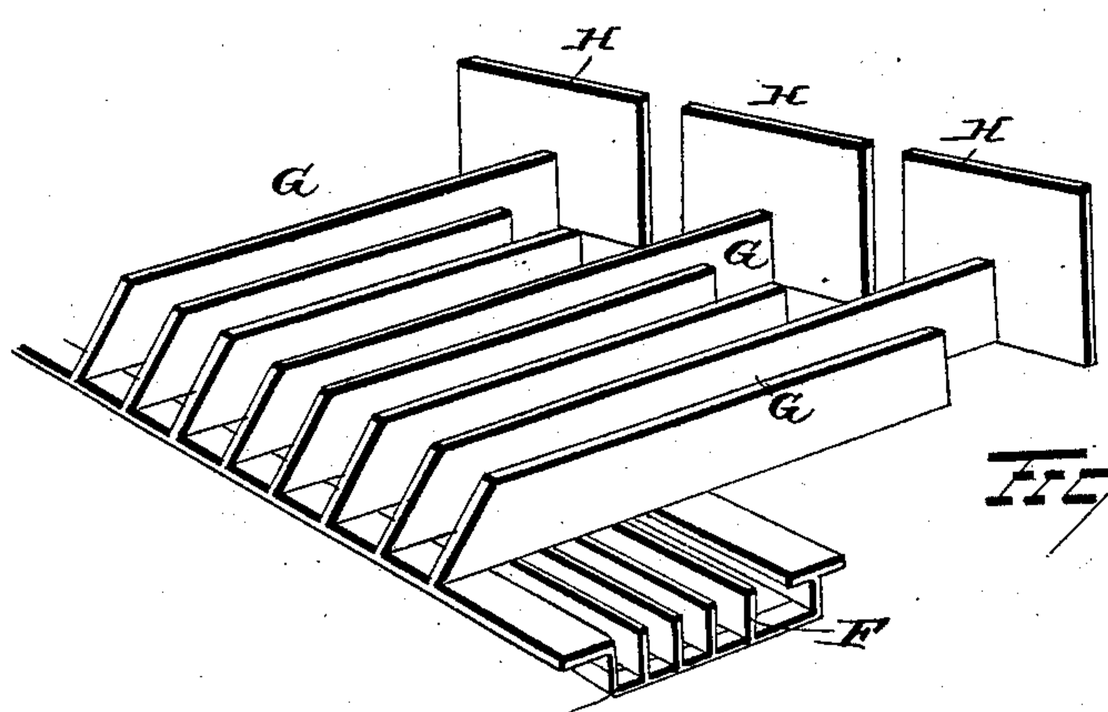


Fig. 3.

Fig. 4.

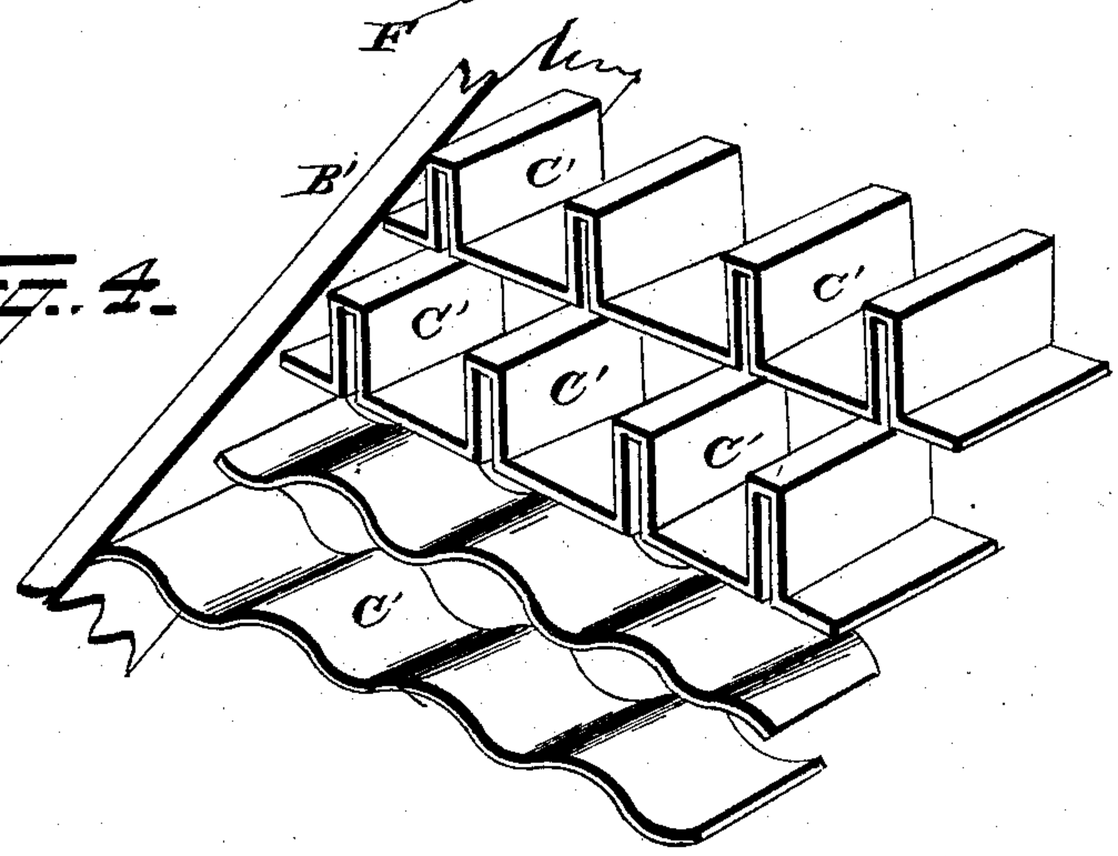
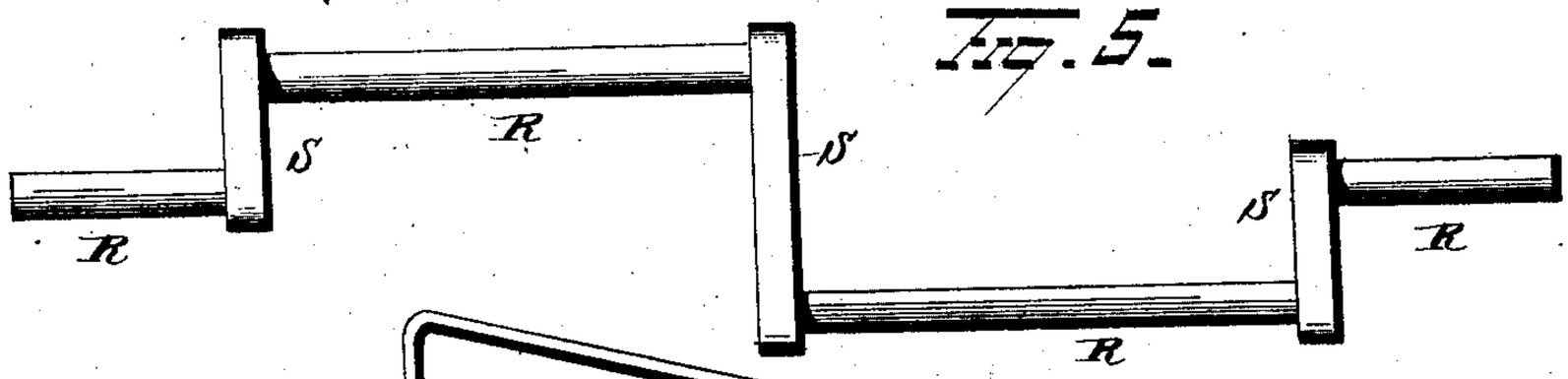


Fig. 5.



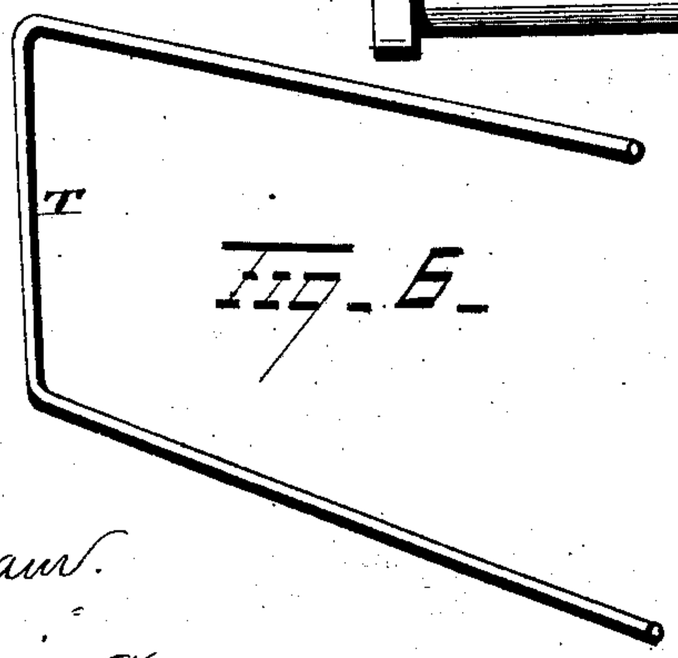


Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID LIPPY, OF MANSFIELD, OHIO.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 293,755, dated February 19, 1884.

Application filed May 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID LIPPY, of Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Thrashing-Machines; and I do hereby 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 pertains to make and use the same.

My invention relates to an improvement in thrashing-machines, the object being to produce an improved device of this character which shall combine simplicity and cheapness of construction with durability and efficiency in use.

With these objects in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in vertical longitudinal section of a thrashing-machine constructed in accordance with my invention. Fig. 2 is a plan view of my machine, the top of the casing being removed. Fig. 3 is a detached perspective view of the grate. Fig. 4 is a similar view of the riddle. Fig. 5 is a detached view of the shaft upon which the forward ends of the vibrators are mounted, and Fig. 6 is a view of one of the swinging frames by which the rear ends of the vibrators are suspended in the casing.

The several features of my improvement are embodied in a casing, A, which may be varied in construction as circumstances may dictate. It is provided with a hopper, B, and a concave, the latter being provided with teeth D, that intersect the teeth E on the thrashing-cylinder.

A grate located to the rear of and inclining toward the rear end of the concave is composed, essentially, of transverse bars F, upon which longitudinal bars G are mounted, the latter, which are set upon their edges, being unequal in length, a long bar, terminating in a shield, H, being arranged to alternate with a pair of shorter bars. So much of the grain as is separated upon this grate passes through the interstices in it and falls upon the incline I, which deflects it upon the floor J of the thrasher. The shields H fulfill the function of retarding the straw and grain, thereby giving further opportunity for the separation of the latter. As the straw upon the grate is pushed rearward by the straw incoming it is lifted over the shields H by serrated elevators K, which play between the same and the longitudinal bars G of the grate, and which are mounted in light frames L, projecting from the forward ends of the vibrators M, which are provided with serrated carriers N, with slats O, and with fingers or teeth P. The forward ends of the vibrators are mounted upon a shaft consisting of bearings R and of flat plates S, the said parts being grouped as shown in the drawings, whereby the vibrators are simultaneously actuated in opposite directions. The rear ends of the vibrators are suspended from the top of the casing by means of swinging frames T, one of which is shown in Fig. 7 of the drawings. The transit of the grain over these vibrators is effected by the crowding of the straw incoming, assisted by the serrated carriers N, which, in virtue of the motion imparted to the vibrators by the shaft above described, engage with the grain and move it rearwardly, the straw falling from the fingers or teeth P upon the vibrators U, and of them more hereinafter. The separation upon the vibrators is very greatly forwarded by the action of a blast derived from the fan V, inclosed in a suitable casing, W, located below the rear ends of the vibrators. The blast is regulated and directed by a deflector, X, journaled in the casing A, and held in any desired position by the rack Y. The action of the blast is to loosen the massed and interlocked straw, and thereby not only permit the separated grain to escape and fall into the bottom of the thrasher but also to facilitate the separation of the grain still clinging to the straw. So much of the grain as is separated upon these vibrators falls upon the bottom of the thrasher, from which it is conveyed to the riddle, as will be hereinafter described. As the grain is forced over the fingers or teeth P it falls upon the vibrators U, which are respectively provided with two pairs of carriers, Z, and a double pair of slats, A′, the forward and rear ends of these vibrators being supported in the same manner as the

ends of the vibrators M. So much of the grain as is separated upon these vibrators falls through the interstices in them and onto the riddle, which is composed of a frame, B′, inclosing a series of corrugated strips, C′, and of fingers or teeth D′. The said riddle, which is suspended in the interior of the casing by rods E′, pivoted to the inner faces of the side walls thereof, is actuated in a horizontal swinging motion by power derived from the shaft supporting the forward ends of the vibrators U, the power being transmitted from the said shaft by means of a link, F′, the shaft G′, and the links H′, or any equivalent arrangement of parts. The corrugated strips C′ are arranged to rise above and slightly overlap each other, as herein shown, the interstices between them being so far concealed that straw falling from above will not enter and clog them, while, on the other hand, riddles covered with netting in which the interstices are exposed need constant attention to prevent them from being clogged up.

The fingers D′, before alluded to, extend over the chute I′ of the screen J′, and prevent straw from falling into it. The grain collected upon the floor J of the thrasher is carried to the riddle by means of an endless belt or conveyer, K′, which encircles suitable pulleys, designated by L′ and M′, respectively. The screen J′, which is provided with a wire netting, N′, is suspended by means of rods arranged to enable it to be vibrated horizontally and at right angles to the vibration of the riddle, the vibration of the screen being effected by motion transmitted by levers O′, P′, and Q′ or the equivalents thereof, from pulley R′, attached to the shaft, upon which the pulleys L′ are mounted. A fan, S′, inclosed in a case, T′, and located beneath the screen, is designed to separate the chaff from the grain while being riddled and screened.

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

1. In a thrashing-machine, the combination, with a thrashing cylinder and concave, of a grate arranged to incline toward the rear end of the concave, said grate consisting of longitudinal and cross bars, a portion of the longitudinal bars being provided with shields on their rear ends, substantially as set forth.

2. In a thrashing-machine, the combination, with a grate provided with shields at its rear end, of vibrators provided with straw carrying and elevating devices located between the bars of the grate, and arranged and adapted to carry the straw rearwardly and lift it over said shields, substantially as set forth.

3. The combination, with the concave, a grate in rear of the concave provided with upwardly-projecting shields and vibrators, and an independent set of vibrators, of an air-forcing device arranged to deliver a blast of air to the straw at a point between said shields and the rear set of vibrators, substantially as set forth.

4. In a thrashing-machine, the combination, with the vibrators, of an air-forcing device arranged close beneath the rear ends of said vibrators, and adapted to force the blast directly against the under side of said rear ends, substantially as described.

5. In a thrashing-machine, the combination, with the vibrators and air-forcing device, arranged as described, of the deflector, the hand-lever for adjusting the deflector, and the rack to secure the hand-lever after adjustment, substantially as described.

6. The combination, with two sets of independent vibrators, an air-forcing device for delivering air to the straw before its delivery to the rear set of vibrators, of a hopper bottom located beneath the concave and vibrators adjacent thereto, and endless carrier located in close proximity to said hopper, substantially as set forth.

7. The combination, with the concave, grate, two sets of vibrators, and the fan, of the hopper bottom and carrier and screen located beneath said vibrators, substantially as set forth.

8. The combination, with the grate, of the forward set of vibrators, consisting of the longitudinal frame-bars, the transverse slats secured thereon, the serrated elevators and serrated carriers mounted above said slats, and the rearwardly-projecting fingers, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID LIPPY.

Witnesses:
HENRY C. HEDGES,
M. E. DOUGLAS.