

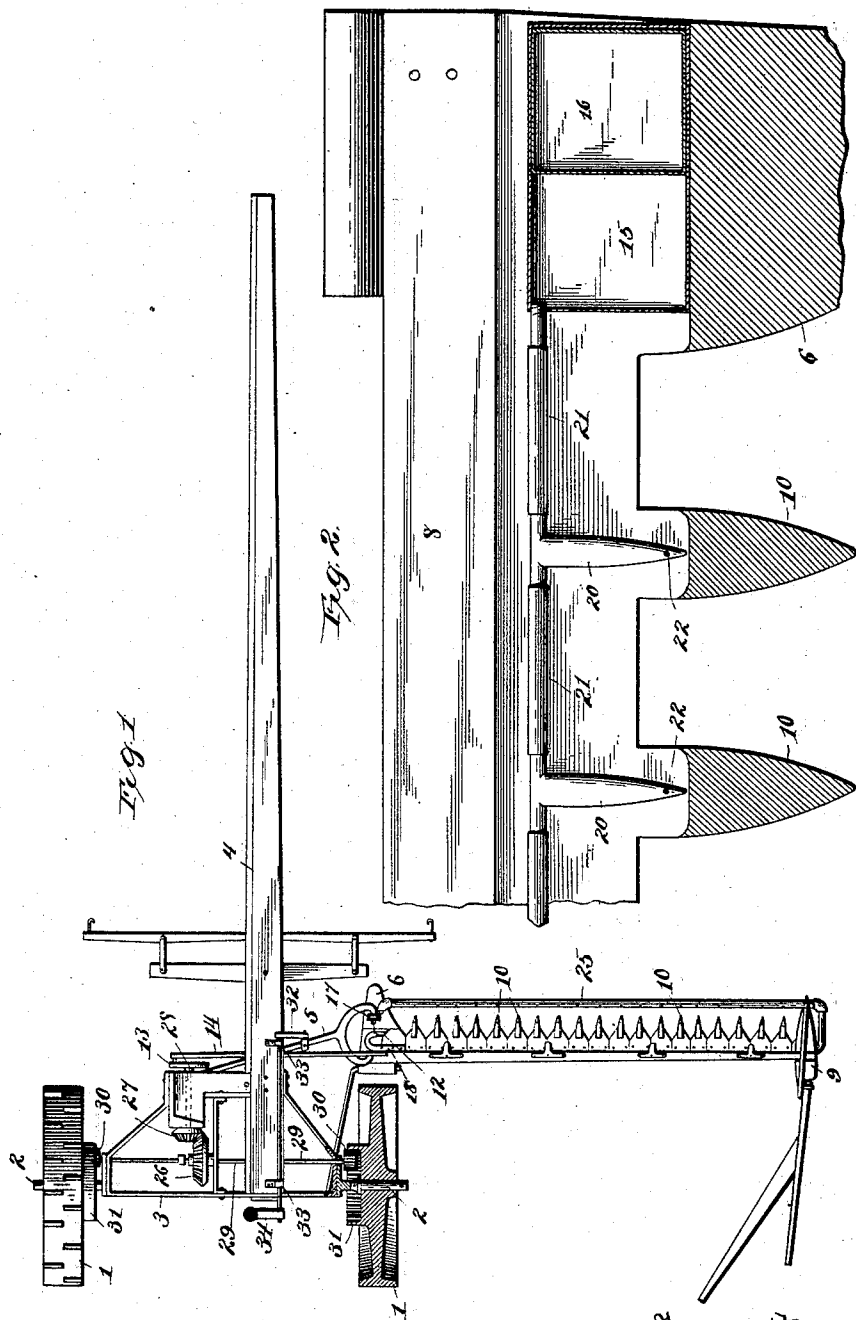
(No Model.)

2 Sheets—Sheet 1.

H. E. OLSON.
MOWING AND REAPING MACHINE.

No. 578,766.

Patented Mar. 16, 1897.



Witnesses
E. C. Wurdeman
J. Williamson

Inventor
Henry E. Olson
by *Geor. H. Holgate*
Attorney

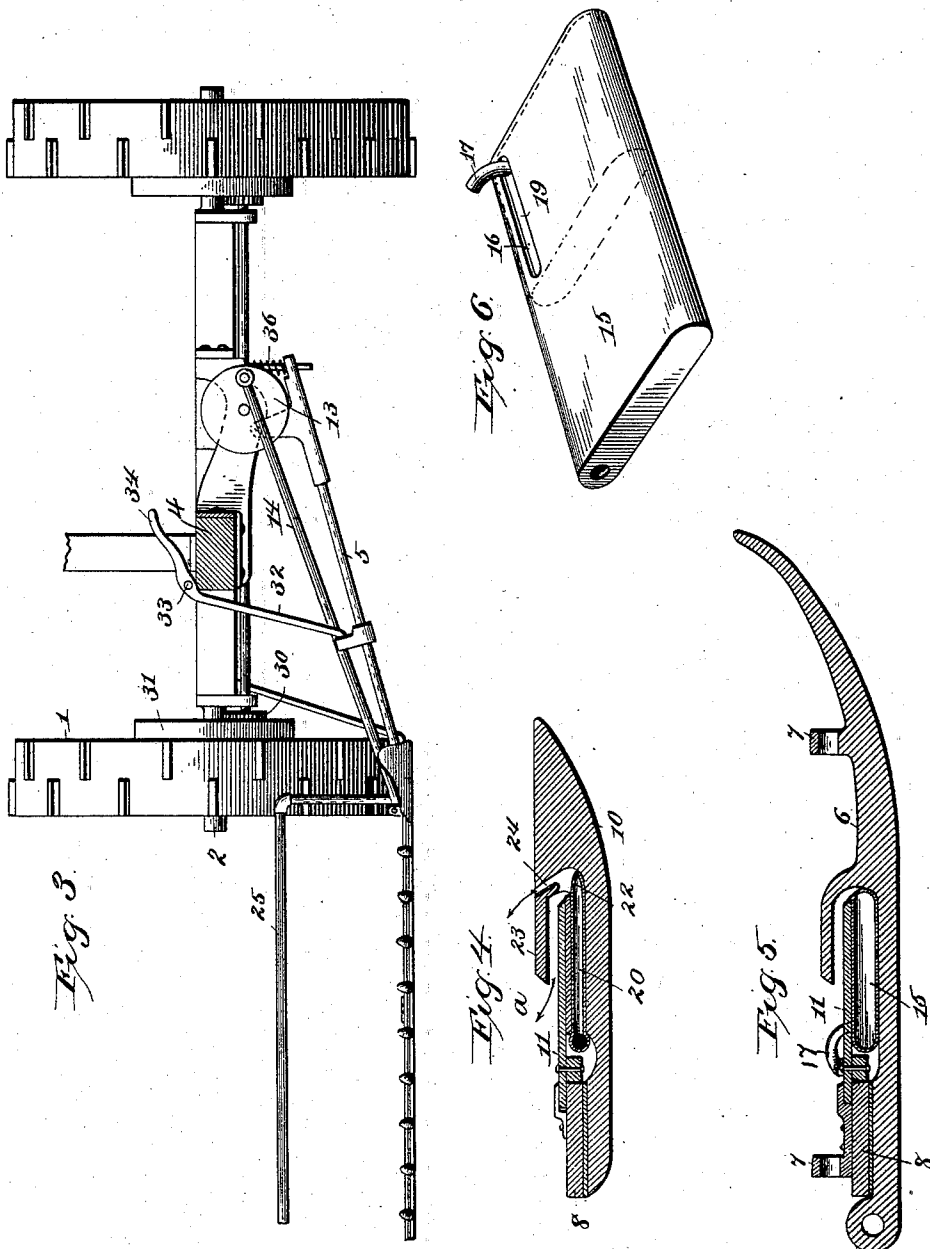
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UNITED STATES PATENT OFFICE.

HENRY E. OLSON, OF CHICAGO, ILLINOIS.

MOWING AND REAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 578,766, dated March 16, 1897.

Application filed April 17, 1896. Serial No. 588,022. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. OLSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mowing and Reaping Machines, of which the following is a specification.

My invention relates to a new and useful improvement in mowing and reaping machines, and has for its object to improve the construction of such machines and render them more durable, less costly and weighty, and also to do away with the use of the ordinary reel and substitute therefor an air-blast to be delivered at the proper angles to clear the knives and lay the grain in the proper direction; and with these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring by number to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view of a mower embodying my improvements; Fig. 2, an enlarged view of the guard-bar, the front ends of the guards being sectioned away so as to clearly show the air-cylinder and means for feeding air therefrom to said guards. Fig. 3 is a front elevation of the machine, the tongue being sectioned away; Fig. 4, an enlarged section of one of the guards with the several parts carried thereby; Fig. 5, a similar view of the inner shoe; Fig. 6, a detailed perspective of the air-cylinder.

Referring to the drawings, 1 represents the wheels, of ordinary construction, upon which the frame of the machine is mounted by the axles 2, and this frame is composed of light steel bars 3, so bent and bolted together as to support the several operating parts of the machine, and to this frame is secured in any convenient manner the tongue 4, carrying suitable devices for attachment to the horses.

5 is a bracket extending downward and sidewise from the frame of the machine and

connected to the inner shoe 6 by engagement with the ears 7, formed upon said shoe.

8 is the finger-bar, which is secured to the inner drag-bar and carries at its outer end the outer shoe 9, both of ordinary construction.

10 are the guard-fingers, which are secured to the finger-bar by bolts or otherwise, and 11 is the knife secured to the knife-head 12, which latter is caused to reciprocate by connection with the crank-wheel 13 through the attachment 14.

15 is an air-cylinder arranged upon the inner shoe and adapted to serve as a pump by having fitted therein the plunger 16, caused to move to and fro by its attachment to the knife-head at 18 through the connection 17. This connection is permitted to move to and fro with the plunger by its passage through the slot 19 in the cylinder.

20 are nozzles, which are supported by the guards and are connected together by pipes 21, which communicate with the cylinder 15, and these nozzles are provided with holes 22 at their outer ends, so arranged as to project the air passing therefrom in an upward direction, and the guards have formed there-with the overhanging flanges 23, so arranged as to provide spaces therebeneath, through which the air thus projected will be deflected rearward, as shown by the arrow *a* in Fig. 4. Formed through these flanges are holes 24 at an angle to the vertical, so as to project a portion of the air issuing from the nozzles in an upward and rearward direction for the purpose hereinafter set forth. From this it will be seen that as the machine progresses forward and the grass or grain is cut by the reciprocation of the knives the blast of air issuing in the direction of the arrow *a* will force the blades of grass or grain from off the knives, so as to prevent the latter from chopping or recutting said blades, and the air issuing from the holes 24 will force the upper portion of the blades of grass or grain rearward, causing them to fall in the proper direction and with uniformity.

For certain classes of work it is necessary to act upon the grain at a higher point than is practicable by the air issuing from the guard-shoes, and in such cases I provide a pipe 25, which is supported by the shoes and

is held at a suitable elevation and so connected with the pipes 21 as to receive an air-supply therefrom. This pipe 25 is provided with a number of small holes upon its rear side, so that when the machine is in operation and the pump forcing air through the pipes 21 a portion thereof will issue through these holes and, striking against the upper portion of the grain, cause it to fall, as before described. This arrangement of air-jets obviates the necessity for the use of a reel and also insures the removal of the blades of grass or grain from the cutters, thereby preventing the clogging of the same, which would decrease the efficiency of the machine as well as require more power for its propulsion.

Power is imparted to the crank-wheel 13 by a beveled gear 26, meshing with the beveled pinion 27 upon the crank-wheel shaft 28, and the gear 26 is carried by the cross-shaft 29, which is journaled in the frame of the machine and provided with pinions 30, adapted to mesh with the internal gears 31, formed with the main wheels 1.

32 is a lever attached to the bracket 5 and pivoted at 33 to the frame of the machine, and 34 is a foot extension by means of which the bracket may be lifted for the purpose of raising the finger-bar over obstructions.

In order to partially support the finger-bar and parts carried thereby and permit said bar to easily pass over slight obstructions, the spring 36 is so arranged as to bear against the inner end of the bracket 5.

I am aware that slight modifications might be made in the construction herein described without departing from the spirit of my invention, and I therefore do not wish to limit myself to the exact construction herein described.

Having thus fully described my invention, what I claim as new and useful is—

1. In a machine of the character described, a truck formed of bars of metal and supported by two wheels, a bracket depending sidewise from said truck, a finger-bar attached to said bracket, knives supported by said finger-bar, guards also supported by said bar, a pump arranged upon the finger-bar, a plunger thereof being attached to the knife-head so as to reciprocate with the knife, a pitman and crank-wheel for reciprocating said knife, suitable gears for connecting said crank-wheel with the truck-wheels, and means for conveying air from the pump to suitable openings in the

guards, substantially as and for the purposes set forth.

2. In a machine of the character described, a finger-bar supported upon a suitable bracket having guards secured thereto, knives adapted to reciprocate upon said bar, nozzles carried by said guards, a pump-cylinder to which said nozzles are connected by suitable pipes, a plunger adapted to reciprocate within said cylinder, and means for reciprocating said plunger, substantially as and for the purposes set forth.

3. In combination with the truck of a machine of the character described, a cutter-bar carried by a suitable bracket depending sidewise from said truck, guards attached to said finger-bar, knives adapted to reciprocate upon said bar, a pump-cylinder arranged upon the finger-bar, a plunger adapted to reciprocate within said cylinder, means for reciprocating said plunger, nozzles carried by the guards, pipes for connecting said nozzles with the cylinder, and passages formed in the guards at an angle to the vertical through which the air from the pump is projected to act upon the grain, as and for the purposes set forth.

4. The herein-described combination of a frame supported by two truck-wheels, a bracket depending sidewise from said frame, a finger-bar carried by said bracket, guard-shoes attached to said bar and having openings 24 and flanges 23, the latter forming air-passages, nozzles carried by said guards having openings 22 in their outer ends, a pump 15 connected to said nozzles by pipes 21, a plunger adapted to reciprocate within said pump, a knife-head and knife carried thereby, a connection 17 for communicating motion from said knife-head to said plunger, a crank-wheel adapted to receive its motion from the truck-wheels by suitable gearing, a pitman for imparting reciprocating motion from said crank-wheel to the knife-head, and a pipe 25 leading from the pipes 21 and provided with a number of openings upon its rear side through which air may be projected against the grain, as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

HENRY E. OLSON.

Witnesses:

S. S. WILLIAMSON,
R. M. PIERCE.