2 Sheets—Sheet 1.

R. D. THOMSON.

Mower.

No. 195,907. **Patented Oct. 9, 1877.**

Fig. 1.

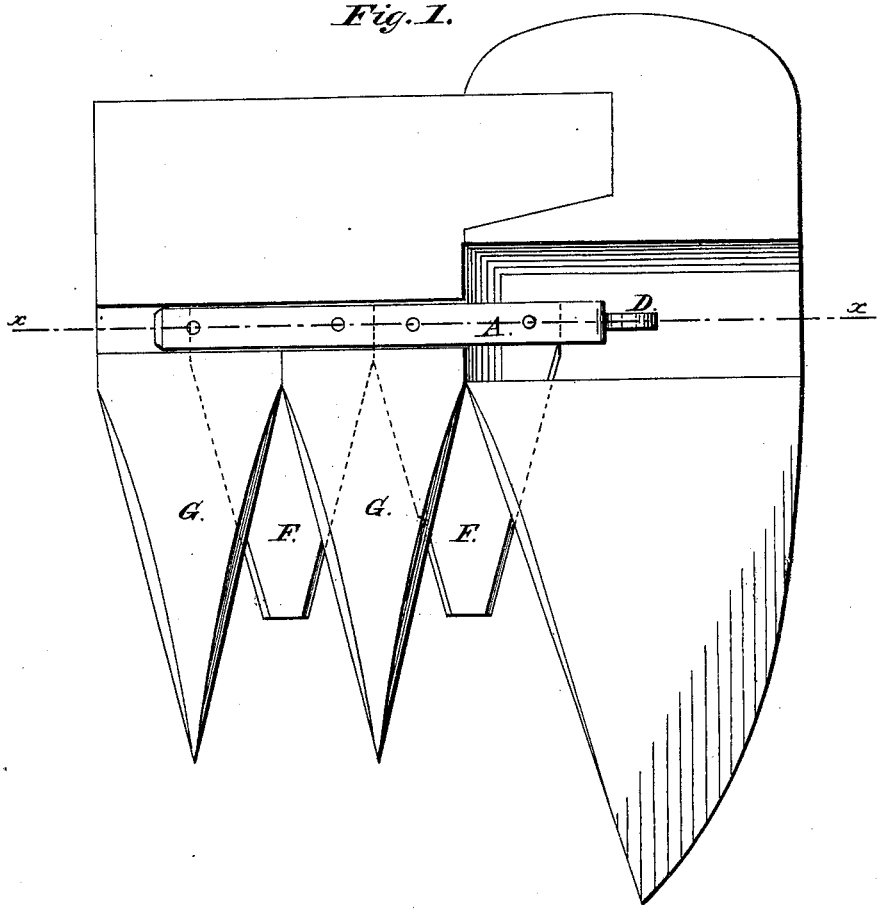


Fig. 2.

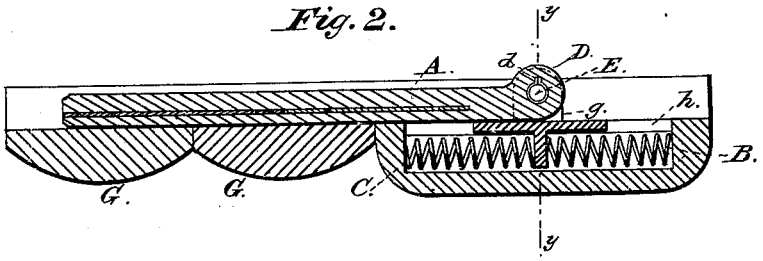
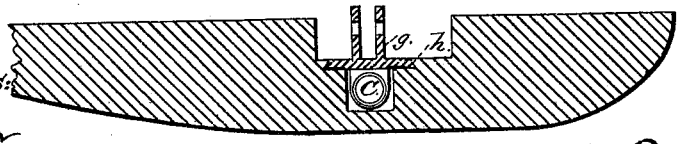


Fig. 3.



Witnesses:
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F. G. Munson

Inventor:
R. D. Thomson

2 Sheets—Sheet 2.

R. D. THOMSON.
Mower.

No. 195,907. Patented Oct. 9, 1877.

Fig. 4.

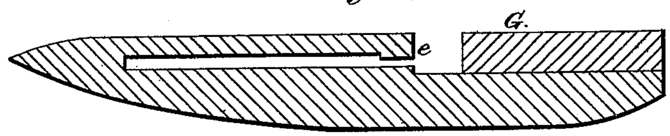


Fig. 5.

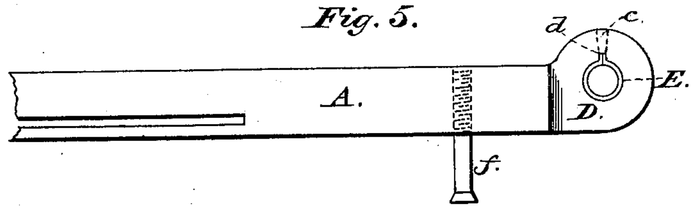


Fig. 6.

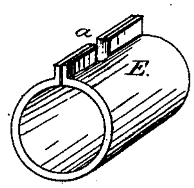


Fig. 7.

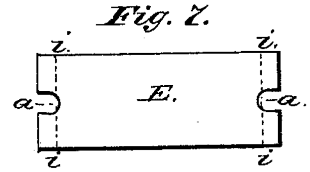
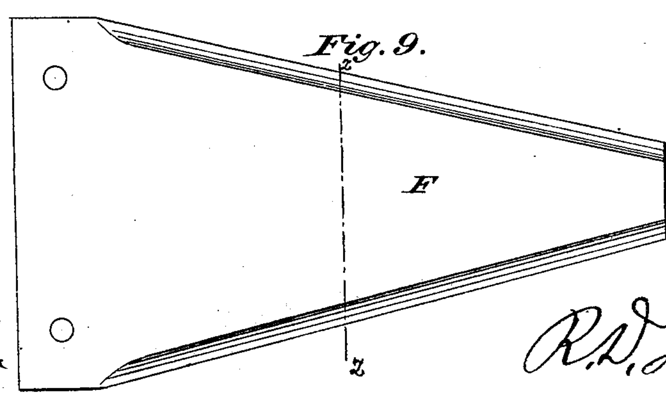


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

ROBERT D. THOMSON, OF NORTH PLATTE, NEBRASKA, ASSIGNOR TO THOMSON MOWING MACHINE COMPANY.

IMPROVEMENT IN MOWERS.

Specification forming part of Letters Patent No. **195,907**, dated October 9, 1877; application filed April 9, 1877.

To all whom it may concern:

Be it known that I, ROBERT D. THOMSON, of North Platte, Lincoln county, Nebraska, have invented new and useful Improvements in Mowers and Reapers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings herewith, in which—

Figure 1 is a plan view. Fig. 2 is a section on the line *x x*, Fig. 1. Fig. 3 is a section on the line *y y*, Fig. 2. Fig. 4 is a sectional view of one of the guards. Fig. 5 is an elevation of the knife-bar head. Fig. 6 is the knife-bar-head bushing. Fig. 7 is the pattern or "blank" of the bushing. Fig. 8 is a sectional view on the line *z z* of Fig. 9; Fig. 9, the "section" or knife.

My invention consists in the construction of a guard adapted to be used in combination with sections or knives, and in a blank or pattern for a sheet-metal bushing, and in the manner of adapting such bushing to a knife-bar head, also adapted for its reception and retention.

To enable those skilled in the art to make and use my invention, I proceed to a more particular description of its parts and their operation.

A is the knife-bar, which is provided with a screw or lug for the attachment of the spring B C. The said screw or lug passes downward into the center of the spring, which operates to balance the knife-bar in such a manner that the shock occasioned by a change in the direction of its movement is overcome.

This spring, as is illustrated in Fig. 3, is seated in a recess formed beneath the knife-bar head D in the shoe, in such manner that the ends of the spring are attached to the shoe and its center to the screw or lug on the knife-bar.

D is the knife-bar head, and is provided with a sheet-metal bushing, E, of copper or brass, or other suitable sheet metal, cut in the shape shown at Fig. 7, and formed as shown at Fig. 6. This bushing is provided with the apertures *a a* extending into the blank beyond the lines of folding, *i i*. These apertures form a passage for the oil to the pitman-bolt by means of the oil-hole *c*.

The flanges formed by folding the blank, as shown, are inserted in the slot *d* of the knife-bar head, which prevents the bushing from turning within its bearing.

F are the knives, and they are provided with cutting-edges formed by a smooth equal bevel on the upper and under side, as shown at Fig. 8, thus affording a cutting-edge, for which the guards G are adapted by being formed without cutting-edges, which are provided in the usual construction of guards by the addition of a ledger-plate of steel, and which has the disadvantage of not only expense, but of liability to come in contact with the knives when in operation and dull them.

The edges of the guards are formed without means for cutting, but simply to operate as resisting-edges to the operation of the knives against the crop. The guards G are also adapted to operate in a more satisfactory manner by being constructed with regard to the size of whatever knives they are used with, in that they have a width at their bases and an outline or contour at their sides at the portion traversed by the knives similar to such knives, and also have their sides extended to form a point.

Furthermore, the guards are integral, and have upon the under side and at the rear of their caps a projection, which serves to bear upon the rear portion of the upper surfaces of the knives, and keep them in place while in operation. They also have a slot of sufficient depth to allow of a vibration vertically of the front portions of the knives without impinging against the guards.

This construction of the guards permits of their being made of cast-iron, which reduces the cost of their production.

By forming their bases and sides similar in dimension and contour with the knives, a resisting-edge is offered to the knife from the instant it begins its reciprocative movement, and continues until the point of the knife passes within the guard, thus obviating the necessity of a number (two or more) of reciprocative movements of the knives during the advance of the machine to a distance equal to the length of the knives. This is accomplished by one movement of my knives.

In a measure, the benefit of a complete cut can be obtained in the use of my guard in combination with knives whose edge is formed by a bevel on one side only, but in a greater degree by the use of the knife constructed as shown and hereinbefore described, while with single-beveled knives collisions occur with the guards.

The operation of my invention is obvious. Connection is made with the operative parts of the mower by suitable means at the knife-bar head. A movement of the knife-bar from a state of rest is met by the resistance of the balancing-spring, which resistance increases as the bar nears the limit of its throw, where the spring overcomes the shock of a change in the direction of the movement of the bar. At the same time the knives are at their start met with a resisting-edge in the guards, and they continue such resistance throughout the entire length of the cutting-edge of the knife. The operation of the springs and of the guards is repeated upon the return movement of the bar.

I claim—

1. The sheet-metal-bushing blank E, provided with the slots *a a*, extending inwardly beyond the line of folding, substantially as shown and described.

2. In combination with the knife-bar head of a mower or reaper, a sheet-metal removable bushing provided with a retaining-flange having slots therein, as shown and described.

3. An integral guard whose sides or edges are non-cutting, similar in contour or outline to the knife with which it is used, and extended to form its point, and whose cap is provided with a projection upon the rear of its under side, as shown and described.

4. In a mower or reaper, the combination of a knife whose cutting-edge is formed by an equal smooth bevel on its upper and under side with an integral guard whose sides are non-cutting and of like outline or contour to those of the knife, and extended to form a point, as shown and described.

R. D. THOMSON.

Witnesses:
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