

No. 656,257

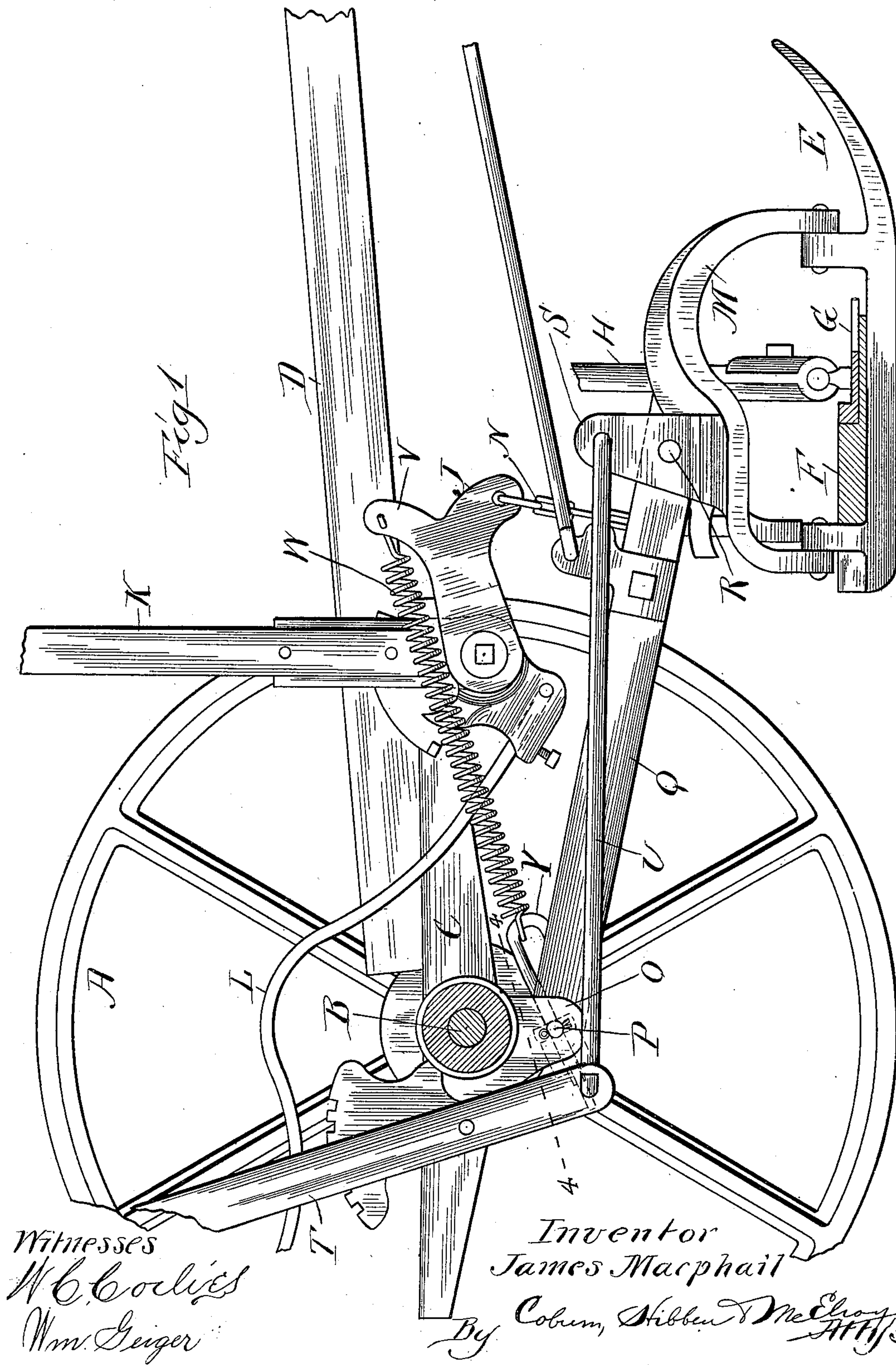
Patented Aug. 21, 1900.

J. MACPHAIL.
MOWING MACHINE.

(Application filed Mar. 14, 1900.)

(No. Model.)

2 Sheets—Sheet 1.



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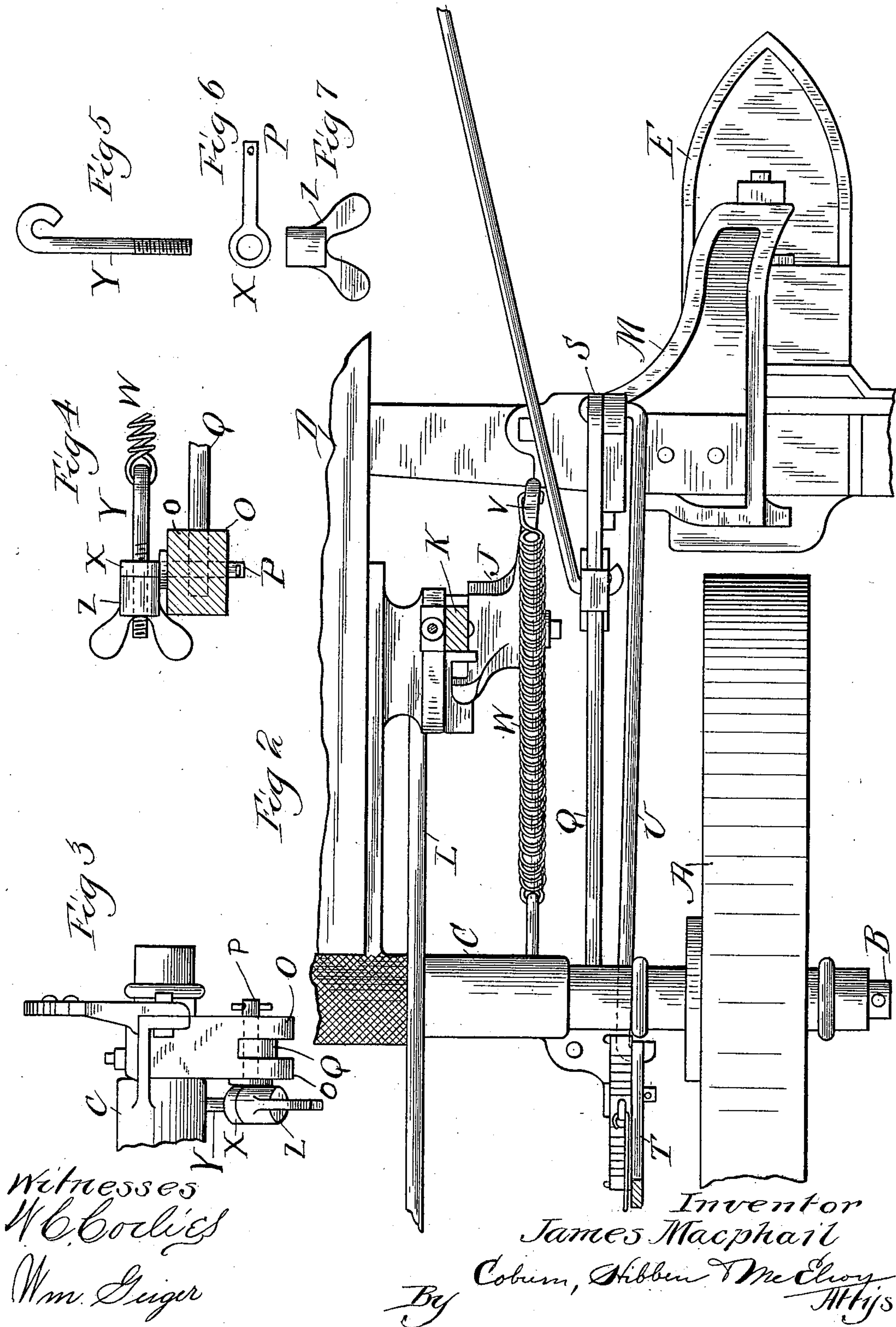
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UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF BLUE ISLAND, ILLINOIS, ASSIGNOR TO THE PLANO MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 656,257, dated August 21, 1900.

Application filed March 14, 1900. Serial No. 8,593. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a resident of Blue Island, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a specification.

My invention relates to an improvement in mowing-machines of the type shown in my Letters Patent No. 604,901, dated May 31, 1898, and is designed to overcome one serious defect in the construction of the machine therein shown and described, as will be more fully set out in the specification.

Referring to the two sheets of drawings, in which the same letters of reference are used to designate identical parts in all the views, Figure 1 is a side elevation of the main portion of the machine with the cutter-bar in section. Fig. 2 is a plan view of a portion of the machine, some of the parts being broken away and in section to illustrate the mechanism with which the present invention is concerned. Fig. 3 is a rear elevation of a small portion of the machine, showing certain details of construction. Fig. 4 is a plan view, in section, of the same parts on the line 4 4 of Fig. 1. Figs. 5, 6, and 7 are separate details of the parts shown in Fig. 4.

A is one of the ground-wheels of the machine, which are mounted upon the axle B, supporting the main frame C of the machine, to which the tongue D is attached in the customary manner. The shoe E supports the inner end of the cutter-bar F, and the sickle G carried thereon is reciprocated by the pitman H, which receives its motion from the driving-wheel (not shown) in the customary manner. The raising-crank J is pivotally mounted in the frame C of the machine in the customary manner and is controlled by the hand-lever K and the foot-lever L, as in my prior machine. The shoe E has pivotally connected therewith the yoke M, which is connected with the raising-crank J by the chain N in the manner well known in these machines. It will readily be seen that as the lever K is drawn toward the rider, who sits in the rear of the machine, the movement of the raising-crank J will raise the yoke M, and consequently the shoe E and the cutter-bar

supported thereby. Rigidly secured to the main frame C and projecting downwardly therefrom directly beneath the axle B is the pair of ears O, through which passes the pivot-pin P, which will be described more at length hereinafter. Pivotaly mounted on this pin P is one end of the push-bar Q, the other end of which has the yoke M pivotally mounted thereon by the pin R passing through the vertical arm S of the yoke. Pivotaly mounted on the frame C, just back of the axle B, is the hand-lever T, the position of which is controlled by the customary notch-segment and catch, which need not be described. The lower end of this hand-lever T has pivotally connected to it the thrust-rod U, which is pivotally attached at its other end to the arm S, above the pivotal point R, so that as the lever T is vibrated back and forth the action of the thrust-rod U will be to tilt the yoke M and the shoe E to any desired position.

All of the parts hitherto described are of the customary construction and operate in the manner shown and described in my prior patent. In the said prior patent, to assist the driver in raising the shoe E and its associated parts by means of the levers K and L, I provided a strong coiled spring, which was attached at one end to the under side of the raising-crank J some distance to the rear and below its pivotal point, while its other end was attached to the tongue at a suitable distance in advance of the raising-crank, depending upon the length of the spring. This coiled spring was so tensioned as to be under stress when the shoe and its associated parts rested on the ground, and consequently as these parts were raised by the action of the levers K and L the tendency of the spring to contract assisted in the work of raising the shoe. A serious objection to this construction was found to exist by reason of the fact that the other end of the spring was attached to the tongue, as in the use of the machine there is more or less vertical movement of the tongue incident to the movements of the horses, and this movement of the tongue necessarily caused an impulse to be given to the spring, which impulse, if it was to increase the tension of the spring, as would be the case if the tongue were raised, resulted in the shoe and its con-

nected parts being lifted, producing a vibration and unevenness of movement that was very undesirable. In my present construction I have overcome this difficulty by changing
5 the location of the spring. As will be seen in Fig. 1, I form an upwardly-projecting arm V upon the raising-crank and secure the end of the spring W to this arm and extend the spring rearwardly, passing it above the pivot
10 of the crank J. I conveniently secure the other end of the spring to the main frame C at a point below the axle B by a construction the details of which are shown in Figs. 3 to 7. As will be readily seen there, the pivot P is
15 formed in the shape of an I-bolt, (see Fig. 6,) through the circular head X of which I pass one end of the hook Y, to which the end of the spring W is secured, and the thumb-nut Z, coöperating with the threaded portion of
20 the hook Y, enables me to adjust the tension of the spring to any desired extent. By this construction I am enabled to mount the spring W in a position where it is not practically affected by any movement of the frame, inas-
25 much as its end is as close as may be to the pivotal center of the frame—i. e., the axle B.

By utilizing the pivot P as a support for the hook Y, I am enabled to dispense with the addition to any new parts to support the end of the spring in its new position. 30

What I claim as new, and desire to secure by Letters Patent of the United States, is—

In a machine of the class described, the combination with the wheels, the axle, and the frame supported thereby; of the shoe E and
35 its associated parts, including the yoke M, the raising-crank J having a lever for operating it, connections between said crank and the shoe for lifting the shoe, the ears O on said frame in immediate proximity to the axle,
40 the push-bar Q pivotally connected at one end of the yoke M of the shoe E, and at the other end to the ears O by the I-bolt pivot P; and the coiled spring W attached at one end to
45 the raising-crank J above its pivot, and at the other end to the eye of the I-bolt pivot P, substantially as and for the purpose described.

JAMES MACPHAIL.

Witnesses:

LOUISE E. SERAGE,
SAMUEL E. HIBBEN.