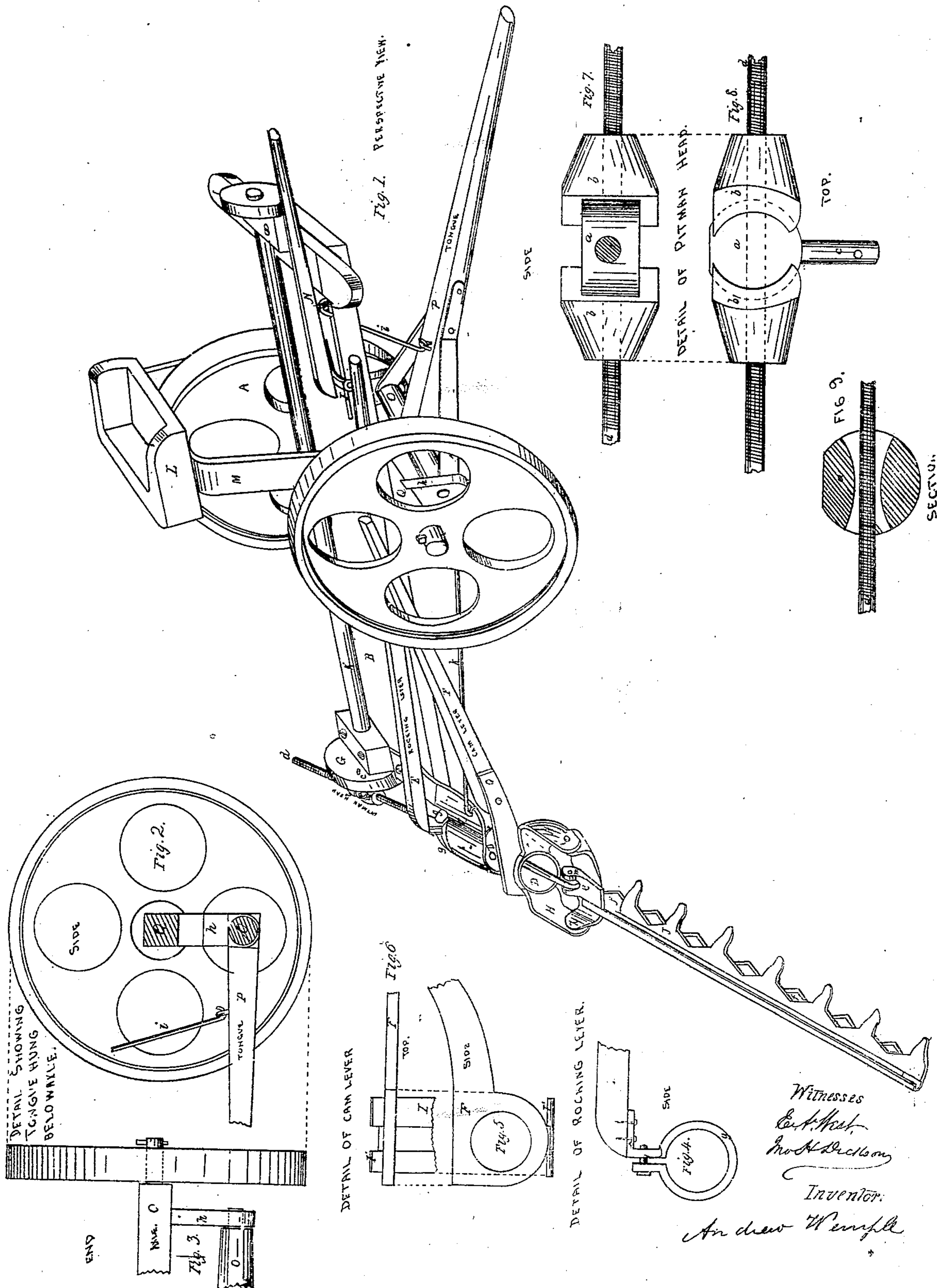


A. Wemple.

Mower.

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UNITED STATES PATENT OFFICE

ANDREW WEMPLE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MOWING-MACHINES.

Specification forming part of Letters Patent No. 61,644, dated January 29, 1867.

To all whom it may concern:

Be it known that I, ANDREW WEMPLE, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mowing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a section, showing a side view of the tongue and rock-shaft below the axle; Fig. 3, a similar section with front view; Fig. 4, a side view of the clamp or collar of the lever E detached; Fig. 5, a side view of the head of the cam-lever F; Fig. 6, a top view of the same, showing also the heel or projection of the finger-bar; Fig. 7, a side view of the pitman-head or wrist-pin; Fig. 8, a top view of the same; and Fig. 9, a horizontal section of the ball or center-piece of the wrist-pin.

Like letters refer to similar parts in all of the figures.

The nature and object of my invention consist in attaching a cutter-bar to the frame by a swivel-joint so located that the cutter or sickle bar, with the finger-bar, can be rocked or the fingers elevated or depressed, either by the lever attached for that purpose or of their own motion, without changing their position relative to the machine. Mowing-machines have been heretofore constructed so that the finger-bar could be rocked; but the joint has been located either above or to one side, so that when the fingers were elevated the bar was thrown forward, and when depressed thrown backward, changing the relative line so as to crowd the sickle when pressed forward and relieve it entirely when thrown back, and give the machine an unsteady motion, besides cramping either the pitman or the sickle or cutter bar; in so locating the pivots of the inner shoe of the finger-bar and the joint connecting the sickle or cutter-bar with the pitman that they will be on a horizontal line or level with the pitman-joint, central, and so near the vertical line that when in motion the pitman-joint or sickle-head will cross it, so that when the outer end of the finger-bar is elevated or depressed to any extent necessary in mowing there will not be any additional

strain or friction; in attaching a lever to the rotating part of the swivel-joint, so that the cutter-bar can be rocked by the driver; in attaching a lever to the swivel-joint, so as to make the cutter-bar rigid, or elevate the outer end, as may be desired; and in the arrangement for hoisting or elevating the rear end of the frame when the tongue is hung below the axle.

To enable others skilled in the art to make and use my invention and improved mower, I will proceed to describe its construction and operation.

The wheels and axle are made in the usual manner, and the wheel A is provided with cogs to operate a pinion-wheel and shaft connected with and operating the shaft K. The bed-piece B, which is made of wood, is about four and two-thirds feet long and thirteen inches wide. At the rear end of this is attached a socket-bar, C, which extends across or nearly across the rear end and projects about one foot, when it is turned backward and formed into a cylinder, as shown. It is supported or strengthened in operation by the brace-rod *k*, which is attached to it and the axle or front of the machine. Into this cylinder I insert a bar, D, which I prefer making tubular, as shown. It is made longer than the cylinder, and at the outer end the rocking lever E is attached by the clamp-collar *g*, Fig. 4, or other suitable means. To the inner end of the rocking-bar D, I attach two arms, H, which are bent, as shown, and to which the inner shoe, I, is pivoted at *l*. These pivots are located centrally with the bar D, or on a line taken horizontally through the center, so that the cutter-bar swings or rocks without obstruction. I also attach to the rock-shaft or bar D a cam-lever, F, which in the form shown passes loosely around it. This lever is attached for the purpose of making the finger-bar rigid, or for elevating the outer end, which is done by raising the lever and throwing it back, when the cam or enlarged part will press against the portion *l'* of the inner shoe, I, which extends beyond the arms, as shown in Figs. 5 and 6. The finger-bar J is attached to or made a part of the shoe I, and the sickle-bar *f* is attached to it in any of the known forms. The head *e* of the sickle-bar is attached to the top of the

bar, so as to bring the pivots l l and m on a level. This arrangement of these joints and the location of the finger-bar in line with the rock-shaft, so as not to change its relative position when rocked, give the machine an easy movement under all conditions of the wheels, fingers, or ends of the finger-bar.

Although it is not absolutely necessary, in order to bring the finger-bar, pitman, and rock-shaft in a line, to make the rock-shaft hollow or tubular, I prefer that form, as it can be made with less expense, and enables me to use a straight pitman.

The pitman d is made of the usual size, and has a screw-thread cut on it about one-third of its length, and is screwed through the pitman-head or wrist-pin. (Shown enlarged at Figs. 7, 8, and 9.) This pitman-head is made of a circular center-piece, a , on one side of which the pin c is attached, and a hole made at right angles with this pin through it, which hole is somewhat larger than the pitman at the center, and made flaring each way, so as to give room for the pitman to play. On each side of this piece a are sockets b , which are fitted to it, as shown. In attaching it the three pieces are placed in position, and the pitman screwed through the sockets, into which threads fitting the screw of the pitman are cut. This makes a flexible pitman-head, which will accommodate itself to any inequalities in the working of the cutter or machine without bringing the friction or strain on the pin c , which increases its durability. The pin c is inserted into the crank or wheel G in any suitable manner.

The tongue or draft-pole P , with its shaft O , is attached, by means of the arms h , below the axle. These arms are cast, and by using a cast axle it may be bent so as to bring the tongue in the same relative position, when it will be attached by hooks and eyes or other suitable means.

In order to raise the machine for traveling, a lever, N , is attached to the bed by a hinge, j , and connected with the draft-pole by the rod i . Raising this lever will depress the front end of the bed and elevate the rear end; and the hinge j being bent so that the rod i , when the lever is elevated, will pass back of the pivot of the hinge, the lever will stand upon its rear end and hold the machine securely without any catch or fastening.

The shaft K will be made in its length and bearings to suit the driving-wheel. It will be obvious that the cutter-bars can be thrown over onto the machine when it is to be moved any distance without cutting.

In the operation of those parts which are peculiar to my machine it will be observed that the finger-bar, being in line with its connection to the body of the machine, will rock up over any ordinary hummocks or down into any ordinary inequalities of the surface of the meadows without any assistance; but in moving over boggy or stony surfaces, or those

upon which ant-hills are formed, and where other machines cut through and dull the sickles, the driver can rock it over by simply lifting the lever E , which is convenient to his seat, or he can raise the outer end of the cutter by lifting the lever F ; and as the pivots of the finger-bar are located in the line of motion, when the lever F is down the outer end of the cutter will follow down into cavities, and will not be disturbed in its even cutting when the wheels or shoe I pass over or into any inequalities of surface. In rocking the shaft and cutter by this method the finger-bar is not moved either backward or forward in its position relative to the machine, as is the case with all other machines which have any rocking motion.

It will therefore be seen that by this arrangement I combine in one machine all the advantages which have heretofore been considered peculiar either to a single-wheel or a two-wheel machine.

I do not confine myself to locating this arrangement of the cutter to the rear end of the machine, as, with slight modifications of the other parts of the machine, it can be located in front or other point.

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

1. The hollow rock-shaft or bar D , provided with arms H , for the purposes set forth, by means of which the position of the finger-bar and sickle relatively to the machine will not be changed when the fingers of the finger-bar are rocked up or down, substantially as specified.

2. The attachment of the finger-bar to the machine or bed B by a single swivel-joint on one side, so that the pitman can be placed in the rear of the joint or connection, and attached to the head of the sickle-bar in the center of the circle or arc described by the finger-bar in rocking, substantially as specified and shown.

3. The location of the joint m , connecting the pitman with the head of the sickle or cutter bar, on a level with and between the pivots l l of the shoe, so as to bring it into the center of the rocking movement, and so near a line drawn from one pivot, l , to the other that it will cross such line in the cutting movements, so that, whether the finger-bar is rocked or its end elevated or depressed, the sickle and pitman will work freely, substantially as shown and specified.

4. The lever N , when so arranged and connected by the hinge j that it will hold the machine in an elevated position without a catch or other appliance, in combination with the rod i and draft-pole, substantially as and for the purposes specified.

ANDREW WEMPLE.

Witnesses:

E. A. WEST,

JNO. H. DICKSON.