S. P. TOWNSEND.

MOWER.

APPLICATION FILED OCT. 10, 1918.

1,413,637. Patented Apr. 25, 1922.

8 SHEETS—SHEET 1.

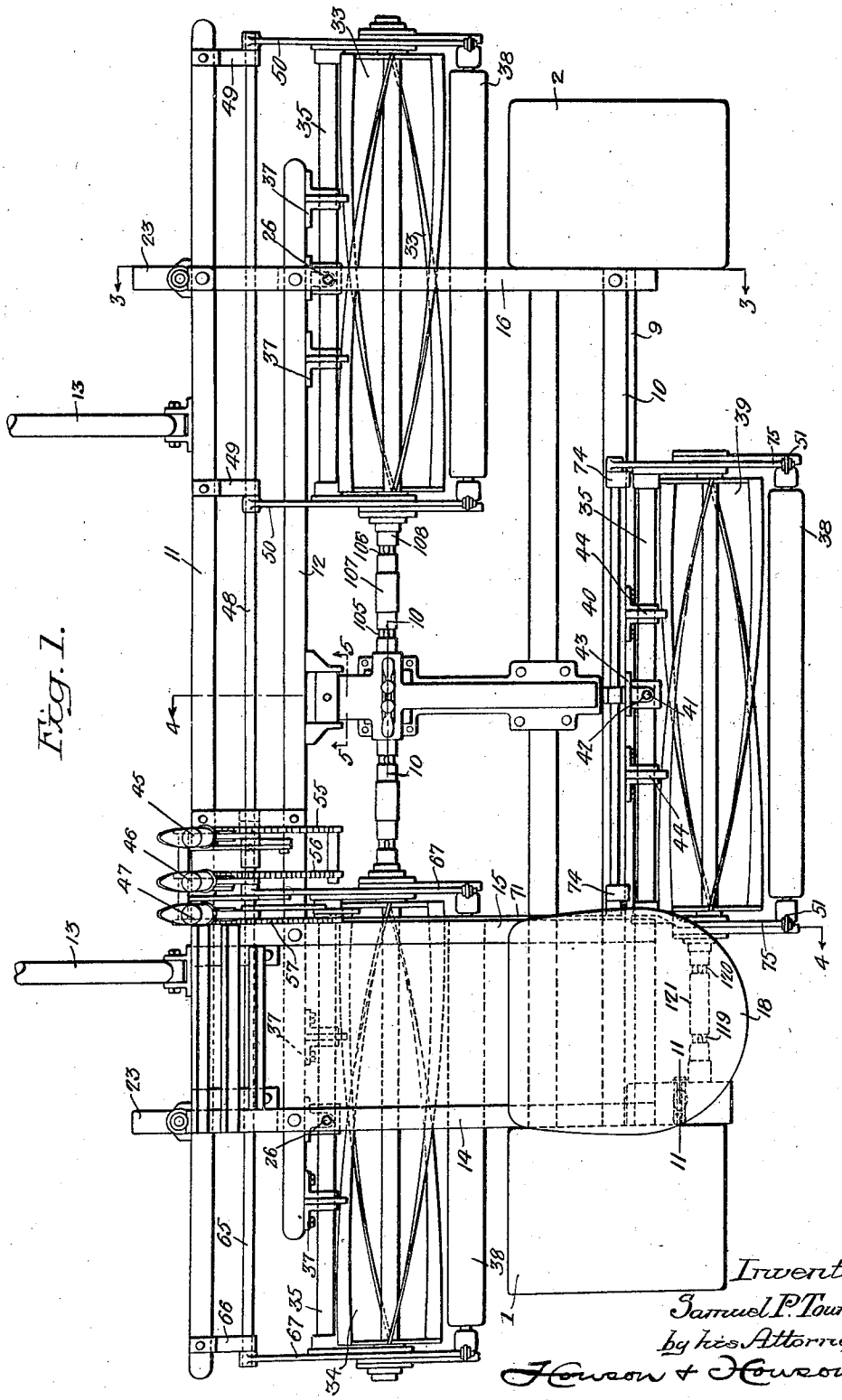


Fig. 1.

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8 SHEETS—SHEET 2.

Fig. 2.

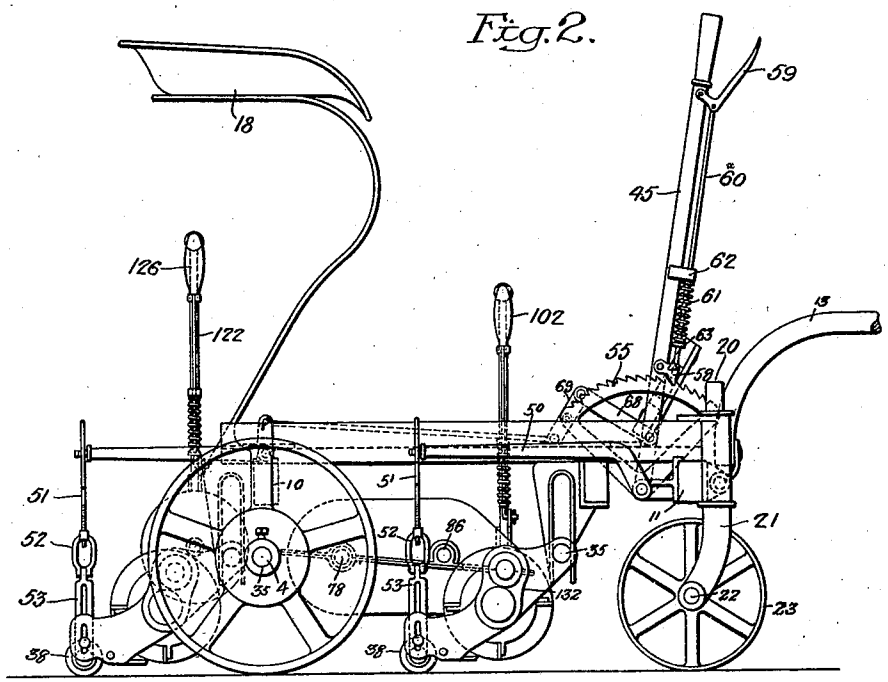



Fig. 12.

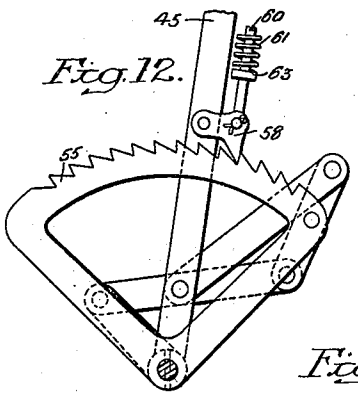



Fig. 13.

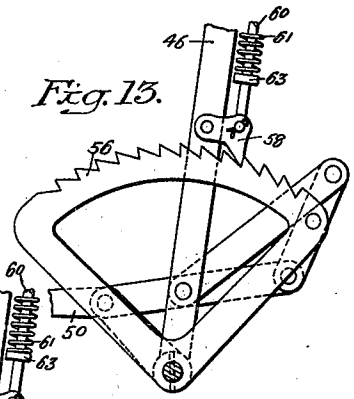
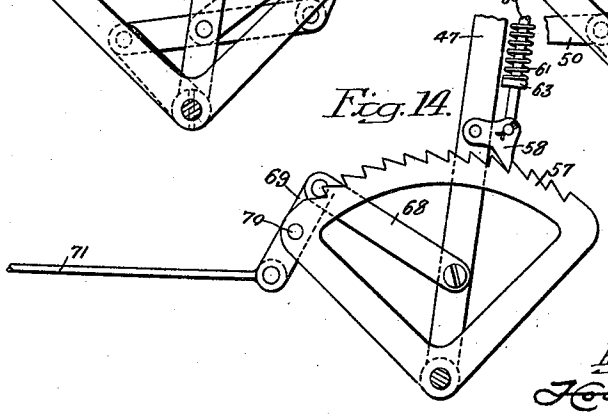



Fig. 14.




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8 SHEETS—SHEET 3.

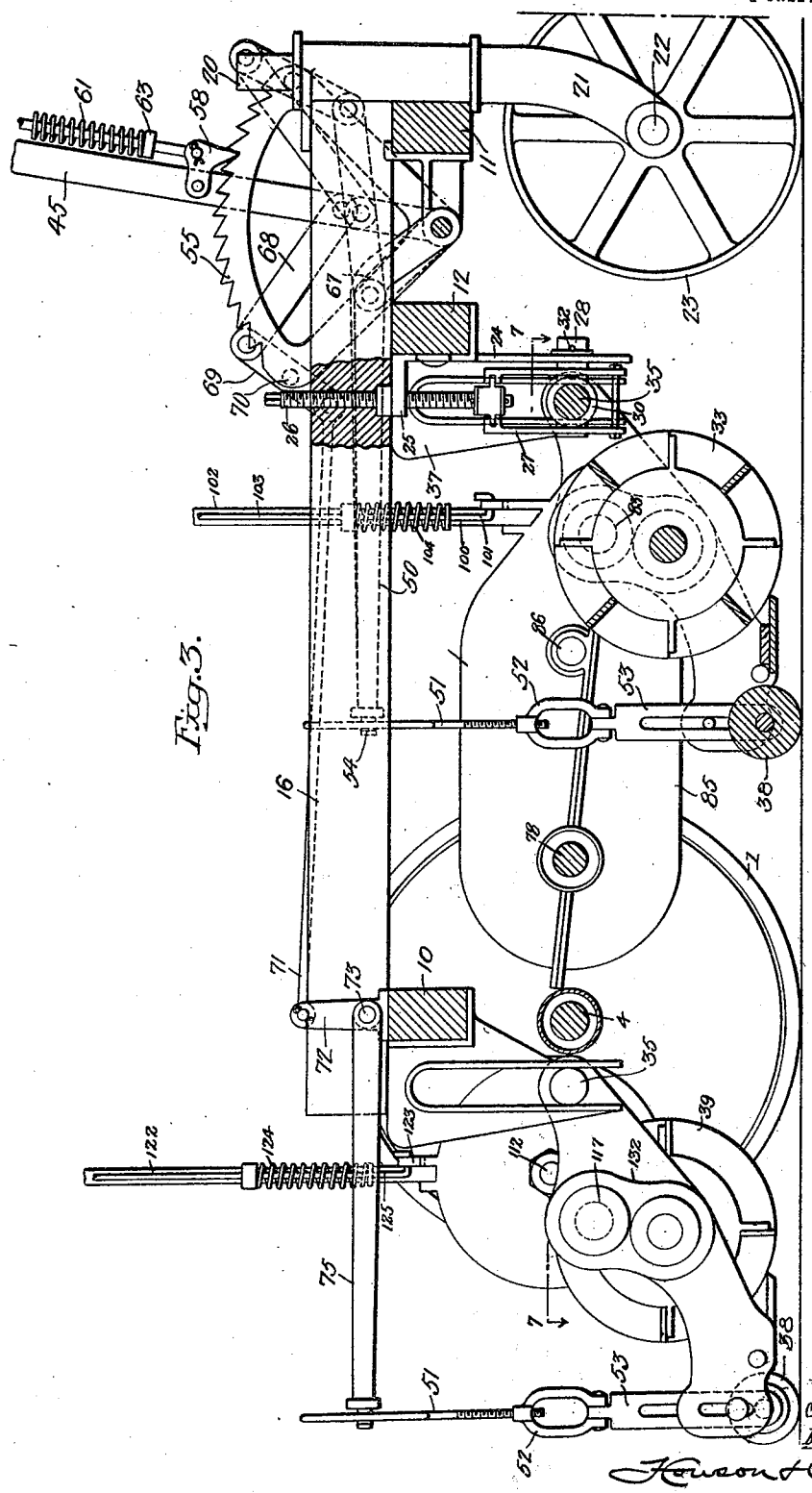


Fig. 3.

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8 SHEETS—SHEET 4.

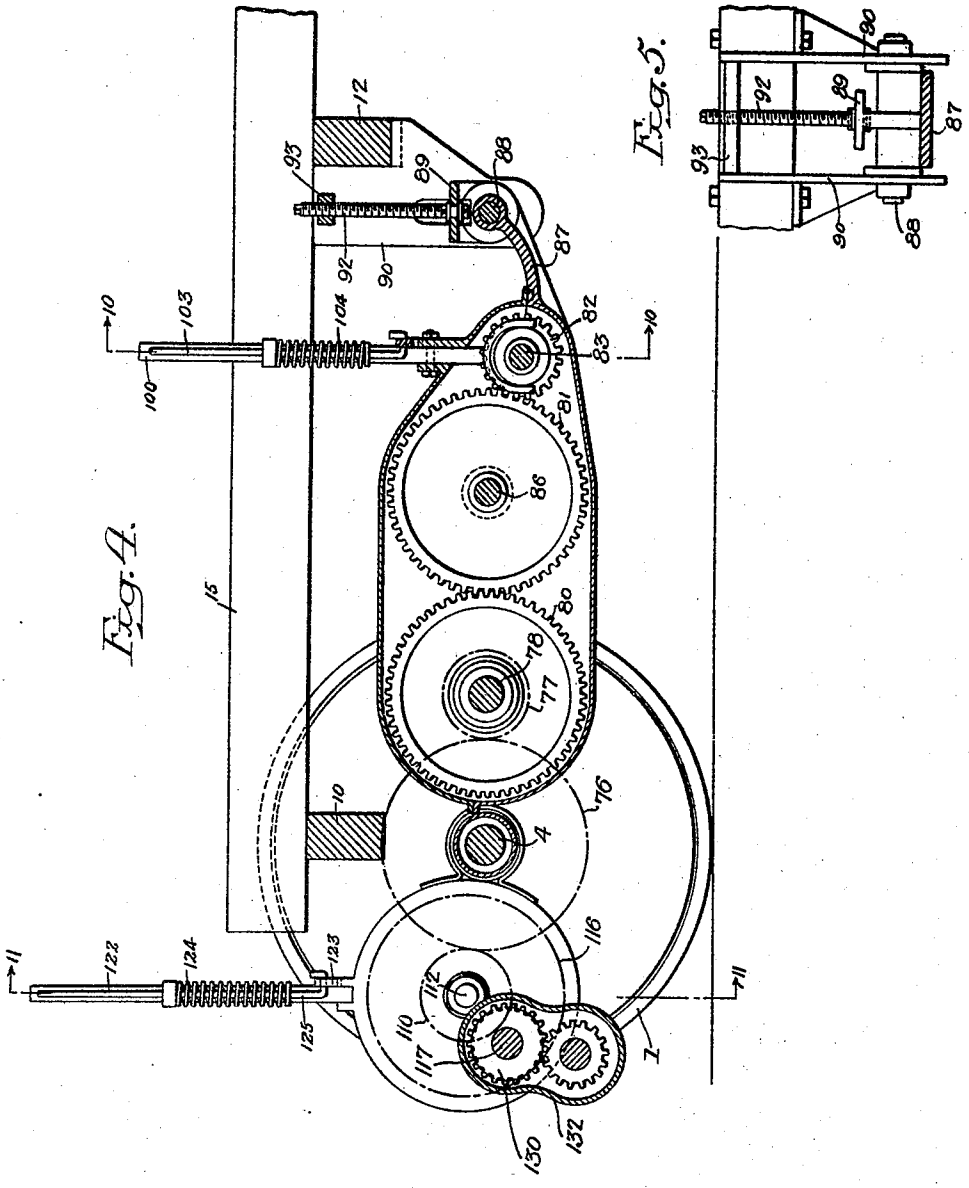



Fig. 4.




Fig. 5.

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8 SHEETS—SHEET 5.

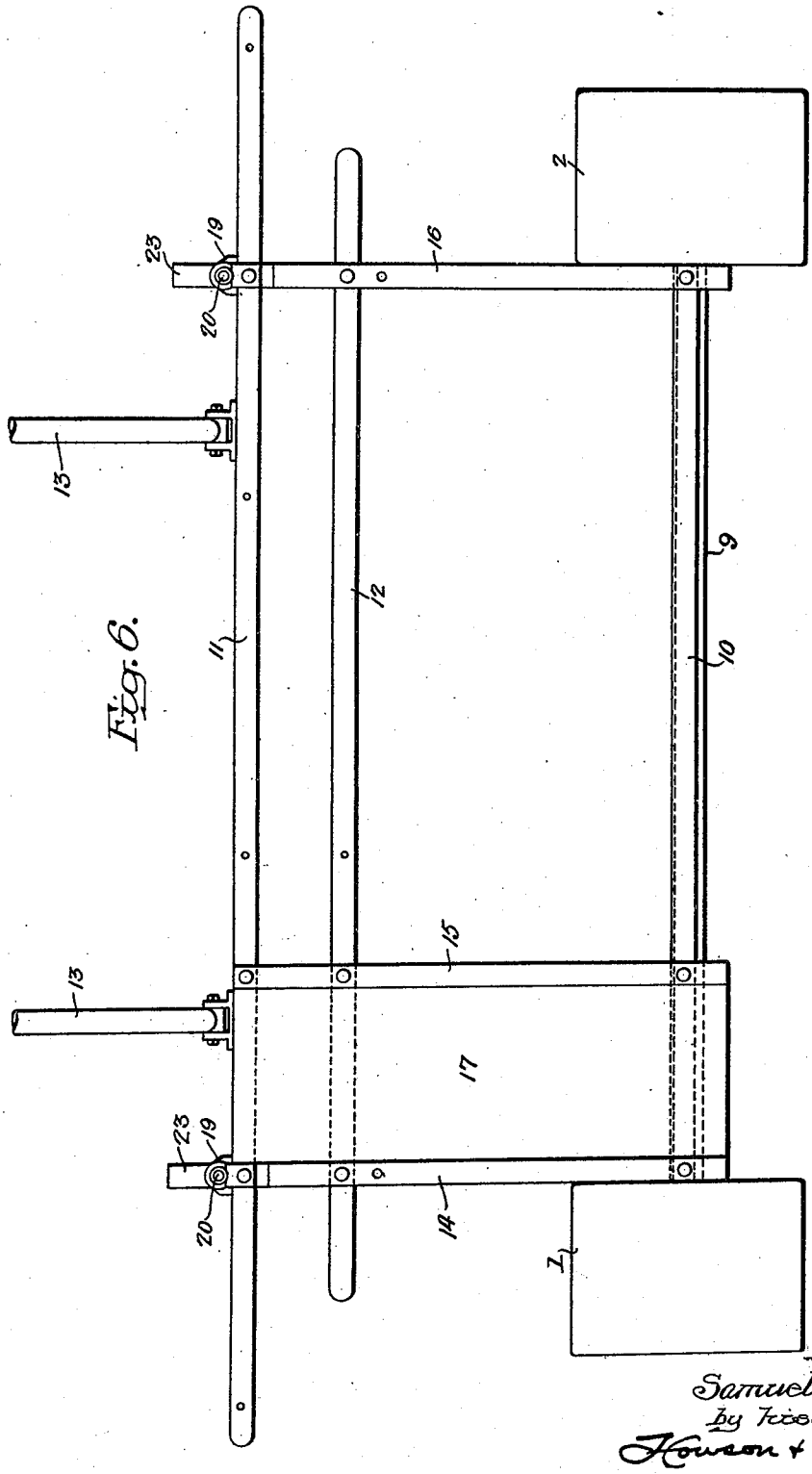



Fig. 6.

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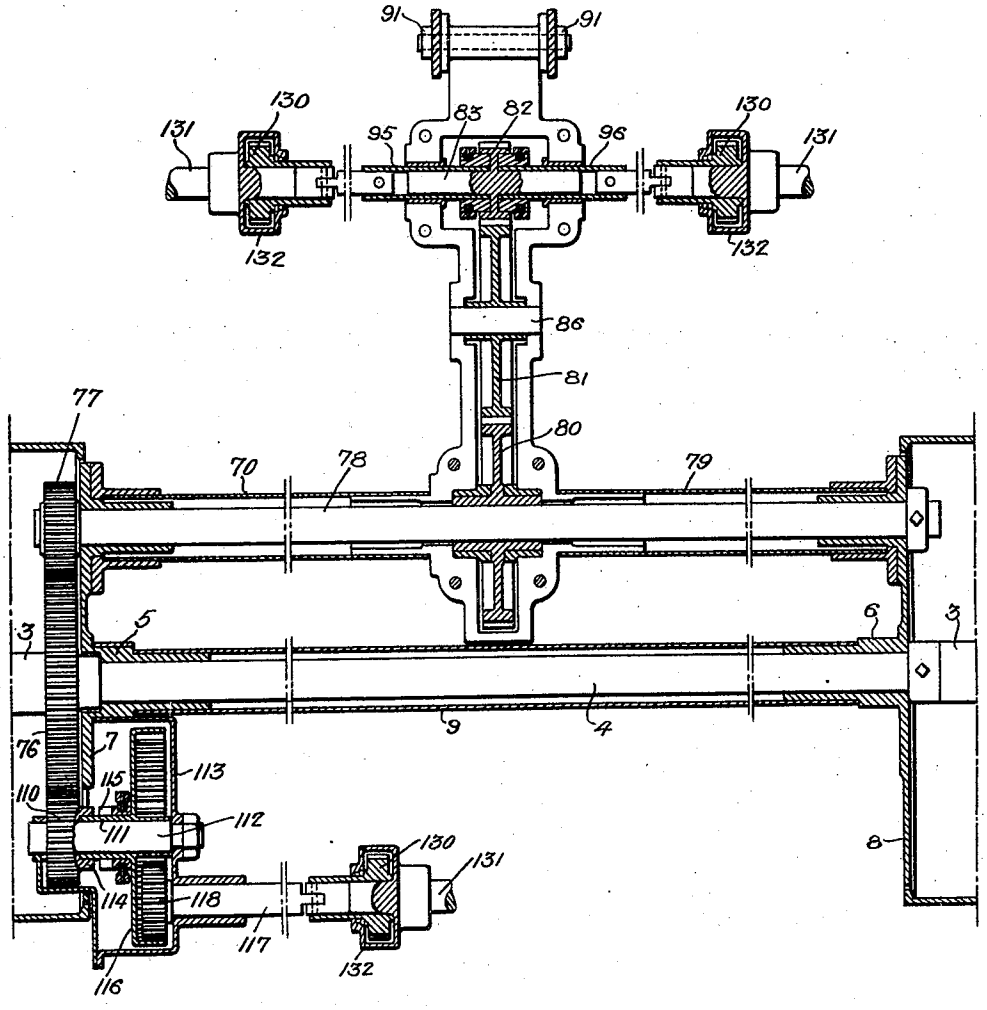
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8 SHEETS—SHEET 6.

*Fig. 7.*




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8 SHEETS—SHEET 7.

Fig. 8.

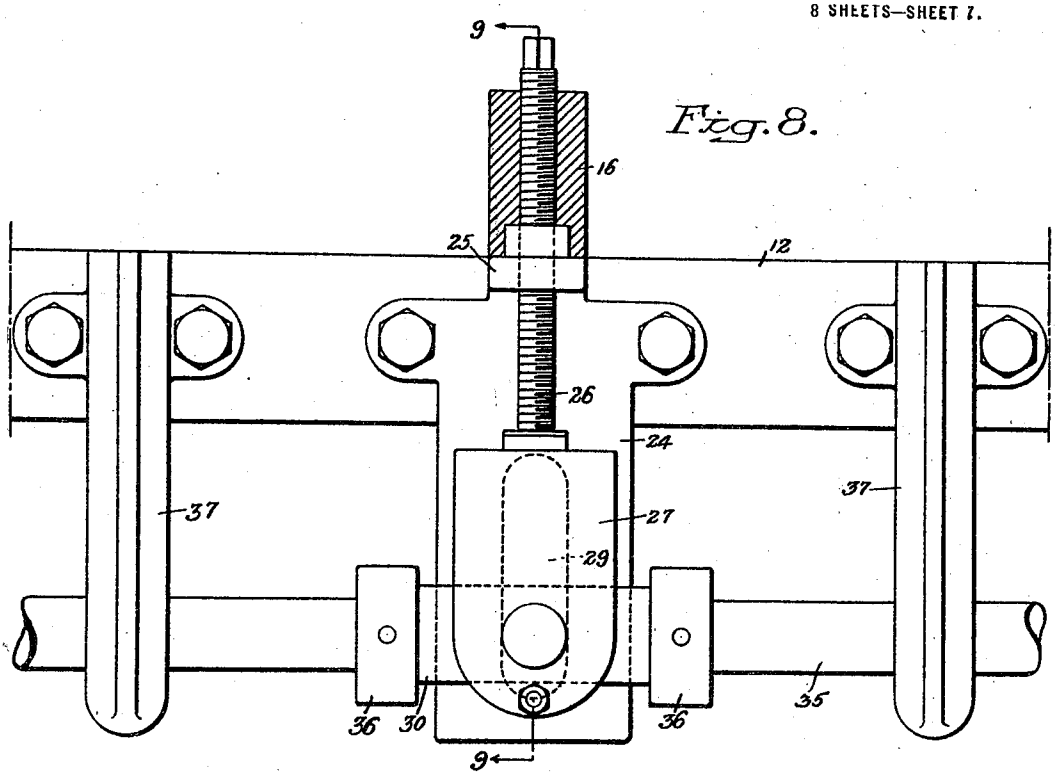



Fig. 9.

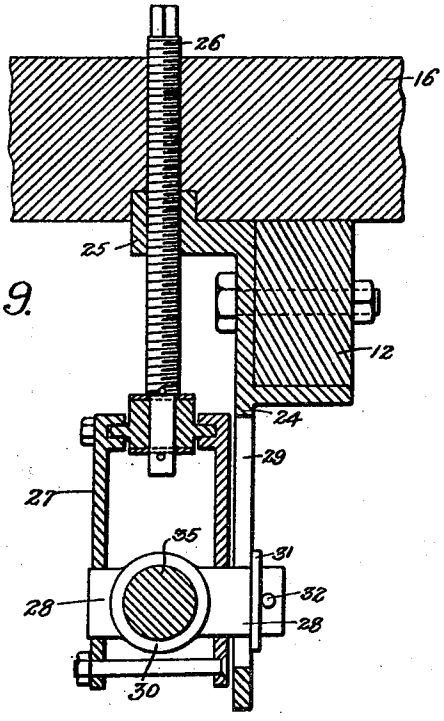
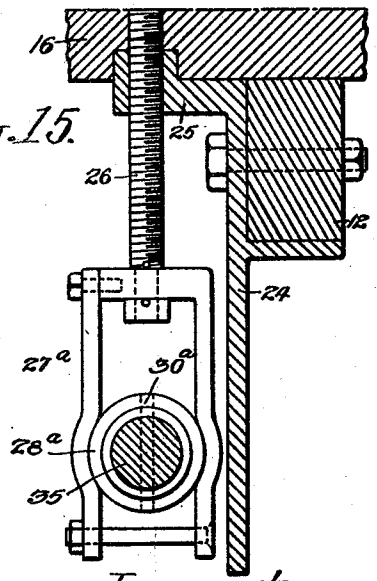



Fig. 15.




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8 SHEETS—SHEET 8.

Fig. 10.

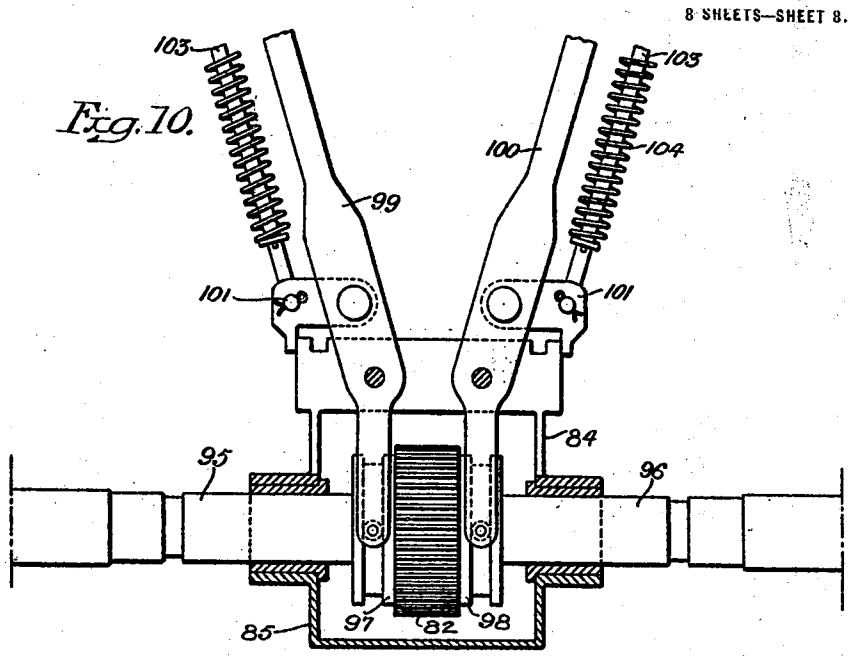
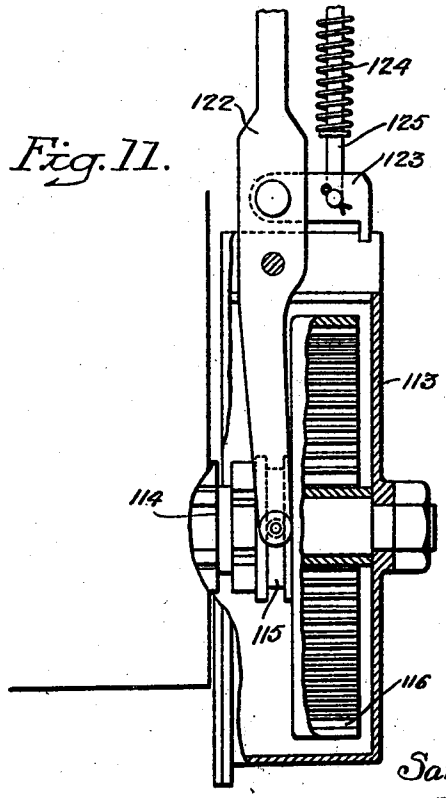



Fig. 11.




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# UNITED STATES PATENT OFFICE.

SAMUEL P. TOWNSEND, OF ORANGE, NEW JERSEY.

## MOWER.

1,413,637. Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed October 10, 1918. Serial No. 257,635.

*To all whom it may concern:*

Be it known that I, SAMUEL P. TOWNSEND, a citizen of the United States, residing in Orange, New Jersey, have invented Mowers, of which the following is a specification.

One object of my invention is to provide a relatively simple and substantial form of what is now known as a triplex mower with a novel form of frame and devices for so connecting a plurality of mowing machine units thereto that these latter shall be completely interchangeable as well as easily removed and replaced in the machine.

I further desire to provide novel driving mechanism for operatively connecting the several mowing machine units to one of the supporting rollers upon which the machine is chiefly carried; which means shall be of such a nature as to allow said units to accommodate themselves to inequalities in the ground over which they are passing while the frame with the driving mechanism remains unchanged in position or moves in some direction other than that of the mowing machine units.

Another object of the invention is to so connect the driving mechanism to the reel shafts of a number of mowing machine units that the operation of said mechanism shall tend to hold or move the rear portions of such units down toward the ground rather than tend to swing them up and turn them over after they have been raised by an obstruction or an unevenness of the ground.

A further object of the invention is to so combine the supporting rollers, the frame, the mowing units and the driving mechanism of a triplex or similar mowing machine as to provide a combination which shall be compact in form as well as efficient in operation.

The invention also contemplates a novel form of triplex mowing machine which shall include mechanism extending forward from the main supporting rollers for driving the two front mower units, together with other and independent driving mechanism extending backwardly from the rollers to the rear mower unit.

It is also desired to provide a mowing machine of the type noted with a novel arrangement and construction of driving mechanism together with means whereby any or all of the mowers may be operatively disconnected from the source of power; the invention including novel means for partially supporting each of the mower units in such manner as to permit of its adjustment for cutting at different heights while permitting it to oscillate in a vertical plane parallel to the planes of oscillation of the other mower units.

The invention further contemplates the provision of driving mechanism for one or more mower units which shall include elements capable of being raised or lowered at will to permit of their adjustment to cut grass of different lengths, without interfering with their connection to the source of power.

These objects and other advantageous ends I attain as hereinafter set forth, reference being had to the accompanying drawings, in which,

Figs. 1 and 2 are respectively a plan and a side elevation of a mower constructed according to my invention;

Figs. 3 and 4 are respectively vertical sections on the lines 3—3 and 4—4, Fig. 1;

Fig. 5 is a transverse vertical section on the line 5—5, Fig. 1;

Fig. 6 is a plan of the frame and supporting rollers forming part of my invention:

Fig. 7 is a section on the line 7—7, Fig. 3;

Fig. 8 is an elevation, partly in vertical section, illustrating the device for connecting any one of the mower units to the frame;

Fig. 9 is a vertical section on the line 9—9, Fig. 8;

Figs. 10 and 11 are respectively vertical sections on the lines 10—10 and 11—11, Fig. 1;

Figs. 12, 13 and 14 are elevations, partly in section, illustrating the detail construction of parts of the elevating devices for the three mower units; and

Fig. 15 is a modification of the structure shown in Fig. 9.

Referring to Figs. 1, 2, 6 and 7 of the above drawings, 1 and 2 are the ground or main supporting wheels or rollers upon which the frame and mechanism of my mowing machine are partially supported, and the hubs 3 of these rollers support a shaft 4 which is ratcheted to them through any suitable and well known form of ratchet device (not shown) whereby it is turned by any forward turning of the shaft. Journaled on this shaft are two sleeves 5 and 6, respectively forming parts of circular plates 7 and 8, mounted in the adjacent ends of the rollers 1 and 2 and connected by a tubu-

lar casing or cover 9 through which said shaft 4 extends. The upper part of each of these plates is slotted or otherwise suitably formed to provide a socket or recess for the reception of the rear transverse frame member 10, and in addition there are two front frame members 11 and 12 parallel with it; the first of these having attached to it a pair of shafts 13. Obviously other means for driving or propelling the machine may be provided without departing from my invention.

Extending at right angles to and rigidly connecting the three parallel frame members 10, 11 and 12 are three parallel beams 14, 15 and 16, of which the first and last extend from front to rear inside of but immediately adjacent the rollers 1 and 2, while the third member 15 cooperates with the first member 14 to support a platform 17 on which is mounted the driver's seat 18. At the points of junction of the front frame member 11 with the two forwardly extending frame members 14 and 16 are mounted two tubular brackets 19 providing bearings for a pair of vertical spindles 20 on whose lower ends are formed forks 21 providing bearings for short shafts or spindles 22 rotatably supporting two front wheels or rollers 23.

Adjacent the ends of the transverse front frame member 12 are two castings or forgings in the shape of vertical, downwardly extending plates 24 preferably mounted in one case under the longitudinally extending frame member 16 and in the other case under the similar frame member 14. Each plate has a rearwardly projecting lug or extension 25 immediately under and preferably extending into the overlying longitudinal frame member and is formed with a vertical threaded hole for the reception of a correspondingly threaded rod or screw 26. On the lower end of this latter is rotatably mounted a hanger 27 of an inverted U-shape, whose arms rotatably support trunnions 28 projecting from a sleeve 30;—one of said trunnions extending forwardly into and being slidable in a vertical slot 29 formed in the adjacent portion of the plate 24. That part of the trunnion which projects beyond said plate has a washer 31 mounted on it and this is held in place by a pin 32.

The three mower units 33, 34 and 39 of my machine are preferably of the standard construction commonly used as independent hand or power driven mowers and each has its side plates rigidly connected by a front rod or brace 35. In the case of the two forward mower units, 33 and 35, each of these front rods extends through the sleeve 30 of its hanger so as to be rotatable therein and has fixed to it at each end of said sleeve a collar 36 whereby the mower unit is held centrally of said hanger.

In addition to being engaged by the sleeve 30, the front cross bar 35 of each front mower unit is engaged by a pair of inverted forks or bolsters 37 projecting downwardly from the frame member 12 and constituting vertical guideways in which said bar is free to slide up or down as it oscillates on the axis provided by the trunnions 28. At the same time the forks provide means whereby power is transmitted to each mower unit structure for moving the same bodily forward with the machine. While the forward portion of each of the mower units is supported from the frame member 12 through the screw 26 and the hanger 27, its rear portion is carried by the ordinary ground roller 38, and the length to which grass will be cut is dependent upon and may be adjusted by said screw, whose upper end is preferably squared for the reception of a wrench or handle whereby it may be turned.

The third or rear mower unit 39 is connected to the frame of the machine at the rear of the shaft casing 9 between the main rollers 1 and 2, and is of such a length as to certainly cut the strip of grass left uncut between the two front mowers 33 and 34. This rear mower is identical in construction with said front mowers and is interchangeable with them, having a rear ground roller 38 by which it is partially supported and also including a front connecting bar 35 extending through a sleeve trunnioned in a hanger 40 identical in construction with the hanger 27. This hanger 40 is supported by a vertically adjustable screw 41, threaded through an overhanging lug 42 carried by a vertical plate 43 which in turn is bolted or otherwise fixed to the rear transverse frame member 10. This rear mower unit is thus free to oscillate on the horizontal pivot provided by its hanger trunnions while its front cross bar 35 is vertically guided and propelled by a pair of forked members 44 the same in construction as the forked members 37 for the front mower units.

Each of the three mower units may be bodily rotated about its front connecting bar 35 when it is desired to put it out of service, without interfering with its reel driving mechanism hereafter described, by means of independent hand-operated elevating device shown in Figs. 1 and 3 and 12 and 14 inclusive. These devices include three operating levers 45, 46 and 47 respectively, all extending upwardly immediately adjacent the front of the platform 17 in positions to be conveniently operated to raise their mowers by a rearward movement imparted to their upper or main portions by a driver occupying the seat 18. The lever 45 has its lower end loosely mounted on a transverse shaft 48 carried in bearing brackets 49 supported by the front frame member 11, and this shaft has two rear-

wardly extending arms 50 each of which, through suitable suspending members 51, 52 and 53, is connected to one of the opposite side frames of the mower unit 33, immediately adjacent its rear or ground roller 33.

Each of the series of links connecting a mower unit with its elevating arms, consists of a vertically slotted plate 51 designed to slidably fit the end of its arm 50 whose extremity is provided with a horizontally elongated head 54 of such length as to prevent removal of said plate as long as it is in a vertical position. The width of the head however, is such that it will pass through the slot in the plate when this is turned to a horizontal position. The lower end of the plate member 51 is threaded to adjustably enter the threaded opening of a shackle-like link member 52 whose lower end however, is split and pinned to the upper end of a third link member 53. The lower end of this latter member is pinned or bolted to the side frame member of the mower unit.

In addition to the quadrant 55 there are two other quadrants 56 and 57 fixed to the frame members 11 and 12 in positions adjacent the levers 46 and 47. The first quadrant 55 is designed to cooperate with a pawl or tooth 58 pivoted to the first elevating lever 45 and is actuated by means of a hand lever 59 connected to it by a rod 60. This lever is pivoted to the upper end of the operating member 45 and the pawl is normally forced into engagement with the quadrant by a spring 61 confined between a lug 62 on the elevating lever and a collar 63 on the rod 60. The second elevating lever 46 is loose on a shaft 65 carried in bearings 66 supported by the front frame member 11 in line with the first shaft 48 and it is operatively connected to said second shaft through a link 154, a lever 155 and a second link pinned to one of the elevating arms 50 for the second or left hand front mower unit. This arm and another like it are fixed to the shaft 65 and have their rear ends connected respectively to the rear portions of the side plates of the mower unit 34 by a series of links 51, 52 and 53 identical with those of the mower unit 33. For connecting the lever 45 to the shaft 48 so that the arms 50 will be elevated by rearward movement of the lever 45, I fix to said shaft an arm 150 and through a link 151 connect this to the lower end of a lever 152 pivoted to a notched quadrant 55 rigidly mounted on the frame members 11 and 12. The upper end of this lever 152 is connected to the operating lever 45 through a link 153.

The third lever 47 is loosely mounted on the shaft 65 and a short distance above the latter is connected through a link 68 with one end of a lever 69 pivoted to the rear portions of the quadrant 57. The opposite end of this lever, through a link 71, is connected to an arm 72 fixed to a shaft 73 journaled in bearings 74 mounted on the rear frame member 10. This same shaft has fixed to it a pair of rearwardly extending arms 75 each of which, through a series of links 51, 52 and 53 is connected, as in the case of the front mower units, to the rear portions of the side frames of the rear mower unit.

The two elevating levers 46 and 47 are each equipped with a pivoted pawl 58 placed to cooperate with its particular quadrant 56 or 57 as the case may be, and said pawl is operable by a hand lever pivoted to the upper part of the operating lever and connected through a link 60 with its pawl, which by means of a spring 61 is normally pressed toward its quadrant. Obviously a rearward movement of any of the elevating levers 45, 46 or 47 swings the ground roller and cutter of its particular mower unit upwardly about the front connecting bar as an axis, thereby preventing it from cutting grass.

For driving the reels of the front mowers I fix to the shaft 4 within the ground roller 1, a gear wheel 76 (Fig. 7) which meshes with the teeth of a pinion or gear 77 fixed to a shaft 78 journaled in suitable bearings provided by the plates 7 and 8 of the two main rollers 1 and 2 and enclosed by a tubular casing 70—79. Preferably at the center of this shaft is fixed a gear wheel 80 journalled in bearings provided by a two-part casing 84—85 and through an intermediate gear wheel 81 driving a third gear wheel 82. The intermediate gear is mounted on a shaft 86 supported in the casing 84—85, while the gear 82 is preferably integral with a short shaft 83 rotatably mounted in two sleeves 95 and 96 free to turn in suitable bearings also provided in the casing. This gear has clutch teeth on both of its faces and there are two clutch members 97 and 98 splined to said sleeves whereby they may be operatively connected to the gear 82 at will.

The casing 84—85 has tubular extensions concentric with the shaft 78 for the reception of the tubular structure 70—79 so that said shaft and the above described train of gearing are not only completely enclosed but said casing 84—85, in view of the above construction, is free to turn to a limited extent about an axis concentric with the shaft 79, the forward end of its part 85 being prolonged as indicated at 87 and terminating in a tubular head for the reception of a pin or spindle 88.

Said spindle is journaled in the side members of a hanger 89 (Figs. 3 and 4) slidably guided between a pair of plates 90 fixed in any suitable manner to the frame member 12 and vertically slotted for the reception of

the ends of the spindle which are provided with nuts or collars 91 to retain it in position. The hanger itself is carried by a screw 92 threaded through a transverse member 93 connecting the plates 90 and rotatable by a wrench or handle applied to its squared upper end for the purpose of raising or lowering the attached end of the gear case 84—85. The clutch members 97 and 98 are engaged by the short arms of a pair of levers 99 and 100 pivoted to the top part 84 of the gear case which is slotted for their passage. Each of these levers is provided with a pawl 101 designed to enter a suitable notch or recess in the gear casing so as to be held with its movable clutch member in such position that the gear 82 is operatively disconnected from the sleeve 95 or 96 as the case may be.

For actuating these pawls a hand operated lever 102 is pivoted to the upper end of each of the levers 99 and 100 and is connected through a rod 103 to its particular pawl. Springs 104 are at all times operative on the rods 103 to hold the pawls 101 in their lower or notch-engaging positions and the parts are so mounted that said pawls may engage the outside edge of that part of the gear case to which the levers 99 and 100 are pivoted, in order to retain the movable clutch members in positions to transmit power from the gear 82 to the tubular shaft sections 95 and 96. Each of these, through a pair of universal joints 105 and 106 and an intermediate shaft section 107, is operatively connected to a gear 130 enclosed by a casing 132 which also contains a second gear 133 concentric with and operatively connected, preferably through a suitable ratchet mechanism, to the reel shaft of one of the mower units 33 or 34, as the case may be.

With the arrangement of parts above described it is possible to raise or lower the train of gears 80, 81 and 82, to bring it into the position best adapted to transmit power to the two front mower units, while at the same time permitting these to be independently raised or lowered by their elevating levers out of and into operative positions.

For operating the rear mower unit 39 I provide a train of gearing including a gear wheel 110 loosely mounted on a sleeve 111 which in turn is rotatably carried on a spindle 112 mounted in bearings provided by an auxiliary casing 113 rotatably mounted on the structure 9 and operative within an opening in the plate 7 so as to be adjustable concentrically with the shaft 4. Said casing has slotted lugs for the reception of bolts whereby it may be clamped to said plate 7 in any adjusted position. The gear 110 meshes with the large gear 76 and is provided with a series of clutch teeth 114 designed to cooperate with the corresponding teeth of a collar 115 splined to the sleeve 111 which also has fixed to or integral with it an internally toothed gear 116. The auxiliary casing 113 which encloses this internal gear and its associated clutch, provides a bearing for a shaft 117 which has fixed to one end a gear 118 meshing with the internal teeth of the gear 116 and at its other end is connected through a pair of universal joints 119 and 120 and a short shaft section 121 with a gear wheel 130 which, through a second gear 133 within a casing 132, connects to the reel shaft of the mower unit 39.

The clutch 114—115 is designed to be operated by a lever 122 extending through a suitable opening in the auxiliary casing 113 to which it is pivoted. This lever has a dog or pawl 123 pivoted to it so as to engage a suitable recess in the casing in order to hold the clutch member 115 away from the teeth 114 of its cooperating member, and this pawl, as in the case of the holding pawls for the clutch levers 99 and 100, is normally pressed toward the casing structure by a spring 124 operative through a rod 125 whose upper end is connected to a hand lever 126 pivoted to the upper end of the operating lever 122.

By reason of the universal joints through which power is transmitted to the mower unit 39, this is free to swing upwardly around its front cross bar 35 under the action of its elevating lever without interference with or disconnection from its driving mechanism, although it, as well as either of the other mower units, may have its reel operatively disconnected from the source of power by the proper operation of its controlling clutch. Each of the mower units, by reason of the peculiar connection between its forward cross bar and the frame, is free to oscillate on what is practically a horizontal axis provided by the trunnions 28 in order to accommodate itself to unevennesses or obstructions in its path of movement. At the same time it is also free to swing up or down on this horizontally pivoted front cross bar under the action of the elevating levers, although it is noted that by reason of the peculiar mounting and connection of the driving mechanism above the line of the reel shaft, the mower unit as a whole at all times tends to swing downwardly around its cross bar 35 rather than in the opposite direction, so that after swinging up as when passing over an obstruction, the action of said driving mechanism tends to force the mower unit down toward the ground.

As shown in Fig. 7, the ratchet wheels 130 are connected between each of the reel shafts 131 and the adjacent driving connection, and these are enclosed by casings 132 in which any suitable forms of ratchets or dogs are mounted in the manner well known in the art, in order to permit of rotation of the reels independently of their respective driving trains.

From the above description it will be

appreciated that I have provided a compact, substantial and relatively simple mechanism for transmitting power to the three mower units of my machine while at the same time permitting of their utmost freedom for automatic adjustment as is required to permit of said units following the inequalities of the surface over which they pass and also in order to permit of their adjustment to meet the varying conditions incident upon their independent movement from and into cutting positions, as well as for the purpose of suiting them to cut grass different lengths. It will further be noted that the main supporting rollers 1 and 2 have been placed in spaces immediately to the rear of the front mower units and at the sides of that part of the frame for the attachment of the rear mower unit.

If desired I may employ the construction shown in Fig. 15 for that shown in Fig. 9, in order to provide a universal jointed support for the front rod 35 of each mower unit. In this form of the invention the hanger $27^a$ is made with opposite spherically curved recesses in which the spherically formed central part of the sleeve $28^a$ is mounted so as to have a limited universal movement. This sleeve is connected to the bar or brace 35 by a pin $30^a$ so as to maintain the mower unit in the desired position relative to the sleeve.

I claim:

1. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units each supported partly by its own ground roller and partly by said frame; with means for vertically adjusting each mower unit relatively to the frame to cause it to rotate about its own ground roller.

2. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units each supported partly by its own ground roller and partly by said frame; means for vertically adjusting each mower unit relatively to the frame to cause it to rotate about its ground roller; and means for driving all of said mower units from at least one of the frame supporting rollers.

3. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a ground roller; with a device connecting said mower unit to the frame including means for adjusting it about its ground roller as an axis to vary the distance of its cutter from the ground.

4. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a ground roller; with a device connecting said mower unit to the frame including means for adjusting it about its ground roller as an axis to vary the distance of its cutter from the ground, the same consisting of a hanger connected to the mower unit and an adjustable threaded connection between the hanger and the frame.

5. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a ground roller; with a device connecting said mower unit to the frame including means for adjusting it about its ground roller as an axis to vary the distance of its cutter from the ground, the same including a sleeve mounted on the front cross bar of the mower unit, a hanger rotatably engaged by said sleeve, and a threaded member connected to the hanger and adjustably engaging the frame.

6. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a ground roller; with a device connecting said mower unit to the frame including means for adjusting it about its ground roller as an axis to vary the distance of its cutter from the ground, the same consisting of a hanger vertically guided on the frame, a threaded member engaging said hanger and adjustably supported by the frame, and a horizontal pivotal connection between the hanger and the mower unit.

7. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a ground roller; a device connecting said mower unit to the frame including a member threaded through the frame and having a horizontal pivotal connection with the front bar of the mower; and bolsters on the frame placed to vertically guide said cross bar while preventing its rotation about the center line of the threaded member.

8. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit having a supporting ground roll; means for connecting the mower unit to the frame to permit of the vertical adjustment of its front portion; mechanism for transmitting power from one of the frame-supporting rolls to the mower unit; and means for adjusting the position of part of said mechanism to accord with variations in the adjustment of the mower unit.

9. The combination of a frame; supporting rollers for said frame; a plurality of mower units each supported partly by the frame and partly by its own ground roller; means for vertically adjusting each of the mower units about its ground roller as an axis; mechanism for driving said mower units from at least one of the frame supporting rolls; and a device for adjusting said mechanism to follow the adjustments of the mower units.

10. The combination in a mowing machine of a frame; supporting rolls therefor; sets of mower units each supported partly by the frame and partly by its own ground roll; in-

dependent trains of mechanism for respectively driving said sets of mower units; independent devices for adjusting the connection between the mower units and the frame to turn each of said units about its ground roller as an axis; and independent means for adjusting said two trains of mechanism relatively to the sets of mower units.

11. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units each supported partly by its own ground roller and partly by said frame; means for vertically adjusting each mower unit relatively to the frame to cause it to rotate about its ground roller; and means for driving all of said mower units from a single source of power.

12. The combination in a mowing machine of a frame; rollers supporting said frame; a mower unit propelled by the frame; driving mechanism connecting one of said rollers with the mower unit including a shaft, a train of mechanism driven by and rotatable about said shaft and a universal joint connection between said train of mechanism and the mower unit; with a device for adjusting said train of mechanism about the shaft.

13. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units attached to the frame; and mechanism operatively connecting one of the rollers with said mower units, the same including a shaft, a train of gear wheels mounted to swing concentrically with the shaft, and a universal joint connection between the outer member of said gear train and the mower units; with a device for adjusting the gear train about the shaft.

14. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units attached to the frame; mechanism operatively connecting one of the rollers with said mower units including a shaft, a casing structure mounted to swing concentrically with the shaft and a series of gear wheels journaled to rotate in said structure; means for connecting said structure to the frame to permit of its adjustment about the shaft; with universal joint connections between one of the gear wheels and the mower units.

15. The combination in a mowing machine of a frame; rollers supporting said frame; a plurality of mower units attached to the frame; mechanism operatively connecting one of the rollers with said mower units including a shaft, a casing structure mounted to swing concentrically with the shaft, and a series of gear wheels journaled to rotate in said structure; means for connecting said structure to the frame to permit of its adjustment about the shaft; universal joint connections between one of the gears and the mower units; and devices for elevating said mower units at will relatively to the frame.

16. The combination in a mowing machine of a frame; rollers for supporting said frame; sets of mower units attached to the frame; means for driving the mower units of each set including a gear mounted concentrically with one of the frame supporting rollers, a second gear meshing with the first gear and adjustable around the same; and means for transmitting power between said second gear and a mower unit of one of the sets including a universal joint connection; a device for adjusting said mower unit relatively to the frame; with mechanism for elevating said mower unit into an inoperative position at will.

17. The combination in a mowing machine of a frame; rollers supporting said frame; a gear mounted concentrically with one of the rollers; a second gear supported to be adjustable about and in engagement with said first gear; a mower unit connected to said frame; a universal joint connection for transmitting power from said second gear to said mower unit; and means for adjusting the mower unit about its ground roller as an axis.

18. The combination in a mowing machine of a frame; rollers supporting said frame; a gear mounted concentrically with one of the rollers; a second gear supported to be adjustable about and in engagement with said first gear; a mower unit connected to said frame; a universal joint connection for transmitting power from said second gear to said mower unit; means for adjusting the mower unit about its ground roll as an axis; with means for swinging said mower unit about a portion of the frame to elevate it at will into an inoperative position.

19. The combination in a mowing machine of a frame; supporting rollers therefor; a mower unit pivotally connected to said frame to swing up and down about a horizontal axis; elevating mechanism for turning said mower unit about its pivotal connection; a member mounted on the frame and adjustable concentrically with one of the rollers; a gear driven from the roller and journalled on said member; with means for operatively connecting said gear to the mower unit.

20. The combination in a mowing machine of a frame; supporting rollers therefor; a mower unit connected to the frame and free to turn on either of two substantially horizontal axes at right angles to each other; a member mounted on the frame and adjustable concentrically with one of the rollers; a gear journalled on said member and driven from said roller; a universal joint connection for transmitting power from said gear to the mower unit; and means for swinging said mower unit about one of its axes to raise it into an inoperative position.

21. The combination in a mowing machine

of a frame; supporting rollers therefor; a mower unit having a horizontal pivotal connection with the frame and supported partly thereby and partly by its own ground roller; with driving mechanism for said mower unit including a rotary element tending to rotate the mower unit downwardly about its pivotal connection with the frame as an axis.

22. The combination in a mowing machine of a frame; supporting rollers therefore; and a mower unit having a horizontal pivotal connection with the frame and supported partly thereby and partly on its own ground roller; with mechanism for driving the reel of said mower unit including intermeshing gears of which the driven gear is mounted to turn in a direction tending to swing the mower unit downwardly around its pivotal connection with the frame.

23. The combination in a mowing machine of a frame; supporting rollers therefore; and a mower unit having a horizontal pivotal connection with the frame and supported partly thereby and partly on its own ground roller; with mechanism for driving the reel of said mower unit including two intermeshing gears, and driven elements supported by the frame for turning one of said gears in a direction tending to rotate the mower unit downwardly about its pivotal connection with the frame as an axis.

24. The combination in a mowing machine of a frame; supporting rollers therefor; a mower unit including a reel and a ground roller; a horizontal pivotal connection between the mower unit and the frame; a gear connected to the reel shaft; a second gear meshing with said first gear and mounted above the line of the reel shaft; with driving mechanism connected to said second gear and normally tending to rotate the mower unit downwardly about the line of its pivotal connection with the frame.

25. The combination in a mowing machine of a frame; supporting rollers therefor; a mower unit having its front portion pivotally connected to the frame; and elevating mechanism for swinging said mower unit about said pivotal connection consisting of a shaft, an operating lever for turning said shaft, a plurality of arms fixed to the shaft and each having a laterally elongated head; with means for connecting each of the arms to the rear part of the mower unit including vertically slotted links each normally held to its arm by the head thereon.

26. The combination in a mowing machine of a frame; supporting rollers therefor; a mower unit having its front portion pivotally connected to the frame; and elevating mechanism for swinging said mower unit about said pivotal connection, consisting of a shaft, an operating lever for turning said shaft, a plurality of arms fixed to the shaft and each having a laterally elongated head, means for connecting each of the arms to the rear part of the mower unit including vertically slotted links each normally held to its arm by the head thereon, a turn buckle threaded to each of said links, and a plate pivoted to each turn buckle and connected to the rear of the mower.

In witness whereof I affix my signature.

S. P. TOWNSEND.