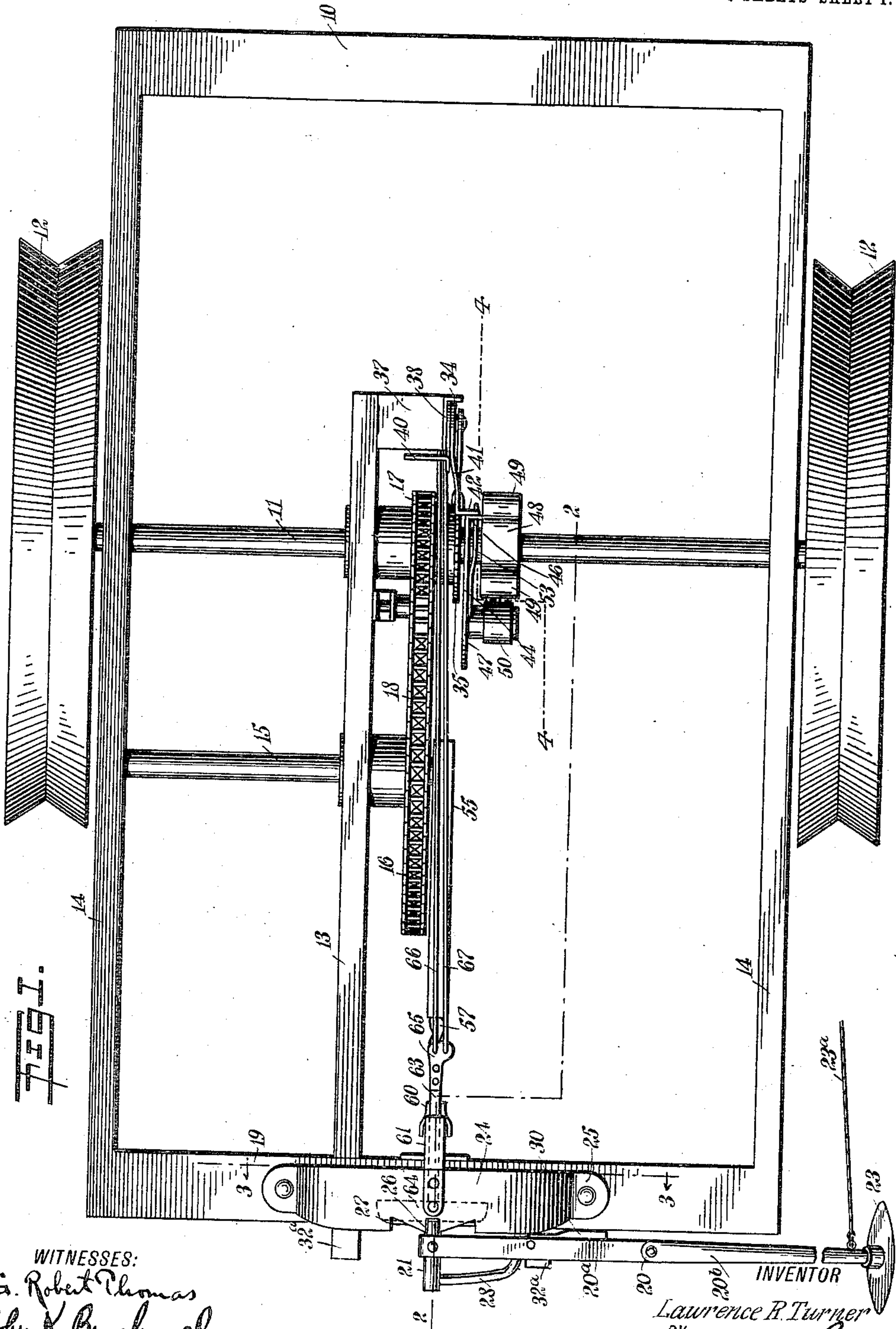


985,643.

L. R. TURNER.  
MARKER ATTACHMENT.  
APPLICATION FILED MAR. 22, 1910.

Patented Feb. 28, 1911.

3 SHEETS-SHEET 1.

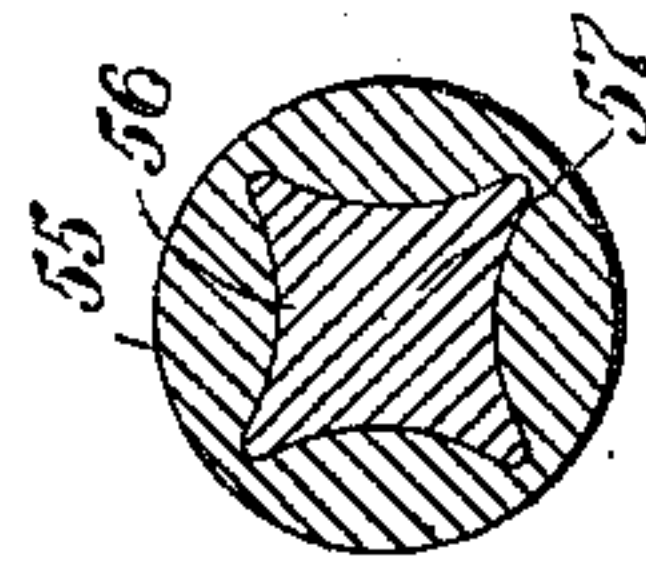


WITNESSES:  
G. Robert Thomas  
John K. Brachvogel

INVENTOR  
Lawrence R. Turner  
BY *Mann & Co.*  
ATTORNEYS

L. R. TURNER.  
MARKER ATTACHMENT.  
APPLICATION FILED MAR. 22, 1910.

3 SHEETS—SHEET 2.



INVENTOR  
*Lawrence R. Turner*  
BY *Mumfles*  
ATTORNEYS



L. R. TURNER.  
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3 SHEETS—SHEET 3.

FIG. 3.

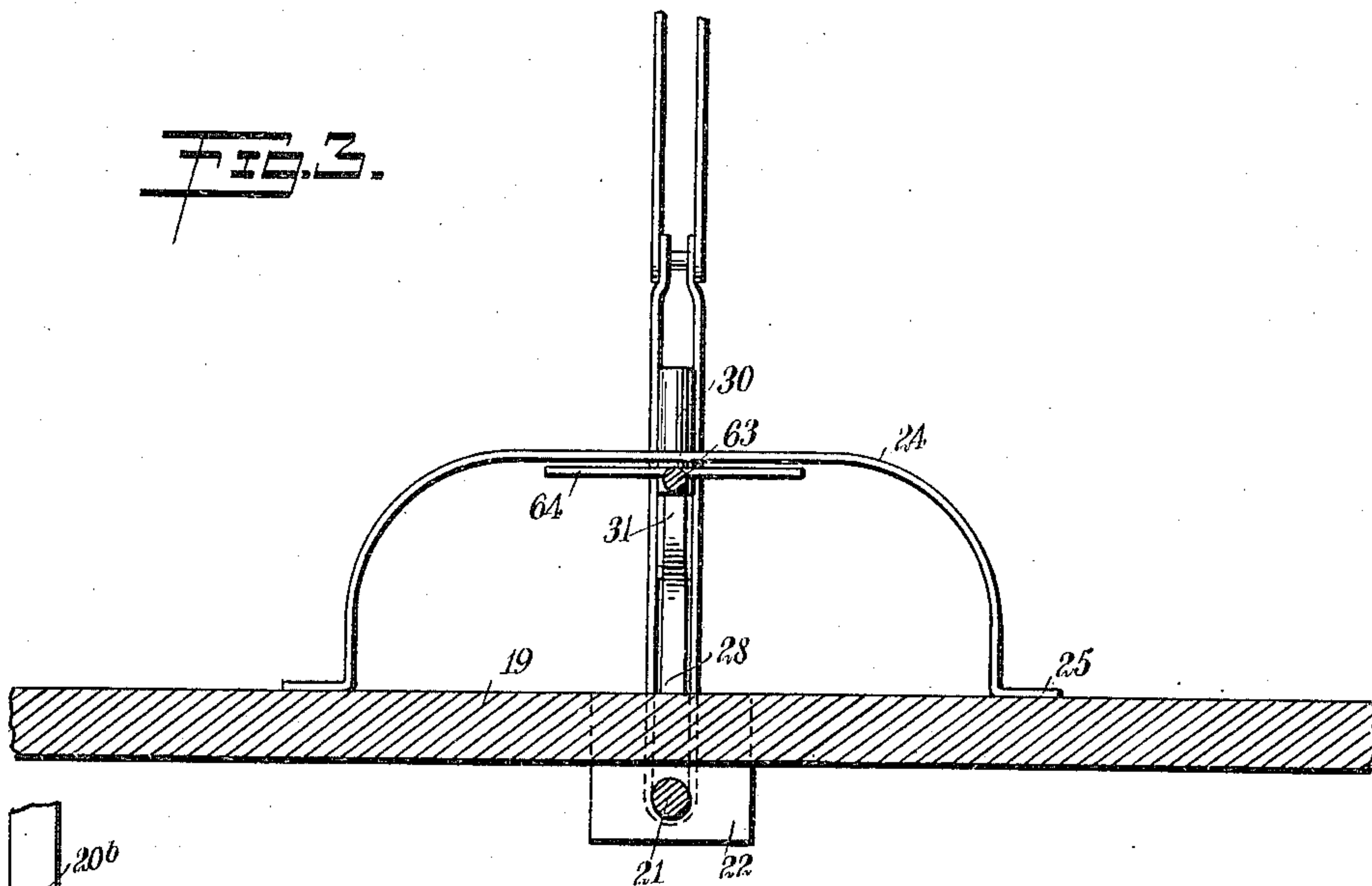
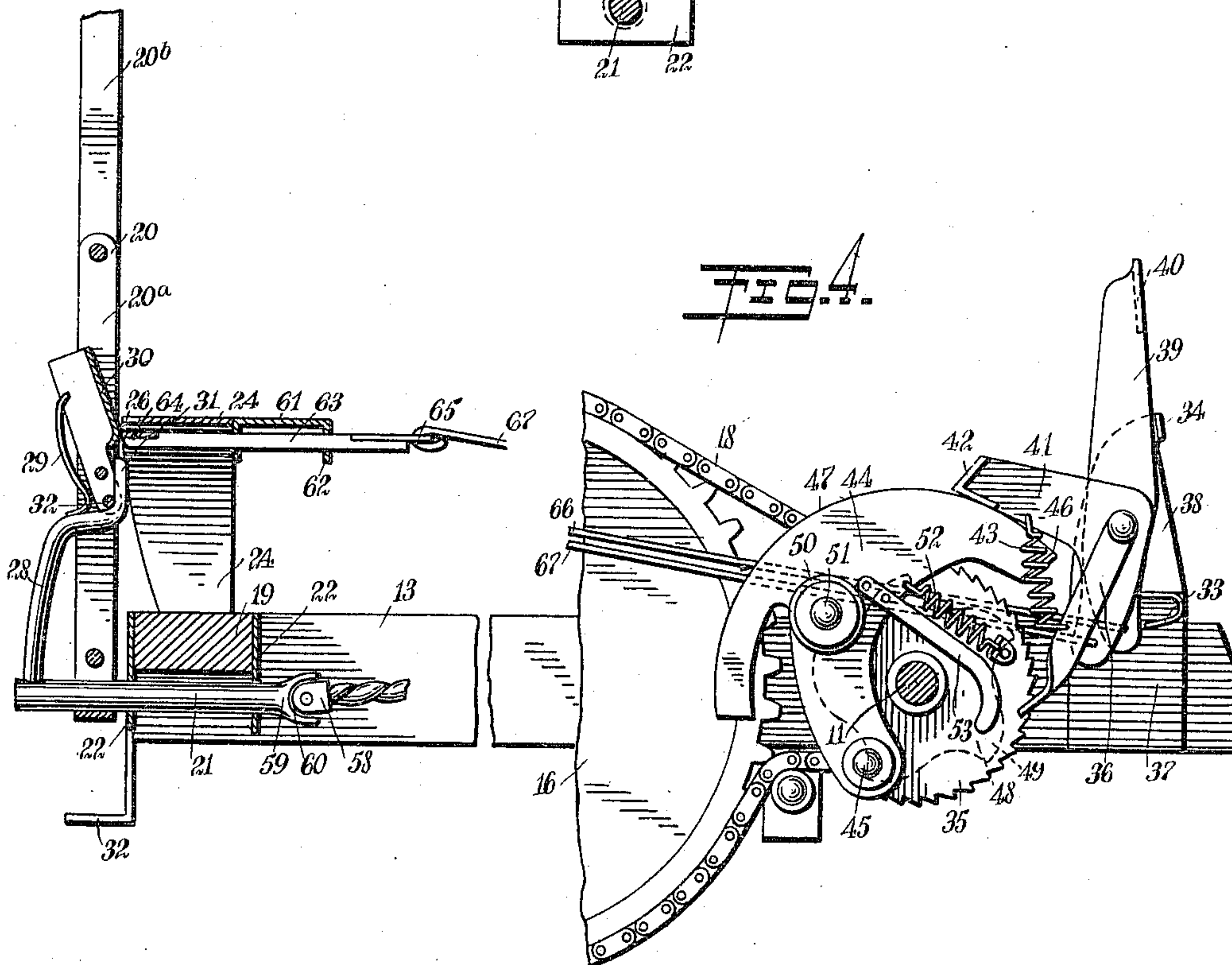


FIG. 4.



WITNESSES:  
G. Robert Thomas  
John K. Braehvogel

INVENTOR  
Lawrence R. Turner  
BY *Munroe*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

LAWRENCE RICHARD TURNER, OF LONG PINE, NEBRASKA.

## MARKER ATTACHMENT.

985,643.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed March 22, 1910. Serial No. 550,851.

*To all whom it may concern:*

Be it known that I, LAWRENCE R. TURNER, a citizen of the United States, and a resident of Long Pine, in the county of Brown and State of Nebraska, have invented a new and Improved Marker Attachment, of which the following is a full, clear, and exact description.

This invention relates to marker attachments, and has reference more particularly to devices of this kind used for automatically adjusting the markers of corn planters, and comprises improvements upon the marker attachment disclosed in my United States Patent No. 901,853, dated October 20, 1908.

The object of the invention is to provide a marker attachment of the class described, for use with corn and other planters, which is operable by the driving axle or other driving mechanism of the planter, by means of which the marker for indicating the positions to be occupied by rows of plants or hills, can be automatically disposed into a plurality of positions operative and inoperative, in which the construction is simplified by the reduction of the number of parts, and in which the marker arm is jointed, to eliminate the possibility of injury to the arm should the line attached thereto and holding it in position, be accidentally broken.

A further object of the invention is to provide a marker attachment of the class described, in which mechanism is provided for holding the marker in a plurality of operative positions, and in an inoperative position, which has means for locking the mechanism in an inoperative position, by means of which the marker can be automatically adjusted from the driving mechanism of the planter, and in which the lever controlling the device is connected with the mechanism for operatively connecting the marker arm and the driving mechanism, through the locking mechanism, so that if the connection between the lever and the locking mechanism is accidentally broken, the possibility of injury to the device is eliminated, as the lever cannot then be operated to effect its purpose.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this speci-

fication, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a plan view of a portion of the frame of a corn planter having an embodiment of my invention applied thereto; Fig. 2 is an enlarged longitudinal section on the line 2—2 of Fig. 1; Fig. 3 is an enlarged transverse section on the line 3—3 of Fig. 1; Fig. 4 is an enlarged longitudinal section on the line 4—4 of Fig. 1 having parts broken away, and showing the means for mounting the marker in position, and the means operable by the driving means of the planter, for controlling the marker; and Fig. 5 is an enlarged transverse section on the line 5—5 of Fig. 2.

Before proceeding to a more detailed explanation of my invention, it should be clearly understood that the general principles of operation, and the main structural features of the present device, are similar to those of the marker attachment disclosed in my United States Patent No. 901853. The improvements reside principally in structural details, which will be set forth at length hereinafter, and which tend to simplify the device, by eliminating unnecessary parts, and to render the attachment safer in operation, by obviating the possibility of injury to the device, should certain of the parts become broken or disarranged. The device can be used with corn or other planters which employ markers. These markers often consist of pivotally mounted members carrying implements for tracing lines on the ground, to indicate the positions to be occupied by the rows of plants or the hills of the same. A marking plow is usually employed for the purpose. When crops such as corn or the like are planted, the grains are generally inserted in the ground at predetermined intervals and in alinement. Unless the operator of the planter has some means for determining where these lines of seeds shall be positioned, it is a difficult matter to operate the planter so that the subsequent growth of the corn or other grain will be in the desired rows or alined hills. For this purpose, the planters are provided with markers which trace lines upon the ground, and thus indicate to the operator of the planter where the seeds have already been planted, and which thus provide him with means for guiding the imple-



ment. The markers are often of considerable weight, and therefore entail considerable labor when it is necessary to swing them from one position to another or to dispose them inoperatively. To obviate this extra work and the consequent loss of time, I provide means which are operable from the driving mechanism of the planter, for disposing the marker of the same in any one of a plurality of possible positions.

Referring more particularly to the drawings, I have shown, for example, the frame 10 of a corn or other planter having a transverse driving shaft or axle 11 carried by the wheels 12. The latter may be of any form, for example, as shown in the drawings, they may have the rims recessed to aid in covering up the seed which has been deposited and over which the wheels pass. The frame 10 includes a longitudinal member 13 intermediate the side frame members 14 and having a bearing in which the shaft or axle 11 is journaled. A second shaft 15 is rotatably carried by the member 13 and one of the members 14, and has a rigid gear or sprocket wheel 16 thereon. The gear wheel 16 is operatively connected by means of a chain 18, with a pinion or sprocket 17, loosely mounted upon the shaft 11. The frame has a rear transverse member 19 upon which the marker arm 20 is mounted by means of a spindle 21 rigid with the marker and journaled in suitable bearing plates 22 of the frame member 19. The marker, at the end has a disk or marker plow 23 which may be of any preferred or common form. The marker arm comprises a part 20<sup>a</sup> mounted upon the spindle 21, and has pivotally associated therewith a part 20<sup>b</sup> which carries the plow 23. A line 23<sup>a</sup> is secured to the marker, near the plow, and has its other end fastened to a suitable part of the planter. The line serves to hold the marker extended so that the plow is operative. Should the line be accidentally broken, so that the marker is deprived of support at the plow end, no injury will be occasioned, as the pivotal connection of the parts 20<sup>a</sup> and 20<sup>b</sup> permits the latter to swing backward and drag behind the planter until the same can be brought to a stop.

Adjacent to the marker, the member 19 has mounted thereon a U-shaped yoke 24, the ends of which form outwardly disposed toes 25, bolted or otherwise fastened upon the member 19. It has, near the middle, at the outer edge, a central notch 26, and at each side of the latter another, inclined notch 27. The part 20<sup>a</sup> of the marker is slotted and has mounted between the sides thereof a catch 30 adapted to engage the notches 26 and 27, and normally projected toward the yoke, by a spring 29. The spring is secured upon a rod 28 which extends from the outer end of the spindle 21,

toward the catch 30, and is inwardly offset through the slotted part 20<sup>a</sup> of the marker, the offset end 31 forming a stop to limit the movement of the catch engaged by a pin 32 extending transversely between the sides of the catch. The latter is formed from a plate or sheet folded upon itself, so that it is hollow, as is shown most clearly in Fig. 4.

When the marker is centrally disposed with respect to the yoke, the catch engages the notch 26 and serves to hold the marker in this central and inoperative position. The side notches 27, which are inclined to the edges of the notch 26, serve to engage the catch in case the catch should fail to slip into the notch 26 and the marker should thereupon tend to assume an operative position at one side or the other. Near the end of the yoke, the member 19 has stops 32<sup>a</sup>, which limit the downward movement of the marker in both directions, and which are engaged by the latter when in operative position, to trace indications or markings upon the ground.

Rigid with the sprocket 17 is a ratchet wheel 35 which is engaged by a pawl 36 movably mounted upon a support 37, at the end of the frame member 13. The support has an upward extension constituting an arm 38 having a stop 34 for a purpose to appear hereinafter. A lever 39 is pivotally mounted upon the extension 38, and has one end formed into a pedal 40. A bell crank lever 41 has a laterally disposed end 42, for a purpose which will appear hereinafter. The pawl 36 is connected by means of a spring 43 with the lever 41, and is normally held in engagement with the ratchet wheel 35, by the spring. The stop 34 limits the movement of the lever 39. The support has a downwardly and inwardly disposed extension 33, which constitutes a stop to limit the movement of the bell crank lever 41.

A dog 44 is pivoted by means of a suitable pin 45, upon the ratchet wheel 35, and has at the end remote from the pivoted end, a nose 46 adapted to engage the end 42 of the bell crank lever 41. The dog forms a curved guideway 47 along which the end 42 can travel, and by means of the bell crank lever 39 can be held inoperative, as will be shown hereinafter. Adjacent to the dog 44, the shaft 11 carries a rigid cam wheel 48 having a plurality of lobes or teeth 49, each of which is arranged operatively to engage a roller 50, mounted by means of a suitable pin 51 upon the dog 44, intermediate the ends thereof. The dog 44 is secured by means of a spring 52 to the ratchet wheel 35 at a point remote from the point of attachment by means of the pin 45. The spring 52 normally holds the dog in position such that the nose 46 of the same engages the end 42 of the bell crank lever 41. The dog has an arm 53 which is curved



partly about the shaft 11 and serves to limit the movement of the dog about its pivotal pin 45.

The gear wheel 16 has a crank pin 54, to which is operatively secured the end of a pitman 55. The latter has a longitudinal spiral bore 56, into which fits a correspondingly formed spiral stem 57. The latter, at the end remote from the pitman 55, has a head 58 which, with a suitably formed head 59 of the spindle 21, forms a universal joint 60. By means of this connection, the rotary movement of the gear wheel 16 serves to rotate the spindle about its longitudinal axis, and with the spindle, the marker 20.

The yoke 24 has an extension 61, provided with downwardly disposed guide ears 62, in which is movably arranged a slide 63. The slide, at the rear end has a transversely extended plate 64 adapted to be projected under the notches 26 and 27. At the other end, the slide has a double eye-member 65, one of the openings of which is connected by means of a link or rod 66 with the lower end of the lever 39. The other eye of the member 65 is connected by means of a rod or link 67, with the lower end of the bell crank lever 41. The provision of the double link connection constitutes a safeguard. If the single link used in the other form of my invention should break, it would still be possible to operate the pedal lever without releasing the marker, so that the device would be injured. With the present form of the attachment, however, if one of the rods or links breaks it is impossible to operate the bell crank 41 by means of the pedal lever, as the connection between the lever and the dog is through the locking member for the marker, *i. e.*, through the slide 63. The provision of the latter simplifies the construction materially, and does away with the locking mechanism employed in connection with the other form of my invention.

The driving shaft or axle 11 rotates continuously in one direction when the planter is being propelled forward in the course of its operation, and serves to drive the gear wheel 16 when the lever 39 is displaced to permit the operative engagement of the cam wheel 48 with the roller 50 of the dog 44. When the operator desires to change the position of the marker, he throws the lever 39 forward by pressing upon the pedals, and displaces the end 42 so that the spring 52 pulls the dog into a position such that the roller 50 is engaged by one of the lobes 49. As the cam wheel is rigid with the shaft 11 it turns the dog as it rotates, and the latter correspondingly actuates the pinion 17. The pinion, through the chain 18, drives the gear wheel, and the latter reciprocates the pitman 55. The stem 57 can not move in the direction of its length and owing to the spiral engagement of the stem with the pit-

man, the spindle 21 is rotated to swing the marker in one direction or the other. The movement of the lever 39 permits the end 42 to travel along the edge of the guideway 47 until the end of the latter is reached, whereupon the lever 39, under the influence of the spring 43, returns to its normal position and is again engaged by the nose 46 of the dog. The engagement of the pawl 36 with the ratchet 35 is such that the dog is free to turn in one direction and is prevented from a corresponding movement in the opposite direction. When the dog is stopped by the engagement of the nose 46 with the end 42, the cam lobe 49 which is in engagement with the roller 50 forces the same outward in a radial direction and swings the dog into an inoperative position, which permits the further rotation of the cam wheel without the corresponding actuation of the dog. The latter is held in an inoperative position by means of the pawl 36 and the ratchet 35, as is shown most clearly in Fig. 2.

The arrangement of the parts is such, that when the gear wheel 16 makes one-half of a revolution, the marker is moved from one operative position to the opposite operative position, that is, a quarter of a revolution of the gear wheel suffices to swing the marker through an arc equal, substantially, to one-quarter of a circle, that is, to move it from an operative to an inoperative position, or vice versa. The pinion and the gear wheel are so proportioned that the former makes a complete revolution when the gear wheel makes one-quarter of a revolution. The operation of the lever 39 moves the plate 64, which is normally retracted, so that the catch 30 is displaced from engagement with the notch 26; or one of the notches 27, should the marker be in an inoperative position. If it is desired to swing the marker from one operative position to the other opposite operative position, the pressure upon the lever 39 is maintained, so that the plate 64 is projected, while the marker is passing from one position to another, in order that the catch cannot come into operative engagement with one of the notches.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

1. In a planter, a movable marker, means for adjusting said marker through the driving mechanism of the planter, a movable member controlling said means, a device for locking said marker in position, an operating lever, an operative connection between said lever and said locking device, and an operative connection between said locking device and said member.

2. In a planter, a movable marker, a locking device for holding said marker in a predetermined position, a driving axle, an operative connection between said axle and



said marker, a dog controlling said connection, a pivoted member for holding said dog normally inoperative, an operating lever, a link operatively connecting said link and  
5 said locking device, and a second link operatively connecting said locking device and said member.

3. In a planter, a movable marker, a locking slide for holding said marker in a predetermined position, a driving axle, an operative connection between said axle and said marker, a dog controlling said connection, a pivoted member for holding said dog normally inoperative, an operating lever, a  
15 link operatively connecting said lever and said slide, a second link operatively connecting said slide and said member, a stop for limiting the movement of said lever, and a stop for limiting the movement of said  
20 member.

4. In a planter, a marker mounted to swing into a plurality of positions and having a catch, a member adapted to be engaged by said catch, to hold said marker in a predetermined position, means for swinging  
25 said marker, a movable member controlling said swinging means, and means operable by said member, for displacing said catch, said means rendering said member inoperative with respect to said catch.  
30

5. In a planter, a marker mounted to swing and having a catch, means for swing-

ing said marker, a member controlling said means, a member having a notch adapted to receive said catch to hold said marker in a  
35 predetermined position, a slide for displacing said catch from said notch, and an operative connection between said slide and said member controlling said swinging means, said slide when projected serving to prevent  
40 said catch from entering said notch.

6. In a planter, a marker mounted to swing and having a pivoted spring-pressed catch, a member having a notch adapted to receive said catch to hold said marker in  
45 an operative position, said marker having a stop for limiting the movement of said catch, a slide having an extension and operable to displace said catch from said notch, said extension, when said slide is projected, serving  
50 to guide said catch along said member and to prevent its entrance into said notch, means for swinging said marker, a member controlling said last-mentioned means, and an operative connection between said slide  
55 and said member.

In testimony whereof I have signed my name to this specification in the presence of subscribing witnesses.

LAWRENCE RICHARD TURNER.

Witnesses:

JNO. DE KOSTER,

J. S. WILSON,

RALPH EGGINK.