

F. FOLTIN.
PLOW.

APPLICATION FILED APR. 8, 1909.

953,325.

Patented Mar. 29, 1910.

3 SHEETS—SHEET 1.

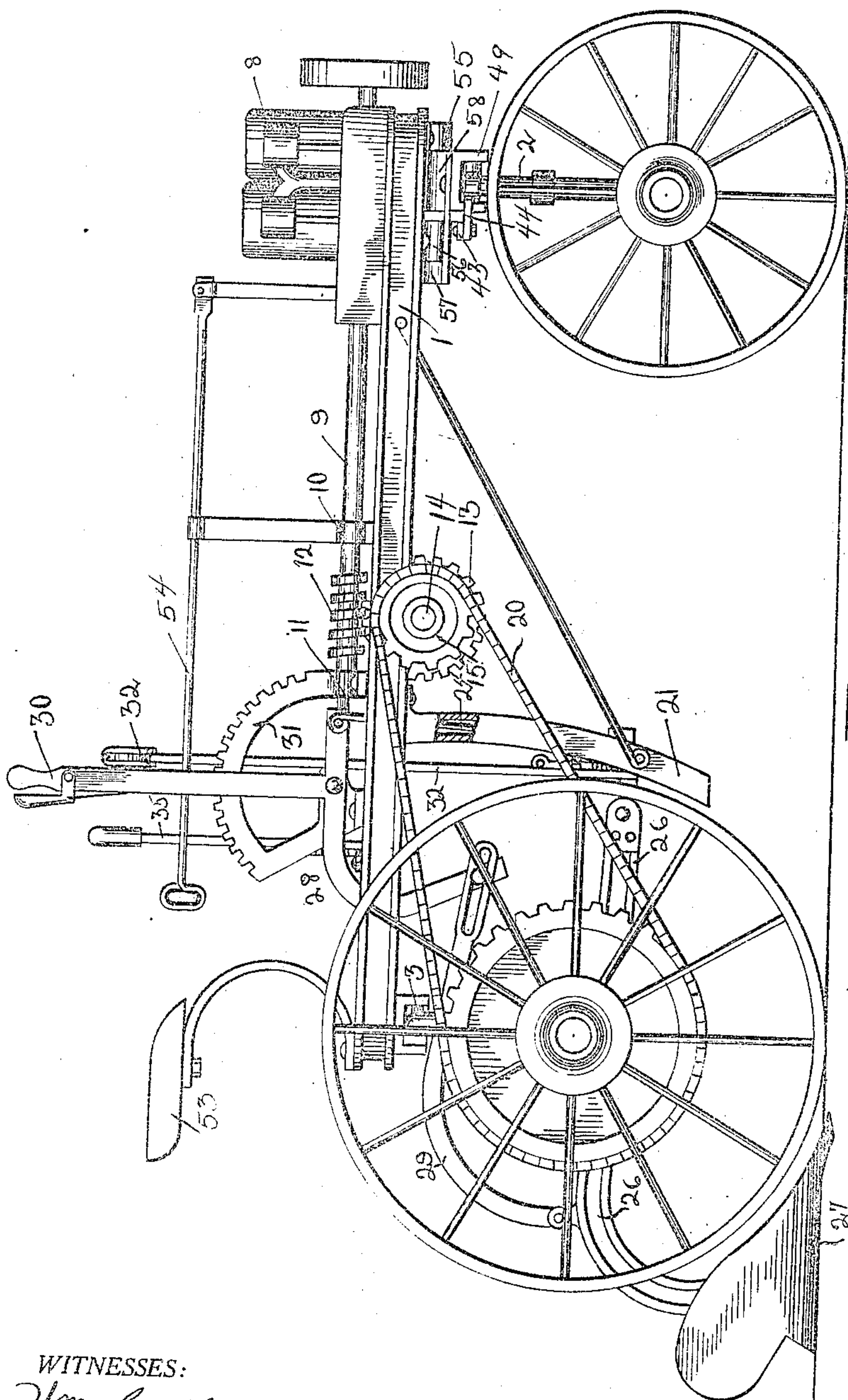


Fig 1

WITNESSES:

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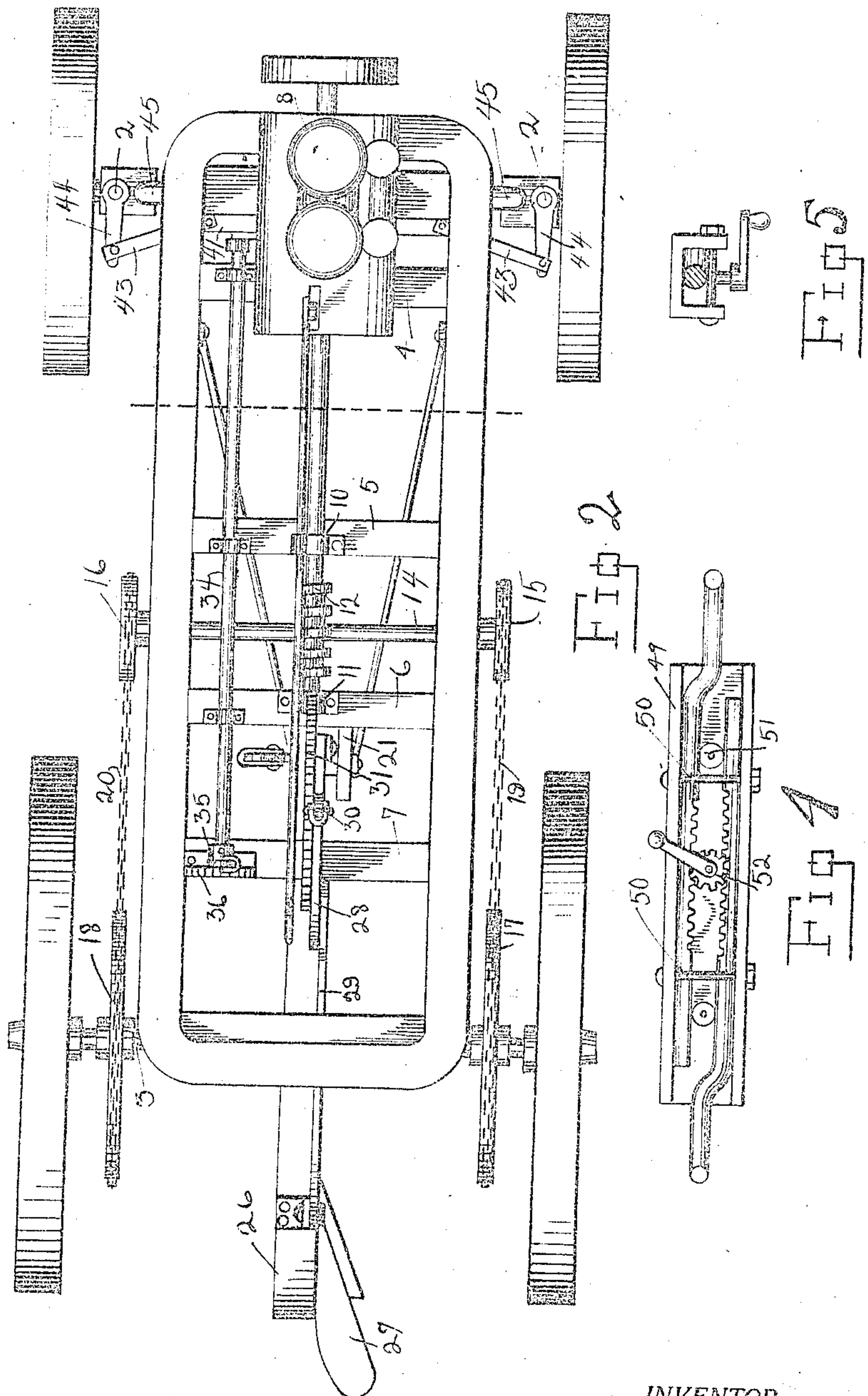
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

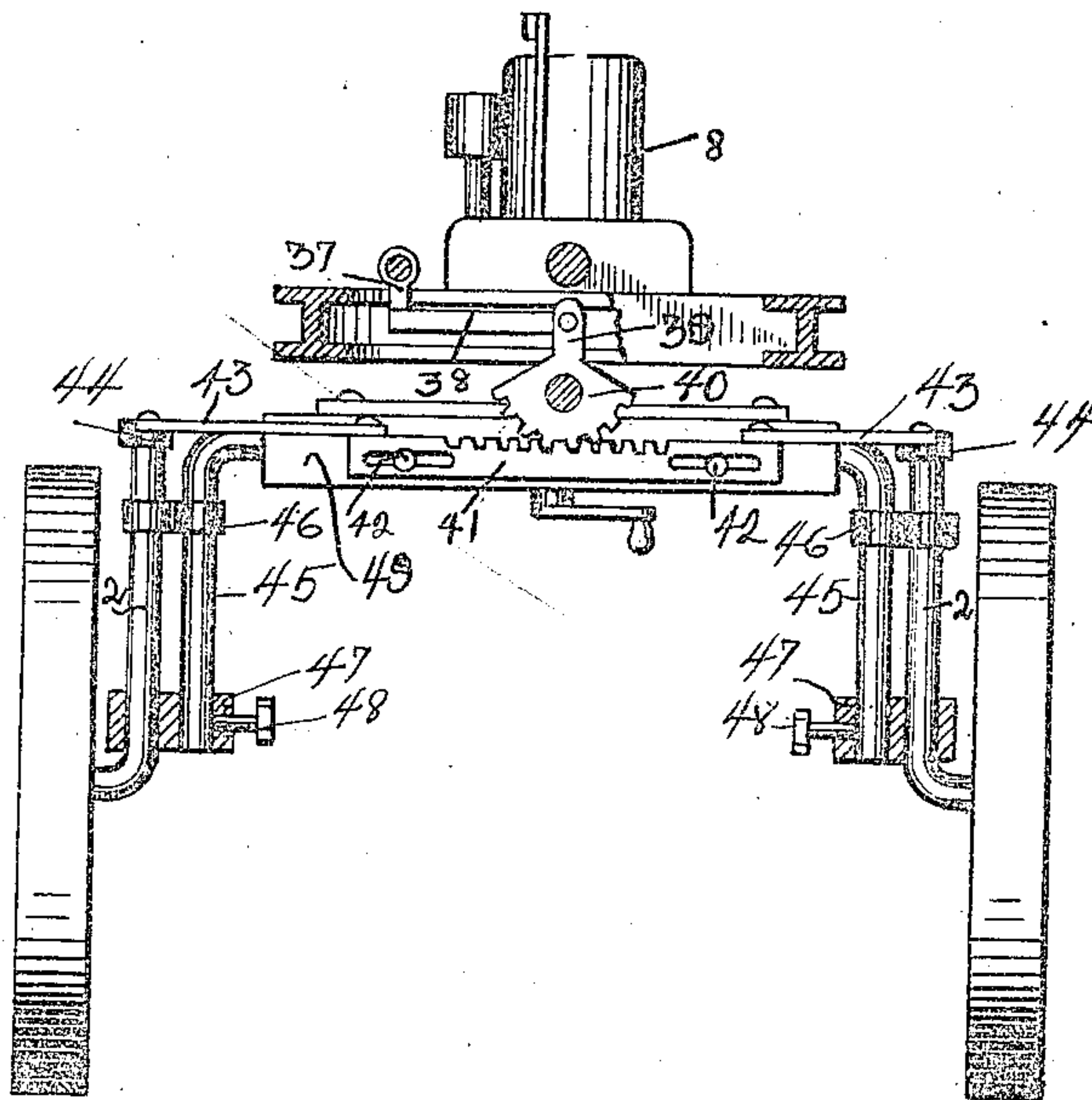


FIG 3

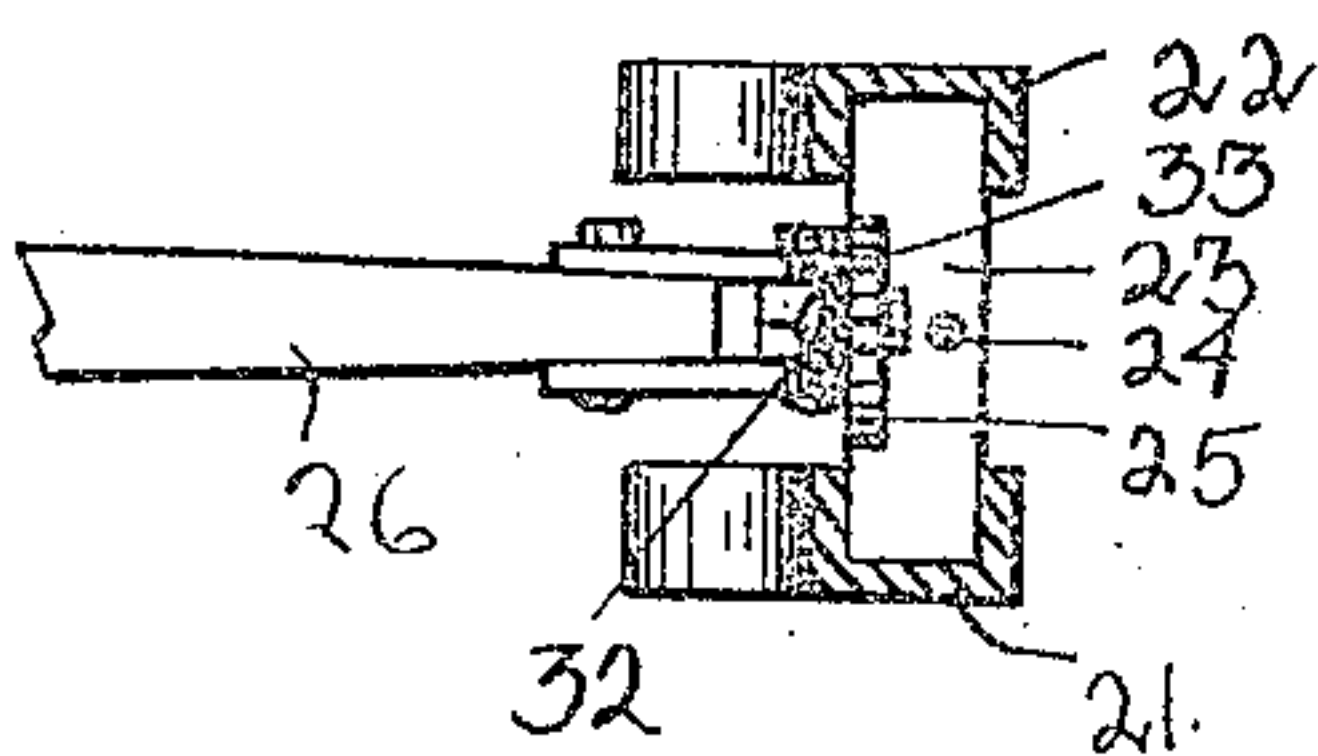


FIG 6

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UNITED STATES PATENT OFFICE.

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PLOW.

953,325

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Application filed April 8, 1909. Serial No. 488,772.

To all whom it may concern:

Be it known that I, FRANK FOLTIN, a citizen of the United States, residing at Houston, county of Harris, State of Texas, have invented certain new and useful Improvements in Plows, of which the following is a specification.

My invention relates to new and useful improvements in plows, and more particularly to such plows as are mechanically operated.

The object of the invention is to provide a device of the character described which carries its own motive means, and which is provided with its own steering, traction and feed mechanism; as well as one whose carrying wheels are laterally adjustable and whose supporting frame and the mechanism carried thereby are vertically adjustable on its axles.

Another feature resides in the provision of means for imparting to the plow-share a lateral, or rocking motion whereby when the same becomes embedded in the soil, it may be loosened from its bed, by the operator, through the operation of a hand lever, connected with the plow beam.

Finally the object of the invention is to provide a device, of the character described, that will be strong, durable, efficient, compact and one which will be easily operated and easily kept in repair.

With the above and other objects in view, my invention has particular relation to certain novel features of construction and operation, an example of which is given in this specification, and illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of my device, in its entirety. Fig. 2 is a plan view thereof. Fig. 3 is a sectional view, taken on the line *a—b* of Fig. 2, showing the front arch and axles, and the steering mechanism, and also showing, in detail, the method by which the frame is vertically adjusted. Fig. 4 is a detailed view of the connecting arch of the axles, from beneath, showing method of lateral adjustment. Fig. 5 is a sectional end view of the arch, showing adjusting means. Fig. 6 is a detailed plan view of the plow beam showing its attachment to an adjustable block whereby the movement of the plow is controlled.

Referring now, more particularly to the drawings, wherein like numerals of refer-

ence designate similar parts, in each of the figures, the numeral 1 refers to a supporting frame, which is composed of suitable side and end members and which is supported upon front and rear axles 2 and 3 which, in turn, are carried by suitable front and rear supporting wheels. The supporting frame 1 is provided with cross braces 4, 5, 6 and 7 for supporting the mechanism appendant thereon. The supporting frame carries an engine 8 which is designed to furnish the motive power for the plow. From this engine a drive shaft 9 extends rearwardly and operates in suitable bearings 10 and 11 carried by braces 5 and 6. This shaft is provided with a worm gear 12 which is adapted to engage gear wheel 13 which is rigidly mounted on shaft 14 carried by the supporting frame 1. This shaft 14 is revolvably secured to said frame by suitable bearings and extends on either side, beyond the frame, and carries, at its extremities, sprocket wheels 15 and 16 rigidly mounted thereon. These sprocket wheels are connected to sprocket wheels 17 and 18 rigidly mounted upon the hubs of the rear wheels of the plow, by means of sprocket chains 19 and 20, and are adjustable, laterally, thereon, so as to be readily kept in alinement with sprocket wheels 15 and 16. Thus a traction mechanism is provided for the plow.

The numerals 21 and 22 designate two suitably curved, downwardly extending, channel irons, which are secured to brace 6. Within the channels of these irons, a block 23 is adjustably secured by means of a rod 24. This block is designed to be raised and lowered by means of said rod and carries a segment 25 which serves as a bearing for the end of the plow-beam 26, which passes through said segment and is secured therein in any suitable manner. This segment also carries a rack for a purpose hereinafter set forth. This plow-beam extends rearwardly and curves downwardly and carries a share 27 of any desirable type. The rod 24 is secured, at its upper end to the front extremity of a shifting lever 28 which is pivoted to the plow-frame at a point intermediate the ends thereof. The rear end of this shifting lever is connected to the front end of the lifting lever 29, by means of a sliding hinge as shown in Fig. 1. The rear end of the lever 29 is attached to the plow beam 26, and is attached, at a point inter-

mediate the ends thereof, to the arch of rear axle 3 said attachment serving as a fulcrum for said lever. The lever 28 carries a suitable handle 30 which is held in any desired position by the usual rack-and-dog arrangement 31. By a backward manipulation of handle 30 the front end of the plow beam 26 is elevated, through the operation of rod 24 and block 23 and thus the point of the share is also elevated and the feed of the plow thus controlled. By a further rearward-manipulation of said handle the rear end of the lever 28 is depressed and the rear end of lever 29 raised, and the plow may thus be raised, entirely out of the ground, by the proper manipulation of said handle 30. I have also provided for a lateral or rocking motion for the plow share. This may be accomplished through the agency of a hand lever 32, which is rigidly secured to the front end of the plowbeam 26, and which has a movement transversely of the main supporting frame.

The steering mechanism comprises a rod 34, revolvably secured in bearings on braces 5 and 6 of the supporting frame, and which is provided with a hand lever 35 for rotating the same. This hand lever is provided with the usual rack-and-dog arrangement 36, for holding the same in any desired position. The front end of this rod carries an arm 37, rigidly attached thereto, and to the end of which, a link 38 is hinged. This link connects with the arm 39 of the segmental rack 40 which is pivoted to the framework of the plow. The steering mechanism also includes the transverse bar 41 which is secured to the arch 45, which supports the front axles, by means of capstan-screws, or bolts 42 which pass through slots in said bar, and also through said arch, thus allowing the bar a lateral movement. This bar is, also, provided with rack teeth designed to mesh with the segmental rack 40, and to each end of said bar a link 43 is hingedly attached. These links also have hinge connections with rearwardly-extending arms 44, carried by the axles of the front or guide wheels of the plow, and rigidly attached thereto, as is more accurately shown in Figs. 2 and 3. It is obvious that, by a manipulation of hand lever 35, the rod 34 will be turned and the segmental rack 40 will, through the operation of arm 37 and link 38, be caused to rotate on its pivotal attachment to the framework. Any movement of the rack 40 will be transmitted to bar 41 and through link 43 and arm 44 to the main guide wheels. A simple and efficient steering mechanism is thus provided.

I desire to call special attention to the form of axle shown. Each guide wheel has its own axle 2 and these axles are connected by a suitable, laterally adjustable arch 45. This arch is secured to said axles by means

of ties 46 and 47 which are integral with the axles, but through which the arch may slide, vertically. The ties 47 are provided with set screws 48, which are provided for the purpose of engaging with said arch and securing the same at any desired point of vertical adjustment. The lateral adjustment of this arch is provided for by the mechanism shown in detail in Figs. 4 and 5, in which the numeral 49 refers to a brace of channel iron within the channel of which the members of the arch are secured by cross-bolts 50. These members play upon rollers 51 located therebetween and the inner sides of said members are provided with rack teeth which mesh with corresponding teeth of a pinion 52 which carries a hand crank. It is obvious that the arch can be adjusted laterally by merely turning said crank. The rear axles 3 are connected to an arch, substantially similar, in all respects, to the arch 45, and is vertically adjustable on said axles, as well as having the lateral adjustment above described. By reason of this lateral adjustment, the plow can be made to accommodate itself to rows of plants of varying distances from each other; and by reason of the vertical adjustment of the arches the plow may be made to accommodate itself to any character of surface, whether level or sloping. The supporting frame carries also a seat 53 for the operator and a conveniently located throttle lever 54 by means of which the engine is controlled.

Provision is made whereby the main supporting frame may have a rocking motion on the front arch. This end is accomplished by means of bearings 55 and 56 which extend downwardly from the main frame, one in front and the other in the rear, of said arch and also a bearing 57 which is carried by braces which extend rearwardly from the arch. These bearings are in alinement with each other and also in alinement with a bearing 58 which extends upwardly from arch 45 and upon which the supporting frame rests. A linch-pin passes through all of these bearings and is securely keyed therein and thus the supporting frame is secured firmly to the front arch but at the same time is allowed a free rocking motion thereon.

A plow constructed in accordance with the description above set out, will be found to be not only compact and practical; but also will be easily operated and readily adapted to the cultivation of various crops, irrespective of the width of the rows or the varying condition of the surface of the land to be cultivated.

What I claim is:—

1. In a plow of the character described a vertically and laterally adjustable supporting frame and carriers therefor, a share beam suspended from said frame and share carried thereby; a guideway, extending

downwardly from said frame; a block adapted to have a vertical movement in said guideway and having connection with the said beam and means for elevating and lowering said block.

2. In a device of the character described a supporting frame and carriers therefor; a beam suspended therefrom; a share carried by the beam; a guideway carried by the frame for controlling the vertical movement of said beam; a block adapted to move in said guideway and having connection with said beam and means for controlling the movement of the block.

3. In a device of the character described a supporting frame and carriers therefor; a beam suspended therefrom; a share carried by the beam; an adjusting block secured to said beam; a guideway in which said block operates; means for controlling the movement of said block in the guideway and a laterally movable manual lever secured to said beam for imparting a rotative motion thereto and a consequent lateral movement to the share.

4. In a device of the character described in combination a supporting frame and carriers therefor; the means for adjusting said frame; the beam suspended therefrom; the downwardly extending channel carried by the frame; the block connected to the beam and adapted to slide vertically in the chan-

nel; the manual lever provided with oppositely extending arms one of which is connected to said block by means of a suitable connecting rod and the other of which is connected to the rear end of said beam; and a laterally movable manual lever connected to said beam for imparting a lateral movement to the same.

5. In a device of the character described in combination with a supporting frame and carriers therefor; a share supporting beam; a lifting lever secured to said beam and at a point intermediate the ends thereof to said frame; a shift lever pivoted to said frame and having two arms, one of which is hingedly secured to the other end of said lifting lever for actuating said lever and beam; a downwardly extending channel carried by the frame; means connected to said beam and adapted to slide vertically in the channel; a connecting rod for connecting said means to the other arm of said shift lever and a laterally movable manual lever connected to said beam for imparting a rocking movement to the same.

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

FRANK FOLTIN.

In the presence of—
WM. A. CATHEY,
GLYNN DAVIS.