W. H. DAWKINS & T. G. DOROUGH.

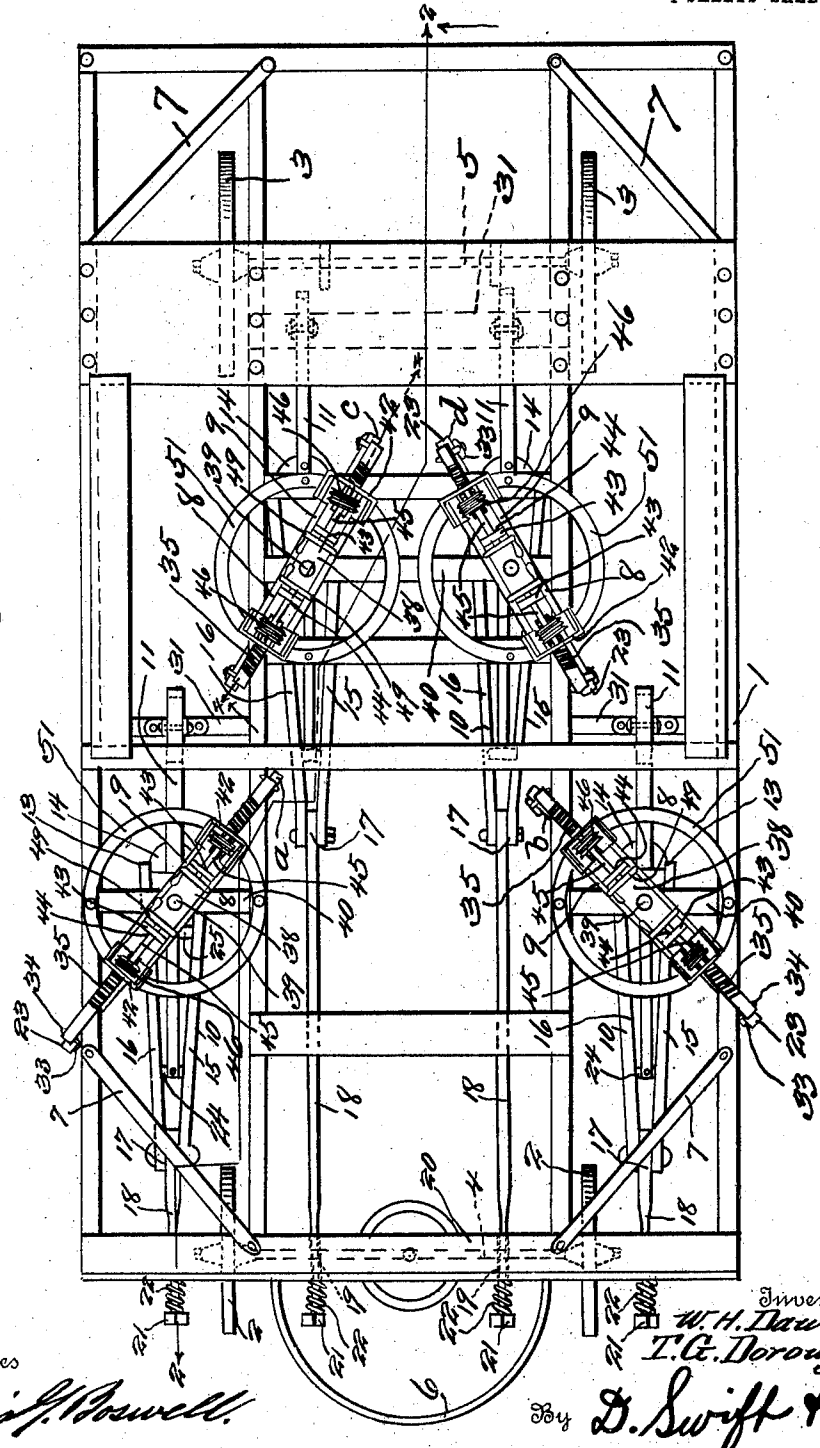
ROAD GRADING MACHINE.

APPLICATION FILED DEC. 8, 1909.

980,612. Patented Jan. 3, 1911.

4 SHEETS—SHEET 1.

Fig. 1.



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4 SHEETS—SHEET 2.

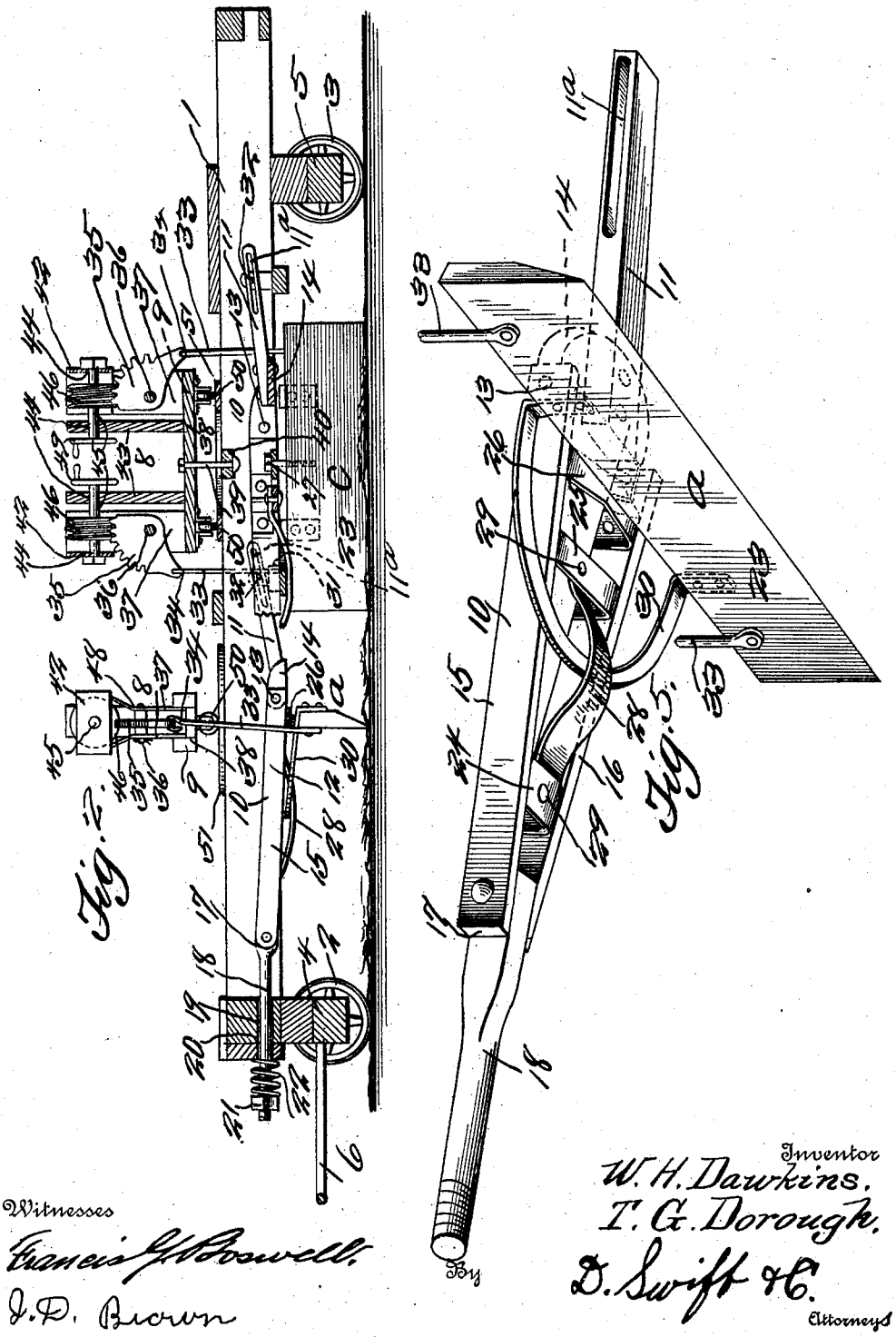

Fig. 5.

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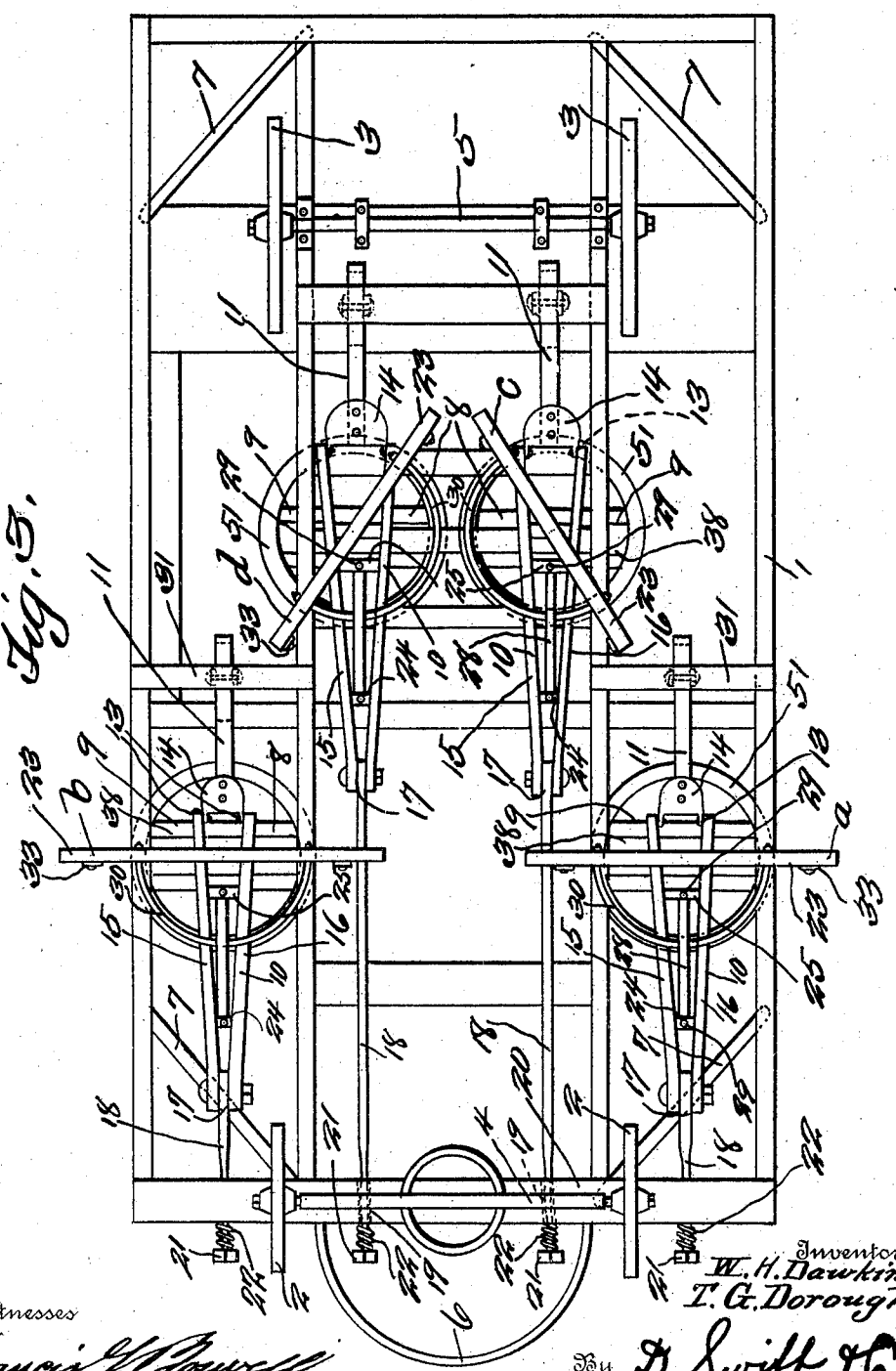
4 SHEETS—SHEET 3.

Fig. 5.



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4 SHEETS—SHEET 4.

Fig. 4.

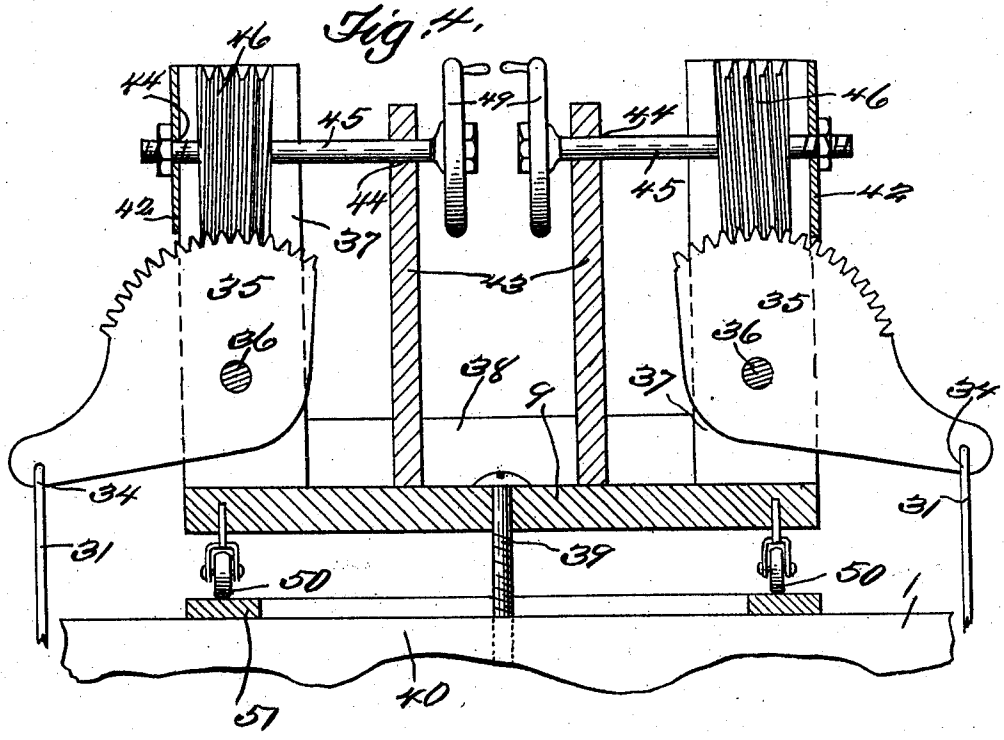
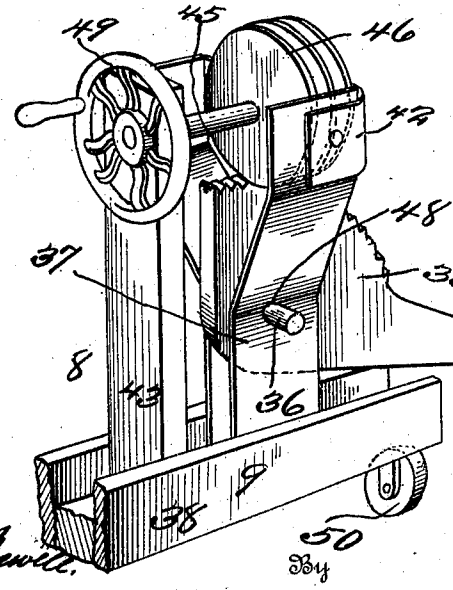


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM H. DAWKINS AND TRANIS G. DOROUGH, OF ROYSTON, GEORGIA.

ROAD-GRADING MACHINE.

980,612. Specification of Letters Patent. Patented Jan. 3, 1911.

Application filed December 8, 1909. Serial No. 532,136.

To all whom it may concern:

Be it known that we, WILLIAM H. DAWKINS and TRANIS G. DOROUGH, citizens of the United States, residing at Royston, in the county of Franklin and State of Georgia, have invented a new and useful Road-Grading Machine; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention about to be set forth and claimed, belongs to the art of road grading machines, and it pertains more particularly to an apparatus of this design having a plurality of transversely and diagonally disposed scraper-blades, which are adjustable with regard to the carriage or frame of the apparatus, which is the main object of the invention.

A further object of the invention, is the provision of means for allowing the scraper-blades to yield bodily when being oscillated upon their pivots with respect to the said carriage; and further to provide means for guiding the blades during their actions.

In the exposition of this specification, a particular design of machine is adhered to, but the invention is not to be confined to this special design. Its reduction to practice may require changes and alterations which the right is claimed to make, provided such changes and alterations are comprehended by the appended claim.

The invention contemplates various other objects and detail construction of parts, which will be hereinafter set forth, and pointed out in the appended claim.

Referring to the drawings: Figure 1 is a top plan view of the road grading machine, showing the means for manipulating the scraper-blades. Fig. 2 is a sectional view upon line 2—2 to one side of the center of the machine, showing the detail structure of the side scraper-blade. Fig. 3 is a bottom plan view of the machine showing the guiding means for the scraper-blades. Fig. 4 is a transverse sectional view upon line 4—4 of Fig. 1. Fig. 5 is a perspective view of the two part frame (the two parts thereof being pivoted together) for supporting the scraper-blades. Fig. 6 is a perspective view of the means for manipulating the said blades.

In regard to the illustrations accompanying this specification 1 denotes the frame or platform of the machine (which is rectangular in contour) provided with fore and aft wheels 2 and 3. These wheels are journaled upon axles 4 and 5, which constitute the running gear of the machine.

The rear axle is stationary, while the forward axle is capable of oscillation in order to guide the machine. A suitable equalizer (not shown) may be attached to the forward axle, by means of the bail shaped member 6. The said frame or platform is braced and strengthened by the angularly disposed bars 7, shown in Fig. 1.

The frame or platform is provided with a plurality of scraper-blades, one upon each side thereof and two in the center to the rear of the side blades, (which are designated respectively by the letters *a*, *b*, *c*, and *d*) the structures 8 for supporting and enabling the manipulation of each blade are similar in detail. Each structure 8 comprises an upper and lower frame 9 and 10 (which are so designed as to have movements characteristic to the functions to be performed).

The lower frame consists of two parts 11 and 12, (which are pivoted together, as at 13, through the medium of the plate 14) the part 12 embodies two bars 15 and 16, (which are arranged at angles to one another to form an apex 17) between which bars a rod 18 is fixed. This rod 18 extends through an aperture 19 of the end piece 20 of the frame 1, and threaded upon the extremity thereof is a nut or member 21, between which and the end piece, a coil spring 22 is interposed to allow the two parts 11 and 12 to yield, as the scraper-blade 23 traverses over the road. Secured between and to the bars 15 and 16, are U-shaped plates 24, 25, and 26, which tend to strengthen the bars. To the plate 26 the scraper-blade 23 is pivoted, by means of the bolt 27. While to the plates 24 and 25, an arched bar 28 is riveted, bolted or otherwise secured as at 29. This arched bar 28 acts as a guide member for the semi-annular segment ring 30, carried by the scraper-blade, in order to guide the said blade. The part 11 is provided with a longitudinal slot 11^a, through which the pin 32 extends, which pin is carried by the ears 31^a of the bar 31.

To each end of the scraper-blade connecting rods 33 are attached, the upper ends 34 of which are connected to worm segments

35 (which are journaled upon shafts 36 of the standards 37 of the upper frame 9). This upper frame 9 consists mainly of a pivoted trough shaped carriage 38, which is mounted upon a pivot bolt 39. This bolt projects upward from a cross bar 40 of the frame or platform 1. The carriage 38 has projecting upwardly from each end, the metallic standards 37, the ends of which are connected together by the bars 42. Standards 43 extend upwardly from the carriage and between the standards 37. Journaled in bearings 44 of the standards 43 and the bars 42, are shafts 45 with which the worm wheels 46 are rotatable. Mounted upon the shafts 36 (which are journaled in bearings 48 of the standards 37) are the worm segments 35, which are engaged by the worm wheels 46. Movable with the shafts 45 are hand wheels 49, by the manipulation of which the worm wheels are rotated, which in turn oscillate the segments 35, in order to tilt the scraper-blades in the manner desired. Each scraper-blade and the parts of its structure 8 may be independently and separately operated, as will be obvious.

Each carriage 38 has projecting downwardly therefrom, (at each end thereof) anti-frictional members 50 (which engage the annular ring or track 51) so as to obviate (to a degree) the friction.

The various scraper-blades may be adjusted vertically (when desired) by the nuts or members 21. The side scrapers may be thrown transversely and horizontally of the frame or platform 1, or at inclinations by the manipulation of the carriage, while the central or rear scraper-blades may be not only adjusted angularly with regard to the said frame 1, but also vertically.

From the foregoing, the essential features, elements and the operation of the device, together with the simplicity thereof, will be clearly apparent.

Having thus fully described the invention, what is claimed as new and useful is:—

In a road grading machine, a platform frame, a supplemental frame mounted thereon, said supplemental frame comprising two parts, longitudinal yielding means for one of the parts, one of said parts comprising two angularly arranged members converging toward one another at their ends, a curved plate carried by and fixed to the other part and having pivotal connections with the free ends of said members, one of said parts having a longitudinal slot therein, means for pivoting the slotted end of one of the parts to the platform frame, three U-shaped members arranged between the angularly arranged members, a scraper blade pivoted to one of the U-shaped members and having a semi-annular ring, a bowed guide strip connected to the other two U-shaped members for guiding the semi-annular ring, and means for adjusting and manipulating the blade, as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM H. DAWKINS.
TRANIS G. DOROUGH.

Witnesses:
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ERNEST F. RAY.