

A. L. STAUFFER.
ICE SAWING MACHINE.
APPLICATION FILED NOV. 15, 1908.

935,866.

Patented Oct. 5, 1909.

2 SHEETS—SHEET 1.

FIG. 3—

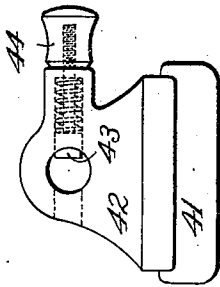
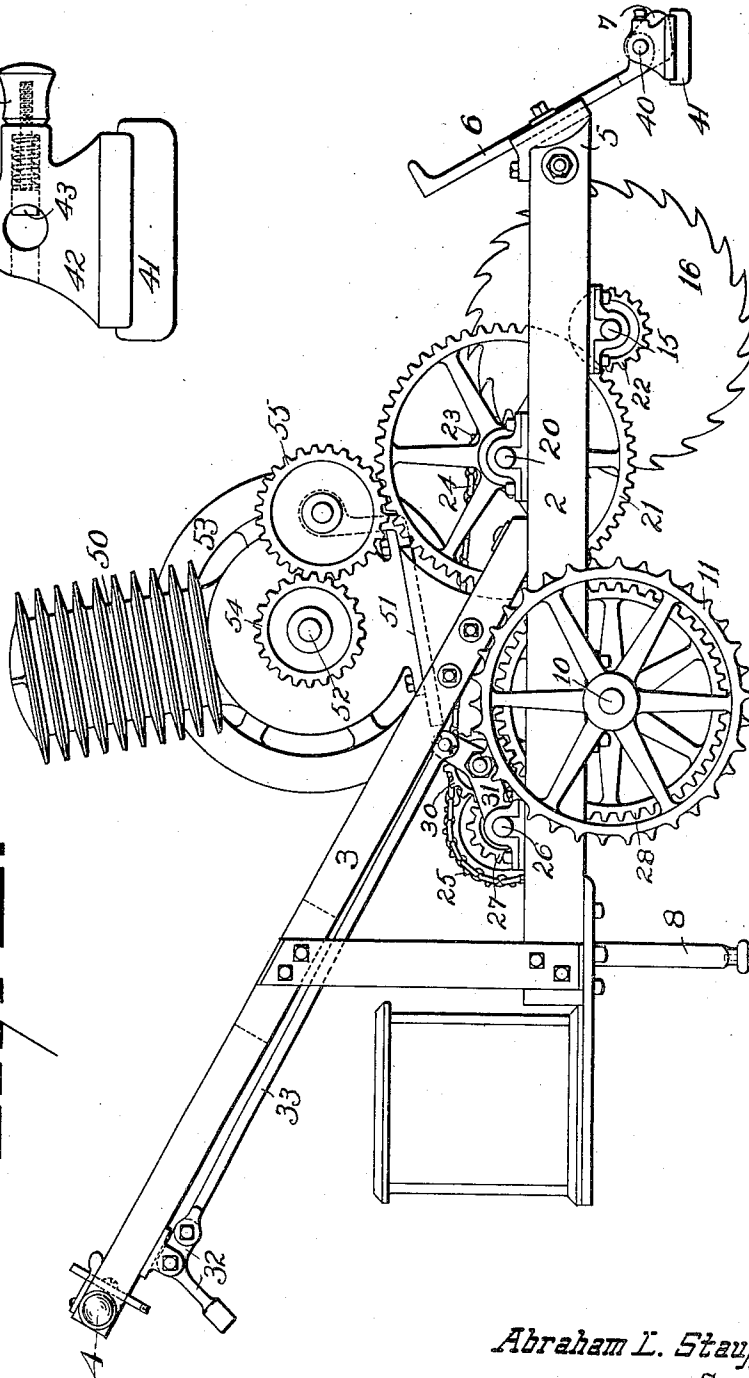


FIG. 1—



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Inventor

Witnesses
Charles P. Richer.
D. M. Stewart

By

[Signature]

Attorneys

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2 SHEETS—SHEET 2.

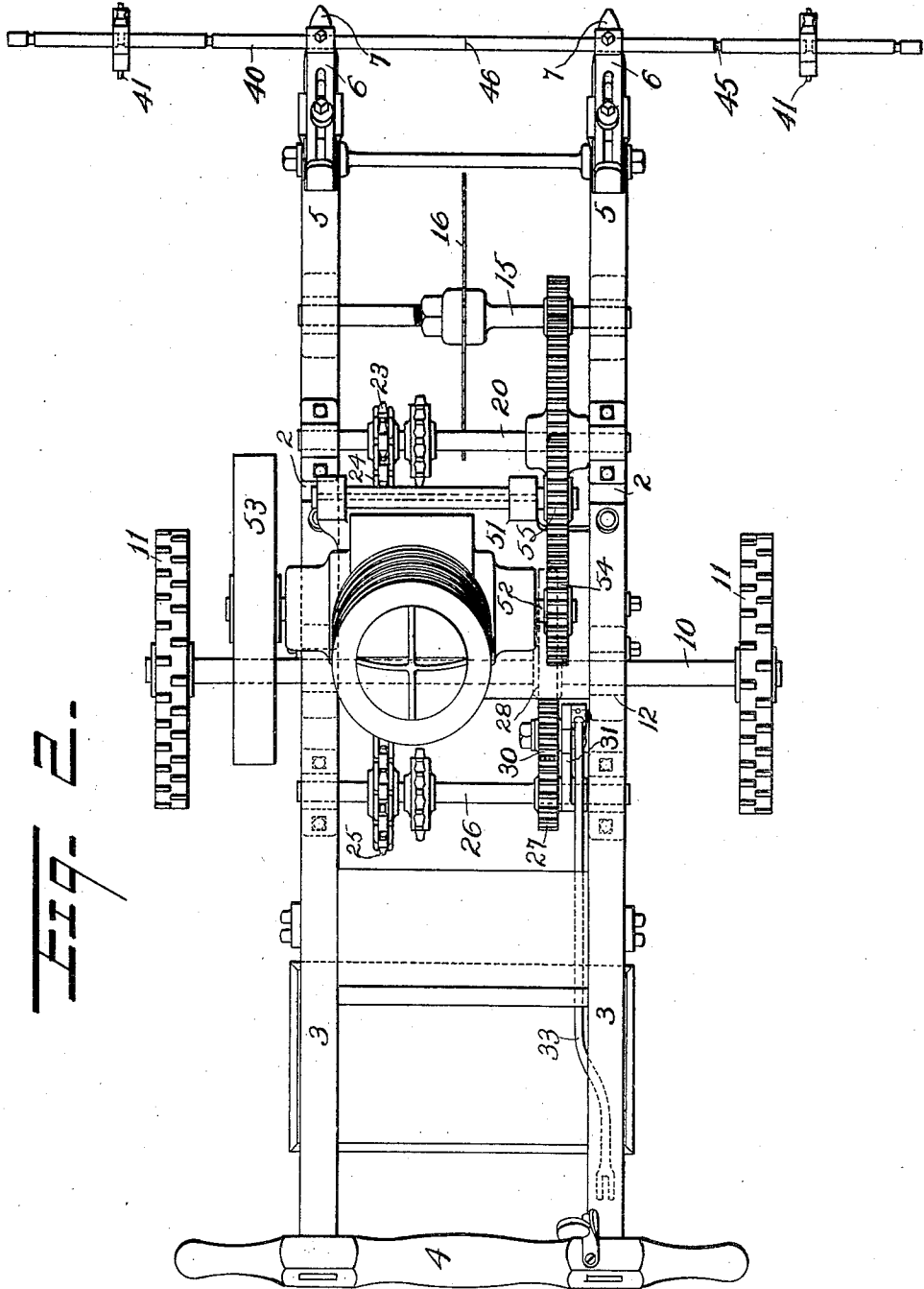


Fig. 2.

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UNITED STATES PATENT OFFICE.

ABRAHAM L. STAUFFER, OF STEVENS, PENNSYLVANIA.

ICE-SAWING MACHINE.

935,866.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed November 15, 1906. Serial No. 343,485.

To all whom it may concern:

Be it known that I, ABRAHAM L. STAUFFER, a citizen of the United States, and a resident of Stevens, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Sawing Machines, of which the following is a specification.

My invention relates particularly to ice-sawing machines of the class shown in my prior patent No. 287,883, issued November 6th, 1883; and it consists in certain improvements in construction and in the coöperative arrangement of the parts, as fully described in connection with the accompanying drawings and specifically pointed out in the claims.

Figure 1 is a full side elevation of a complete machine embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a separate enlarged view of one of the swinging gages.

The frame of the machine is made up of parallel horizontal members 2, 2, with upwardly inclined rearwardly extending members 3, 3, connected at their ends by a handle bar 4. At the front ends 5, 5, of the horizontal members are adjustably secured vertically slotted guide feet 6, 6, the lower ends 7, 7, of which bear upon the surface of the ice during the cutting operation to limit the depth of the saw cut as hereafter described. Near the rear end of the frame is provided a fulcrum leg 8 upon which the weight of the machine is thrown, by bearing down upon the handle bar 4, to turn it as required at the end of a cut. Between the forwardly located adjustable guide feet 6, 6, and the rearwardly located fixed fulcrum leg 8, the coöperating mechanisms are mounted as will now be described. The traction shaft 10, having suitable wheels 11, is mounted in bearings 12 on the frame just forward of the fulcrum leg 8; and the saw-shaft 15, with saw 16 fixed thereto, is similarly mounted just rearward of the front guide feet 6. Intermediate of these traction and saw shafts is mounted a common drive shaft 20 therefor; said shaft having a gear wheel 21 meshing with a pinion 22 on the saw shaft, and a sprocket wheel 23, with a drive chain 24 thereon extending rearward to a sprocket wheel 25 on a countershaft 26, through which latter the traction-shaft 10 is driven. To provide however for throwing the traction shaft into service and out of service as de-

sired, the gear wheel 27 on countershaft 26 is arranged to gear indirectly with the toothed wheel 28 of the traction shaft, through a pinion 30 which is mounted in a swinging frame 31 on the countershaft, so as to be moved into or out of mesh with the wheel 28; this engaging and disengaging movement of the swinging pinion 30 being conveniently effected, as shown, through the medium of a bell-crank lever 32 mounted on the inclined frame member 3 adjacent the handle bar and connected to the frame 31 by a rod 33. Suitable locking means are provided as indicated for holding the lever 32 in engaging or disengaging position.

The vertically slotted guide feet 6, 6, are adjusted upon the forward ends of the frame members 2, 2, as required to produce a desired depth of saw cut. When thus adjusted the forward portion of the machine is carried upon their lower ends 7, 7, while the saw is cutting to the proper depth. To provide for uniformly spacing the cuts so as to automatically produce ice-blocks of uniform size, I employ a transverse gage-rod 40, passed through openings in the guide-feet 6 and adjustably clamped thereto, in connection with a pair of gage-plates 41 mounted thereon and adapted, when turned into operative position, to enter and ride in a previously made saw cut. The shank portions 42 of each of these gages, is provided with an opening for the passage of the gage-rod 40, and with a spring-pressed pin 43 normally projected into said opening and having a screw-head 44 by means of which it is withdrawn. The rod 40 is formed, as shown, with a series of three circumferential grooves 45, equally spaced on either side of the middle point 46 of the rod, which is set in line with the saw 16; and the gages 41 are rotatably engaged in either of these grooves, by means of their pins 43, the groove selected determining the spacing of the cuts, and one gage only being turned into operative position while the other is swung out of service until the machine is turned.

The drive-shaft 20 may be arranged to be operated manually, but in the preferred construction shown I provide for employing in connection with the traction and saw mechanism already described, a suitably mounted motor 50, indicated as an ordinary gasoline engine. This engine is carried upon a platform 51 rigidly secured to the frame members; and its shaft 52 is provided with a fly-

wheel 53, and with a pinion wheel 54 which is arranged to drive the drive-shaft 20 through an idler gear 55 carried in bearings provided upon the platform 51. The latter is located horizontally between the drive-shaft 20 and the traction countershaft 26, and at such a height relative to said shafts as to permit of the passing of the connecting drive-chain 24 below the platform; thus providing for the required coöperation of the different mechanisms described, in a practically convenient manner and with a proper distribution of weight.

In starting the machine the guide feet 6 are set at proper height above the surface of the ice, the traction countershaft 26 is thrown out of gear by operation of the bell-crank lever 32, and the saw is then run until it has cut to the desired depth and the weight rests upon the guide-feet 6. The traction shaft being now thrown into operation as described, a straight-away cut is made to the end, when the saw is raised by bearing down upon the handle-bar 4, the machine turned upon the fulcrum foot 8, and the described operation repeated; one of the gages 41, in subsequent cuts, being set into engagement with a previous cut to automatically maintain the proper spacing as already described.

To provide for varying the speed at which the machine travels, relative to the speed of the saw, as is desirable for different depths of cuts and varying conditions of the ice, sprocket wheels of different sizes are preferably provided, as indicated, to which the drive-chain may be adjusted as required.

Modifications of the specific mechanisms

shown may of course be readily made, without departing from the invention.

What I claim is:—

1. An ice sawing machine comprising a frame with parallel horizontal members and inclined handle members, guide-feet adjustably secured to the forward ends of said horizontal members, and a fulcrum leg at the rear portions thereof, a saw shaft rearwardly adjacent said guide feet, a traction-wheel shaft forwardly adjacent said fulcrum leg, an intermediate drive-shaft arranged in gear with said saw-shaft, a chain-driven countershaft operatively connecting said drive-shaft and traction-wheel shaft, a swinging pinion arranged to throw said countershaft into or out of gear with the traction-wheel shaft, an operating lever on said handle members connected to said swinging pinion, and mechanism for operating said drive-shaft, substantially as set forth.

2. In an ice sawing machine having vertically adjustable guide feet at the forward end thereof, a transverse gage-rod secured to the lower portions of said guide-feet and provided with circular grooves adjacent the opposite ends thereof, and gage plates having perforated shank portions rotatably strung upon said rod and provided with spring-projected pins engaging said grooves, substantially as set forth.

In testimony whereof, I affix my signature, in the presence of two witnesses.

ABRAHAM L. STAUFFER.

Witnesses:

GEO. J. ROOT,
SAMUEL M. FRY.