

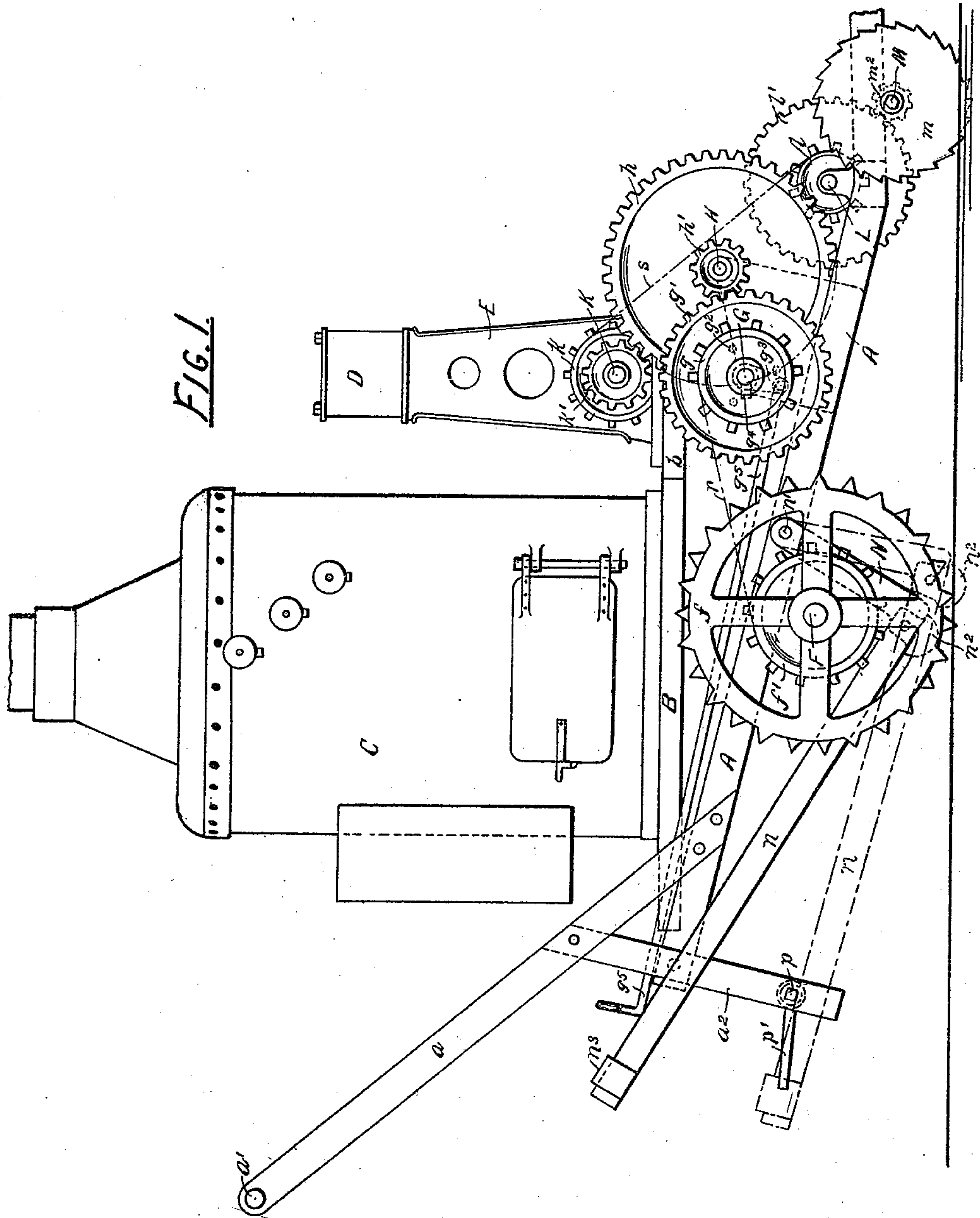
(No Model.)

2 Sheets—Sheet 1.

A. L. STAUFFER.  
ICE SAWING MACHINE.

No. 438,651.

Patented Oct. 21, 1890.



WITNESSES  
*Ed. A. Kelly.*  
*Edward F. Kendall.*

*Abraham L. Stauffer*  
INVENTOR  
*W. J. Stewart*  
Attorney

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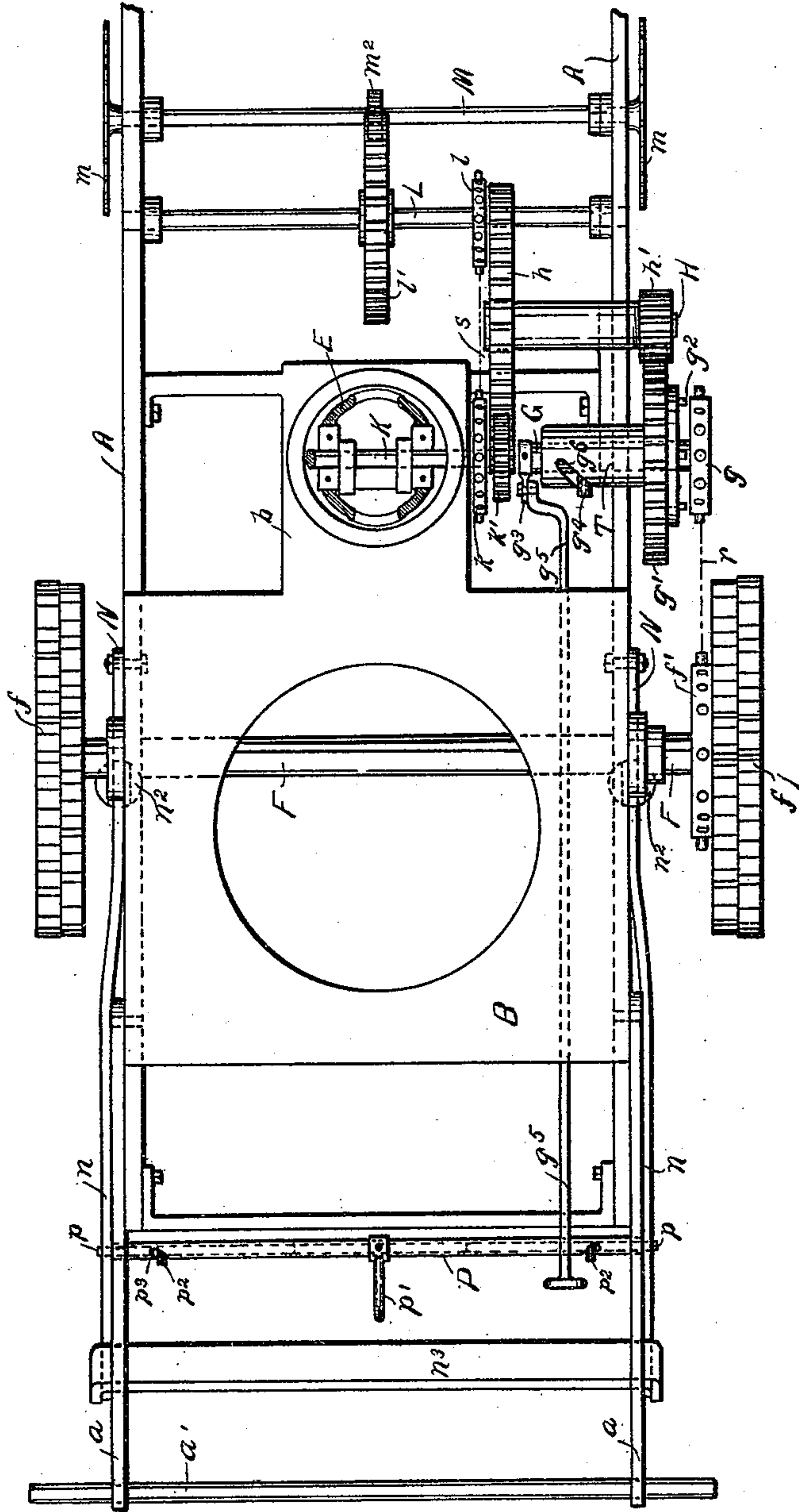
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FIG. 2.



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# UNITED STATES PATENT OFFICE.

ABRAHAM L. STAUFFER, OF STEVENS, PENNSYLVANIA.

## ICE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,651, dated October 21, 1890.

Application filed December 3, 1889. Serial No. 332,428. (No model.)

*To all whom it may concern:*

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

This invention relates more especially to a form of sawing-machines in which the propelling-power for both the saws and the machine itself is provided by a motor forming part of the machine.

The main object of the invention is to furnish a machine of this kind in which the chief part of the weight is usually carried upon a single pair of traction-wheels so arranged as to allow only a proper proportion to rest upon the saw or saws which are located in front of said wheels, yet which will permit the whole of the weight to be transferred to a pair of legs so connected to the frame as to enable the operator to lift the traction-wheels clear of the ice and sustain the weight practically in equilibrium upon the said legs in order that the machine may be readily turned thereon.

This and other features of the invention are fully set forth herein in connection with the accompanying drawings, and are specifically pointed out in the claims.

Figure 1 is a full elevation of my machine. Fig. 2 is a plan of the same, showing the boiler removed and the main part of the engine cut away.

The frame A is mounted upon a single pair of traction-wheels *f*, secured to an axle or shaft F, and is provided with rearward and upward extensions *a*, terminating in a cross-bar or handle *a'*, and with rear fixed legs *a*<sup>2</sup>. Upon a platform B, secured to the frame above the wheels *f*, is placed a steam-boiler C, and upon a forward extension *b* of said platform is located a vertical steam-engine D. The crank-shaft K is supported in suitable bearings in the engine-frame E, and has secured thereto a chain-wheel *k* and a toothed wheel *k'*, by means of which motion may be conveyed to the traction-wheels to propel the machine, and also to the circular-saw shaft M, near the forward end of the frame, (a portion of which latter is not shown.) To this shaft M the saws *m* are secured.

The system of gearing by means of which motion is conveyed from the crank-shaft K is as follows: The toothed wheel *k'* upon the crank-shaft meshes with a wheel *h*, secured to a counter-shaft H, which carries also a pinion *h'*. The latter meshes with a loose wheel *g'* upon a shaft G, to which is secured a chain-wheel *g*, which is connected by a chain (indicated by the broken line *r*) with a chain-wheel *f'* upon the traction-wheel shaft. The shaft G is capable of longitudinal movement in its bearings for the purpose of throwing the chain-wheel *g* into or out of gear with the loose wheel *g'*, the latter being provided with projecting pins *g*<sup>2</sup>, adapted to enter corresponding recesses in the chain-wheel. To secure the longitudinal movement of the shaft, a crank *g*<sup>3</sup> is secured to its inner end, and is connected with an operating-rod *g*<sup>5</sup>, which extends to a convenient point at the rear of the machine. A movement of this rod rotates the shaft, and by means of a pin *g*<sup>4</sup>, projecting from it and riding in an inclined slot *g*<sup>6</sup> in the bearing T, the chain-wheel *g* is moved toward or away from the loose wheel, and the traction-wheels are then operated or not, as desired.

The saw-shaft M is represented as operated through an intermediate shaft L, which latter carries a chain-wheel *l*, connected by a chain *s* with the wheel *k* on the crank-shaft, and also a toothed wheel *l'*, meshing with a pinion *m*<sup>2</sup> on the saw-shaft. Though not so shown, it is evident that the saw-shaft may be arranged to be thrown out of gear, if desired, as well as the traction-wheels.

In order to turn the machine at the end of a cut, it is necessary that the weight should be taken off the traction-wheels, the spurs upon which cut into the ice and thus render turning upon them practically impossible. I therefore provide a means of transferring the whole weight of the machine to a pair of legs N, provided with hemispherical pads *n*<sup>2</sup>, adapted to readily slide upon the ice. These legs are pivoted to the frame at a point *n'* forward of the traction-wheel center, and are provided with rearwardly-extending levers *n*, connected at their extremities by a cross-bar *n*<sup>3</sup>. When these levers are in their normal raised position, as shown in Fig. 1, the pads *n*<sup>2</sup> are clear of the ice and slightly to the rear



of the traction-wheel center. When it is desired to turn the machine, the foot of the operator is placed upon the cross-bar  $n^3$ , and as the levers are pressed down to the dotted position the pads  $n^2$  are swung forward around the center  $n'$ , thus acting as a powerful leverage upon the machine, which when the pads are almost vertically under the pivotal point  $n'$  is raised clear of the ice and so nearly balanced on the supporting-legs N as to permit the saws  $m$  to be easily raised by a slight downward pressure on the rear handle  $a'$ , and the machine to be swung around as desired upon the pads  $n^2$ .

To maintain the legs N in their supporting position, I provide a locking mechanism, as follows: A pipe P connects the rear fixed legs  $a^2$  of the frame and incloses separate bolts  $p$ , which are moved longitudinally outward or inward by the rotation of the pipe by means of a lever  $p'$ , pins  $p^2$  projecting from the bolts through inclined slots  $p^3$  in the pipe. The bolts are prevented from turning in the pipe, the rotation of which causes them to move outward to hold the levers  $n$  in their lowered position or inward when it is desired to lower the machine upon its wheels.

I do not limit my invention to the exact construction indicated; but

What I claim is—

1. An ice-sawing machine comprising a frame A, mounted on a single pair of traction-wheels, cutting means mounted on a shaft at the forward end of the frame, a chain-wheel adjacent to one of the traction-wheels, a motor carried by said frame, a crank-shaft near one end of the frame, a longitudinally-movable shaft geared with said crank-shaft, a chain-wheel  $g$  on said shaft G, connected with the chain-wheel on the traction-wheel shaft, said chain-wheel  $g$  having recesses, a loose wheel  $g'$ , mounted beside said chain-wheel  $g$  and having pins engaging the recesses thereof, and mechanism connecting said cutting-means shaft with said crank-shaft.

2. In an ice-sawing machine, a main frame mounted on a single pair of traction-wheels and carrying cutting means at its forward end,

and a motor mounted on said main frame, in combination with a crank-shaft, a chain-wheel  $f'$ , adjacent to one of the traction-wheels, a shaft G, geared to said crank-shaft and carrying a loose wheel provided with projecting pins, and a chain-wheel having recesses engaged by said projecting pins and connected with the chain-wheel  $f'$ , and means for moving said shaft G longitudinally, for the purpose set forth, consisting of a crank secured to said shaft G and provided with an operating-rod, and a pin secured to said shaft and traveling in an inclined slot formed in the bearing in said shaft.

3. In an ice-sawing machine, the combination, with the frame mounted on a single pair of traction-wheels and carrying cutting means, of movable supporting-legs N, pivoted at their upper ends to the frame and having rearwardly-extending levers  $n$ , and a locking mechanism for said levers, consisting of a rotating pipe and bolts in said pipe having sliding engagement therewith and advanced and retracted by rotation thereof, as described.

4. In an ice-sawing machine, the combination, with the frame mounted on a single pair of traction-wheels and carrying cutting means, said frame having rearwardly-extending handles and depending legs, of movable supporting-legs pivoted at their upper ends to the frame and having rearwardly-extending levers connected together at their rear ends, and a locking mechanism for said levers, consisting of a rotating pipe crossing the space between the depending legs of the main frame and formed with inclined slots, a lever for rotating said pipe, and bolts in said pipe having pins traveling in the slots therein, substantially as described, whereby the rotation of said pipe will move said bolts outwardly into engagement with said lever or inward out of engagement therewith.

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

ABRAHAM L. STAUFFER.

Witnesses:

ED. A. KELLY,

J. R. LICHTENTHALER.