

W. F. SMITH.
ICE SAWING RIG.
APPLICATION FILED MAR. 22, 1909

932,591.

Patented Aug. 31, 1909.

Fig. 2.

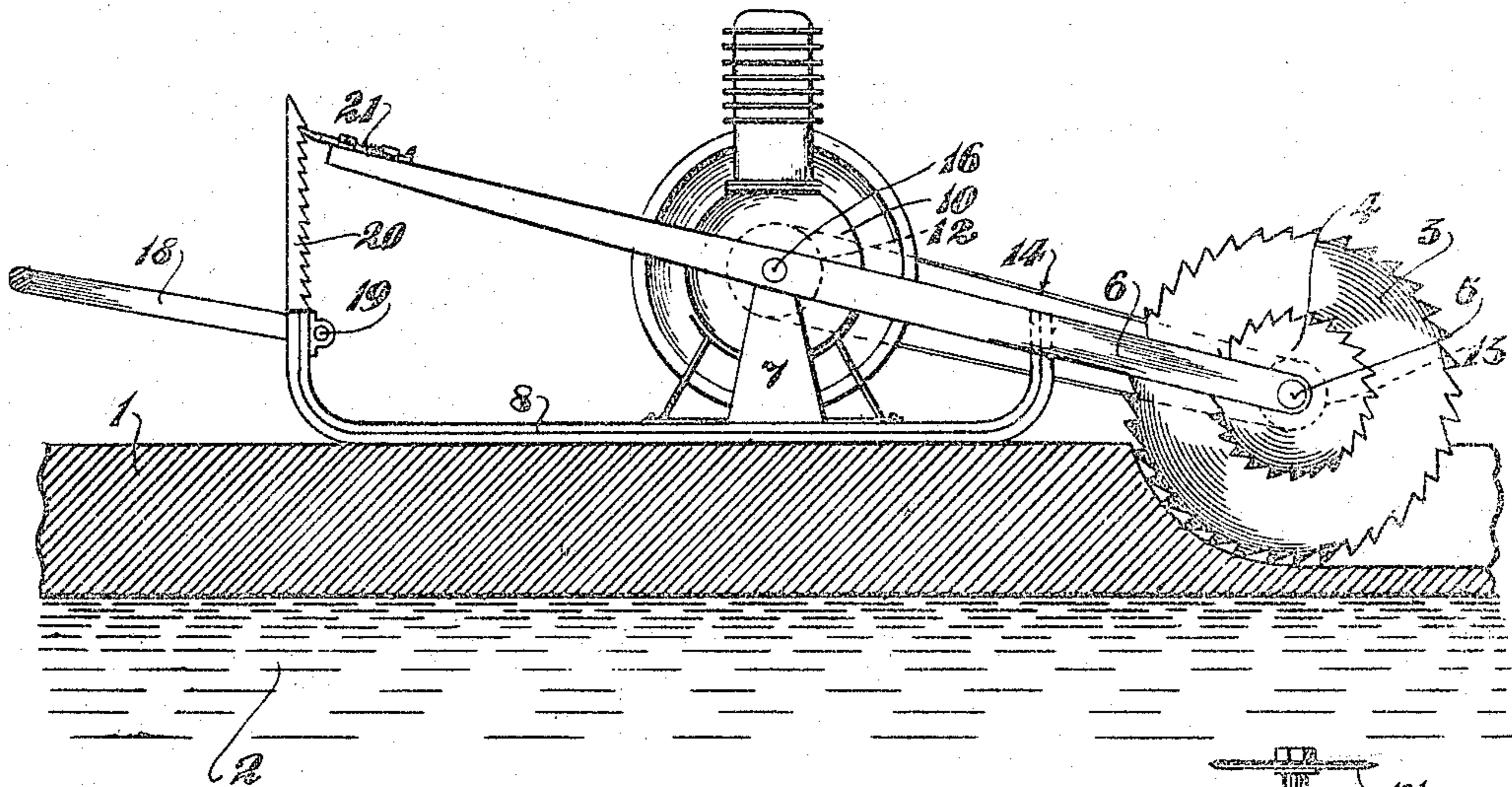
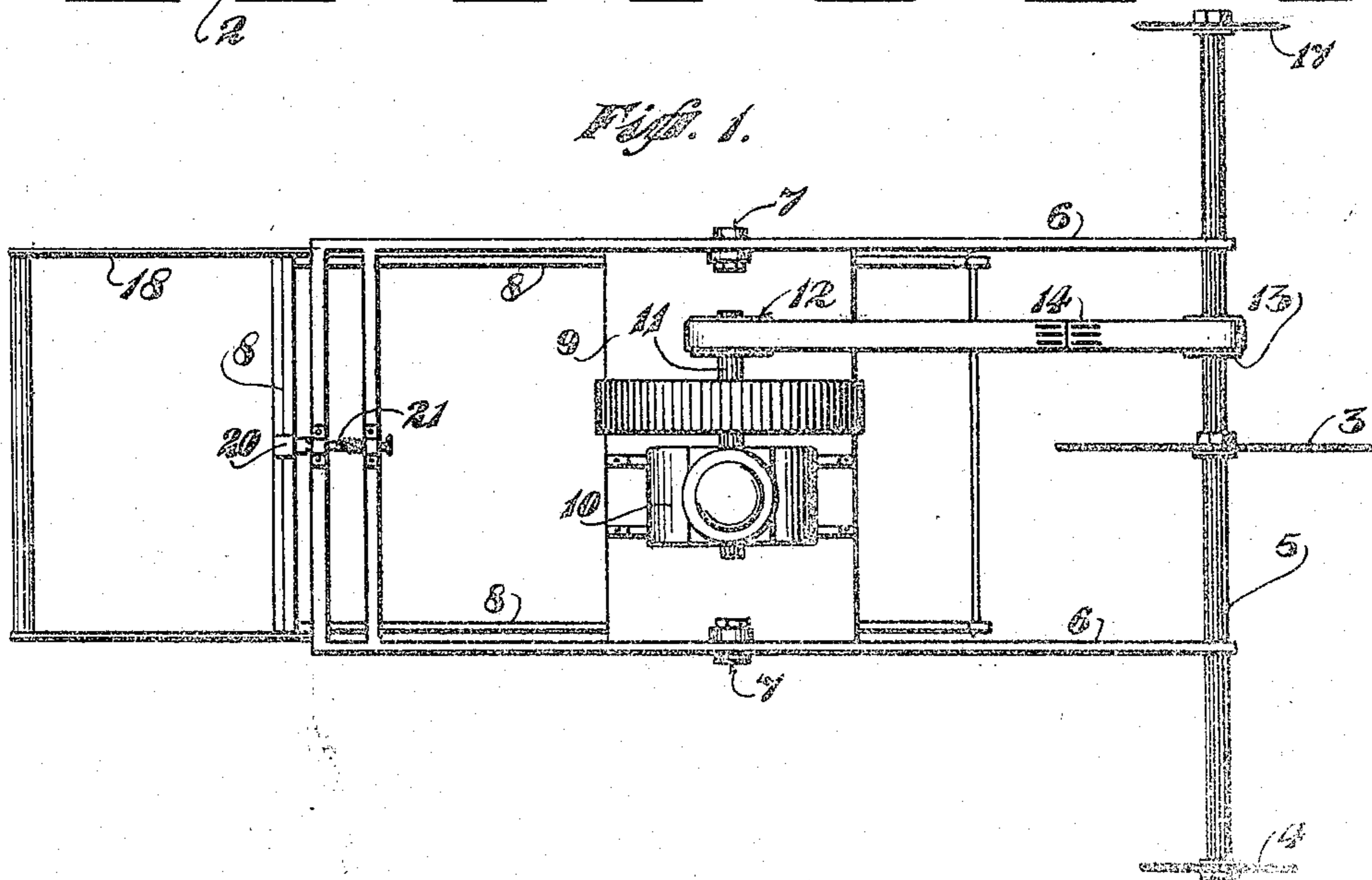


Fig. 1.



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UNITED STATES PATENT OFFICE.

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ICE-SAWING RIG.

932,591.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed March 22, 1909. Serial No. 485,087.

To all whom it may concern:

Be it known that I, WILLIAM F. SMITH, a citizen of the United States, residing at Appleton, in the county of Swift and State of Minnesota, have invented certain new and useful Improvements in Ice-Sawing Rigs; and I 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.

My invention has for its object to provide a simple and efficient ice sawing rig, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a plan view of the complete ice sawing rig; and Fig. 2 is a side elevation, showing the device at work sawing ice, which is supported on the surface of the water.

The numeral 1 indicates the body of ice supported on the surface of the water 2.

In the preferred form of this improved rig, a pair of relatively large and small saws 3 and 4 are carried by a shaft or mandrel 5, journaled in the projecting free end of a bail-like lever 6, that is pivotally mounted on laterally spaced pedestals 7 secured to the runners of a sled 8. On a suitable platform 9 of the sled 8, a small motor, preferably in the form of an explosive engine 10, is mounted. The shaft 11 of this engine 10 carries a pulley 12, over which, and a pulley 13 on the saw shaft 5, runs a belt 14. The engine shaft 11 is axially aligned with the pivotal connections 16 between the lever 6 and bearing pedestals 7, so that oscillatory movement of the said lever does not change the tension of the said belt. The large saw 3 is at the central portion of the said shaft 5, and the small saw 4 is at one end thereof. At its other end, the shaft 5 is provided with a gage wheel 17 of disk-like form, which is adapted to run in the narrow groove cut in the ice by the saw 4, for a purpose which will be hereinafter explained. The gage wheel 17 is preferably of the same diameter as the small saw 4.

The saw shaft 5 is supported beyond one end of the sled 8, and to the other end of said sled, a bail-like handle 18 is pivotally connected at 19.

A ratchet toothed bar 20 is rigidly secured to, and projects vertically above the intermediate transverse portion of that end of the sled 8 to which the handle 18 is applied, and the saw operating lever at the same end of the sled, is provided with an outwardly spring pressed latch bolt 21 that is adapted to engage the teeth of said ratchet bar. As is evident, the ratchet bar 20 and latch bolt 21 coöperate to hold the lever 6 in any set adjustment, with the saws 3 and 4 arranged to cut grooves of the desired depth in the surface of the ice. The sled is adapted to be drawn by the handle 18 while the saws are driven by the engine 10.

It is customary in cutting ice for storage, to first cut, by the use of an ice plow, long straight parallel grooves so nearly through the body of ice that it may be very easily broken off by a crowbar or wedge. This ice sawing rig is especially designed for use to cross cut the ice at a right angle to these plow formed grooves. For illustration, assume that the saw 4 is located four feet distant from the large saw 3, and that the gage wheel 17 is likewise located four feet distant from the said large saw 3. Then when the device is used, the lever 6 should be so adjusted, that the large saw 3 will cut nearly or quite through the body of ice, while the small saw 4 will cut a comparatively shallow groove in the ice. Then in using the device, it should be drawn straight ahead crosswise of the plow formed grooves, thereby cutting the relatively deep and shallow grooves at a right angle thereto. On the next cut, the gage wheel 17 should be run in the furrow previously cut by the small saw 4, and this operation, when repeated, will cut the ice nearly or quite through into cakes eight feet in length, and will sub-divide each such cake centrally by a shallow groove, which will make it an easy matter to break the long cake in two when desired. Of course, the distance between the two saws may be varied as desired, but the distance between the two saws should be the same as the distance between the large saw and the gage wheel.

While as above stated, the rig is especially designed for cross cutting ice, it may, as is evident, be much more generally used in sawing ice. For instance, by making both of the saws of the same diameter, or even by the use of a single large saw with the gage wheel, the device might be used for doing the work usually done by an ice plow.

Instead of the sled, a wheeled vehicle or other form of carriage might be employed to carry the engine and saw supporting lever, but the sled, as is evident, is best adapted
5 for use on ice.

What I claim is:

In an ice sawing rig, the combination with a carriage and a motor mounted thereon, of a shaft supporting lever adjustably mounted
10 on the said carriage, a saw shaft carried by the projecting end of said lever, means for driving said shaft from said motor, and

relatively large and small saws and a gage wheel on said shaft, said small saw and gage wheel being secured, one on each end of said
15 shaft and said large saw being secured to the intermediate portion of said shaft midway between the small saw and gage wheel.

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

WILLIAM F. SMITH.

Witnesses:

PETER DETUNCK,
A. D. COUNTRYMAN