No. 667,978. Patented Feb. 12, 1901.

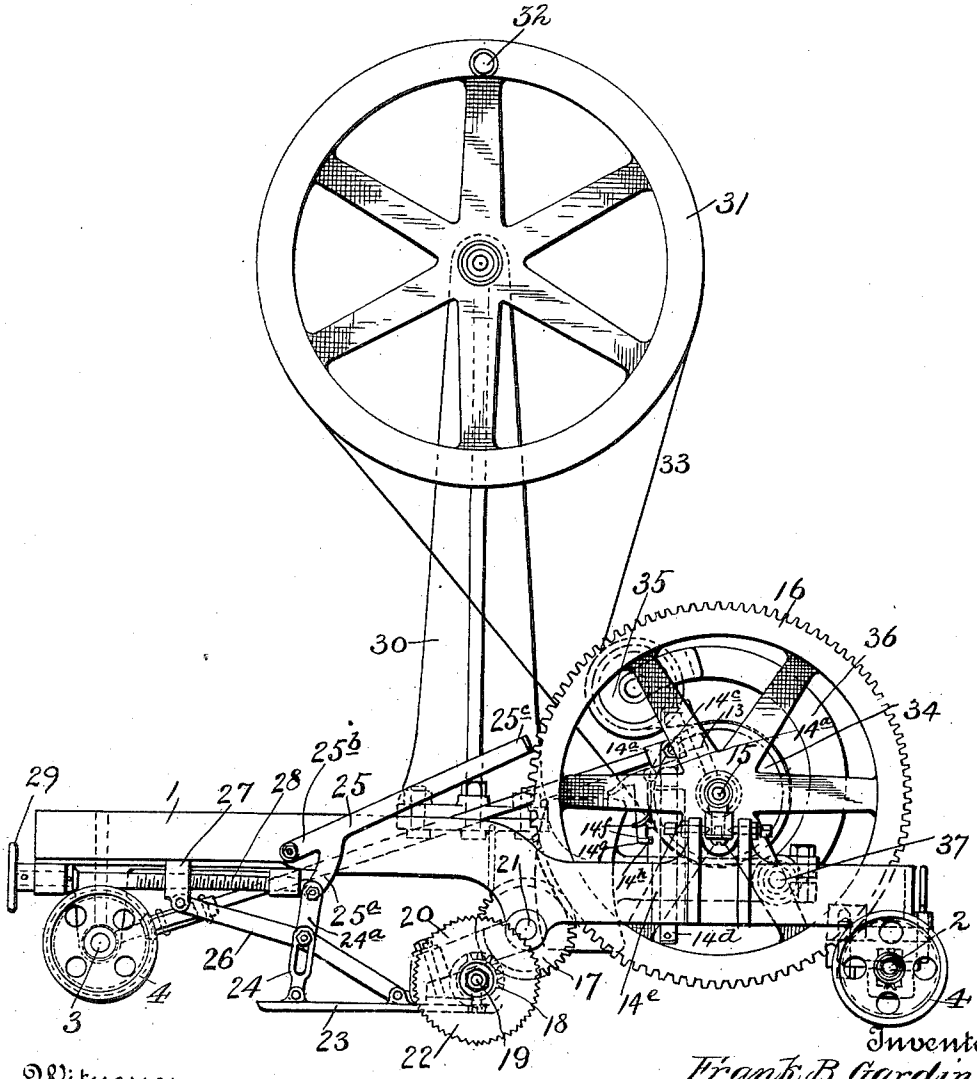
F. B. GARDINER & W. H. K. ABBOTT.

FLOOR SAWING AND RABBETING MACHINE.

(No Model.) (Application filed Aug. 21, 1900.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses:
Franck L. Ourand.
E. M. Bruyea.

Inventors:
Frank B. Gardiner.
Wm. H. K. Abbott,
By Louis Bagger & Co.,
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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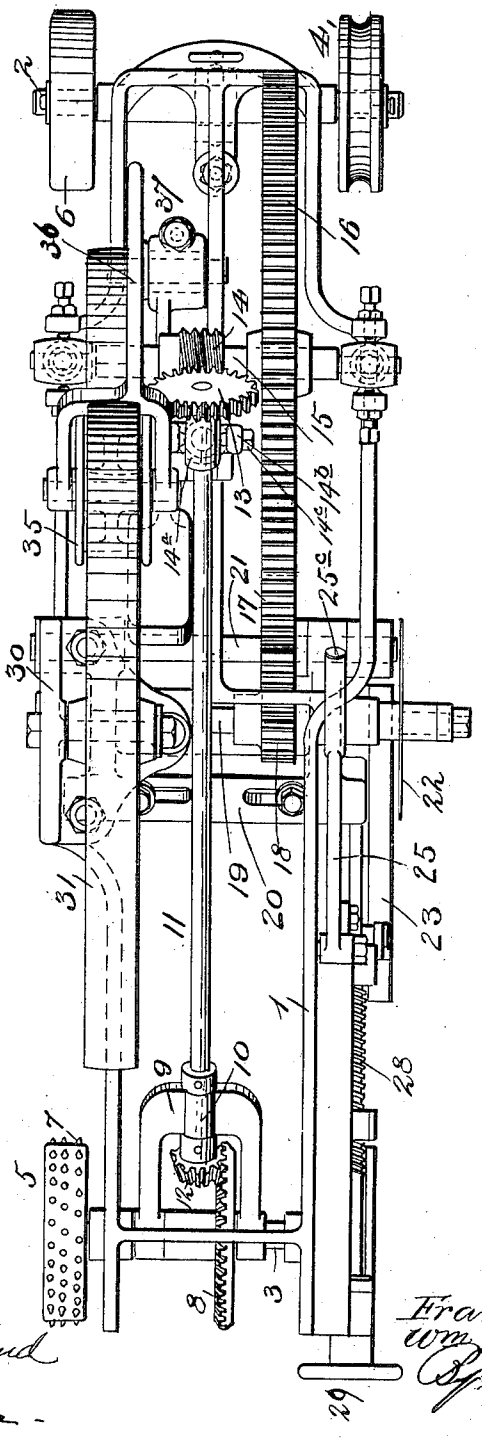


Fig. 2.

Witnesses:
Franck L. Durand
E. P. Kenyon

Inventors:
Frank B. Gardiner
Wm. H. K. Abbott,
By Lauis Bagger & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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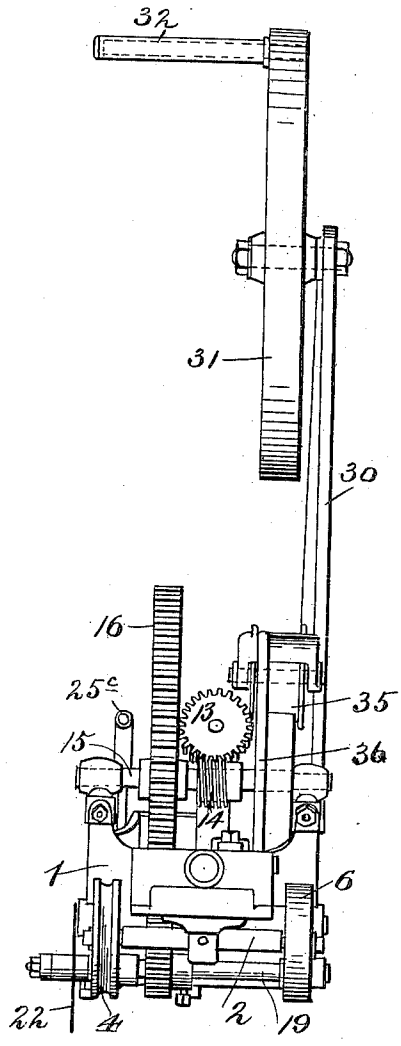


Fig. 3.

Witnesses:
Franck L. Durand
E. R. Bunyan

Inventors:
Frank B. Gardiner
Wm. H. K. Abbott,
By Louis Bagger & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK B. GARDINER AND WILLIAM H. K. ABBOTT, OF WATERVILLE, MAINE.

FLOOR SAWING AND RABBETING MACHINE.

SPECIFICATION forming part of Letters Patent No. 667,978, dated February 12, 1901.

Application filed August 21, 1900. Serial No. 27,567. (No model.)

To all whom it may concern:

Be it known that we, FRANK B. GARDINER and WILLIAM H. K. ABBOTT, citizens of the United States, residing at Waterville, in the county of Kennebec and State of Maine, have invented new and useful Improvements in Floor Sawing and Rabbeting Machines, of which the following is a specification.

Our invention relates to floor sawing and rabbeting machines; and the object of the same is to provide simple and efficient mechanism for repairing and resurfacing floors.

Heretofore it has been the common practice to remove old floors or worn portions thereof by hand, and the tools ordinarily used for this purpose are the chisel and mallet. This process is not only slow and tedious, but expensive, owing to the fact that much time is consumed in the operation of removing defective boards and resetting new ones where only repairs are necessary, while the expense of reflooring or resurfacing is still greater.

The object of our invention is to provide a mechanism to repair or resurface floors expeditiously, cheaply, and more perfectly than has heretofore been done by hand.

With this object in view our invention consists of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a machine made in accordance with our invention. Fig. 2 is a plan view of the same. Fig. 3 is a rear end elevation of the same.

Like numerals of reference designate like parts wherever they occur in the different views.

Our machine is designed to be mounted upon a wheeled truck and moved along the floor by any suitable power. For the purposes of this specification a hand-operated machine has been illustrated in the drawings.

Suitably journaled in the framework 1 of the machine are the front and rear axles 2 3 of the carriage or truck of the machine, and upon the ends of the axles are fitted the wheels 4 5 6, said wheels 4 being grooved in their peripheries and designed to run upon a track secured to the floor to be repaired or resurfaced. The wheel 5 is provided with a series of spurs 7, which engage the floor and serve to propel the machine. The wheel 6 may have a plain periphery, and the front axle 2, upon which this wheel is fitted, may be connected to the frame in a manner to have lateral swing or vibration. Keyed centrally to the rear axle 3 is a beveled gear 8. A yoke 9 is mounted loosely upon the axle 3, and journaled at 10 in said yoke is a longitudinal shaft 11, having a pinion 12 keyed thereto, said pinion meshing with the beveled gear 8. The opposite end of the shaft 11 is fitted with a spur-gear 13 in mesh with a worm 14, keyed to a transverse shaft 15, journaled in the frame. This shaft 15 has keyed to it a large cog-wheel 16, which meshes with an idler 17, and the idler is in mesh with a gear-wheel 18 on the tool-shaft 19, journaled in hangers 20, depending from the idler-shaft 21, to which the hangers are loosely pivoted. The shaft 19 has fitted to its outer end a saw 22, and it will be understood that a series of saws may be secured to said shaft, said saws being spaced apart by rings or washers. A grooving or rabbeting tool or a planing-tool may be secured to this shaft in place of the saw. Secured to the hangers 20 is a gage-plate 23, supported by the slotted link 24, pivoted at its lower end to the gage 23 and at its upper end to a link 24^a, connected at its upper end to an adjusting-lever 25. An arm 26 is pivoted at one end to the gage-plate, and its opposite end is pivoted to a traveling nut 27, fitted to a threaded rod 28, journaled longitudinally in the frame and provided with a hand-wheel 29 for turning it. The lever 25 consists of the arm 25^a, to which the link 24 is pivoted, the arm 25^b, pivoted to the frame of the machine, and the handle 25^c. The movement of this handle regulates the depth of cut of the tool mounted on the shaft 19 and the relative position of the gage-plate 23.

Rising from one side of the frame is a standard 30, having journaled at its upper end a fly-wheel 31, having a crank or handle 32. A belt 33 passes around the wheel 31 and around a pulley 34 on the shaft 15. A belt-tightener, consisting of a pulley 35, journaled in a curved arm 36, pivoted at 37, may be used to insure contact of the belting.

Near the front end of the shaft 11, at the side of spur-wheel 13, is a collar 14^a, to which

a yoke 14^b is secured by set-screws 14^c. Depending from the yoke 14^b is a rod 14^d, which slides in a tubular casing 14^e, said tubular casing having two notches 14^f therein. A dog 14^g is pivoted to the yoke 14^b, and when it is desired to disconnect the spur-wheel 13 from the worm 14 the shaft 11 is raised, carrying the dog 14^g until the toe 14^h engages the upper notch 14^f and throws out the saw-operating mechanism. In order that the saw 22 may be raised above the floor-surface to move the machine about without actuating said saw, the lever 25 may be thrown toward the left in Fig. 1 to lie in a horizontal plane.

The operation of our machine is as follows: An iron rail of the right contour to fit the grooves in the carriage-wheels 4 is secured to the floor at the required distance from the board which it is desired to remove from the floor. The wheels 4 are placed upon the track and the machine is moved along on the floor, the spur-wheel 5 engaging the floor. The handle 25^c is actuated to give the required depth of cut to the saw or other tool and the handle 32 is turned to actuate the tool. When it is desired to form a groove or rabbet in the floor to set a new board, a groove or rabbet plane may be substituted for the saw, or a smoothing-plane may be used in place of the saw.

From the foregoing it will be obvious that operations of the character referred to may be carried on expeditiously and that a machine made in accordance with our invention is capable of other uses in the art of wood-working.

Having thus fully described our invention, what we claim is—

1. A flooring-machine mounted upon a wheeled carriage, two of the wheels of said carriage being peripherally grooved to run upon a track, a spur-wheel designed to engage the surface over which the carriage is to be moved, a tool-shaft journaled in hangers pivoted to the frame, means for actuating said shaft, a tool mounted on the shaft, a gage for determining the depth of cut of the tool, and means for adjusting the tool shaft and gage, substantially as described.

2. In a flooring-machine, a wheeled carriage, a tool-shaft journaled in hangers on the carriage, a gage-plate connected to the hangers, a lever connected to the gage-plate by a slotted link, an arm connected to the gage-plate and to the link, and means for adjusting the arm longitudinally and the gage-plate and tool vertically, substantially as described.

3. In a flooring-machine, a wheeled carriage, a standard rising therefrom, a hand-wheel journaled to said standard, a tool-shaft journaled to hangers pivoted to the carriage, the rear axle of the carriage having a grooved wheel at one end and a spur-wheel at the other, a beveled gear on said shaft, a longitudinal shaft having a pinion in mesh with said beveled gear, a spur-gear at the opposite end of said longitudinal shaft, a worm in mesh with said spur-wheel, said worm being mounted on a transverse shaft, having a cogged wheel secured thereto and in mesh with an idler for transmitting power to the tool-shaft, substantially as described.

4. In a flooring-machine, the combination, substantially as described, with a carriage mounted on wheels, means for propelling the carriage over the floor, a tool-shaft journaled in hangers pivoted to the frame, a tool mounted on said shaft, means for revolving said shaft to actuate said tool, a gage for determining the depth of the cut of said tool, and means for adjusting the said shaft and said gage.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FRANK B. GARDINER.
WILLIAM H. K. ABBOTT.

Witnesses:
A. M. KENNISON,
S. I. ABBOTT.