

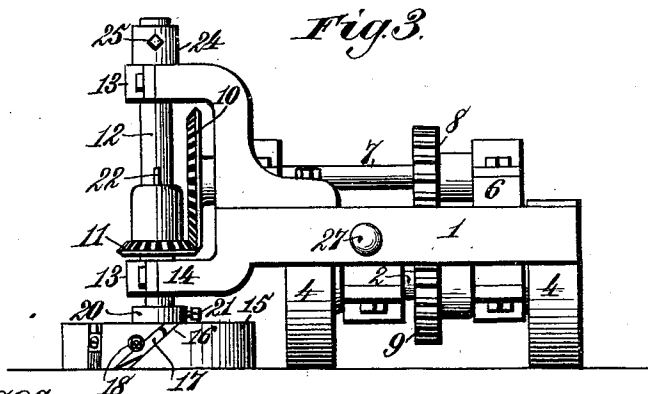
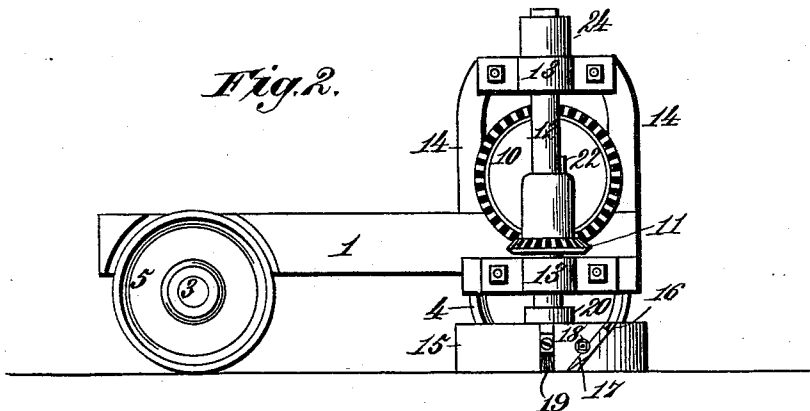
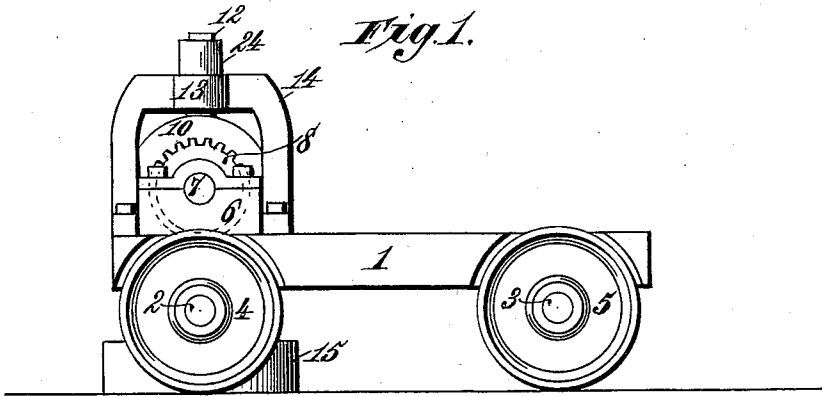
(No Model.)

2 Sheets—Sheet 1.

W. W. MURRAY & T. W. CROMER.
MACHINE FOR DRESSING OR POLISHING FLOORS.

No. 521,729.

Patented June 19, 1894.



Witnesses.
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 By *James L. Norris,*
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Fig. 4.

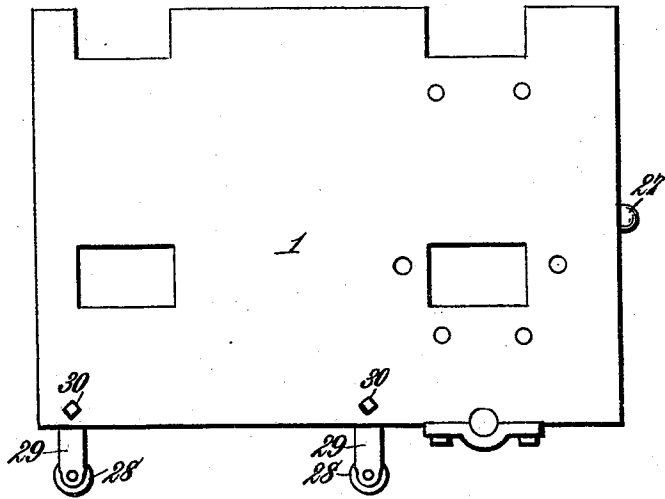


Fig. 6.

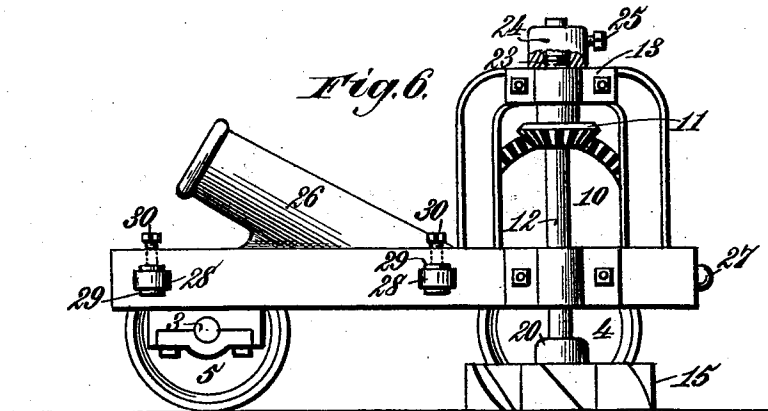
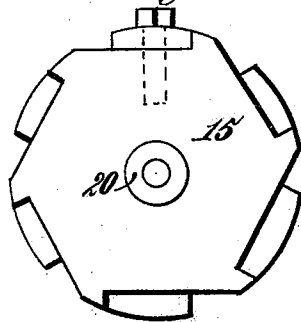


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM W. MURRAY AND THOMAS W. CROMER, OF BALTIMORE,
MARYLAND.

MACHINE FOR DRESSING OR POLISHING FLOORS.

SPECIFICATION forming part of Letters Patent No. 521,729, dated June 19, 1894.

Application filed March 13, 1894. Serial No. 503,463. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM W. MURRAY and THOMAS W. CROMER, both citizens of the United States, residing in Baltimore city and State of Maryland, have invented new and useful Improvements in Machines for Dressing or Polishing Floors, of which the following is a specification.

Our invention has for its object to provide an improved, simple and easily operated machine for planing or otherwise dressing or smoothing the floors of rooms or the decks of vessels or other surfaces under foot, without the inconvenience and fatigue of kneeling, as in the use of an ordinary hand planer.

The invention comprises certain features of construction and novel combinations of parts in a machine for cleaning off, dressing, smoothing and polishing floors, decks and other under foot surfaces, as hereinafter more particularly described and claimed.

In the annexed drawings illustrating the invention—Figures 1 and 2 are opposite side elevations of our improved floor planing or dressing and polishing machine. Fig. 3 is an end elevation of the same. Fig. 4 is a plan of the truck. Fig. 5 is a plan of the cutter head or tool head. Fig. 6 shows a modification in the arrangement of a part of the gearing for rotating the tool head.

Referring to the drawings, the numeral 1 designates a truck or carriage having front and rear axles 2 and 3 to which wheels 4 and 5 are attached. The wheels 4 of what may be termed the front axle 2 are rigidly secured to said axle so that it will be revolved as the carriage is moved forward or backward.

On the carriage 1 above the axle 2 are arranged bearings 6 in which is journaled an upper shaft 7 having a spur gear 8 rigidly mounted thereon. This spur gear 8 meshes with a spur gear 9 on the axle 2 from which the upper shaft 7 is thus revolved. To one end of the upper horizontal shaft 7 is secured a bevel gear wheel 10 meshing with a bevel gear 11 that is feathered on a vertical shaft 12 journaled in bearings 13 both of which may be formed in bracket arms 14 secured to or formed on one side of the machine carriage; or, if preferred, the upper bearing of the vertical shaft 12 may be ar-

ranged in a bracket or brackets projecting above the carriage and the lower bearing may be located in one side of the carriage. The gear 11 may mesh with either the top or bottom of the gear 10, as preferred.

On the lower end of the vertical shaft 12 is secured a horizontally arranged tool-head 15 of suitable character to serve for cutting or planing, for abrading or sand-papering or for polishing, as may be required. A number of interchangeable tool-heads will be provided, some of which may have cutters or planer bits attached thereto, while others may be formed or provided with rasping or filing surfaces or have sand paper, emery or other abrading or polishing material secured thereon. The rasping or filing head will be useful for the purpose of removing or breaking up paint, tack heads and other extraneous matter adhering to floors, preparatory to redressing them with a planer head, while a sand-papering head may be used to smooth or polish the work after it has been dressed off or planed. A stone-faced head, or a head composed of stone, may be used to polish tile or stone floors.

The planer head is without slots to receive the cutters and has its periphery provided with a number of vertically inclined and tangentially arranged seats 16 in which the planer-bits or cutters 17 are placed. These seats 16 are each formed by cutting perpendicularly through the sides of the cutter head in the chord of an arc, to provide a support for the inner side edge of the cutter, and also diagonally from top to bottom to afford a surface for the back of the cutter to rest against. Each cutter 17 may be secured in place by means of a screw-bolt 18 inserted into the periphery of the cutter head 15 and extended across the upper face of the cutter, in close contact therewith and with the bolt head clamping the outer side of the cutter. This manner of attaching the cutters requires no slots either in the cutters or cutter head and no cap to protect such slots from becoming clogged with chips, shavings and dirt. In those rotary cutting devices having slots in the cutter head or cutters and where a cap is employed, experience shows that there is a constant tendency of the slots to choke with

shavings and dirt and that chips are liable to be driven under the caps and cause serious trouble, often resulting in breakage of the cutters or their attaching bolts. For the purpose of protecting the cutting edges of the cutters or planer bits from contact with grit, dirt or other foreign substances it is preferable to provide the periphery of the cutter head with brushes 19 arranged at suitable intervals and in inclined positions so as to rest on the floor in advance of the cutters to brush away accumulations of grit, dirt and shavings from the path of the cutting or planing devices.

The tool head 15 is provided on its upper side with a boss 20 having in one side a set screw 21 by which the tool head may be rigidly, but detachably, secured to the lower end of the vertically arranged rotary shaft 12, or the said tool head and shaft may be connected in any other appropriate manner so that the tool head will be adapted to revolve with said shaft and be capable of ready removal for replacing it with an abrading or polishing head.

Between the top of the rotary tool head and the lower bearing of its vertical shaft 12 is sufficient space to permit the tool head to rise should it strike any unyielding obstruction on the floor. This upward movement of the tool head will not cause any jarring or jolting of the main portion of the machine and will not effect any disarrangement of the bevel gears 10 and 11, the said gear 11 being connected with the shaft 12 by a spline or feather 22 so that the said shaft will rise readily together with the tool head and will slip easily through the gear 11 without interfering with the proper action of any part of the machine.

The upper end of the vertical shaft 12 is provided with a screw threaded portion 23, on which is placed an internally threaded cap 24 provided with a set screw 25 adapted to bear on a plane portion of the shaft and secure the cap in position. The cap 24 rests on the upper bearing 13 of the shaft 12 and thus serves to support said shaft and attached tool head. By loosening the set screw 25 and turning the cap 24 to the right or left so as to vary its point of attachment to the shaft 12 a delicate adjustment can be imparted to said shaft, either by raising or lowering it, to vary the pressure of the tool head on the surface to be dressed or polished.

One end of the machine carriage may be provided with an inclined socket 26 to receive a handle by which the machine can be pushed or drawn. It is obvious, however, that the machine can be propelled by a handle or bail attached in any convenient manner. At an ordinary walking gait, with the wheels 4 resting on the floor or deck, the tool head 15 and its vertical shaft 12 will be revolved rapidly through the gearing that connects with the axle on which said wheels are secured. If desired the driving wheels 4 may be provided with roughened tires to increase the friction.

The supporting wheels 5 serve to level the machine and maintain the tool head in a horizontal position while at work. These wheels also afford a fulcrum to facilitate lifting the driving wheels 4 from the floor, by bearing down on the machine handle, and the machine can then be drawn backward without operating the tool head and its position be shifted for beginning a new cut or continuing the dressing or polishing at a fresh point.

A bumper 27 is preferably attached to the forward end of the machine to prevent marring of the wall, wainscoting or mop board and, for a similar purpose, bumper wheels 28 may be carried on the ends of arms 29 that may project from one side of the machine carriage. These arms 29 may be detachably inserted in sockets formed in the sides of the carriage and may be adjustably secured therein by set screws 30 so as to project any required distance and serve as a gage for controlling the operation of the machine adjacent to a side wall and so prevent any marring of the mop board.

The machine is easily operated by simply pushing or drawing it forward and as the horizontally rotary tool head is actuated wholly from driving wheels bearing on the floor and revolved by movement thereon it is obvious that the operation of the tool head can be instantly controlled by a proper manipulation of the carriage handle.

What we claim as our invention is—

1. The combination in a floor planing or polishing machine, of a wheel carriage having the wheels of one of its axles fast thereon, a horizontal shaft mounted above said axle and geared therewith and carrying at its end a bevel-wheel fast thereon, a yoke-shaped frame carried by the carriage, a vertical longitudinally movable shaft journaled in said frame and having a bevel-gear feathered thereon and meshing with the bevel-gear on the end of the horizontal shaft, a horizontally rotary tool head detachably secured to the lower end of said vertical shaft, and a screw-cap adjustably engaged with the upper screw-threaded end of said vertical shaft and resting on the top of the yoke-shaped frame, substantially as described.

2. The combination in a floor planing or polishing machine, of a wheeled carriage, a vertical shaft geared with and driven by one of the carriage axles, and a horizontally rotary tool head carried by the lower end of said vertical shaft, planer bits carried by said tool head and brushes arranged on the tool head intermediate the planer bits, substantially as described.

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

WILLIAM W. MURRAY. [L. S.]

THOMAS W. CROMER. [L. S.]

Witnesses:

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SAMUEL T. RICHARDSON.