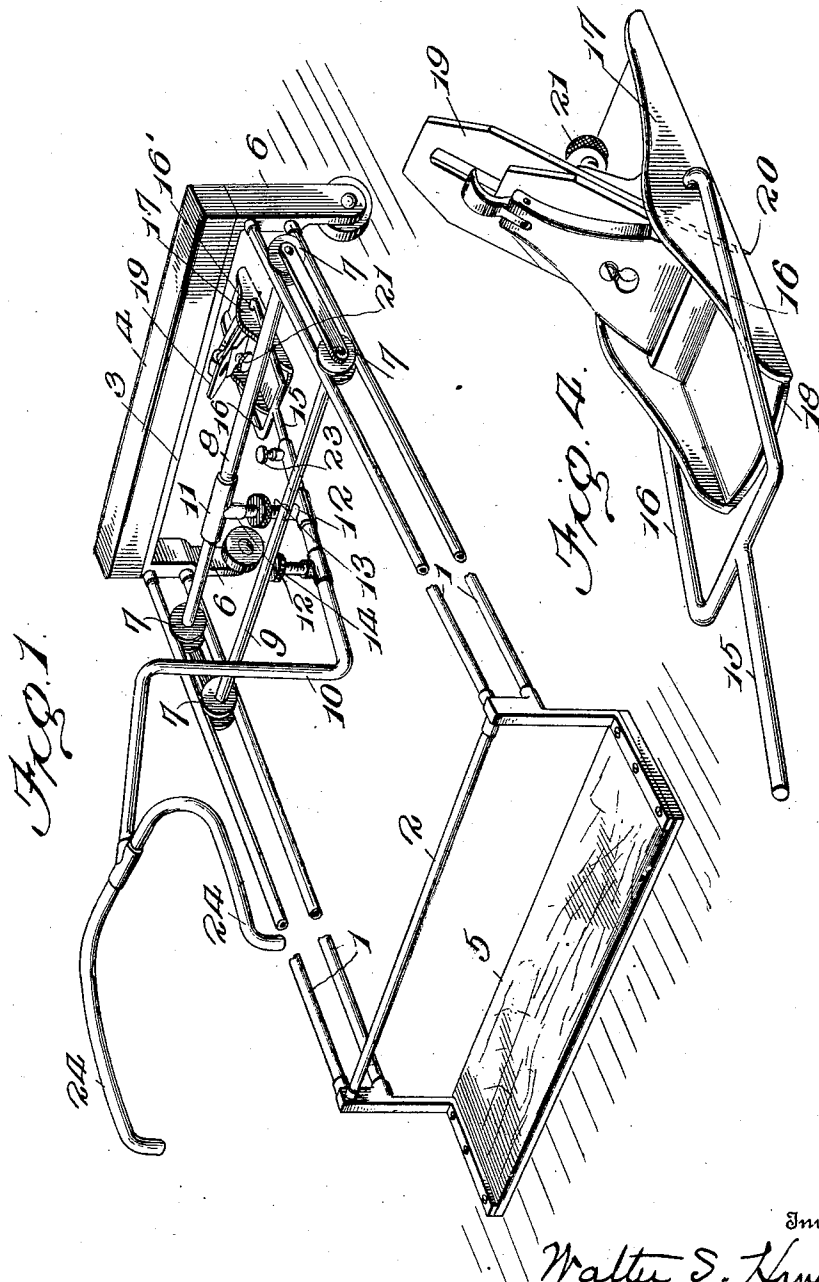


W. S. HAVEN.
FLOOR DRESSING MACHINE.
APPLICATION FILED JAN. 15, 1909.

944,862.

Patented Dec. 28, 1909.
2 SHEETS—SHEET 1.



Witnesses

W. A. Williams
E. R. Peck

By

Inventor
Walter S. Haven
Hubert E. Peck

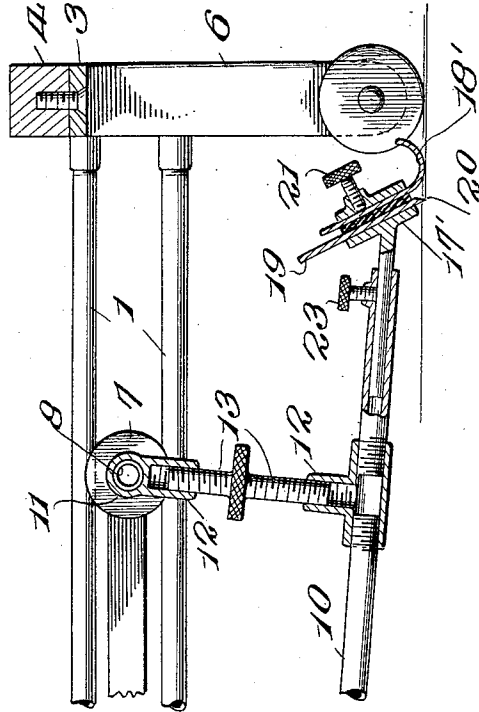
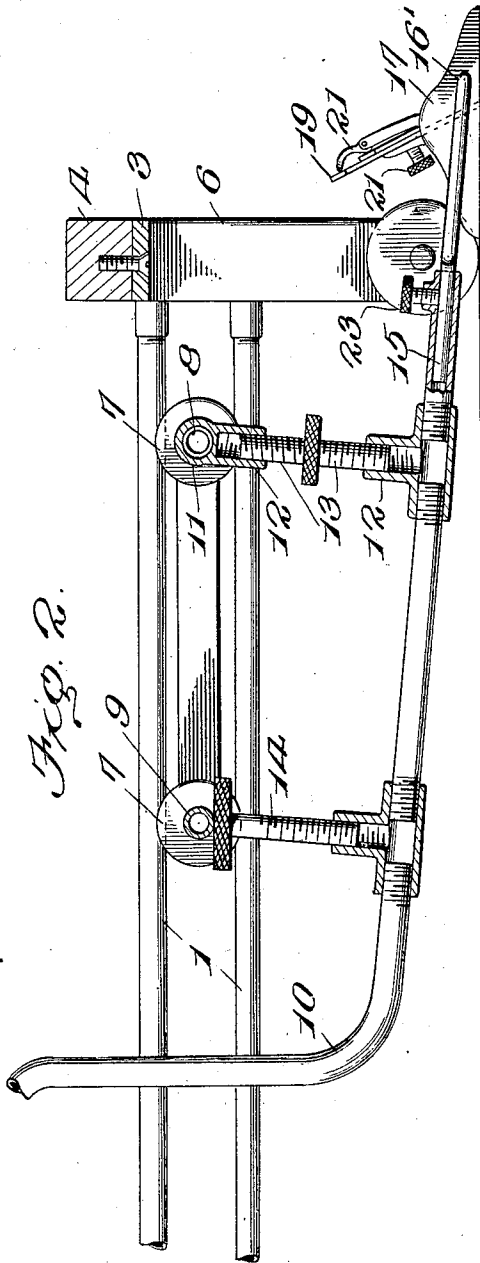
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UNITED STATES PATENT OFFICE.

WALTER S. HAVEN, OF RACINE, WISCONSIN.

FLOOR-DRESSING MACHINE.

944,862.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed January 15, 1909. Serial No. 472,525.

To all whom it may concern:

Be it known that I, WALTER S. HAVEN, a citizen of the United States, residing at Racine, Racine county, Wisconsin, have invented certain new and useful Improvements in Floor-Dressing Machines; 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.

This invention relates to certain improvements in floor surfacing or scraping machines; and the objects and nature of my invention will be readily understood by those skilled in the art in the light of the following explanation of the accompanying drawings showing what I now consider my preferred embodiment.

The invention consists in certain novel features in construction and in combinations and arrangements of parts and elements as more fully and particularly set forth hereinafter.

Referring to the accompanying drawings:—Figure 1, is a perspective view of a machine constructed in accordance with my invention. Fig. 2, is a section taken longitudinally and vertically through a portion of the frame, and through the truck and portions of the handle or lever. Fig. 3, is a vertical longitudinal section through portions of the frame, truck and lever, a modified form of blade holder or stock being shown in section. Fig. 4, is a detail perspective view of a blade holder, and attached fork head, of the general form shown in Figs. 1 and 2.

In the specific example illustrated, in the drawings, I show an open horizontal usually rectangular frame adapted to be moved to any portion of the floor to be surfaced, and said frame includes means to hold or confine a reciprocatory member controlling a blade down to reciprocation in a plane parallel or about parallel with the floor surface. I show this frame provided with a longitudinal runway for said member, said runway being composed of parallel horizontal tracks, each consisting of a pair of upper and lower rods 1, two pairs of spaced tracks being employed. These tracks are rigidly secured to end cross pieces 2, 3, the front end piece usually carrying or being formed by weight 4, while at the rear of the frame is provided a foot piece 5, adapted to rest on the floor and hold the frame in place. The front end

of the frame is shown provided with supporting legs 6. In this particular construction, I show a truck confined to reciprocate along said tracks, said truck carrying the means controlling or supporting the floor finishing tool. The truck shown is provided with wheels or rollers 7, confined to the tracks and mounted on horizontal axles 8, 9, arranged transversely of the frame, and suitably coupled together, but spaced a distance apart. One of said axles for instance, the front axle 8, is straight between the tracks and forms an elongated fulcrum or support, for a handle or lever by which the truck is reciprocated and the floor surfacing tool is controlled. This handle or lever 10, in the present example, is shown arranged longitudinally of the machine beneath the truck and its axles, and in rear thereof is extended upwardly and provided with rear hand holds readily accessible to the operator located in rear of the machine with either or both feet on the foot board.

The lever is loosely hung from the truck, preferably so as to independently rock either vertically or horizontally and so as to be bodily movable laterally and transversely of the direction of reciprocation of the truck. To accomplish these movements I show a sleeve 11, loosely mounted on the axle 8, and capable of axial or turning movement thereon and also longitudinal movement thereon, and the lever is supported from and carried by said sleeve through the medium of a hanger 12, attached to the lever in rear of its front end. This hanger preferably embodies a swivel or pivotal connection whereby the lever can swing on a vertical axis. This loose or swivel connection can be attained by forming the hanger in two sections respectively rigid with the sleeve and lever, and longitudinally hollow and internally threaded to receive a third and intermediate connecting section 13, externally threaded to join said two sections by screwing thereinto. I oppositely screw thread the opposite ends of said section 13, and correspondingly oppositely thread the hollow sections receiving the same. For instance, the upper end of nipple or coupling section 13, and the upper hollow section 12, can be formed with right hand threads while the lower end of section 13, and the lower hollow section can be formed with left hand threads. By employing this right and left hand screw connection, the lever

or truck actuating handle can be easily removed and applied, and also the vertical distance between the floor and the lower portion of the lever can be quickly and easily
5 varied or adjusted.

In rear of the lever supporting hanger, I show the lever provided with a vertically adjustable stop 14, arranged to engage the rear axle 9, of the truck to limit the vertical
10 swing of the lever and to steady and brace the lever during its operative stroke.

The floor surfacing device is arranged in advance of the lever supporting hanger and is coupled or attached to the front end of
15 the lever. In the specific example illustrated, I show the front end of the lever longitudinally socketed or hollow to slidably receive the straight rear end 15 of a forked
20 forwardly extending head or shank, the opposite legs 16 of the fork straddling and at their front extremities being pivotally joined, at 16', to a stock 17, forming a blade
holder or head and a leveling sole or face 18, usually flat and horizontal and arranged
25 in the direction of reciprocation thereof. This stock is vertically slotted to receive a floor finishing bit or blade 19, having its transverse lower working edge 20, arranged
30 transversely of the sole and projecting the necessary distance below the plane thereof, and preferably arranged at a point intermediate, say about midway, between the ends of the sole so that the leveling faces of the
35 sole will be arranged in front of as well as behind the transverse working edge 20. The blade 19, can be arranged in any desirable angle to accomplish the result desired, and can be arranged to project in one direction
40 to form a planer or in the opposite direction to form a scraper, and the stock can be provided with any suitable means, generally indicated by the reference letter 21, to secure or clamp the bit or blade and
45 permit the necessary adjustment thereof. Any suitable wedge and clamping devices can be employed for this purpose to maintain the bit or blade in the desired adjustment in the throat of the stock.

In operating this machine, the operator
50 stands at the rear of the frame and holds the frame in the desired position to the floor by placing either or both feet on the foot board, and reciprocates the truck and floor dressing
55 device through the medium of the lever or handle. The arrangement is generally such that the return or inoperative stroke of the truck, is the forward stroke when the truck is moving away from the operator, while the
60 operative stroke is when the truck is moving toward the operator, and during this operative stroke the lever fulcrums on the axle of the truck and through the forked shank or head holds the leveling face or sole of the
65 stock to the floor so that said sole in a measure follows the surface of the floor

whereby the dressing bit or blade is caused to perform its proper function and prevented from gouging or otherwise marring the floor surface. In this connection attention is called to the fact that during
70 operation of the machine, the tool or blade is rigid with and is carried by the stock, that is, said blade is in fixed and immovable relation with respect to the leveling face or sole of the stock, and the application of
75 the power or propelling force to the stock is preferably at a point intermediate the length of the stock, as well as at a point removed from the transverse plane in which the blade is included; the point of applica-
80 tion of the propelling force to the stock, that is, the transverse pivotal axis of the joint between the stock and the forked shank, being usually arranged a distance behind the plane of the blade with respect to
85 the direction of movement of the stock during its operative stroke.

A shearing cut can be made at any time by simply swinging the handle or lever laterally on the vertical axis of the loose hanger,
90 the stock being guided and held in continuation of the lever during this movement by the forked shank.

The forked shank is removably coupled to the lever. For instance, in the specific ex-
95 ample illustrated, the straight portion 15, of the shank is held removably in the end of the lever by the clamping or set screw 23. By thus removably coupling the blade carrying stock to the lever, one form of dressing
100 tool can be readily substituted for another form according to the requirements of the work.

In Fig. 3, I show a modified form of stock or blade holder 17', which is rigid with its
105 straight shank removably fitted in the lever end and secured by set screw 23, as just described in connection with the blade holder and forked shank of Fig. 2. This stock or blade holder 17', is formed with a vertically
110 disposed socket to receive the floor dressing bit or blade 19, having lower projecting working edge 20, and also to receive a vertically adjustable shoe, sole or gage 18'. The head is provided with a clamping device
115 comprising set screw 21 for securing the blade and sole in the head. This sole comprises an upright portion or shank fitted in the blade holder socket and the depending and forwardly curved portion 18', arranged
120 to travel on the floor surface immediately behind the blade working edge 20, when performing its working stroke. The sole can be adjusted vertically in the blade holder and with respect to the working edge 20, to control
125 the working depth thereof and prevent the same from gouging. The sole 18', travels on the floor surface and follows the vertical undulations of the floor surface and maintains the head and the blade in fixed re-
130

lation with respect to the floor surface during the working stroke. In this modified form, the blade 19, can be adjusted vertically independently of the sole 18' to vary the downward working projection of the edge 20, with respect to the sole or leveling face.

In order to enable the operator to make a full operative stroke of maximum length without being required to step back from the frame and from the foot board, I form the rear end of the lever with branching, divided or separated rearwardly extending handles 24, one for each hand, and so spaced apart as to receive the body of the operator between them. By this arrangement the operator can move the lever and the truck forward to the limit of the forward or return stroke, and can then draw the parts back on the operative stroke and can finish said stroke with his hands moving back and on opposite sides of the body to a position in rear of the body, with said separated handle ends extending rearwardly on opposite sides of the body and beyond the same.

I do not herein make claim to the weighted frame, the truck and the vertically and laterally swinging handle lever as such features, among others, are claimed in my copending application filed Feb. 21, 1908, Serial Number 417,196.

The term "truck" is employed herein in a broad sense to include any type of carriage and not in a limited sense to include only a wheeled type of carriage.

What I claim is:—

1. A floor dressing machine comprising a truck, a vertically-rockable lever carried thereby, and a stock controlled and actuated by the lever and pivotally joined thereto to tilt vertically in following the floor surface and having a leveling face or sole and provided with and carrying a dressing blade.

2. A floor dressing machine comprising a vertically-rockable lever, provided with and controlling a stock having an independent vertical tilting movement with respect to the lever, said stock having a bottom leveling face or sole and a dressing blade projecting below said face and operatively fixed with respect thereto, in combination with a truck carrying said lever.

3. A floor dressing machine comprising a truck, a lever carried thereby, and a stock controlled by the lever and pivotally joined thereto on a horizontal axis transverse of the machine to follow the surface of the floor during operation, said stock having a bottom leveling face and provided with and carrying a dressing tool projecting through said face.

4. A floor dressing machine comprising a truck, a lever fulcrumed thereto and carried thereby, and a stock actuated by said lever and intermediate its length pivotally joined to said lever on a transverse axis and ar-

ranged to rock vertically independently of the truck and lever in following the surface of the floor said stock having a leveling surface or sole arranged in the direction of operative movement of the stock, and provided with and carrying a dressing tool operatively fixed therein and projecting through said sole intermediate the length thereof.

5. A floor dressing machine comprising a truck, a track to hold the same to reciprocation in a fixed plane above the floor surface, a lever carried by and fulcrumed to said truck, a stock mounted to rock vertically on a transverse axis in following the surface of the floor being dressed and having a leveling face or sole and provided with and carrying a floor dressing blade projecting through said sole, and means pivotally coupling said stock to said lever.

6. In a floor dressing machine, in combination, a truck, a rockable lever carried thereby, a stock adapted to independently rock vertically in following the floor surface and having a bottom leveling sole or face and provided with and carrying a dressing tool, and means pivotally coupling and attaching said stock to said lever on a transverse axis intermediate the length of the stock and at a point removed from the working edge of said tool.

7. A floor dressing machine comprising a truck, a vertically-rockable lever carried thereby and fulcrumed thereto, and provided with a forked shank, and a vertically-rockable stock adapted to follow the surface of the floor and pivotally coupled within said forked shank on a transverse axis and provided with a floor dressing tool projecting below the bottom leveling face or sole of the stock.

8. A floor dressing machine, comprising a truck, a rockable lever carried thereby, a shank removably coupled to said lever, and a stock intermediate its length pivotally coupled to said shank to rock on a transverse axis, and carried by said shank and adapted to independently rock vertically in following the surface of the floor and provided with a floor dressing tool operatively fixed therein and carried thereby.

9. In a floor dressing machine, in combination, a truck, a vertically-rockable stock adapted to follow the floor surface being dressed and provided with an elongated bottom leveling face, and a dressing tool operatively fixed therein and projecting through said face at a point intermediate the length thereof, controlling means swingable on a vertical axis and carried by said truck, and means whereby said stock is pivotally coupled to said controlling means on a horizontal axis transverse of the machine and whereby the same can be moved laterally for a shearing cut.

10. A floor dressing machine comprising

a truck, a lever, floor dressing means connected to and controlled by said lever, and a hanger supporting the lever from the truck and whereby the lever can be oscillated laterally on a vertical axis, said hanger comprising sections loosely joined by an intermediate coupling connection or nipple provided with right and left hand screw thread connections with said sections.

10 11. In a floor dressing machine, in combination, a truck, a vertically movable truck actuating lever fulcrumed to and carried by said truck and provided with and controlling a floor dressing tool, and a sole adapted

to travel on the floor surface adjacent the 15 working edge of said tool and control the working depth thereof during the operative stroke of said lever, said blade and sole being maintained in fixed relation and movable vertically together during said working 20 stroke.

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

WALTER S. HAVEN.

Witnesses:

B. R. JONES,
JAMES CRAIG.