

S. T. JOHNSON.
SURFACE FINISHING MACHINE.
APPLICATION FILED MAR. 25, 1909.

949,037.

Patented Feb. 15, 1910.

4 SHEETS—SHEET 1.

Fig. 9.

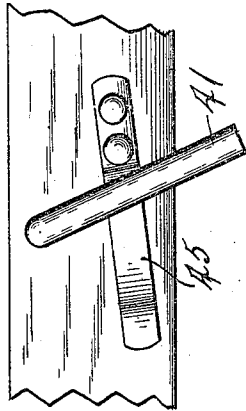
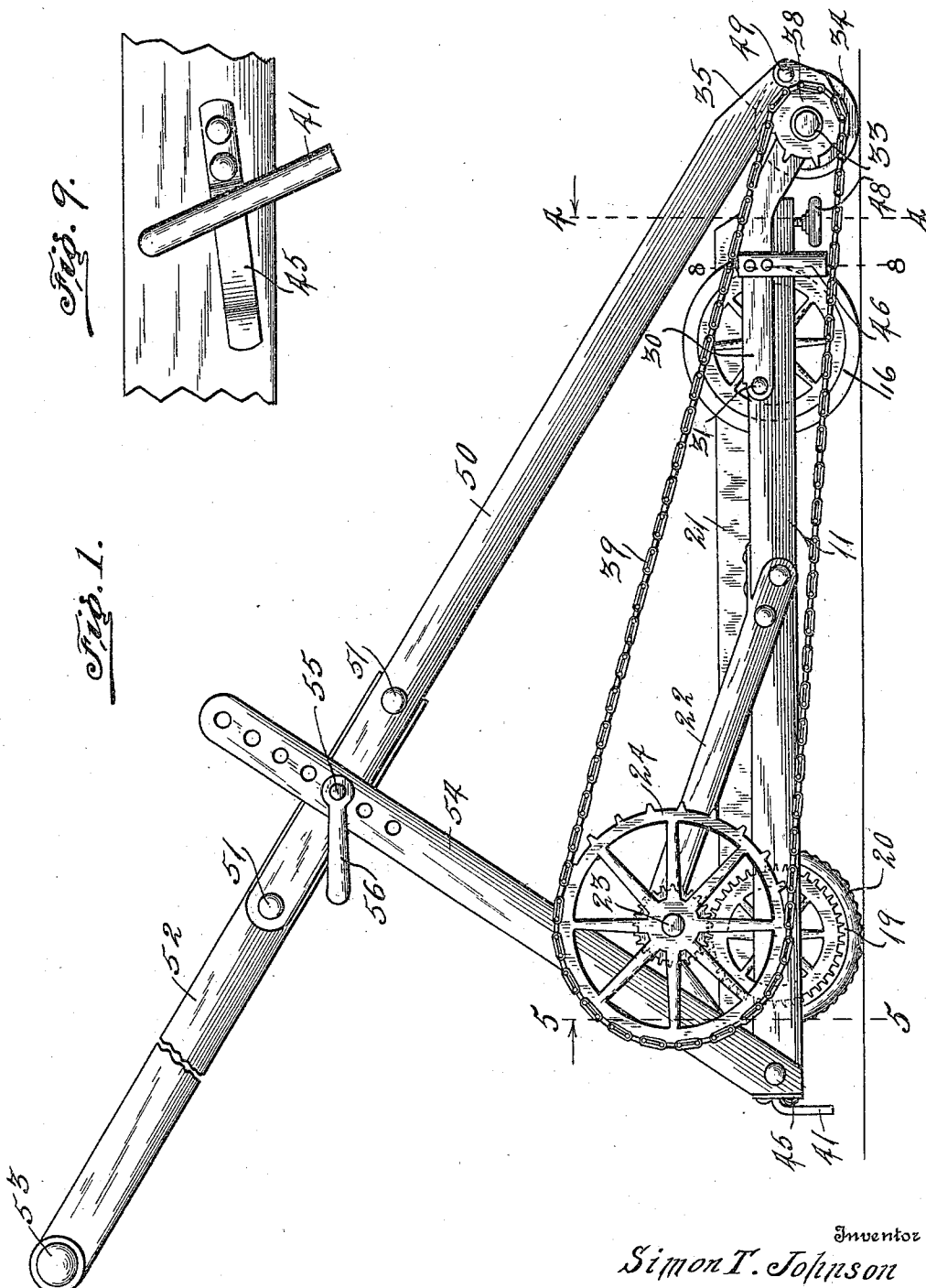


Fig. 1.



Witnesses

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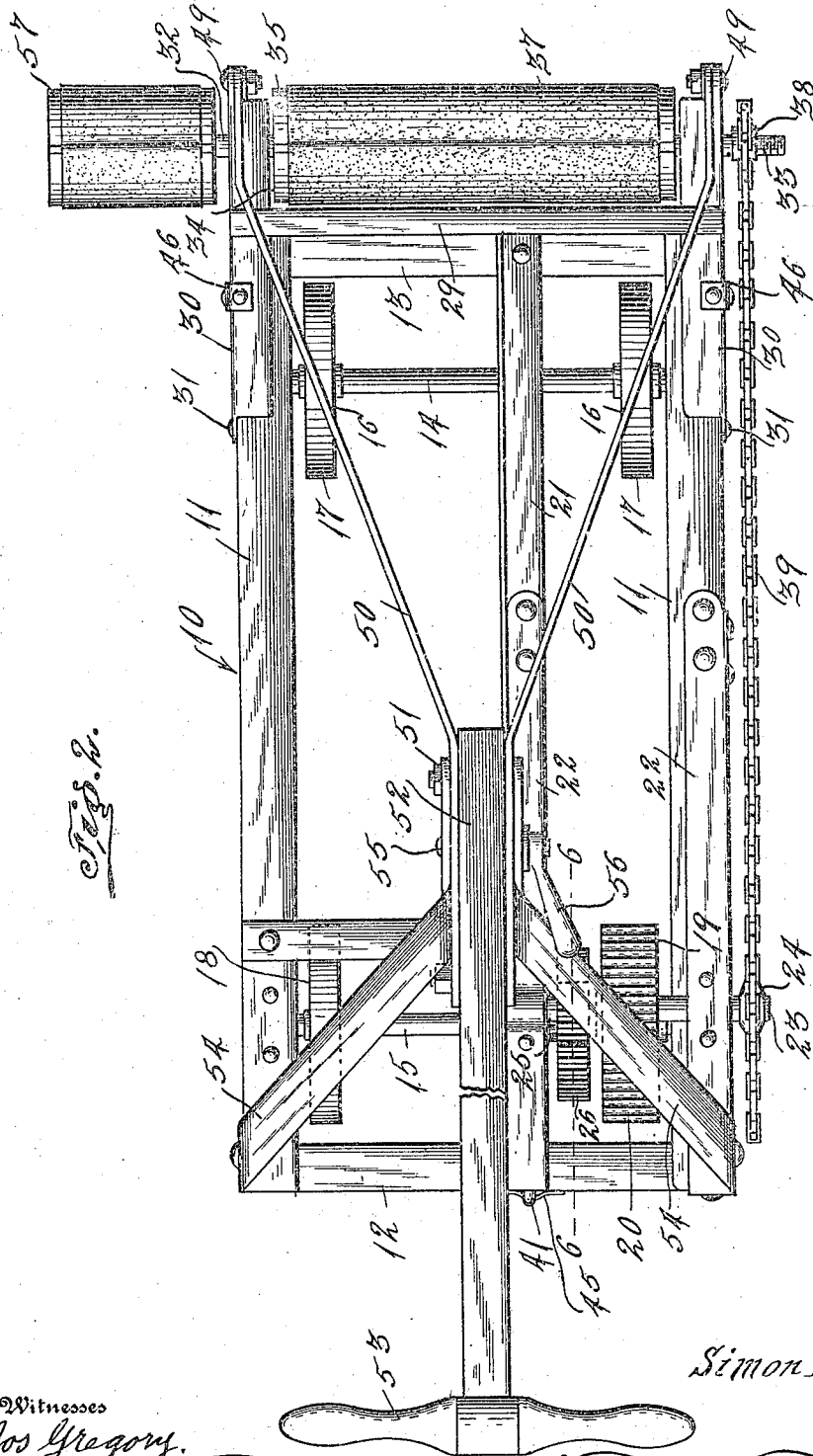
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4 SHEETS-SHEET 2.



Reg. U.S. Pat. & Tm. Off.

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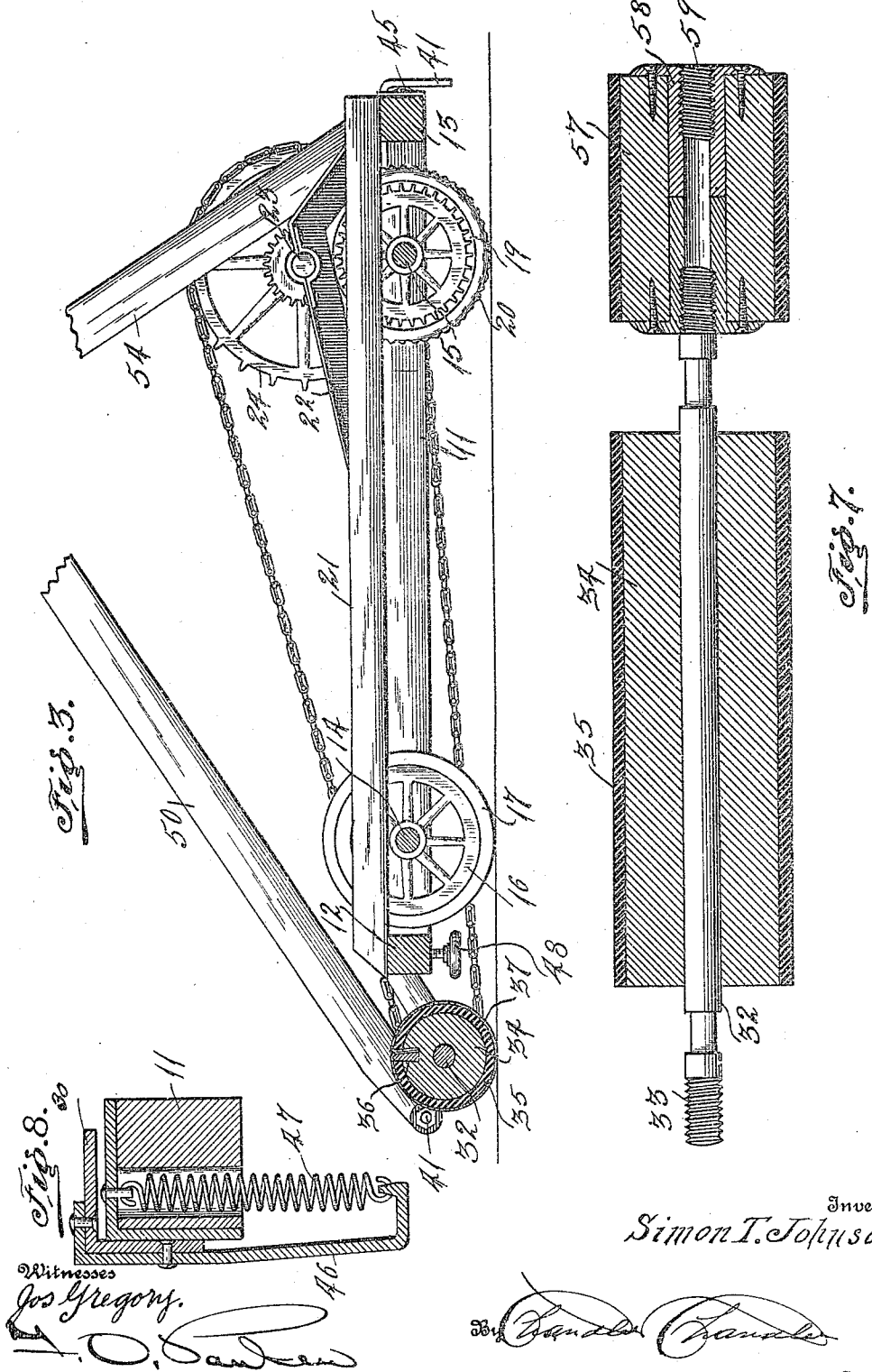
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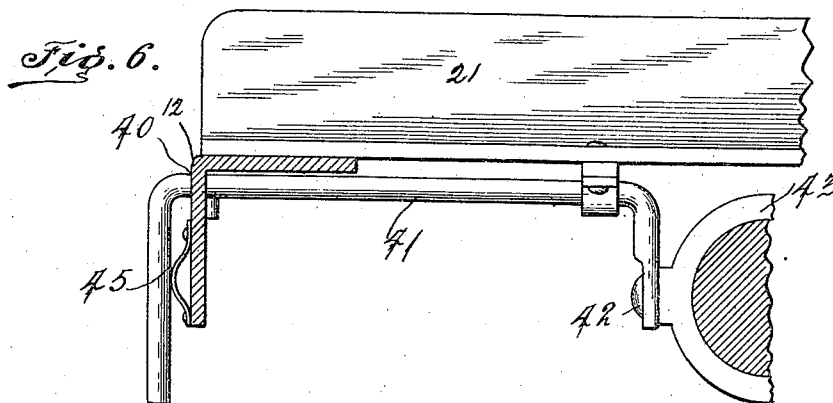
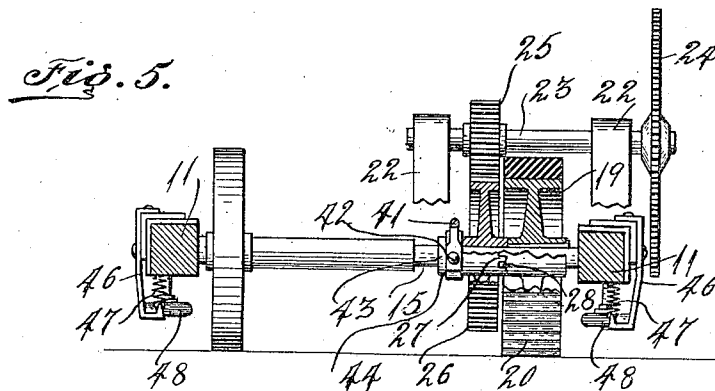
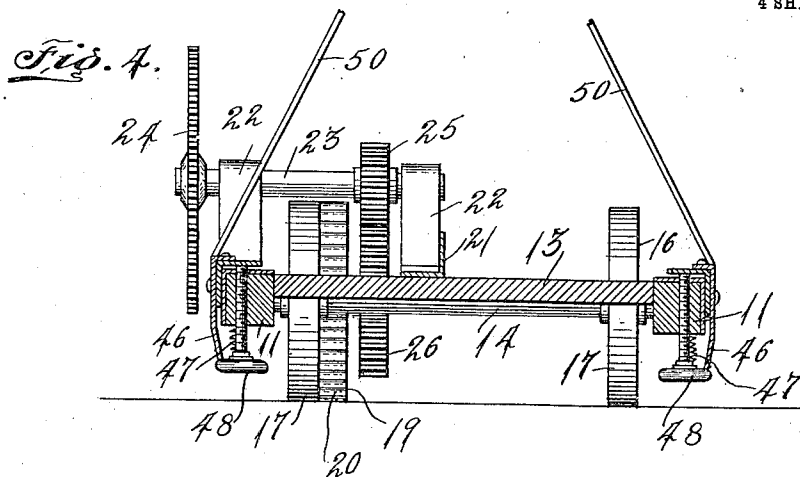
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SURFACE-FINISHING MACHINE.

949,037.

Specification of Letters Patent.

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Application filed March 25, 1909. Serial No. 485,711.

To all whom it may concern:

Be it known that I, SIMON T. JOHNSON, a subject of the King of Sweden, residing at Merriam Park, in the county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Surface-Finishing 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.

The invention relates to surface finishing machines and more particularly to the class of machines for smoothing and finishing floor surfaces constructed of wood material.

The primary object of the invention is the provision of a surface finishing machine which is adapted to be moved over floors or any wooden surface and by means of a rotary surfacing roller which is adapted to operate upon the wooden flooring so that the latter will be smoothed to give to the same an even and highly finished surface.

Another object of the invention is the provision of a machine of this character in which the entire surface of a wooden flooring can be rendered smooth and dressed with an even finish surface and means to enable the flooring adjacent vertical walls to be smoothed and finished consistent with the remaining area thereof.

A further object of the invention is the provision of a machine of this character which is simple in construction, strong, durable, thoroughly efficient in operation and comparatively inexpensive in the manufacture.

In the drawings accompanying and forming part of this specification is illustrated the preferred form of embodiment of the invention, which to enable those skilled in the art to carry the invention into practice, will be set forth at length in the following description, while the novelty of the invention will be included in the claims succeeding the description. It is to be understood however that minor changes, variations and modifications may be resorted to, such as come properly within the scope of the claims hereunto appended, without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings:—Figure 1 is a side elevation of the invention. Fig. 2 is a top plan

view thereof. Fig. 3 is a longitudinal fragmentary view through the machine. Fig. 4 is a sectional view on the line 4—4 of Fig. 1. Fig. 5 is a sectional view on the line 5—5 of Fig. 1 looking in the direction of the arrow. Fig. 6 is a fragmentary sectional view on the line 6—6 of Fig. 2. Fig. 7 is a longitudinal sectional view through the main and supplemental finishing rollers. Fig. 8 is a detail sectional view on the line 8—8 of Fig. 1. Fig. 9 is a fragmentary rear end elevation showing the spring held clutch operating lever.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings the numeral 10, designates generally the main frame of the machine which comprises spaced paralleled side beams 11, the same united at their rear ends to a cross bar 12, and also united near the forward ends of said side beams is a front cross bar 13, so as to provide a rigid unitary open frame structure. Journaled in the side beams 11 of the main frame are front and rear axles 14, and 15 respectively, to the former of which are fixed traction wheels 16, which latter are disposed within the frame structure and are provided with rubber tires 17, so as to afford a soft tread thereto. Fixed to the rear axle 15, are supporting wheels 18 and 19, the latter serving as the main power wheel of the machine and is provided with a corrugated rubber tread or tire 20, the same being of increased width with respect to the tread of the wheel 18 which latter corresponds with the front supporting wheels of the machine.

Located approximately centrally of the main frame 10, and secured to the cross bars thereof is a center bar 21 the latter being L-shaped in cross section and extending longitudinally of said main frame. Near the rear of the main frame and rising from the center bar 21, and one side beam 11, are bearings 22, in which is journaled a horizontally disposed driven shaft 23, the latter having one end projecting slightly beyond one side of the main frame and has fixed thereto a sprocket wheel 24. Also secured to said shaft 23, is a pinion 25, the latter enmeshing with a gear wheel 26, which is slidably mounted upon the rear axle 15, and is formed with clutch teeth 27, to engage

corresponding clutch teeth 28, formed on the driving wheel 19, fixed to the rear axle of the machine.

Mounted at the forward end of the main frame 10 is a swinging auxiliary frame 29, which has its side arms 30, pivoted as at 31, to the side beams 11, of the main frame. Each of said arms 30, is of L-shape in cross section and mounted near the forward ends of these arms is a rotatable spindle or shaft 32, the opposite ends of which are threaded as at 33, and project beyond the sides of the frame a slight distance for the purpose as will be hereinafter described.

Secured to the spindle or shaft 32, is a finishing roller 34, which is provided with a rubber covering 35, and contains a wedge-shaped slot longitudinally throughout the length thereof to receive a wedging bar or key 36, which latter serves to secure circumferentially of the finishing roller a surfacing sheet of material 37, the same being composed either of sandpaper emery cloth or paper or it may be of felt carrying abrasive or other substance desired according to the work to be done by the surfacing or finishing roller. The said material 37, has its longitudinal edges inserted in the wedge slot and is clamped about the roller by means of the wedging key.

Fixed to the spindle or shaft 32, is a sprocket wheel 38, over which is trained a sprocket chain 39, the latter also trained over the sprocket wheel 24, so that rotary motion will be imparted from the main power wheel to the surfacing or finishing roller during the advancement of the machine over a flooring or other wooden surfaces.

Supported by a suitable bearing 40, depending from the center bar 21, is a clutch operating crank or lever 41, the inner end of which is pivoted as at 42, to an offset portion of a ring 43, the latter loosely fitted in an annular groove formed in the hub 44, of the gear wheel 26, so that upon operating the crank or lever 41 the said gear wheel 26, can be thrown into or out of clutch engagement with the main power wheel 19, of the machine. Secured to the rear cross bar 12, of the main frame in the path of movement of the clutch operating crank or lever 41, is a friction spring 45, which serves to hold the said crank or lever in its thrown position. Secured to the arms 30 of the auxiliary frame are depending brackets 46, which latter have connected thereto the lower ends of retractile springs 47, the same having their upper ends connected to the side beams 11, of the main frame and these springs serve to normally hold the surfacing or finishing roller 34, elevated and out of contact with the surface of the flooring to be smoothed. Threaded into the side rails 11, of the main frame are manually operative adjusting screws 48, which latter serve to limit the

downward movement of the auxiliary frame 29, when the machine is in actual operation or use. Connected to the forward ends of the arms 30, of the auxiliary frame by pivots 49, and rising above the main frame 10, at an inclination are inwardly converging bars 50, to which is connected therebetween by fasteners 51 a handle bar 52, having a hand grip cross head 53, so that an operator can push the machine over a flooring or surface to be finished or smoothed. Pivoted to the rear end of the main frame 10, and rising at an inclination therefrom are inwardly converging brace bars 54, the latter containing a series of registering openings engaged by a bolt member 55, which also passes through a suitable opening contained in the handle bar and threaded onto said bolt is a lever controlled lock nut 56, so that the handle bar can be adjusted to various inclinations to suit the operator.

Detachably connected to the spindle or shaft 32, on either threaded end 33 thereof, is a supplemental smoothing roller 57, the same being identical in construction to the roller 34, although it contains a hub 58, the bore of which has its opposite ends threaded as at 59, to permit the detachable mounting of said supplemental smoothing roller upon either end of the shaft or spindle 32, so that a flooring can be smoothed and finished adjacent vertical walls and at the corners formed thereby.

From the foregoing description it is thought the construction and operation of the machine will be clear therefore an extended explanation has been omitted.

What is claimed is:—

1. In a machine of the class described, a main frame, an auxiliary raising and lowering frame pivotally connected thereto, a surfacing roller journaled in the auxiliary frame, a handle bar pivotally connected to the auxiliary frame, means connected to the main brace and handle bar to hold the latter in various adjusted positions, driving means operating said surfacing roller upon the advancement of the main frame, and clutch means controlling said driving means.

2. In a machine of the class described, a main frame, an auxiliary raising and lowering frame pivotally connected thereto, a surfacing roller journaled in the auxiliary frame, a handle bar pivotally connected to the auxiliary frame, means connected to the main brace and handle bar to hold the latter in various adjusted positions, driving means operating said surfacing roller upon the advancement of the main frame, clutch means controlling said driving means, and tension means normally holding the auxiliary frame in a raised position.

3. In a machine of the class described, a main frame, an auxiliary raising and lowering frame pivotally connected thereto, a

surfacing roller journaled in the auxiliary
frame, means connected to the main brace
and handle bar to hold the latter in various
adjusted positions, driving means operating
5 said surfacing roller upon the advancement
of the main frame, clutch means controlling
said driving means, tension means normally
holding the auxiliary frame in a raised posi-

tion, and adjustable means for limiting the
lowering of the auxiliary frame. 10

In testimony whereof, I affix my signa-
ture, in presence of two witnesses.

SIMON T. JOHNSON.

Witnesses:

P. A. PAULSON,

AUGUST JOHNSON.