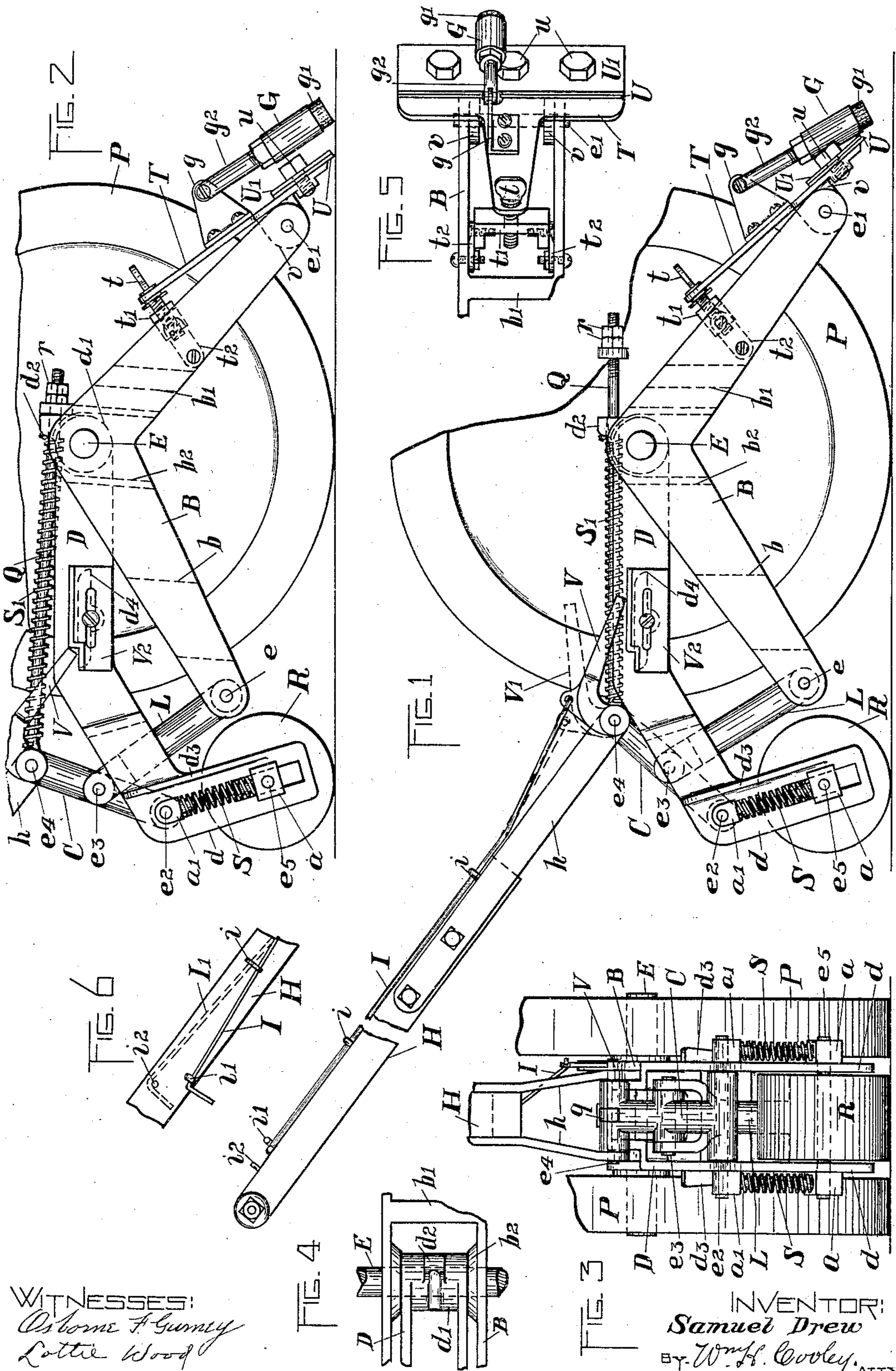


S. DREW.
FLOOR SCRAPING MACHINE.
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938,652.

Patented Nov. 2, 1909.



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UNITED STATES PATENT OFFICE.

SAMUEL DREW, OF ROCHESTER, NEW YORK.

FLOOR-SCRAPING MACHINE.

938,652.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, SAMUEL DREW, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Floor-Scraping Machine, of which the following is a specification.

This invention relates to that class of floor scrapers adapted to operate upon floors in a way to prepare the same for sandpapering and the final finishing process.

The purpose of my present invention is to provide a machine of the character described in which the knife shall be automatically raised from the floor during the inoperative travel of the machine and also automatically brought into proper engagement with the floor during the operative travel of the machine, such results being secured by mechanism under the control of the handle in such a way that the direction in which the machine is moved by the handle determines the relative positions of the parts in a way to secure the above mentioned results.

The accompanying drawings illustrating a floor scraping machine in accordance with my present invention, are as follows:—

Figure 1 is a side elevation of the machine with the wheel toward the observer removed and with part of the other wheel broken away, and with the parts of the machine shown in the relative positions which they assume during the inoperative travel of the machine, which in Fig. 1 is toward the right. Fig. 2 is a view similar to Fig. 1, but with the parts comprising the main body portion of the machine shown in their operative positions which they assume when the machine is being drawn to the left. Fig. 3 is a view of the main body portion of the machine as seen from the left. Fig. 4 is a top or plan view of a part of the central portion of the frame work of the machine about the main shaft E thereof. Fig. 5 is a plan view of the right hand end of the machine, being the end carrying the knife. Fig. 6 is a plan view of the upper portion of the handle.

Similar letters refer to similar parts throughout the several figures of drawing.

Referring to the drawings,—the main support for the operative parts of my machine consists of the two main wheels P each independently revoluble upon a main shaft E

and held thereon with the frame work B 55 between them by means of any suitable mechanism, such, preferably, as cotter pins, not shown. The shaft E is also revoluble through the frame work B. This frame work B is angular in conformation and has, 60 as indicated in Fig. 4 on the inside, bosses b^2 to strengthen the same at the center and to furnish increased bearing surfaces for the shaft E. This frame work B has between the side members thereof connecting webs b 65 and b^1 , as indicated in dotted lines in Figs. 1 and 2. Between the side members of the frame B at the right hand end thereof there is pivotally supported upon a rod e^1 the adjustable knife-carrying plate T having ears 70 v thereon extending between the side members of the frame B and through suitable holes therefor in which this rod e^1 extends. A U-shaped member t^1 has its ends articulating with the free ends of the links t^2 75 upon screws, as indicated in Figs. 1, 2 and 5, and such links t^2 are pivotally supported from the sides of the frame B upon suitable screws, as indicated also in Figs. 1, 2 and 5. An adjusting screw t is threaded through 80 the main portion of this member t^1 and is prevented from longitudinal movement through the hole therefor in the upper end of the knife-carrying plate T by means of a washer on the under side of such plate, and a 85 cotter pin, as shown in Figs. 1 and 2, may be used to hold the washer in place, and between such washer and the head of the screw t , the upper end of the knife-carrying plate T is secured in such a way as to permit 90 of the free rotation of the screw t to adjust, angularly with reference to the frame of the machine, the knife-carrying plate T. The lower end of this knife carrying plate T has secured thereto the usual scraping knife U 95 held in place by means of bolts u extending through the cap plate U^1 . To the knife plate T there is secured an ear g projecting upwardly and to the right, and pivotally secured to which is seen the upper end of the 100 bolt g^2 having threaded thereon the cylinder G which may be adjustably secured on the bolt g^2 by means of a jam nut, as indicated in Figs. 1, 2 and 5, and in the lower end of this cylinder G there is secured a short cyl- 105 inder of rubber g^1 adapted to engage the floor before the knife U and in such a way as to prevent the knife U from engaging

with the floor until the machine has been drawn slightly to the left, tilting this buffer member, comprising the rod g^2 , cylinder G and rubber g^1 , over to the left, as indicated in Fig. 2, and thus causing the engagement of the scraper knife U with the floor to take place so gradually as to leave no well defined marks at the beginning of the engagement of the knife with the floor as would be the case without the use of such buffer member.

Articulating with and between the left hand ends of the side members of the frame B and upon the rod e is seen the link L, the upper end of which is bifurcated and articulates on the rod e^3 with the lever C as seen at its center. This lever C has lateral extensions near its middle adapted to enter between the bifurcated upper end of the link L, and it also has lateral extensions at its ends, those at its lower end adapted to enter between and articulate with the side members of the frame work D upon a rod e^2 . This rod e^2 extends also through and is revolvable in the spring engaging members a^1 , which may, if desired, be formed integrally upon the outside of the side members of the frame D near their upper left hand corners. These spring supporting members a^1 have downward extensions cylindrical in form and adapted to engage within the springs S, the other ends of which engage over similar spring supporting members a comprising bearings for the rod e^5 extending also through the roller R, which may or may not be rotatably secured upon the rod e^5 as desired. The rod e^5 and bearings a are held in place by any suitable means such as cotter pins or like devices, not shown,—so also are the rods e^2 and e^3 already described. The springs S comprise a yielding support for the left hand end of the frame D. The lateral extensions at the upper end of the lever C engage between the iron straps h secured on the sides of the handle H at its lower end and a suitable rod e^4 , which may be held in place also by cotter pins, extends through suitable holes therefor in the lower ends of the side members h of the handle H and through the upper end of the lever C, thus permitting the handle H to articulate with the lever C at its upper end.

A rod Q has an eye q on its left hand end engaging within a suitable slot therefor in the upper end of the lever C and articulates upon the rod e^4 . The left hand end of this rod Q extends through an upward projection d^2 formed on the cylinder d^1 , within which shaft E is freely revoluble, serving as a connecting member between the side members of the frame D and with which such cylinder d^1 is preferably formed integrally. Between the side members of this frame work D there extends a connecting web d^4 , as

indicated in dotted lines in Figs. 1 and 2, and the frame work D is widened out each way at a point to the left of the wheels P so that frame work D is considerably wider at its left hand end. The downward projections d of this frame work D are stiffened by means of the laterally extending webs d^3 , as seen, and through suitable slots therefor in these downward extensions d of the frame work D there extend tongues on the spring engaging members a , forming a guiding means for such members a when the left hand end of the frame D is forced downwardly against the action of the springs S. The right hand end of the rod Q has thereon a washer and two jam nuts, as shown, whereby the motion to the left of the upper end of the lever C may be adjustably limited while the spring S^1 operates to hold such lever C in the position indicated in Fig. 1.

Through suitable eyes i on the upper side of the handle H there extends a rod I having at its upper end a lateral extension, as indicated, by means of which such rod may be operated. A hook i^1 tends to hold the upper end of such rod I in the position shown in full lines in Fig. 6, but the upper end of such rod I may be disengaged from this hook i^1 and moved to the position indicated in dotted lines at I^1 , and in engagement over the pin i^2 . The lower end of this rod I engages and articulates with an ear on the upper edge of the latch V articulating on the end of the rod e^4 toward the observer in Figs. 1 and 2. There is adjustably secured on the side of the frame D toward the observer in Figs. 1 and 2, as seen, a latch plate V^2 , adjustably held in place by means of a screw, as seen, extending through a slot therefor in such plate V^2 and threaded into the frame D. This latch plate V^2 is adapted to be engaged by the latch V when the handle H is drawn to its extreme left hand position, as seen in Fig. 2, and this latch V may be either disengaged from the latch plate V^2 by a pull exerted upon the lateral extension of the upper end of the rod I, or such latch may be held in its inoperative position, indicated in dotted lines at V^1 in Fig. 1, when the rod I is moved to the position indicated in dotted lines at I^1 in Fig. 6, and in engagement over the pin i^2 .

In using my machine, the knife U is properly adjusted and secured upon a knife plate T in the manner already described and the motion to the left of the upper end of the lever C is properly adjusted by means of the jam nuts r at the right hand end of the rod Q, then upon pushing the machine from the left and toward the right, the parts are caused to assume the positions indicated in Fig. 1 with the knife U raised from the floor. The buffer member G prevents a marring of the base which might occur without its use

when the machine is moved to the extreme side of the room, the floor of which is to be dressed. Then upon drawing the handle H to the left, the parts are caused to assume the positions nearly as indicated in Fig. 2, except that the buffer G first prevents the knife U from engaging the floor, but as the machine is drawn to the left, this buffer member G tilts over and permits the knife U to gradually engage with the floor, preventing the unsightly marks which would occur without the use of the buffer, which is shown in Fig. 2 as having reached that position where the knife is fully in engagement with the floor. The motion to the left of the handle H swings the lever C over to the left raising, as clearly indicated in Figs. 1 and 2, the left hand end of the frame work B and tending to raise the wheels P from the floor by impressing an adjustable amount of the weight of such wheels upon the knife U and upon the rear end of the frame D. The rear end of the frame D is, however, yieldably supported from the floor by means of this connection already described with the roller R and the pressure exerted upon the rear end of this frame D, it will at once be seen, is dependent upon the amount of motion to the left of the upper end of the lever C, which in turn is adjustably limited by the jam nuts *r*. There is thus provided a ready means for adjusting the proportion of the weight of the wheels P that is supported from the knife U and thereby the pressure exerted on such knife.

The normal pull upon the handle H in operating the machine tends to keep the parts in the positions indicated in Fig. 2 with the knife firmly and in constant and proper engagement with the floor. If, however, it is desired, the latch V may be made use of in the manner already described and the point of operative engagement of this latch V with the latch plate V² is adjustable to meet the varying conditions effected by the adjustment of the jam nuts *r*.

In using my machine, the same is pushed by the operator to the edge of the room so that the buffer G preferably engages lightly with the base and then the machine is drawn to the desired distance away from the side wall of the room by the handle H.

From the foregoing description of my floor scraping machine, it is believed that the construction and operation thereof are sufficiently clear to call for no further explanation.

What I claim is:—

1. In a floor scraper, a roller weight revolvably connected with a frame pivotally supported therefrom; a scraper knife mounted upon one end of such frame; an operating handle connected to the machine and means, independent of any upward or downward

pressure exerted on the handle by the operator, whereby, when the scraper is moved in one direction by such handle, the frame is tilted on its support to raise the knife end thereof from the floor and whereby also, when the scraper is moved in the opposite direction by the handle, the frame is tilted to force the knife into engagement with the floor with a pressure representing a part of the weight of such roller weight.

2. In a floor scraper, a roller weight revolvably connected with a frame pivotally supported therefrom; a scraper knife mounted upon one end of such frame; an operating handle connected to the machine; means, independent of any upward or downward pressure exerted on the handle by the operator, whereby, when the scraper is moved in one direction by such handle, the frame is tilted on its support to raise the knife end thereof from the floor and whereby also, when the scraper is moved in the opposite direction by the handle, the frame is tilted to force the knife into engagement with the floor with a pressure representing a part of the weight of such roller weight and yieldable and elastic means sustaining such pressure.

3. In a floor scraper, a roller weight revolvably connected with a frame pivotally supported therefrom; a scraper knife mounted upon one end of such frame; an operating handle connected to the machine; means, independent of any upward or downward pressure exerted on the handle by the operator, whereby, when the scraper is moved in one direction by such handle, the frame is tilted on its support to raise the knife end thereof from the floor and whereby also, when the scraper is moved in the opposite direction by the handle, the frame is tilted to force the knife into engagement with the floor with a pressure representing a part of the weight of such roller weight and means for adjusting the proportionate part of the weight of such roller weight impressed upon the knife when in engagement with the floor.

4. In a floor scraper, a roller weight revolvably connected with a frame pivotally supported therefrom; a scraper knife mounted upon one end of such frame; an operating handle connected to the machine; means, independent of any upward or downward pressure exerted on the handle by the operator whereby, when the scraper is moved in one direction by such handle, the frame is tilted on its support to raise the knife end thereof from the floor and whereby also, when the scraper is moved in the opposite direction by the handle, the frame is tilted to force the knife into engagement with the floor with a pressure representing a part of the weight of such roller weight; means for adjusting the proportionate part of the weight of such

roller weight impressed upon the knife when in engagement with the floor and yieldable and elastic means sustaining such pressure.

5. In a floor scraper, a roller weight rev-
 5 olubly connected with a frame pivotally
 supported therefrom; a scraper knife mount-
 ed upon one end of such frame; an operat-
 ing handle and an auxiliary frame connect-
 10 ed to the main frame and connections be-
 tween such auxiliary frame, such handle
 and such main frame whereby, independent
 of any upward or downward pressure exerted
 on the handle by the operator, as such
 scraper is moved in one direction by such
 15 handle the knife end of such main frame is
 raised and whereby also, independent of any
 upward or downward pressure exerted on
 the handle by the operator, when such ma-
 chine is moved in the other direction by
 20 such handle, the knife on the main frame is
 forced into engagement with the floor with
 a pressure representing a part of the weight
 of such roller weight.

6. In a floor scraper, a roller weight rev-
 25 olubly connected with a frame pivotally
 supported therefrom, a scraper knife mount-
 ed upon one end of such frame; an operat-
 ing handle; an auxiliary frame connected to
 the main frame and connections between
 30 such auxiliary frame, such handle and such
 main frame whereby, independent of any
 upward or downward pressure exerted on
 the handle by the operator, as such scraper
 is moved in one direction by such handle,
 35 the knife end of such main frame is raised
 and whereby also, independent of any up-
 ward or downward pressure exerted on the
 handle by the operator, when such machine
 is moved in the other direction by such han-
 40 dle, the knife on the main frame is forced
 into engagement with the floor with a pres-
 sure representing a part of the weight of
 such roller weight and yieldable and elastic
 means sustaining such pressure.

7. In a floor scraper, a roller weight rev-
 45 olubly connected with a frame pivotally
 supported therefrom; a scraper knife mount-
 ed upon one end of such frame; an operating
 handle; an auxiliary frame connected to the
 50 main frame and connections between such
 auxiliary frame, such handle and such main
 frame whereby, independent of any up-
 ward or downward pressure exerted on the
 handle by the operator, as such scraper is
 55 moved in one direction by such handle, the
 knife end of such main frame is raised and
 whereby also, independent of any upward
 or downward pressure exerted on the han-
 dle by the operator, when such machine is
 60 moved in the other direction by such handle,
 the knife on the main frame is forced into
 engagement with the floor with a pressure
 representing a part of the weight of such
 roller weight and means for adjusting the

proportionate part of the weight of such 65
 roller weight impressed upon the knife when
 in engagement with the floor.

8. In a floor scraper, a roller weight rev-
 olubly connected with a frame pivotally
 supported therefrom; a scraper knife mount- 70
 ed upon one end of such frame; an operat-
 ing handle; an auxiliary frame connected to
 the main frame and connections between such
 auxiliary frame, such handle and such main
 frame whereby, independent of any upward 75
 or downward pressure exerted on the han-
 dle by the operator, as such scraper is moved
 in one direction by such handle, the knife
 end of such main frame is raised and where-
 by also, independent of any upward or 80
 downward pressure exerted on the handle
 by the operator, when such machine is moved
 in the other direction by such handle, the
 knife on the main frame is forced into en-
 gagement with the floor with a pressure rep- 85
 resenting a part of the weight of such roller
 weight; means for adjusting the proportion-
 ate part of the weight of such roller weight
 impressed upon the knife when in engage-
 ment with the floor and yieldable and elas- 90
 tic means sustaining such pressure.

9. In a floor scraper, a roller weight rev-
 olubly connected with a frame pivotally
 supported therefrom; a scraper knife mount- 95
 ed upon one end of such frame; an operat-
 ing handle and an auxiliary frame pivotally
 connected to the main frame and connec-
 tions between such auxiliary frame, such
 handle and such main frame whereby, inde-
 pendent of any upward or downward pres- 100
 sure exerted on the handle by the operator,
 as such scraper is moved in one direction by
 such handle, the knife end of such main
 frame is raised and whereby also, inde-
 pendent of any upward or downward pres- 105
 sure exerted on the handle by the operator,
 when such machine is moved in the other
 direction by such handle, the knife on the
 main frame is forced into engagement with
 the floor with a pressure representing a part 110
 of the weight of such roller weight.

10. In a floor scraper, a roller weight rev-
 olubly connected with a frame pivotally sup-
 ported therefrom; a scraper knife mounted 115
 upon one end of such frame; an operating
 handle; an auxiliary frame pivotally con-
 nected to the main frame and connections
 between such auxiliary frame, such handle
 and such main frame whereby independent
 of any upward or downward pressure exert- 120
 ed on the handle by the operator, as the
 scraper is moved in one direction by such
 handle, the knife end of such main frame
 is raised and whereby also, independent of
 any upward or downward pressure exerted 125
 on the handle by the operator, when such
 machine is moved in the other direction by
 such handle, the knife on the main frame is

forced into engagement with the floor with a pressure representing a part of the weight of such roller weight and yieldable and elastic means sustaining such pressure.

11. In a floor scraper, a roller weight rev-
olubly connected with a frame pivotally sup-
ported therefrom; a scraper knife mounted
upon one end of such frame; an operating
handle; an auxiliary frame pivotally con-
nected to the main frame and connections
between such auxiliary frame, such handle
and such main frame whereby, independent
of any upward or downward pressure exert-
ed on the handle by the operator, as such
scraper is moved in one direction by such
handle, the knife end of such main frame
is raised and whereby also, independent of
any upward or downward pressure exerted
on the handle by the operator, when such
machine is moved in the other direction by
such handle, the knife on the main frame is
forced into engagement with the floor with
a pressure representing a part of the weight
of such roller weight and means for adjust-
ing the proportionate part of the weight of
such roller weight impressed upon the knife
when in engagement with the floor.

12. In a floor scraper, a roller weight rev-
olubly connected with a frame pivotally sup-
ported therefrom; a scraper knife mounted
upon one end of such frame; an operating
handle; an auxiliary frame pivotally con-
nected to the main frame and connections
between such auxiliary frame, such handle
and such main frame whereby, independent
of any upward or downward pressure exert-
ed on the handle by the operator, as such
scraper is moved in one direction by such
handle, the knife end of such main frame
is raised and whereby also, independent of
any upward or downward pressure exerted
on the handle by the operator, when such
machine is moved in the other direction by
such handle, the knife on the main frame is
forced into engagement with the floor with
a pressure representing a part of the weight
of such roller weight; means for adjusting
the proportionate part of the weight of
such roller weight impressed upon the knife
when in engagement with the floor and
yieldable and elastic means sustaining such
pressure.

13. In a floor scraper, a roller weight rev-
olubly connected with a frame pivotally
supported therefrom; a scraper knife
mounted upon one end of such frame; an
operating handle and an auxiliary frame
elastically and yieldably supported from a
floor engaging roller and connections be-
tween such auxiliary frame, such handle
and such main frame whereby, independent
of any upward or downward pressure ex-
erted on the handle by the operator, as such
scraper is moved in one direction by such

handle, the knife end of such main frame is 65
raised and whereby also, independent of any
upward or downward pressure exerted on
the handle by the operator, when such ma-
chine is moved in the other direction by
such handle, the knife on the main frame is 70
yieldably forced into engagement with the
floor with a pressure representing a part of
the weight of such roller weight impressed
thereon and on such auxiliary frame and
varying according to the yielding of the 75
elastic and yieldable support for the aux-
iliary frame.

14. In a floor scraper, a roller weight rev-
olubly connected with a frame pivotally
supported therefrom; a scraper knife 80
mounted upon one end of such frame; an
operating handle; an auxiliary frame elas-
tically and yieldably supported from a floor
engaging roller and connections between
such auxiliary frame, such handle and such 85
main frame whereby, independent of any
upward or downward pressure exerted on
the handle by the operator, as such scraper
is moved in one direction by such handle, the
knife end of such main frame is raised and 90
whereby also, independent of any upward
or downward pressure exerted on the handle
by the operator, when such machine is
moved in the other direction by such han-
dle, the knife on the main frame is yield- 95
ably forced into engagement with the floor
with a pressure representing a part of the
weight of such roller weight impressed
thereon and on such auxiliary frame and va-
rying according to the yielding of the elas- 100
tic and yieldable support for the auxiliary
frame and means for adjusting the propor-
tionate part of the weight of such roller
weight impressed thus upon the knife when
in engagement with the floor. 105

15. In a floor scraper, a roller weight rev-
olubly connected with a frame pivotally
supported therefrom; a scraper knife
mounted upon one end of such frame; an
operating handle; an auxiliary frame elas- 110
tically and yieldably supported from a floor
engaging roller and connections between
such auxiliary frame, such handle and
such main frame whereby, independent
of any upward or downward pressure 115
exerted on the handle by the operator, as
such scraper is moved in one direction by
such handle, the knife end of such main
frame is raised and whereby also, independ-
ent of any upward or downward pressure 120
exerted on the handle by the operator, when
such machine is moved in the other direc-
tion by such handle, the knife on the main
frame is yieldably forced into engagement
with the floor with a pressure representing 125
a part of the weight of such roller weight
impressed thereon and on such auxiliary
frame and varying according to the yielding

of the elastic and yieldable support for the
auxiliary frame and means for adjusting
the proportionate part of the weight of such
roller weight impressed thus upon the knife
5 when in engagement with the floor, such last
named means comprising mechanism for ad-
justing the upward pressure exerted by such

auxiliary frame on the end of the main
frame opposite the knife.

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Witnesses:

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