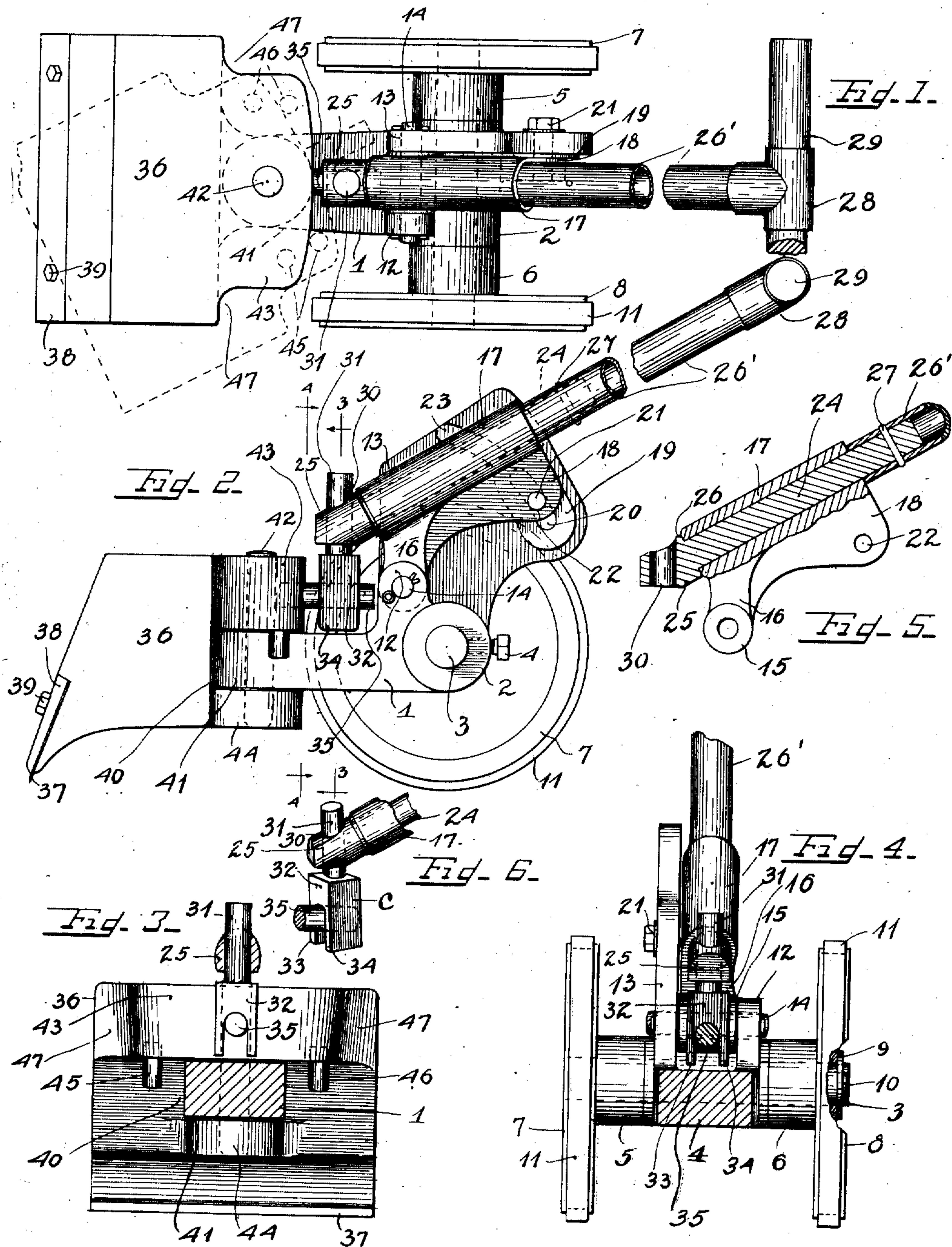


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FLOOR SCRAPING MACHINE.  
APPLICATION FILED MAY 3, 1909.

989,726.

Patented Apr. 18, 1911.



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# UNITED STATES PATENT OFFICE.

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## FLOOR-SCRAPING MACHINE.

989,726.

Specification of Letters Patent.

Patented Apr. 18, 1911.

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*To all whom it may concern:*

Be it known that I, PETER RUDD, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Floor-Scraping Machines, of which the following is a specification, and which is illustrated in the accompanying drawing, forming a part thereof.

10 My invention relates to floor scraping machines, its object being to provide improved construction, particularly to enable adjustment to be made during the operation of the machine. In scraping machines of this class 15 the body part is usually mounted on wheels and supports a scraping blade which engages the surface to be scraped. It is desirable to have this blade engage the floor along the line at an angle with the direction of travel 20 of the machine and in some machines the blade is given a permanent angular setting. In other machines provision is made for loosening the blade and for slightly varying the angular position thereof, but in none of 25 these machines is it possible to adjust instantaneously the angularity while the machine is being operated. Such an adjustment is very desirable when it is considered that during one stroke of the machine different grains and conditions are encountered in 30 the substance to be scraped. It is of course possible to change the direction of travel of the entire machine to thus adjust the angularity of the blade but this requires a great 35 deal of work and wastes a lot of time.

The main feature of my invention, therefore, is to provide a scraping machine of this class, in which the angularity of the blade can be instantaneously adjusted while 40 the machine is in operation and without changing the direction of travel of the body part of the machine. The machines usually have a handle, by means of which they are drawn across the floor to be treated, and as 45 a means for carrying out my invention I prefer to utilize the handle for carrying out the adjustment of the blade. In my machine the blade is carried by a frame pivoted to the body part to be swung laterally, and a 50 joint or coupling is provided between the handle and the pivoted frame so that axial rotation of the handle will cause lateral swing of the pivoted frame and thereby angular adjustment of the blade with reference 55 to the direction of travel of the body part. This adjustment control of the handle in no

way interferes with the use of the handle as a means for drawing the machine over the floor, and provision is also made whereby the handle may be adjusted in a vertical 60 plane.

In the accompanying drawing which illustrates the features of my invention Figure 1 is a plan view of a floor scraping machine, the dotted lines showing an angular position 65 of the blade supporting frame; Fig. 2 is a side elevation; Fig. 3 is a sectional view taken on plane 3—3, Fig. 2; Fig. 4 is a sectional view taken on plane 4—4, Fig. 2; Fig. 5 is a view of the handle supporting 70 member, the upper part thereof being in vertical diametrical section; and Fig. 6 is a view of the joint, or coupling, in the position assumed when the supporting frame has been swung to the position indicated in 75 dotted lines, Fig. 1.

The machine comprises a rectangular body part 1, through whose rear end 2 passes the axle 3, secured therein by a set screw 4. The ends of this axle are engaged 80 by hubs 5 and 6 carrying wheels 7 and 8 respectively, each held in place by a washer 9 and a pin 10 and each surrounded by a rubber tire 11. Extending upwardly from the body part 1 are a bearing lug 12 and a bearing 85 lug or wall 13, and a shaft 14 extends through these bearing lugs, which shaft is parallel with the axle 3 and in the vertical plane a short distance in front of the axle 90 plane. Pivoted to this shaft 14 between the lugs is a hub 15, from which extends the handle supporting frame 16, the upper sleeve part 17 of this frame being inclined as shown. A web 18 extends downwardly from 95 the sleeve part 17 and engages the boss 19 extending from the lug or wall 13. A segmental slot having its center in the axle of shaft 14 is cut through the wall 13 and surrounded by the boss 19, this slot receiving 100 the shank of the screw 21 whose end threads into the opening 22 in the web 18. On loosening of the screw 21 the handle supporting frame can be rotated about the shaft 14 and upon tightening of the screw the handle 105 frame will be held in its adjusted position. The boss 19 has the extension 23 for guiding the upper part of the handle supporting frame. Extending through and journaled in the sleeve part 17 is a rod 24 enlarged at 110 its lower end to form a head 25, whose shoulder 26 engages the lower end of the sleeve. The upper end of this rod extends into the



pipe 26', being secured thereto by means of a pin 27, the lower end of this pipe engaging the upper end of the sleeve part 17, thus confining the rod 24 in said sleeve. The pipe 26' forming the handle part can be of suitable length and terminates in a T part 28, in which may be fastened a grip rod 29, which may be of wood. The handle is thus adjustable in a vertical plane by virtue of the pivotal arrangement of the supporting frame 16 and is also axially rotatable by virtue of the arrangement of the rod 24 in sleeve 17.

An opening 30 extends through the head part 25 in a direction at right angles to the plane of the grip rod 29, so when said grip rod is in a horizontal plane, said opening will be in a vertical plane. A coupling member *c* has an upper cylindrical end 31 for reciprocable and rotational movement in opening 30 and has a lower bifurcated end 32 whose limbs 33 and 34 are planar and parallel and between which is received a cylindrical rod 35 extending rearwardly and centrally in a horizontal plane from the supporting frame 36, at whose front end a scraping blade 37 is adapted to be secured by means of a plate 38 and screws 39. The rear end of the frame 36 has the bearing pocket 40 for receiving the front rounded end of the body part 1, a pivot pin 42 extending through the upper and lower rear sections 43 and 44 of the frame 36 and through the part 41, so that the frame 36 can be swung laterally about said pivot. The frame 36 is of sufficient volume to give the desired weight and pressure on the blade and is of such shape as to most efficiently apply its weight to the blade.

In the position shown the handle is in vertical adjustment to fit the average operator and with this position when the handle grip 29 is horizontal and the blade 37 parallel with the axle 3, the coupling member *c* will be vertical and the extension 35 in the vertical plane of the handle. Upon slight axial rotation of the handle by means of its grip 29, the head 25 will revolve axially and the coupling member *c* will be swung correspondingly to cause the extension 35 to be carried therewith either to the left or the right of the central plane, thereby causing frame 36 to be swung correspondingly and the angularity of the blade 37 correspondingly adjusted. In Fig. 1 the dotted lines show the extension 35 to have been swung toward the right (looking from the grip end of the handle) and the front part of frame 36 swung to the left so that the blade 37 will be at an angle with the vertical plane of the axle 3. The corresponding position of the head 25 and coupling member *c* is shown in Fig. 6. Upon axial rotation of the head 25 the coupling member *c* swings and moves longitudinally and assumes an

inclined position, and also rotates axially to keep its limbs 33 and 34 parallel with the extension 35. The diameter of the extension 35 is preferably equal to the distance between the limbs 33 and 34 and the end 31 engages snugly in opening 30 to prevent lost motion. We thus have a universal joint or coupling connecting between the handle and the frame 36, which upon slight axial rotation of the handle will cause lateral swing of the frame 36 and angular adjustment of the blade with reference to the vertical plane of the main axle. This adjustment of the blade can be made while the machine is at rest or can be made instantaneously while the machine is in operation, and it is not necessary to in any way change the direction of travel of the machine as a whole in order to accomplish the blade adjustment. This adjusting feature is very desirable, as it saves a great amount of time and labor and much better work can be accomplished. The machine can be run across a floor in straight lines and the blade adjustment made instantaneously to suit the varying conditions of the surface to be scraped. The handle, as already explained, is adjustable in a vertical plane, but this adjustment in no way interferes with the proper and efficient operation of the coupling mechanism between the handle and the frame 36.

Stop studs 45 and 46 extend downwardly from the upper section 43 and engage with the body part 1 to limit the swing of the frame 36, and the frame 36 is cut away at its rear end to leave pockets 47 for receiving the wheels upon swing of said frame.

I do not wish to be limited to the construction and arrangement shown and described, as changes may readily be made without departing from the scope of my invention, whose broad features reside in the instantaneous adjustability of the scraping blade during operation of the machine without changing the direction of the travel of the machine, and in the control of said adjustability by the machine handle.

I therefore desire to secure the following claims by Letters Patent:

1. In a floor scraper, the combination of a body, a head pivoted to one end of said body to be adapted for lateral swing, a scraping knife on the head, a frame pivoted to the body, a handle journaled in said frame to be axially rotated and extending from the other end of said body, said pivoted frame allowing vertical swing of the handle with reference to the body and head, and universal coupling mechanism interposed between the inner end of said handle and said head to translate rotational movement of said handle into lateral swing of the head independently of vertical swing of said handle.

2. In a floor scraper, the combination of



a body, a head, a scraping knife on said head, said head being pivoted to one end of the body to be adapted for lateral swing to change the angle of the scraping knife relatively to the body, a frame pivoted to the body and adapted to swing vertically with reference thereto, a handle journaled in said frame and extending from the other end of said body, universal coupling mechanism interposed between the inner end of said handle and said head for translating rotational movement of said handle into lateral swing of said head, and means for locking said frame and thereby said handle in any position of vertical adjustment.

3. In a floor scraper, the combination of a body, a head at one end of the body, a scraping knife on the head, said head being pivoted to be swung laterally with reference to the body to change the angle of the scraping knife with reference to the body, a handle journaled to the body to be axially rotatable, a pin extending inwardly from said head, a pin journaled in the inner end of said handle, and a fork extending from said last mentioned pin to receive said first mentioned pin, said pins and fork forming a universal coupling mechanism for translating rotational movement of the handle into lateral swing of said head.

4. In a floor scraper, the combination of a body mounted on wheels, a head at one end of said body, a scraping knife on the head, said head being pivoted to the body to be adapted to be swung in a horizontal plane to change the angle of the scraping knife in relation to the body, a handle extending from the body by means of which said body may be drawn along to carry the scraping knife across a surface to be scraped, said head being adapted for axial rotation, a pin extending from said head, a pin journaled in the inner end of said handle, and a fork member extending from said last mentioned pin and straddling the first mentioned pin, said pins and fork member forming universal coupling for translating rotation of the handle into lateral swing of the head.

5. In a floor scraper, the combination of a body mounted on wheels, a head having a scraping knife and pivoted at one end of the body to be adapted for horizontal swing to vary the angle of the scraping knife with

relation to the body, a handle provided for drawing the body along to carry the scraping knife across the surface to be scraped, said handle being adapted for axial rotation, a pin extending from the head, and a fork member pivoted to the inner end of the handle and straddling said pin, said pin and fork member forming a coupling for translating rotation of the handle into horizontal swing of the head.

6. In a floor scraper, the combination of a body mounted on wheels, a handle pivoted to the body part to be adapted for vertical swing and for axial rotation, a head carrying a scraping knife and pivoted to the body to be adapted for movement in a horizontal plane to change the angle of the scraping knife relatively to the body, a pin extending from the head, and a fork member pivoted to the lower end of said handle and straddling said pin, said pin and fork member forming a universal coupling for translating rotational movement of the handle into horizontal movement of said head independently of the direction of travel of said body and independently of the vertical position of said handle with reference to the body.

7. In a floor scraper, the combination of a body mounted on wheels, a handle member extending from the body by means of which said body can be drawn along a surface to be scraped, said handle member being adapted for axial rotation, a head member carrying a scraping knife and pivoted to the body to be adapted for horizontal movement to change the angle of the scraping knife relatively to the body and the direction of travel of the body to produce a draw cut without changing the direction of movement of the body, a pin extending from one of said members, and a fork member pivoted to the other member and straddling said pin, said pin and fork member forming a coupling for translating rotation of the handle member into horizontal movement of the head member.

In witness whereof, I hereunto subscribe my name, this 30th day of April A. D. 1909.

PETER RUDD.

Witnesses:

JULIA C. LOOMIS,  
W. FISH.