

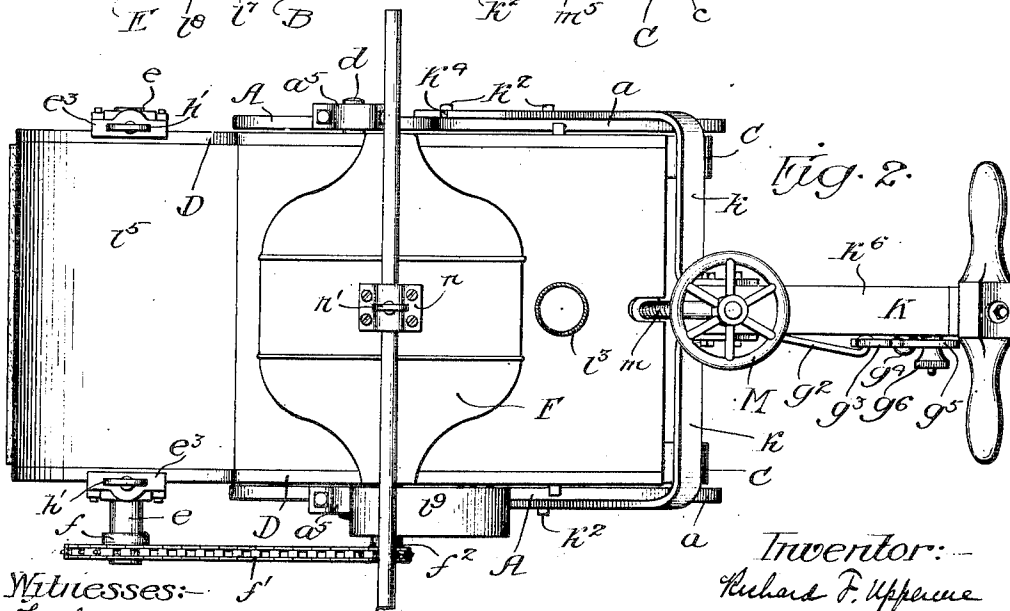
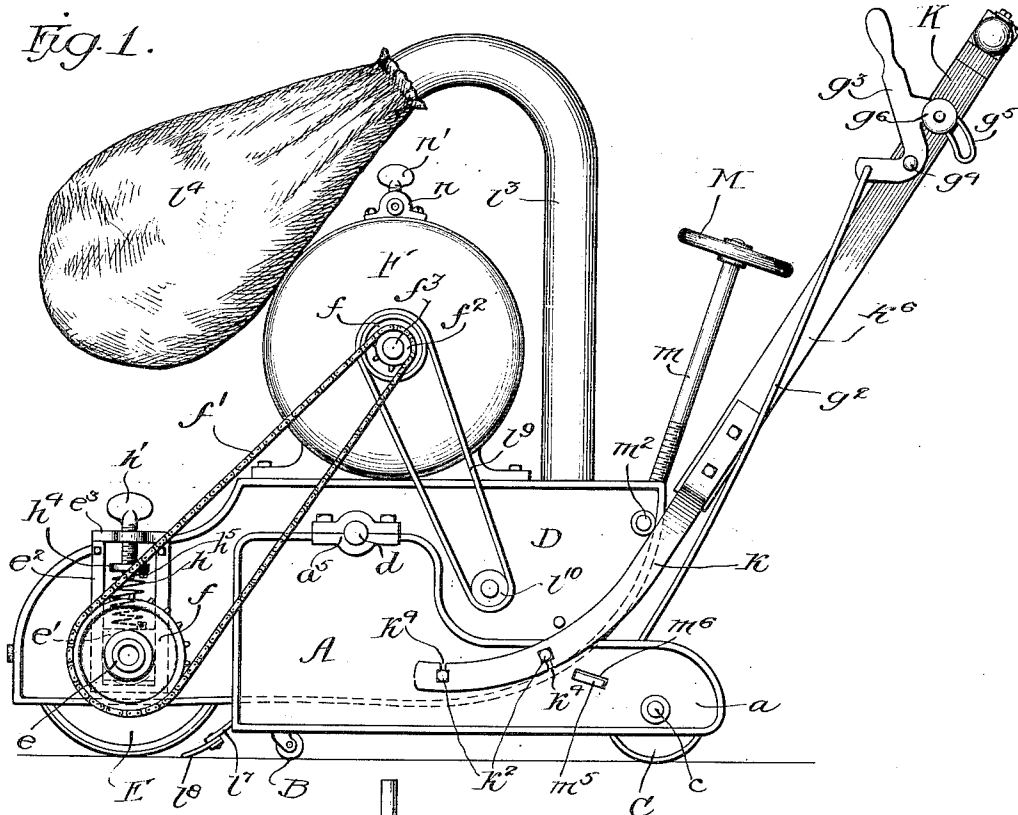
R. F. UPPERCUE.
FLOOR SURFACING MACHINE.
APPLICATION FILED JULY 9, 1910.

1,051,467.

Patented Jan. 28, 1913.

2 SHEETS-SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

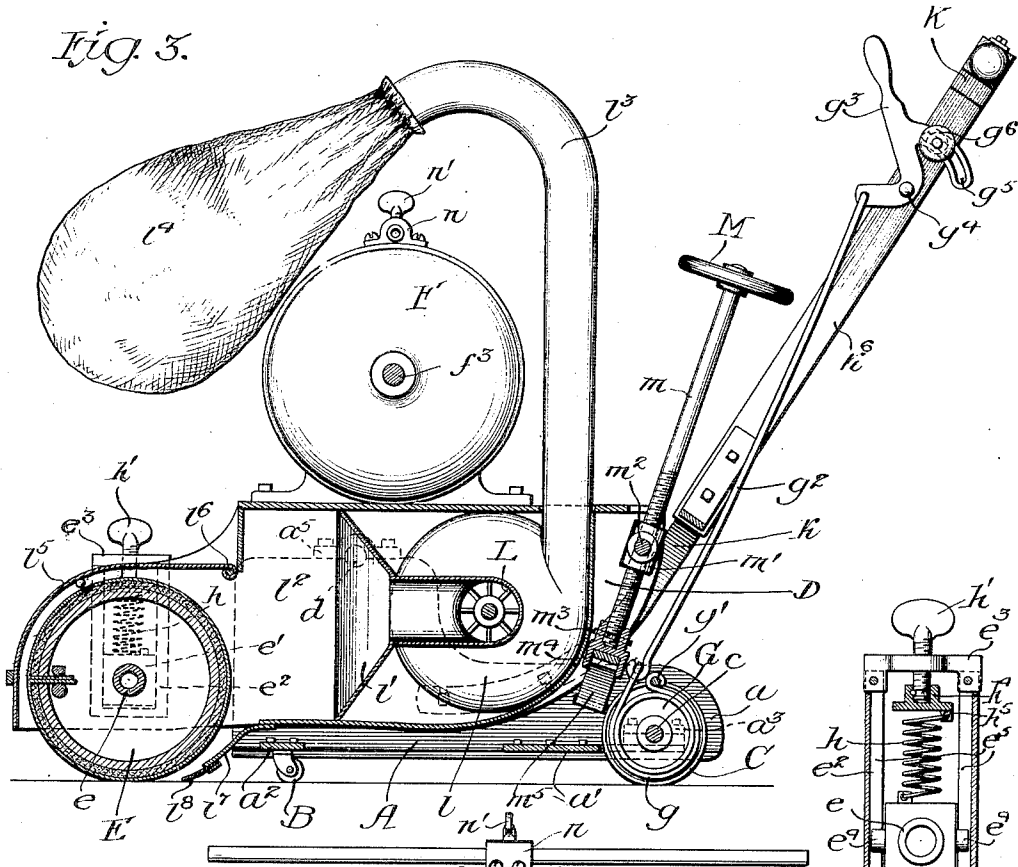


Fig. 5.

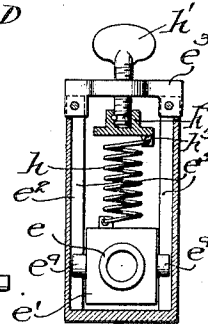
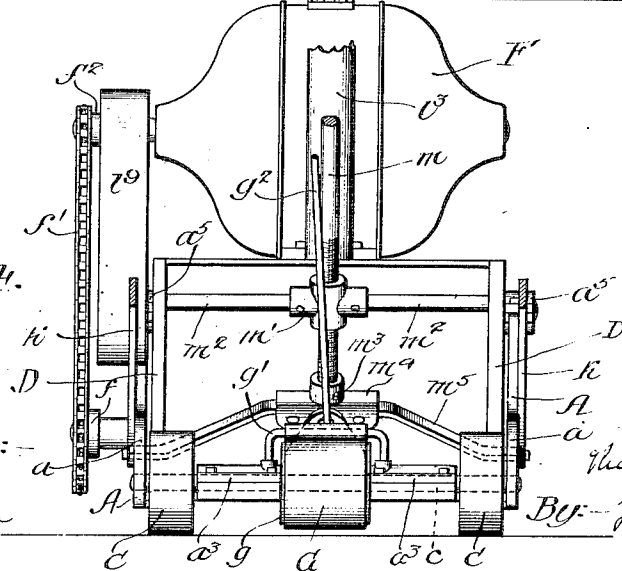


Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD F. UPPERCUE, OF MAYWOOD, ILLINOIS.

FLOOR-SURFACING MACHINE.

1,051,467.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed July 9, 1910. Serial No. 571,250.

To all whom it may concern:

Be it known that I, RICHARD F. UPPERCUE, a resident of Maywood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Floor-Surfacing Machines, of which the following is a full, clear, and exact description.

The invention relates to floor-surfacing machines and designs to provide an improved machine which is simple in construction and may be conveniently operated on a floor.

In floor-surfacing machines in which a motor-driven drum is employed, the tractile force of the surfacing roll engaging the floor has been utilized to propel the machine under control of a push-bar by which the operator can manually move the machine about. In the operation of such machines, when the drum is pressed against the floor, the tractile force is sufficient to propel the machine faster than desirable for proper resurfacing and it is necessary for the operator to hold back the machine, which requires considerable strength and tires the operator, and for that reason, in many instances, a machine embodying positively-driven mechanism for driving the carrying-wheels at desired speed, is preferred.

The present invention designs to provide an improved machine in which mechanism for driving traction-wheels may be dispensed with, and in which the operator can readily control the propulsion of the machine, without the necessity of overcoming the excessive tractile force of the surfacing-drum by manual force. This result is attained by the employment of a retarding device applied to hold and control the rotation of the carrying-wheels.

In the drawings: Figure 1 is a side elevation of a machine embodying the invention. Fig. 2 is a plan. Fig. 3 is a central longitudinal section. Fig. 4 is a rear elevation, parts being shown in section. Fig. 5 is a detail view of the bearing for the surfacing drum.

The machine comprises a carriage or truck A, which has side-frames *a* which are cross-connected by a plate *a'* and bar *a''*. Caster-wheels B support the front end of the truck and an axle *c* is mounted in bearings *a'''* secured to plate *a'* and in the side-frames *a* of the truck. Carrying-wheels C are rigidly secured to the axle *c*. A handle K for manually shifting the machine, is se-

cured to the truck by bars *k*, which extend to the outer sides of the truck-sides *a* respectively. Bolts *k''*, extending through slots *k'''* in said bars, serve to fixedly hold the handle-bars in operative position and to permit it to be swung into position over the machine for convenience in storage or transportation.

A tilting-frame D is pivotally sustained by the truck A and has trunnions *d* mounted in journals *a''''* on the sides of the truck. This tilting-frame D carries the surfacing-drum E at its front and a motor F for driving the drum is sustained on the top of said frame. This frame is tiltable so that the surfacing-drum carried thereby may be raised or lowered into contact with or away from the floor, as desired in the operation of the machine, and so that the desired pressure may be applied to said drum in operating it over a floor.

The surfacing-drum E may be of any suitable construction as well understood in the art. The shaft *e* of the drum is journaled in bearing-blocks *e'*, each of which is mounted to slide in a suitable guide or way formed in a bracket *e''*, secured to the sides of frame D respectively. A spring *h* is interposed between each of the bearing-blocks *e'* and an adjusting-screw *h'* which is mounted in a removable top-bar *e'''* of the bracket *e''*. Each bearing-block *e'* is provided with studs *e''''* which slides in grooves *e''''''* in its bracket *e''* to permit the drum and its shaft to tilt or yield transversely in the frame D, so that in operation, the roll may adjust itself laterally to any inequalities of the floor. The surfacing-drum is removably held in the tiltable frame D so that it may be quickly and conveniently replaced by a brush or other tool when desired. The pressure of each cushion spring *h*, may be varied by screw *h'*, and the latter has rotatably connected to its lower end, a bearing plate *h''* for the spring *h*. The upper end of said spring is secured to said plate *h''* by having its upper end extended through an eye *h'''* in said plate and the lower end is similarly connected to the bearing-block *e'* so that when the top-bars *e'''*, which are secured to brackets *e''* by bolts, are removed, the adjusting-screws and their spring-connections and the bearing-blocks, may be quickly removed with the drum and its shaft.

The surfacing drum E is operated at a

high speed and this causes the same, when pressed into contact with the floor, to propel the machine forwardly too fast to surface the floor. The drum is driven by a sprocket-wheel f secured to one end of the drum-shaft e , a chain f' and a sprocket-wheel f'' secured to the shaft f^3 on motor F. Usually, an electric-motor is employed for driving the surfacing-drum and being driven at a high speed, the tractile force of the drum tends to propel the machine too fast to surface the floor, particularly when the truck-wheels are not driven at slow speed. To avoid the necessity upon the part of the operator to hold the machine back against the tractile force of the surfacing drum, by manual force applied to the handle, a retarding device is provided, which, when applied to the carrying-wheels C of the truck, will cause these wheels to resist the tractile force of the drum and retard the machine. This retarding device consists of a drum or pulley G secured to the axle c of the carrying-wheels, a resilient friction-band g which is secured to a stirrup g' which is rigidly secured to the journals a^3 of the truck, a rod g^2 and a hand-lever g^3 disposed adjacent the propelling handle K. Lever g^3 is pivoted to the upright bar h^6 of the handle K at g^4 , and is provided with a segmental slotted portion g^5 by which a screw g^6 is adapted to hold the hand-lever and its connections in assigned positions, so that by manipulation of the hand-lever, the brake-band g may be applied with desired pressure to the drum G to overcome the excessive tractile force of the surfacing-drum and thus the speed of travel of the machine over the floor may be regulated to a nicety, without providing driving-mechanism for the carrying-wheels and without imposing upon the operator the duty of manually retarding the progress of the machine against the tractile force of the surfacing drum.

A suction-fan L of any suitable construction, is mounted within the frame D and below the top of said frame. A shell l is extended around the fan-casing and forwardly to a point adjacent the surfacing-drum to provide an enlarged chamber or duct l^2 , through which the cuttings and dust will be drawn into the fan. A tapered inlet l' is provided for directing the material to the fan which discharges the dust through an exhaust-duct l^3 into a suitable collector l^4 . A hood l^5 is pivoted, as at l^6 , to the frame D, to direct the cuttings from the floor into chamber l^2 . To prevent the cuttings from being directed beneath the machine, without being removed, a forwardly and downwardly extending plate l^7 is secured to the front edge of shell l and a flexible strip l^8 , such as felt or rubber, is secured to the front edge of said plate and is adapted to engage the floor to catch the cuttings and dust and

direct them into the chamber l^2 where the suction of the fan will carry them off. The fan is driven from the motor F by a belt l^9 which is driven by a pulley f^5 on the motor-shaft f^3 and drives a pulley l^{10} on the fan-shaft.

In practice, it is frequently desirable to raise and lower the surfacing-drum to render it inoperative or operative, or to vary the pressure of the drum on the floor. This adjustment is effected by tilting the frame D in the trucks A to raise or lower the front end of the frame which carries the surfacing-drum. The mechanism for tilting said frame to adjust the surfacing-drum comprises a hand-wheel M which is secured to the upper end of a shaft m , which is provided with a screw-thread engaging a screw threaded bracket m' which is pivotally held in the tiltable frame D by a sectional rod m^2 . The lower end of shaft m is connected by a pin and groove m^3 to a bracket m^4 , in which a spring-bar m^5 is secured. This bar m^5 is bowed or arched and its terminals extend through slots m^6 in the sides of truck A. Resultantly, this mechanism serves to hold the frame D in assigned position and by adjustment of hand-wheel M the frame may be tilted to raise or lower the drum carried by said frame. The spring-bar m^5 provides a slightly yielding connection between the tilting-frame and the truck for exerting a pressure against the frame D to hold the surfacing-drum on the floor, while permitting it to yield slightly in either direction when necessary in passing over uneven surfaces or obstructions and the springs h permit one end of the drum to yield upwardly independently of the other if necessary when the surfacing-roll is traveling over a laterally uneven surface. The tension of the springs h may be adjusted by screws h' and by manipulation of hand-wheel M, the pressure of the surfacing-drum on the floor may be regulated to a nicety and by operation of the same wheel, the surfacing-drum may be thrown out of contact with the floor when desired.

A tube N is secured to the top of the frame of motor F by a bracket n and a clamp-screw n' and this tube is adapted for the leading-in wires or conductors for the electrical motor so that, as the machine is being propelled on a floor, the wires will be held to either side of the machine to prevent the machine from passing over them.

In operating the machine, the motor F will be constantly driven to drive the surfacing-roll and fan L. Until the frame D has been tilted to bring the surfacing-roll into contact with the floor, the machine will be inoperative and may be propelled manually by the operator. When the machine is to be operated on a floor, hand-wheel M, which is within convenient reach of the op-

erator at the rear of the machine, may be turned to raise the rear end of the frame D, to swing the latter about its pivotal connection with the truck, and to lower the surfacing-drum at the front thereof. The tractile force of the surfacing-drum will propel the machine and by adjusting the hand-lever g^3 , the advance of the machine may be retarded to prevent the surfacing-drum from propelling the machine too rapidly. By adjustment of hand-wheel M, the pressure of the drum on the floor may be regulated to a nicety.

The invention is not to be understood as restricted to the details shown and described, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a floor-scraping machine, the combination of a truck provided with carrying-wheels, a combined surfacing-drum and propelling means, a frame carrying said drum, a motor for driving said drum, and means for retarding the propulsion of the machine due to the tractile force of said drum.

2. In a floor-surfacing machine, the combination of a truck provided with carrying-

wheels, a combined surfacing-drum and propelling means, a frame carrying said drum and pivoted to the truck to vary the pressure of said drum upon the floor, a motor for driving said drum, and adjustable means for retarding the carrying-wheels of the truck to regulate the propulsion of the machine due to the tractile force of said drum.

3. In a floor-surfacing machine, the combination of a truck, carrying-wheels for said truck, a frame tiltably mounted on said truck, a surfacing-drum mounted in said tilting-frame, a spring-bar applied between said truck and frame, and means connected to said bar and using the same as a fulcrum for raising and lowering said frame.

4. In a floor-surfacing machine, the combination of a truck, carrying-wheels for said truck, a frame tiltably mounted in said truck, a surfacing-drum mounted in said tilting-frame, a spring-bar applied between said truck and frame, and a shaft rotatably connected to said spring-bar and using the same as a fulcrum, said shaft being in screw-threaded engagement with said tilting frame for adjusting the latter vertically.

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