

2 Sheets—Sheet 1.

No. 478,443.

Patented July 5, 1892.

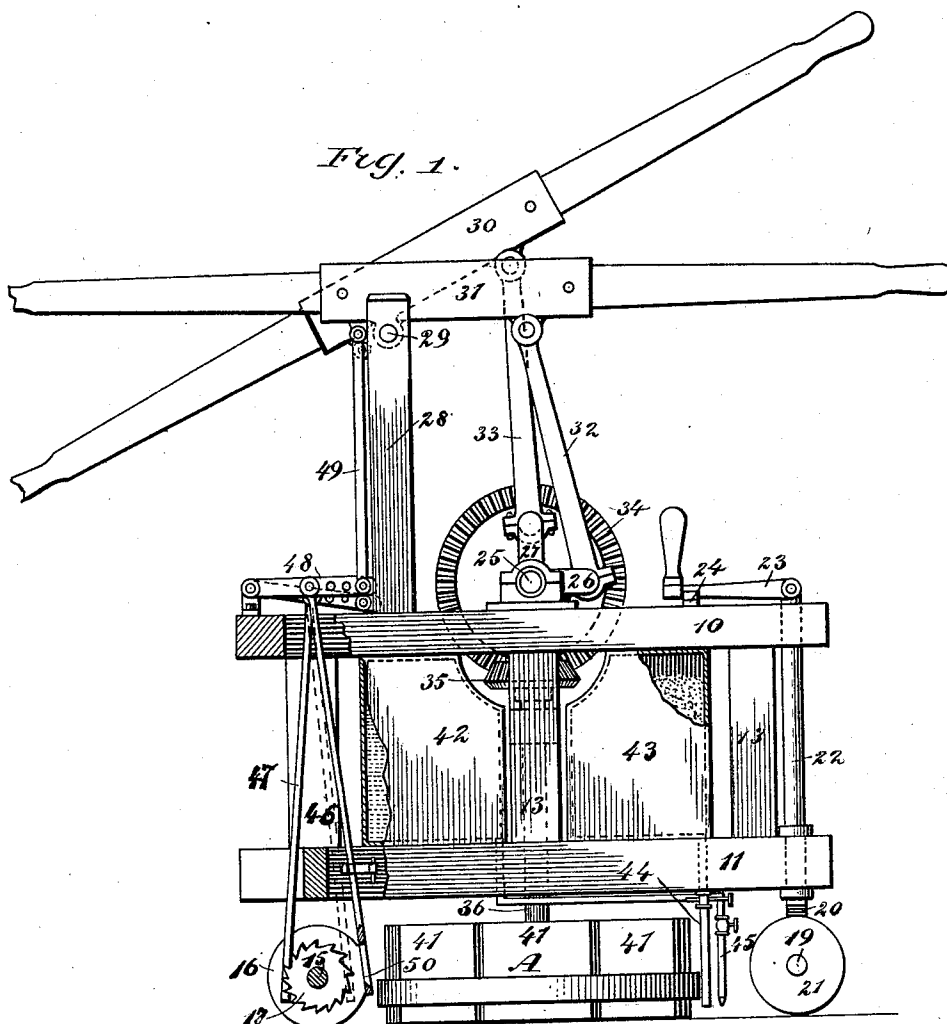
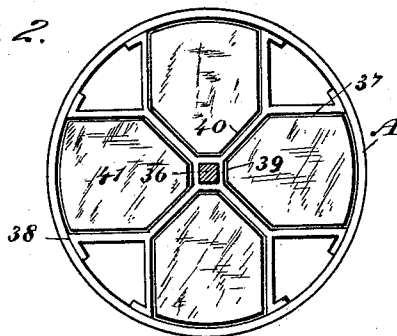


Fig. 2.



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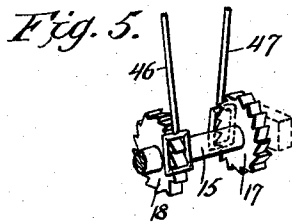
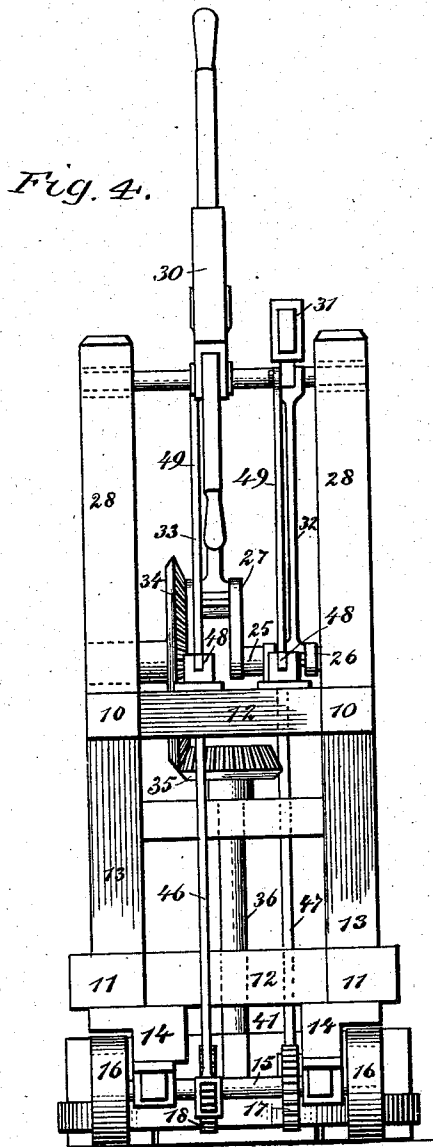
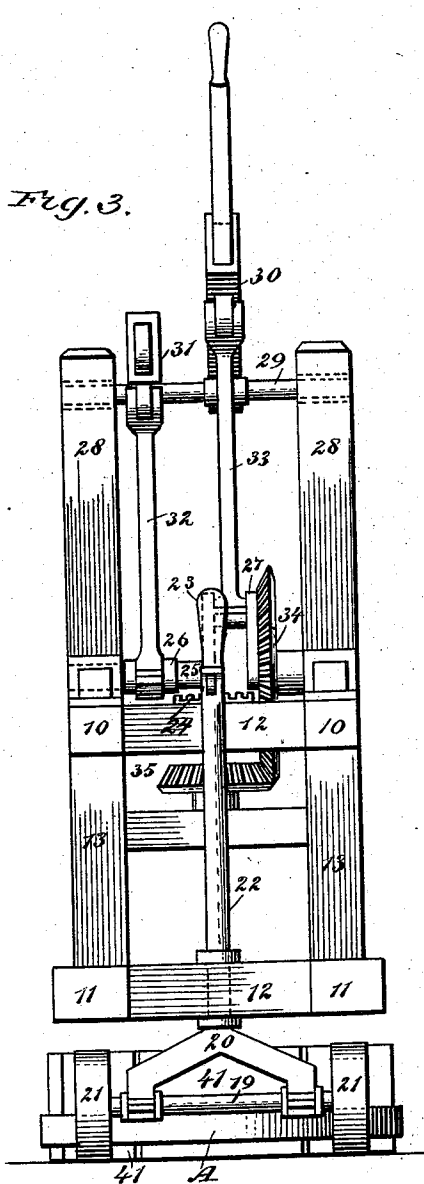
(No Model.)

2 Sheets—Sheet 2.

S. LOWBERG.
DECK CLEANING MACHINE.

No. 478,443.

Patented July 5, 1892.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL LOWBERG, OF NEW YORK, N. Y.

DECK-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 478,443, dated July 5, 1892.

Application filed May 26, 1891. Serial No. 394,232. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL LOWBERG, of New York city, in the county and State of New York, have invented a new and Improved
5 Deck-Cleaning Machine, of which the following is a full, clear, and exact description.

My invention relates to an improvement in deck-cleaning machines or machines for holy-stoning a deck, and has for its object to
10 provide a machine of simple, durable, and economic construction wherewith the holy-stones may be moved across the surface of the deck in frictional contact therewith and in any direction desired; and another object of
15 the invention is to provide for rotating the stones and permitting them to rest freely upon the deck and feed by gravity.

A further object of the invention is to so construct the machine that it may be steered
20 in any desired direction, and wherein water and grinding material may be supplied to the deck in the path of a stone as required.

The invention consists in the novel construction and combination of the several parts,
25 as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference
30 indicate corresponding parts in all the views.

Figure 1 is a side elevation of the machine, partly in section. Fig. 2 is a plan view of the stone-carrying frame, illustrating the stones
35 in position therein. Fig. 3 is a front elevation of the machine. Fig. 4 is a rear elevation thereof, and Fig. 5 is a detail perspective view.

The frame of the machine usually consists
40 of upper and lower horizontal beams 10 and 11, united by horizontal cross-beams 12 and perpendicular side beams 13. At the rear of the frame bearings 14 of any approved construction are secured to the bottom, in which
45 bearings an axle 15 is held to revolve, the said axle having secured to its extremities supporting-wheels 16, and between the bearings ratchet-wheels 17 and 18, having their teeth inclined in opposite directions, are firmly at-
50 tached to the axle. The forward axle 19 has

attached thereto an upwardly-extending yoke 20, and supporting-wheels 21 are loosely mounted upon the extremities of the axle. The yoke 20 is attached in any suitable or approved manner to a vertical shaft 22, which
55 is held to turn in the frame, and the upper end of the shaft usually extends to and beyond the upper surface of the frame and is provided with an attached crank-arm 23 whereby the shaft is revolved, the said crank-
60 arm being adapted to engage with a suitable rack 24 or the equivalent thereof. By means of the crank-arm 23 and the shaft 22 the machine may be steered in any desired direction.
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At or near the center of the frame, upon the top thereof, a shaft 25 is transversely journaled in suitable boxes, which shaft is provided with two crank-arms 26 and 27, one being at a right angle to the other. Near the
70 rear of the frame uprights 28 are secured to its upper portion, one at each side, and the uprights are connected at or near their upper ends by a fixed shaft 29. Upon the shaft 29 two walking-beams 30 and 31 are loosely
75 mounted. The walking-beam 31 is connected with the crank-arm 26 by a link 32, and the walking-beam 30 is connected by a link 33 with the crank-arm 27 of the shaft 25.

The crank-shaft 25 is provided with an attached bevel-gear 34, which bevel-gear meshes with a bevel-pinion 35, secured to the upper end of a vertical shaft 36, the said shaft being journaled in suitable supports in the frame. The shaft 36 extends downward below the
85 frame and is attached to a stone-carrier A. (Illustrated in detail in Fig. 2.) The stone-carrier consists of a skeleton frame containing a number of pockets 37, extending through from the upper to the lower face. Ordinarily
90 the stone-carrier A is constructed of a circular band 38, which is connected with a central hub 39 by a series of spider-like arms 40, and the pockets are ordinarily made angular at one end and curved at the opposite end. The
95 pockets 37 are adapted to receive the polishing-stones 41, ordinarily termed "holy-stones." The stones are loosely fitted in the pockets and extend above and below the carrier, as is illustrated in Fig. 1. Thus as their under
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surfaces engaging with the deck are worn away the stones feed downward by gravity.

Within the body of the machine two tanks 42 and 43 are preferably located, one containing an abrasing material and the other a liquid, and each tank feeds its contents in suitable proportions and at proper times in the path of the holy-stones. This feeding may be accomplished in any suitable or approved manner. In the drawings pipes 44 and 45, containing suitable valves, are represented as leading from the tanks and as carried at one side of the stones. It will be observed that when the walking-beams are rocked upon the shaft 29 through the medium of the crank-shaft 25 a rotary motion is imparted to the vertical shaft 36, and consequently a like motion is given to the carrier containing the holy-stones.

The machine is carried forward and backward, as occasion may require, through the medium of dogs 46 and 47, engaging the ratchet-wheels 17 and 18 on the rear axle. The dogs are oppositely located and alternately engage the ratchet-wheels, the dog 47 engaging the ratchet-wheel 17 and the dog 46 the ratchet-wheel 18. The upper ends of the dogs are adjustably and pivotally attached to levers 48, fulcrumed upon the frame at the rear thereof, as is best shown in Fig. 1. The levers contain a series of apertures for the adjustment of the dogs, and the inner ends of said levers are pivotally connected by links 49 with the walking-beams 30 and 31 at the rear of the fulcrum of the latter, the links 32 and 33, uniting the walking-beams with the crank-shank 25, being located some distance in front of their fulcrums.

The dogs 46 and 47 consist of rods passing downward through suitable recesses in the frame and engaging with the ratchet-wheels by gravity. The lower end of each rod is enlarged and is provided with a recess 50, preferably rectangular, the lower wall of the recess being inclined, and when a dog is in engagement with a ratchet-wheel the teeth of the latter enter the recess in the former and the inclined base-wall of the recess engages with one of the teeth, and as the walking-beams are manipulated to operate the stones the dog in engagement with a ratchet-wheel will be elevated and said wheel turned, imparting a rotary movement to the rear axle 15, and according to which dog of a set is made to engage with the ratchet-wheels is the machine propelled rearward or forward. The length of the forward or rearward travel of the machine is determined by the adjustment of the dogs upon the levers 48, causing the recesses in the dogs to receive a greater or a less number of teeth of the ratchet-wheels. One dog of each set is held out of engagement with the ratchet-wheels in any suitable or approved manner.

It is evident that the machine is exceedingly simple and durable in construction, and

that a deck by its use may be thoroughly cleaned in a much more expeditious manner than heretofore and by the employment of fewer hands.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for cleaning decks and like surfaces, the combination, with a wheeled frame and a stone-carrier located beneath the frame, of a drive-shaft provided with crank arms having a gear connection with the stone-carrier, walking-beams having a pitman connection with the crank-arms of the drive-shaft, and means for propelling the frame from the walking-beams, as and for the purpose specified.

2. In a machine for cleaning the decks of vessels and similar surfaces, the combination, with a frame supported by wheels, a carrying-frame provided with pockets adapted to receive polishing or cleaning stones, and a shaft attached to said carrying-frame, of a drive-shaft provided with crank-arms, a gear connection between the drive-shaft and the shaft of the carrying-frame, levers fulcrumed upon the frame, and link connections between the levers and the crank-arms of the drive-shaft, as and for the purpose specified.

3. In a machine for cleaning decks of vessels and similar surfaces, the combination of a carrier consisting of a central hub, spider-like arms radiating from the hub, and a band secured to the outer ends of the arms and forming pockets open at top and bottom, and polishing-stones in said pockets and extending above and below the carrier, substantially as described.

4. In a machine for cleaning the decks of vessels and similar surfaces, the combination, with a wheel-supported frame, ratchet-wheels secured to the rear axle, and a carrier adapted to receive blocks of polishing or cleaning material, of a drive-shaft provided with crank-arms, a gear connection between the drive-shaft and the block-carrying frame, walking-beams fulcrumed upon the main frame, link connections between the walking-beams and the crank-arms of the drive-shaft, levers fulcrumed upon the frame and pivotally connected with the walking-beams, and dogs adjustably attached to the said levers, the said dogs being in engagement with the ratchet-wheels, as and for the purpose set forth.

5. In a machine for polishing or cleaning the decks of vessels and similar surfaces, the combination, with a wheel-supported frame, the axle of the forward wheel being swiveled in the frame, a guide-shaft attached to the swiveled axle, ratchet-wheels secured upon the rear axle, and a carrier-frame located beneath the main frame and adapted to receive blocks of polishing or cleaning material, of a drive-shaft, a gear connection between the drive-shaft and the block-carrying frame, walking-beams pivoted upon the main frame,

link connections between the walking-beams forward of their fulcrums and the drive-shaft, levers pivoted upon the rear of the frame and having link connections with the walking-
5 beams at the rear of their fulcrums, and dogs adjustably attached to the said levers, the said dogs being adapted for engagement with the ratchet-wheels of the rear axle, as and for the purpose set forth.

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Witnesses:

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HENRY STANWOOD.