

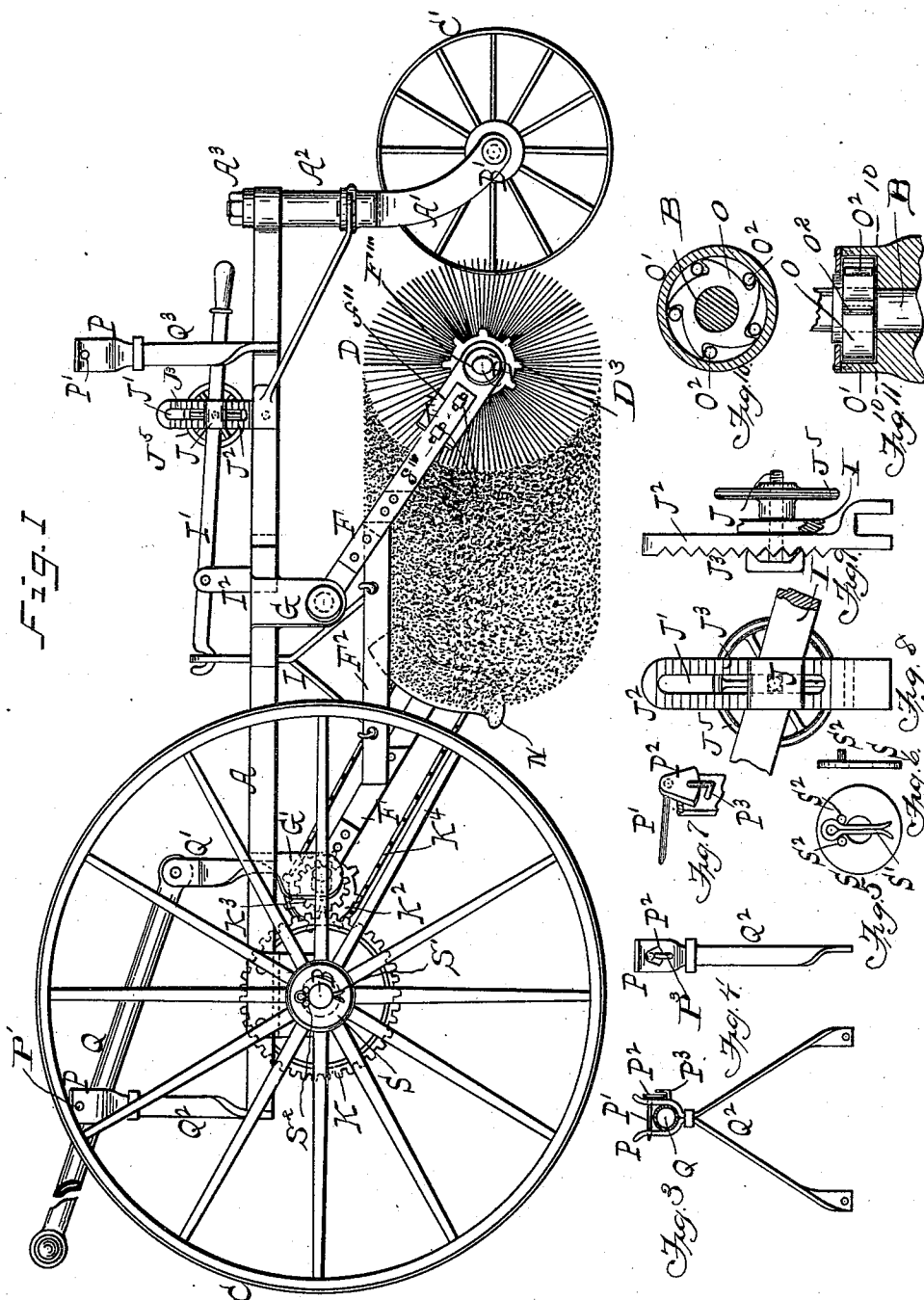
(No Model.)

3 Sheets—Sheet 1.

C. HVASS.
STREET SWEEPER.

No. 548,200.

Patented Oct. 22, 1895.



WITNESSES:

V. J. Goetz.

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(No Model.)

3 Sheets—Sheet 3.

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Fig. XIV.

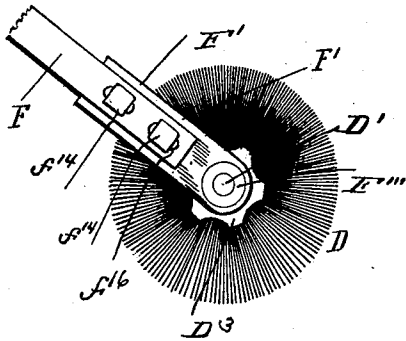
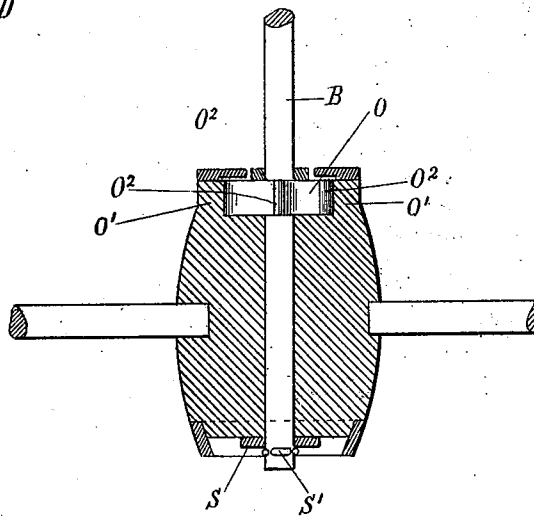


Fig. XVII.



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UNITED STATES PATENT OFFICE.

CHARLES HVASS, OF NEW YORK, N. Y.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 548,200, dated October 22, 1895.

Application filed December 20, 1893. Serial No. 494,221. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HVASS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Sweeping-Machines, of which the following is a specification.

My invention has relation to a street-sweeper; and it consists in the construction and novel arrangement of parts, as hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

The object of my invention is to provide a sweeping-machine of simple and inexpensive construction and to so construct the machine that it may be readily operated or worked by hand or otherwise, both from the front and rear thereof; further, to provide a simple and effectual means for adjusting the brush in a raised or lowered position as well as means for supporting the handle, and certain other improvements, as will appear from the drawings.

Figure 1 represents a side elevation of a sweeper embodying my invention. Fig. 2 represents a plan view thereof. Fig. 3 is a detail front view of the handle-supporting frame. Fig. 4 is a detail side view of same. Fig. 5 is a detail face view of the washers S and pin S'. Fig. 6 is an edge view of same, pin S' removed. Fig. 7 is a detail perspective view of hook P⁸ and pin P'; Fig. 8, an enlarged side view of the lever-adjusting device; Fig. 9, a detail end view of the same; Fig. 10, a detail view of one of the cams O; Fig. 11, a sectional view showing its position in the hub; Fig. 12, a detail view showing construction of the brush-shaft D'; Fig. 13, a detail in side view of one of the bars F and concomitants; Fig. 14, an end view of the same. Fig. 15 represents an edge view of the brush-shield and bar F. Fig. 15* represents a side view of the shield N. Fig. 15** represents a face view of the bar F, showing slot for bolt N'. Fig. 16 is an enlarged detail view of the end of the brush, showing the hanger and its connection to the brush; Fig. 17, a sectional

plan view of the hub of one of the main driving-wheels, showing the relation of the several parts of the clutch and washer.

Referring to the accompanying drawings, wherein like letters of reference indicate corresponding parts in all the figures, the letter A designates the main frame of the sweeper, consisting of suitable side and cross bars, which frame is mounted directly upon the rear axle B. At the front end of the frame A is secured in any desired manner bifurcated post A', in which is journaled a steering-wheel C'. Loosely mounted on the rear axle are driving-wheels C.

The letter D indicates a brush which is oblique to the longitudinal plane of the sweeper and is dependent from the main frame in suitable sectional and adjustable end bars F, pivoted to hangers G. The bars F are provided with suitable castings F', having bearings F''' for the ends of the brush-shaft D'.

The brush-shaft D' is adjustable in its bearings by the following means: At the ends of the bars F, which depend from the hangers G, are castings F', having bearings F''' for the shaft. The casting has a groove or cut-out portion F¹⁰ on its inner face, the upper and lower walls of which are provided with notches. A second groove f¹¹ on the outer side of the casting forms a seat for the reception of the bar F, a thin wall f¹² remaining between the grooves F¹⁰ and f¹¹, and has a slot f¹³, through which a bolt f¹⁴ is passed. If desired, one or more bolts may be employed, as shown in Fig. 2. The bolts f¹⁴ are passed through slots f¹⁶ in the bars F and through slots f¹³ into a nut F³, which is seated in the groove f¹⁰ and prevented from turning therein by having two of its corners seated in notches in the upper and lower walls.

It will be readily understood that when it is desired to adjust the brush the bolts f¹⁴ are released, the bars F adjusted to the desired point, the nuts F³ fitted into corresponding notches in the grooves F¹⁰, and the bolts f¹⁴ screwed into the nut, thus binding the parts securely. The object of the slots f¹³ in the bars F is to permit a slight adjustment of the

brush by simply releasing the bolt and not taking the nut out of engagement with the notches.

F² designates a cross-bar between the bars 5 F, to which is loosely attached the lower end of a vertical rod I, its opposite end provided with an eye engaging a hook on the lifting-lever I', fulcrumed to a suitable standard I² on the main frame. The lever I' is provided, 10 intermediate of its length, with an opening through which passes a clamping-bolt J, and is designed to hold said lever in its adjustable position.

To readily permit of the brush D being 15 raised or lowered and held in such adjusted position, I employ the following means: Rigidly secured to the main frame, to the front end thereof, is a suitable standard J², provided with a longitudinal slot J', said stand- 20 ard being further provided upon one of its faces and both sides of the slot J' with V-shaped jogs or teeth J³, against which is adapted to fit and be held the toothed head of a bolt J, having a suitable jam or thumb nut J⁵.

K⁵ designates a short shaft journaled in 25 suitable hangers G' G', secured to the main frame A. Keyed on the shaft K⁵ is a sprocket-wheel K², on which and the sprocket-wheel K' on the extended end of the brush-shaft D' 30 passes an endless sprocket-chain K⁴. Keyed on the shaft K⁵ is also a beveled gear-wheel K³, which meshes with a like wheel K on the axle B.

Should the sprocket-wheel become out of 35 order, the brush can be reversed and the sprocket-wheel D³ on the opposite side of the shaft may be used. Sprocket-wheels on each side of the brush have been found desirable for this purpose.

To avoid all danger of the sprocket-chain 40 contacting with the brush and to prevent a breaking of these parts, I employ a guard or shield N, fastened near the lower end of one of the bars F, as plainly shown in plan view, 45 Figs. 2 and 15.

Letter O designates cams, one secured near 50 each end of the axle B, and each is provided with a series of inclined grooves or recesses. On each hub is secured a ring O', inclosing the cam O. Between the cams and ring are 55 arranged a series of rollers O². It will be seen that by this construction of the cams on the rear axle the driving-wheels C are free to turn upon the axle B when the sweeping-machine is drawn rearward, but are tight on the axle when the machine is drawn forward.

On the extended ends of the axle B are washers S, provided with pins S². S' designates a 60 linchpin passing through the axle B.

Letter Q designates a suitable handle pivoted to a standard Q' on the main frame and adapted to be used from the rear of the machine, as well as from the front, by being 65 turned on its pivot. Q² Q³ are standards, one

secured on the rear of the main frame and the 65 other near the front of the main frame in line with the handle Q, said standards terminating at their upper ends in suitable forks P, adapted to hold in an elevated position the 70 handle Q. The forked portions P are provided with aligned perforations, through which pass pins P', and are designed to hold the handle-bar Q in position. To prevent the accidental 75 displacement of the pins P', I provide said pins with a head P², made eccentric to the body of the pin, and when in position are designed to abut against suitable keepers or hooks P³ on the standards Q² Q³.

The brush-shaft is made in three parts, consisting of a wooden center D² and a screw- 80 threaded portion D' at each end thereof. These screw-threaded portions are provided with extended rounded ends adapted to enter the openings in the lower ends of the parts 85 F' and serve as journals for the brush. Each end of the brush is provided with a sprocket-wheel D³ for imparting motion to the brush.

The post A' is swiveled in a stem A² and is provided with a clamping-nut A³, by means of 90 which the angular position of the front wheel may be changed to permit of the machine being run in a straight or circular direction.

I do not desire to confine myself to the precise construction herein shown and described, 95 as many minor changes may be made without departing from the spirit of my invention.

The construction and operation of my 100 sweeper, taken in connection with the above description and accompanying drawings, will be readily understood by those skilled in the art.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a sweeper the combination with a brush supporting frame, of a lifting lever connected thereto and means for securing the lever in an adjusted position consisting of a 105 slotted standard secured to the main frame provided with a slot having rack teeth on each side of said slot a screw bolt carried by the lever and passing therethrough and in the slot of the standard, a nut applied to the bolt to clamp the head of the bolt against the rack teeth of the standard, substantially as specified. 110

2. In a sweeper a support for the handle bar consisting of a standard terminating in a fork, a stop pin passing through the fork with an eccentric gravitating head at one end and a hook at one side of the fork to engage the pin 120 head, substantially as specified.

3. In a hand sweeper, the combination with the main frame and brush frame, a lifting lever connected to the brush frame, a slotted standard carried by the main frame—provided with rack teeth on its outer surface— 125 a clamping bolt passing through the lever and standard provided with a serrated head, de-

signed to clamp and hold the lever in its adjusted position, substantially as specified.

4. In a hand sweeper, the combination with the main frame, provided at each end with suitable supports for the handle bar, fulcrumed to the main frame, said supports consisting of
5 forked standards provided with aligned openings therein, suitable pins passing through

said openings provided with eccentric heads, and a stop on the standards for holding said pins, substantially as specified.

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