

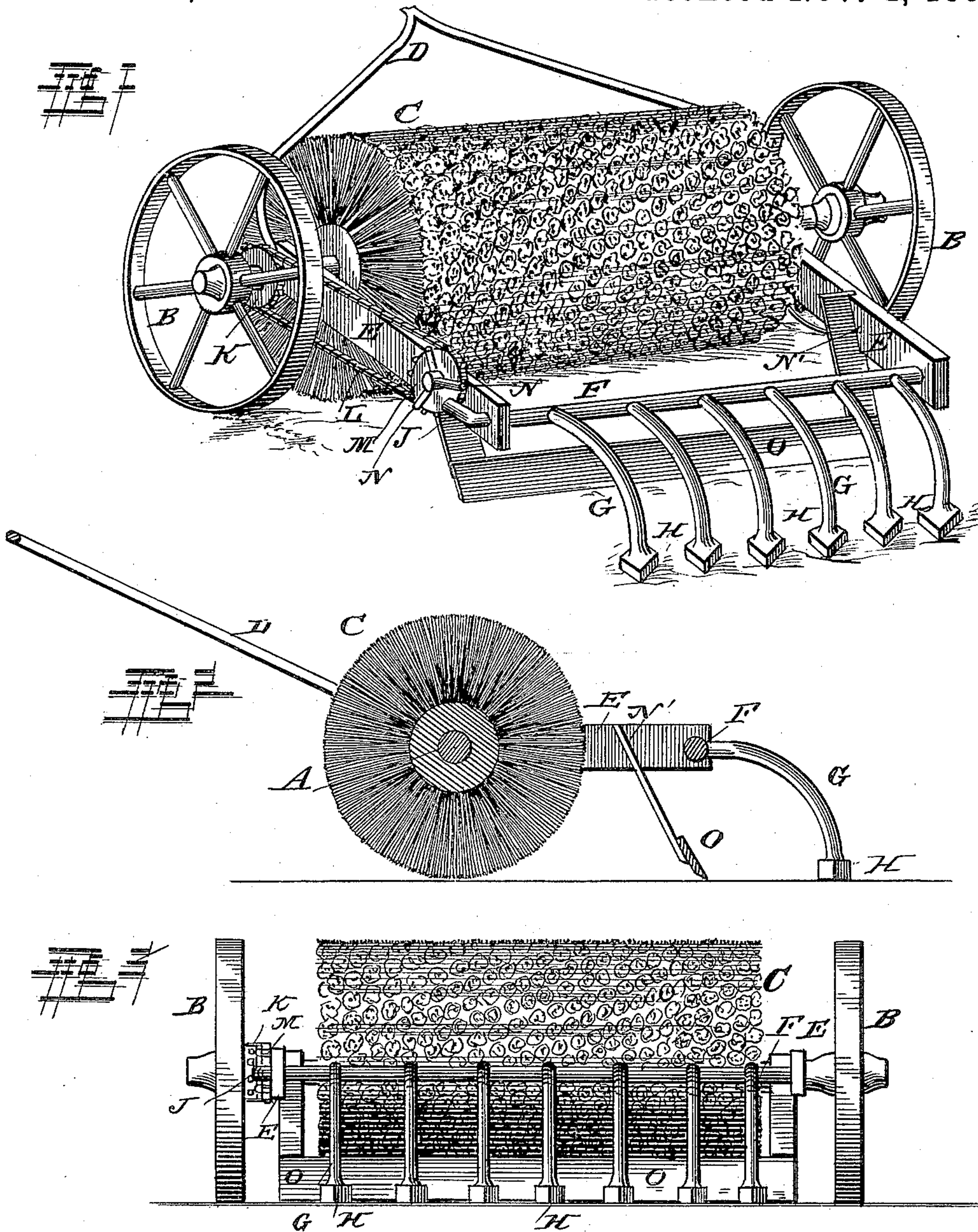
(No Model.)

R. D. DRAKE.

COMBINED ICE CUTTER AND SNOW SWEEPER.

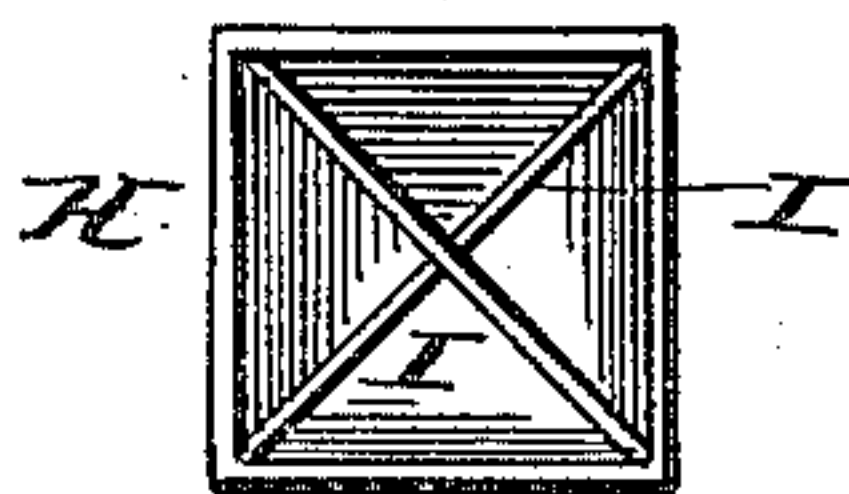
No. 307,634.

Patented Nov. 4, 1884.



WITNESSES:

Wm. S. Dieterich
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INVENTOR.

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UNITED STATES PATENT OFFICE.

RICHARD DILLON DRAKE, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED ICE-CUTTER AND SNOW-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 307,634, dated November 4, 1884.

Application filed June 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, R. DILLON DRAKE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Combined Ice-Cutters and Snow-Sweepers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved machine for cutting or chopping ice and sweeping snow off the pavement. Fig. 2 is a longitudinal vertical sectional view of same. Fig. 3 is a front view of the machine, and Fig. 4 is a detailed view.

The same letters refer to the same parts in all the figures.

This invention relates to an improved machine for removing the accumulations of ice and downtrodden snow from the pavements; and my invention consists in certain improvements in the construction of the said machine, whereby it may be used in a threefold manner, first, for the purpose of cutting or chopping the ice and downtrodden snow; secondly, for the purpose of pushing the fragments in front of and to one side of the machine; and, thirdly, for the purpose of sweeping the pavement clean by means of a revolving brush.

To this end the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, A designates a shaft or axle provided with suitable transporting-wheels, BB, in the hubs of which the said axle revolves.

C designates a circular or cylindrical brush, which is mounted securely upon the axle A, with which it revolves.

D designates a suitable handle, the inner end of which is bifurcated and securely attached to the axle.

E E designate a pair of arms attached securely to the axle at the sides of the brush. The front ends of the said arms are provided

with bearings for its transverse shaft F, provided with a series of curved fingers, G G, the lower ends of which terminate in the rectangular cutters H H, which are in turn provided with diagonal knives I I. The one end of the shaft F is provided with a rearwardly-extending arm or lever, J.

K designates a cog-wheel or chain-wheel, which is mounted securely upon the axle A, adjoining one of the transporting-wheels. The said wheel is connected by a chain, L, with another chain-wheel, M, journaled to one of the arms E, a short distance in rear of the shaft F. The said chain-wheel is provided with one or more fingers, N N, adapted to engage the arm J, which projects, as stated, from the transverse shaft F. It will thus be seen that when the chain-wheel L revolves it will impart an oscillating or vibrating motion to the said shaft, the effect of which will be to cause the chopping-fingers G to strike the snow or ice in front of the machine as the latter is being propelled over the pavement.

The arms E E are provided directly in rear of the transverse shaft F with inclined grooves N' N', adapted to receive an inclined scraper, O. The object of this is to push the loosened snow and ice to one side of the machine in front of the brush, so that the function of the latter shall be limited to sweeping the pavement clean after the grosser obstructions have been removed by the said scraper.

The operation and advantages of this machine will be readily understood without requiring extended explanation. The construction is simple and inexpensive, and the device, which may be easily operated by hand-power, will be found exceedingly useful for cleaning sidewalks and like purposes.

I would have it understood that the shaft carrying the chopping-fingers may be removed, when desired, as well as the scraper, so that when desired the brush may be used independent of either.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An improved machine for cleaning sidewalks and for like purposes, the same comprising a revolving brush mounted securely upon an axle which revolves in the hubs of the trans-

porting-wheels, a suitable handle secured to the said axle, and arms extending forwardly from the latter and supporting a detachable inclined scraper, substantially as set forth.

5 2. The combination, with a suitably-mounted revolving brush, of arms extending forwardly from the axle of the same, an inclined scraper secured detachably between the said arms, an oscillating shaft carrying a series of chopping-
10 fingers, and mechanism for operating the said shaft, substantially as set forth.

3. In a machine for cleaning pavements and the like, the herein-described vibrating chopping-fingers terminating at their lower ends
15 in rectangular cutters provided with diagonal knives, substantially as set forth.

4. The herein-described improved machine for cleaning pavements and the like, the same consisting of a revolving brush mounted upon

a suitable axle, having a rearwardly-extending 20 handle, arms extending forwardly from the said axle and carrying a detachable inclined scraper, and a vibrating shaft equipped with suitable chopping-fingers, and having a rear-
25 wardly-extending arm, a chain-wheel journaled to one of the arms, and having projections adapted to engage the arm of the oscillating shaft, the said chain-wheel connected
30 by a suitable drive-chain with a chain-wheel mounted upon the axle of the machine, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

RICHARD DILLON DRAKE.

Witnesses:

A. McKNIGHT,

H. C. HANFORD, Jr.