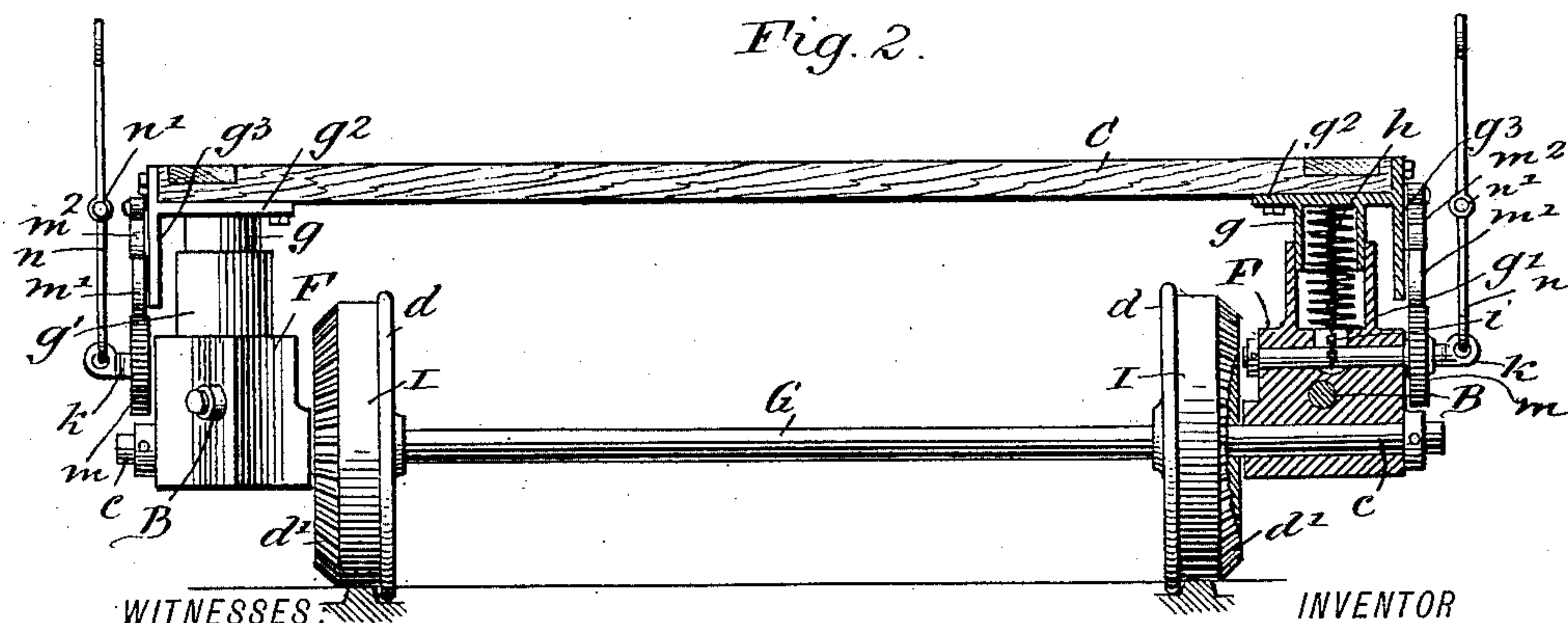
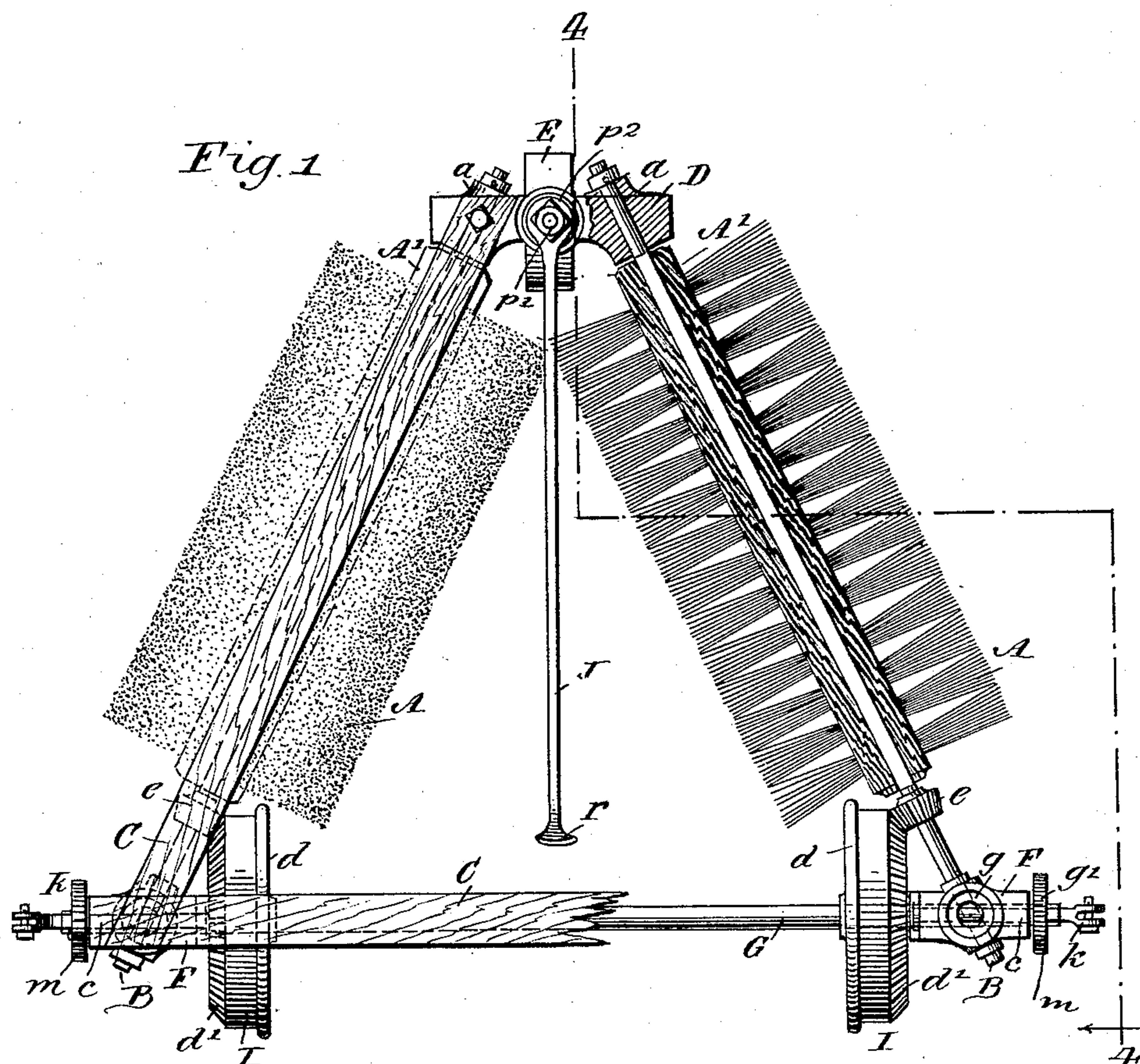


2 Sheets—Sheet 1.

Patented Apr. 5, 1892.



Paul Johnston
E. M. Clark

INVENTOR
Mary S. Kjellström
BY *Munn & Co*
ATTORNEYS.

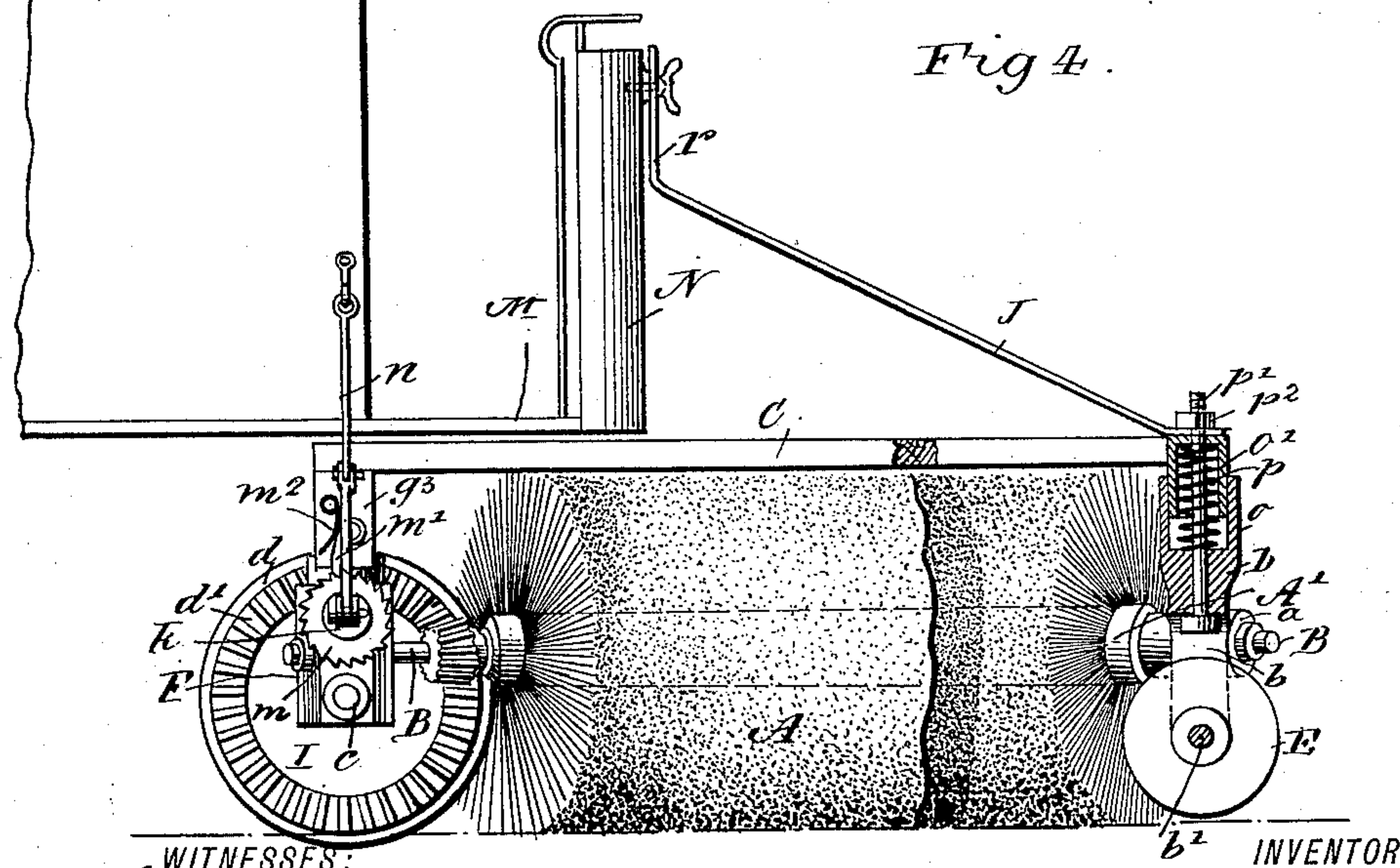
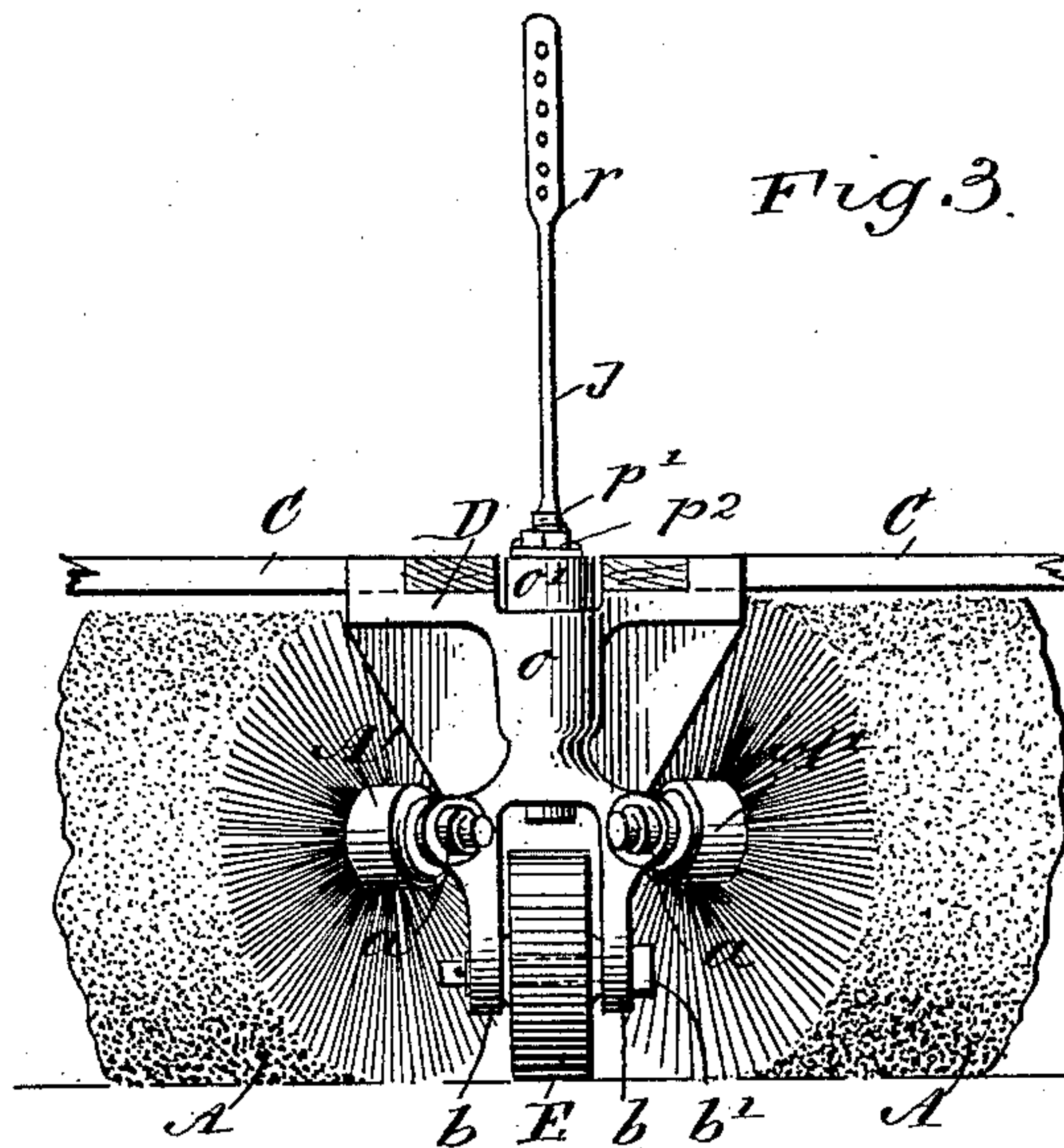
(No Model.)

2 Sheets—Sheet 2.

M. S. KJELLSTRÖM.
STREET SWEEPER.

No. 472,366.

Patented Apr. 5, 1892.



WITNESSES:

Paul J. Scher
E. M. Clarke

INVENTOR

Mary S. Kjellström
BY
Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

MARY S. KJELLSTRÖM, OF NEW YORK, N. Y.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 472,366, dated April 5, 1892.

Application filed August 29, 1891. Serial No. 404,067. (No model.)

To all whom it may concern:

Be it known that I, MARY S. KJELLSTRÖM, of New York city, in the county and State of New York, have invented a new and useful Road-Sweeper, of which the following is a full, clear, and exact description.

This invention relates to improvements in road-sweepers, and particularly to a class employed to remove dirt, snow, and other obstructions from railway-tracks, and has for its object to provide a simple practical device of the character indicated which will be adapted for speedy attachment to a car or removal therefrom, that will afford means for adjusting the brushes for height, and that may be used on any road independently of a car.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

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

Figure 1 is a plan view of the device, partly in section. Fig. 2 is a rear view broken into section on one side and front parts removed. Fig. 3 is a front view with the rear portion broken away; and Fig. 4 is a side view of the device on a car-front, partly in section, taken on the line 4 4 in Fig. 1.

Two cylindrical brushes A are provided. These are of a suitable length for effective service, and each have their radial splints thickly and evenly projected from a center block A', that is made of wood or other available material. Each block A' is axially perforated to receive a shaft B, which shafts are projected at their ends and form journals for the revoluble support of the brushes.

A main frame C is provided for the device, which frame, made of wood or metal, is composed of three flat beams joined at the ends to produce a triangle.

The brushes A are sustained below two converging sides of the frame C, so that two of their ends will be nearly in contact and the opposite ends widely separated, as shown in Fig. 1.

There is a depending bracket-frame D affixed to the forward angle of the main frame C, which bracket-frame is provided with two boxes α , that are in the same horizontal plane

and so diverge from each other rearwardly as to receive and rotatably sustain the front journal ends of the shafts B. Below the boxes α two depending parallel limbs b are formed on the bracket-frame D. These limbs are spaced apart to admit the ground-wheel E between them, the latter having a revoluble support on a cross-bolt or axle b' , that is secured in the limbs mentioned.

The diverging rear ends of the shafts B are journaled in bearings formed in two similar sliding boxes F, as shown in Figs. 1 and 4.

An axle G extends between the rear ends of the brushes A, and on it are mounted two track-wheels I, that are secured thereon a proper distance from the journal ends c of the axle, which latter are inserted through the boxes F below the journals of the brush-shafts B. The wheels I have radial flanges d on their inner edges to retain them from displacement when moved on a car-track, and on their outer sides a bevel gear-rim d' is formed or secured to each wheel, which gears mesh with pinions e , that are secured on the brush-shafts.

The main frame C is attached to the boxes F, so as to afford an elastic connection between these parts, the use of which will be explained. Such a connection (being shown in Fig. 2) consists of a spring-case g , that slides telescopically within a cup g' , the case having a flange g^2 on its upper end that is secured to the frame C. There is a cup and spring-case of like construction for each box F, and within the cups g' a spiral spring h is seated in each, which by expansion will project the frame C away from the boxes F. Within each spring h a chain i or other suitable flexible connection is placed, which chains have their upper ends affixed to the top walls of the cases g , the lower end of each chain having connection with a cross-shaft k , that extends through the box F in a plane parallel with the journals c of the axle G, there being a sufficient space provided at their points of juncture to allow the chains to be wrapped partly upon the shaft-bodies. On the inner ends of the shafts k a nut or other equivalent device is secured to prevent an outward displacement of the shafts, and on the outer projecting end portion of each shaft a ratchet-wheel m is affixed. Outside

of the wheels m a keeper-bar n is jointed by its lower end to the terminal of each shaft k , which bars are adapted to fold upwardly and also have a joint n' formed in each at about
 5 their centers of length. On an outer depending portion g^3 of the flange g^2 , that is a part of each spring-case g , there is a pawl m' pivoted. Said pawls engaging with their free ends the teeth of the wheels m are held against
 10 them by the springs m^2 .

Referring to the bracket-frame D again, as shown in Fig. 4, there is a cup o formed in the upper portion of this frame at its center of width, and within the cup a spring-case o'
 15 is inserted. Within the cup and spring-case a spiral spring p is placed, which presses the case o' upwardly, the parts being connected by a vertical bolt p' . Upon the upper end wall of the spring-case o' the forward flattened end portion of a brace-rod J is imposed
 20 and is thereto secured by the bolt p' , that extends through the perforated flattened end of the brace. A nut p^2 on the threaded projecting part of said bolt, serving to hold all parts
 25 together, limits the upward movement of the spring-case.

As before indicated, the device is preferably employed to sweep the road-bed and tracks of a surface railroad, and is shown in position
 30 for service on the front end of a car in Fig. 4.

To properly and conveniently locate the rear portion of the main frame C of the sweeper below the front platform M of the car whereon the device is to be secured, the track-wheels
 35 I are placed on the track and the wheel E on the road-bed between the tracks. The keeper-bars n are now flexed at their joints n' , so as to convert the bars into crank-handles, which, if rotatably moved at the same time in
 40 a proper direction, will cause the shafts k to wrap the lower portions of the chains i upon their bodies, and thus lower the main frame C a proper degree for the introduction of its rear portion below the car-platform M, the
 45 ratchet-wheels m and pawls m' conducing to this result by a retention of the spring-cases g at any point of depression. After the main frame C has been placed in position below the car-platform M the compressing devices
 50 for the spiral springs h are adjusted to release the latter, which by their force will project the frame C upwardly against the lower side of the car-platform, and to secure said frame and the entire device in position the
 55 keeper-bars n are straightened so as to permit them to be attached securely to the sides of the car-body. (See Fig. 4.) The front end of the frame C is controlled by the brace-rod J, which is bent upwardly from the point of
 60 connection with the bolt p' and is rearwardly extended, its length being so proportioned that when the frame C is in secured adjustment below the car-platform M the rear end of the brace-rod that is bent upwardly, as at
 65 r , will be in contact with the wall N of the platform M.

As shown in Fig. 3, the end portion r of

brace J is perforated at intervals to allow the front end of the brushes A to be elevated
 70 from the road-bed, if this is desired, and then be again lowered to cause said brushes to have sweeping contact with the latter, the relative dimensions of the ground-wheel E being such
 75 as will permit the peripheries of the brushes to have such a bearing on the surface to be cleaned.

It will be seen that from the geared connection of the brushes A with the wheels I said brushes will sweep the dirt from between the
 80 tracks of a railroad, or the surface of any other road, if used independently of a car, and deposit the refuse in two rows at the sides of the machine, and as the brushes are diverged from the front rearward they are adapted to
 85 thoroughly cleanse all the surface they pass over when the sweeper is propelled forwardly by any source of power applied to the car.

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

1. A road-sweeper comprising a triangular frame, two brushes mounted below the converging sides of the frame, an axle between the rear ends of the brushes, track-wheels
 95 mounted on the axle and from which the brushes are driven, and a ground-wheel journaled in the forward end of the frame, substantially as described.

2. A road-sweeper comprising a triangular frame, two brushes mounted below the converging sides of the frame and provided with
 100 pinions on the rear ends of their shafts, an axle between the rear ends of the brushes, track-wheels on the axle and provided with bevel gear-wheels meshing with the pinions of the brush-shafts, and a ground-wheel journaled in the forward end of the frame, substantially as described.

3. A road-sweeper comprising a triangular frame, two converging brushes mounted below the frame, an axle between the rear ends
 110 of the brushes, track-wheels on the axle, gearing between the track-wheels and brush-shafts, springs interposed between the frame and the boxes of the rear ends of the brushes, and a ground-wheel mounted in the forward part of the frame, substantially as described.

4. In a road-sweeper, the combination, with a frame and brushes mounted below the frame, of springs interposed between the
 120 frame and the boxes of the rear ends of the brush-shafts, and means for compressing the springs to lower the frame, substantially as and for the purpose set forth.

5. In a road-sweeper, the combination, with a frame and brushes mounted below the frame, of springs interposed between the
 125 frame and the boxes of the rear ends of the brush-shafts, shafts mounted in the boxes, chains having one end secured to the shafts and the other end connected with the frame, and means for operating said shafts, substantially as described.

6. In a road-sweeper, the combination, with

a frame and brushes mounted below the same, of cups on the boxes of the brush-shafts, cases secured to the frame and sliding in the cups, springs in the cups and cases,
5 shafts mounted in the boxes, chains secured to cases and to the shafts, jointed keeper-bars on the ends of the shafts, and pawl-and-ratchet mechanism for said shafts, substantially as herein shown and described.

MARY S. KJELLSTRÖM.

Witnesses:

C. A. LUNDBERG,
TEKLA SEGURDAHL.