No. 701,393. Patented June 3, 1902.

S. J. REYNOLDS.

CARPET SWEEPER.

(Application filed July 1, 1901.)

(No Model.) 2 Sheets—Sheet 1.

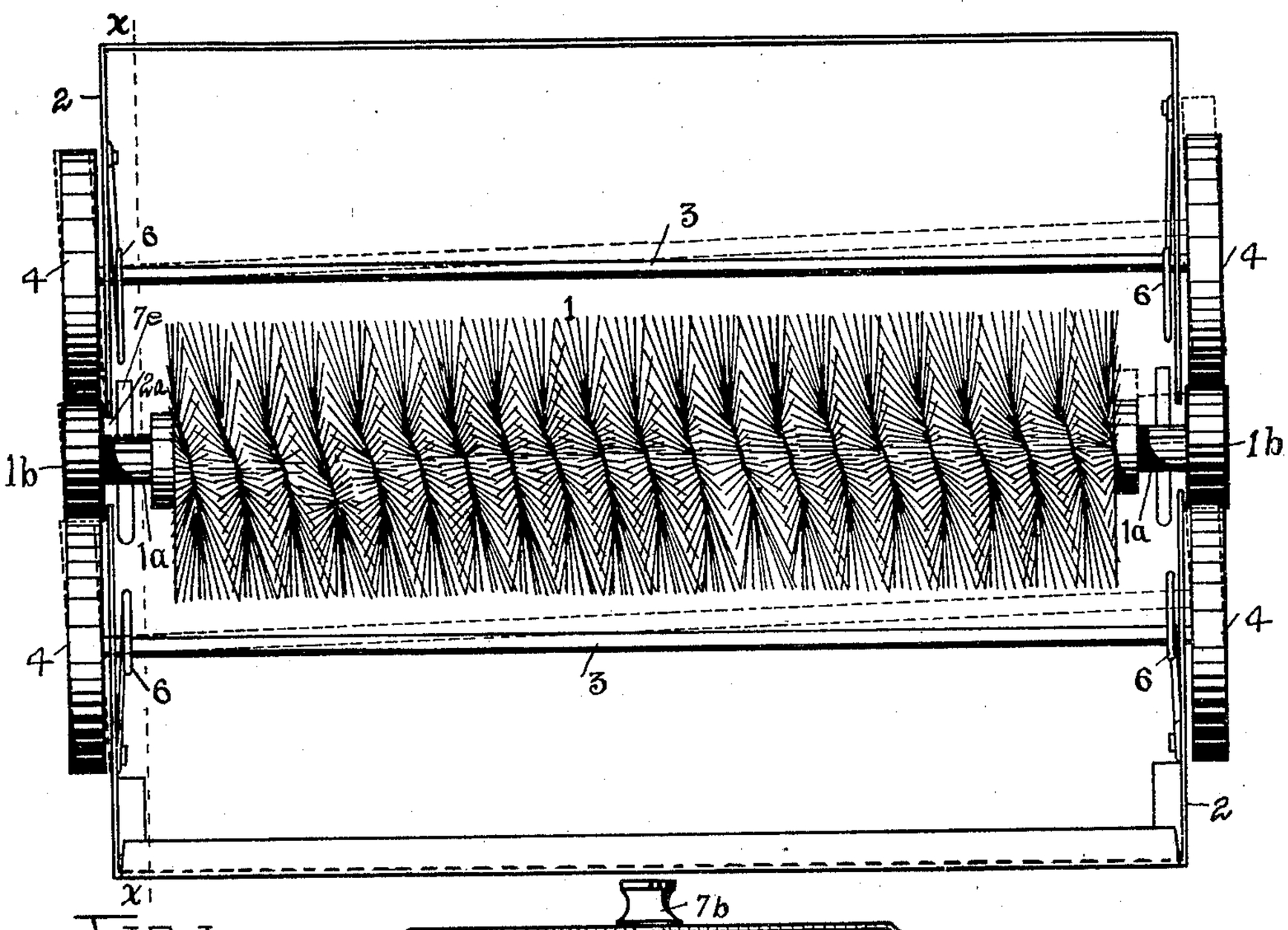

FIG. 1.

FIG. 2.

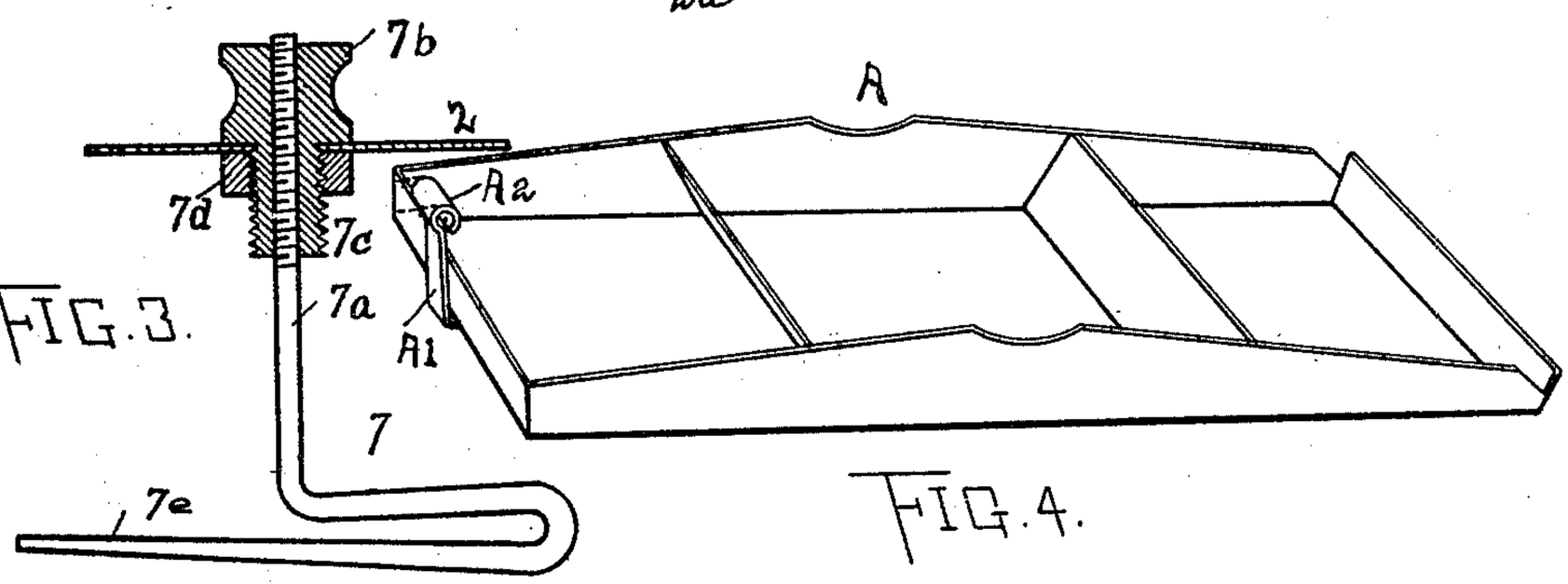

FIG. 3.

FIG. 4.

WITNESSES:

L. Gould

Wm. Stephens

S. J. Reynolds INVENTOR.

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Geo. B. Willcox ATTORNEY.

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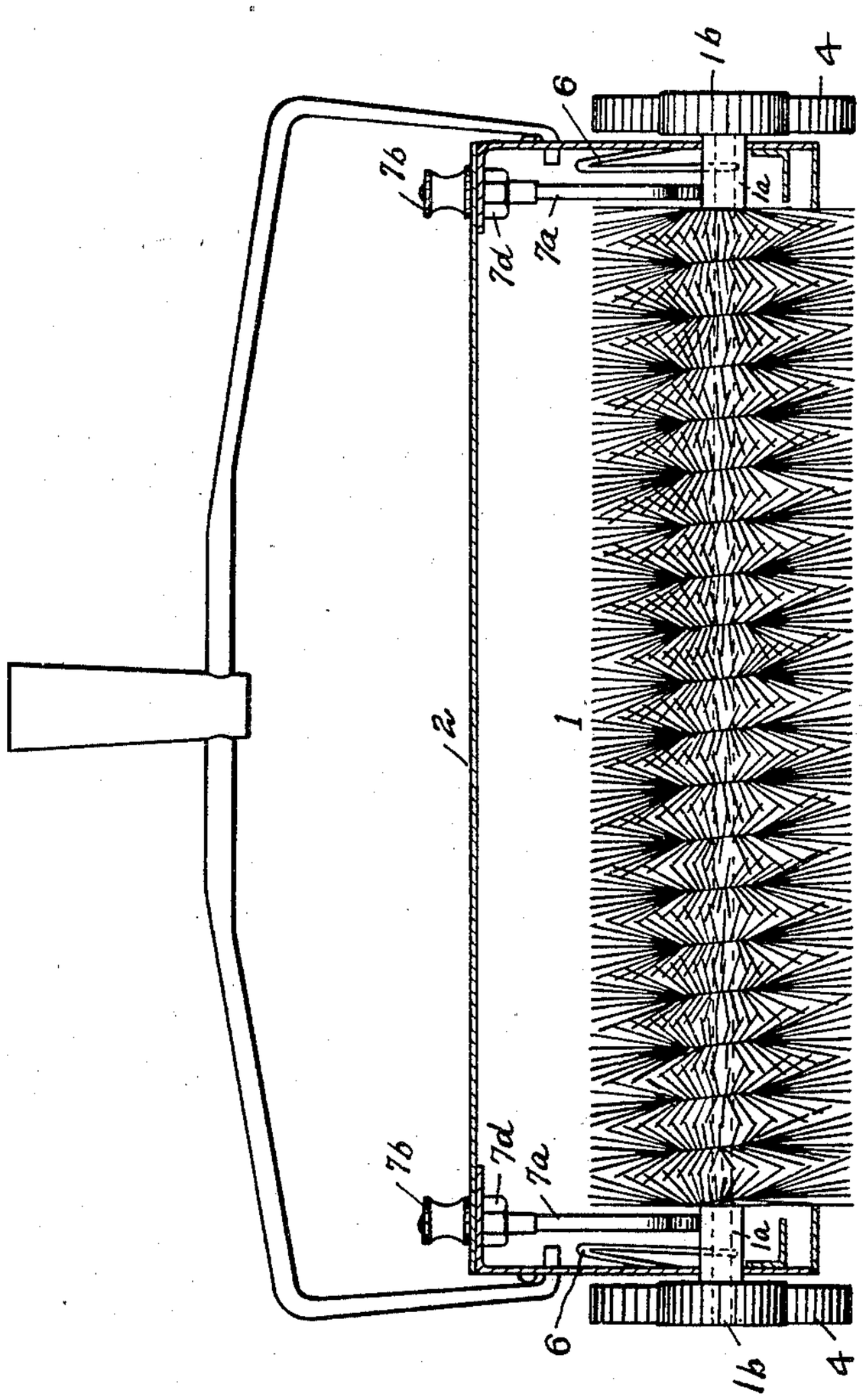

FIG. 5.

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UNITED STATES PATENT OFFICE.

SYLVANUS J. REYNOLDS, OF SAGINAW, MICHIGAN.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 701,393, dated June 3, 1902.

Application filed July 1, 1901. Serial No. 66,744. (No model.)

To all whom it may concern:

Be it known that I, SYLVANUS J. REYNOLDS, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Carpet-Sweepers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention is an improvement in carpet-sweepers; and it consists in certain constructions and combinations of parts whereby the objects of my invention are accomplished. These objects are, first, to produce a carpet-sweeper in which the brush shall be supported free from and out of contact with the frame or casing of the sweeper and have both horizontal and vertical movement independent thereof, being so mounted between the wheels that both wheels will always be in contact with the roller of the brush, pressing against it to exert constant and uniform driving power on the spindle of the roller.

A further object is to provide means for quickly and easily adjusting the pressure of the brush upon the carpet and to lock the brush-adjusting device against accidental displacement.

Another object is to provide means for quickly detaching the dust-receptacles by pressure of the foot.

I accomplish these objects by the means illustrated in the accompanying drawings, throughout the views of which similar letters and characters of reference designate corresponding parts.

Figure 1 is a bottom view of the sweeper. Fig. 2 is a sectional view on the line x x of Fig. 1, being broken away in parts. Fig. 3 is a detail of one of the brush-adjusting springs. Fig. 4 is a detail of the dust-receptacles. Fig. 5 is a longitudinal section in elevation taken on the line x^2 x^2 of Fig. 1.

As is plainly shown in the drawings, the device consists in a brush 1, having spindles 1^a of small diameter extending outside the casing 2 and terminating in rollers 1^b, by which the brush is rotated. On each side of the center of the casing is a shaft 3, extending across it parallel with the brush. Wheels 4 are mounted on the ends of the shafts. These shafts are not rigidly mounted in the casing, but are mounted in horizontal slots 5, so that the shafts and wheels can move toward or away from the center line of the sweeper. The wheels are yieldingly pressed toward the center line of the sweeper by a pair of bowed springs 6, one at each end of the shafts 3. By this means the wheel when it meets an obstruction on the carpet yields more or less to the resistance which it encounters. The roller 1^b is placed between the yielding rims of the wheels above a line connecting their centers, so that the brush cannot drop out when the sweeper is lifted from the floor. The thrust of the wheels is prevented from raising the brush too high by a spring brush-adjuster 7, consisting in a vertical rod 7^a, passing through the casing, threaded at its upper end and provided with an outside set-nut 7^b, which has a threaded projection 7^c extending into the casing. A lock-nut 7^d engages the projection and securely clamps the casing between the lock-nut and the set-nut, preventing vertical movement of the rod 7^a. The lower end of the rod 7^a is bent horizontally and then bent back upon itself to form a vertically-yielding spring 7^e, which takes the upward pressure of the small spindle 1^a, due to the thrust of the brush against the carpet and the upward thrust of the wheels against the roller 1^b, while permitting free horizontal movement of the spindle.

It will be noticed that there is no bearing for the spindle in the casing, but that the casing has spindle-openings 2^a sufficiently large to permit free vertical and horizontal movement of the brush-spindle. An important advantage of this construction is that retarding one wheel does not subject the roller to the thrust of the other wheel alone, but, on the contrary, the second wheel follows the first, the two carrying the roller between them and insuring that both wheels will at all times exert their full driving effect upon the roller unimpeded by the resistance of rigid bearings. This simultaneous movement of the roller and wheels is indicated by the dotted lines in Fig. 1.

I have also adopted a mode of attaching the dust-pan to the casing, whereby the pan can be quickly detached by the simple pres-

sure of the operator's foot. This arrangement is illustrated in Fig. 4, in which A is a dust-pan, carrying an upwardly-extending spring A′, having an inwardly-projecting latch A^2 at its upper end. An internal flange 2^b is provided on one side of the casing, and an outward projection 2^c is provided on the opposite side. The flange 2^b supports one end of the pan, and the engagement of the latch A^2 over the projection 2^c supports the other end. By pressing downward upon the latch it becomes detached and the pan drops to the floor clear of the sweeper.

By the means above described I have produced a simple sweeper that can be cheaply manufactured, is easily taken apart, has a brush which is at all times positively driven by the combined action of all the wheels, has no bearings to cause binding, and is yieldingly mounted not only against vertical, but also against horizontal, resistances due to unevenness of the carpet or other causes.

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

1. In combination with a casing carrying pairs of horizontally-adjustable wheels yieldingly pressed toward each other; a brush-spindle engaged and supported by said wheels; a vertically-adjustable brush-adjuster having a horizontal lower bearing-face permitting horizontal movement of the brush-spindle, and openings in said casing larger than said spindle for the purpose set forth.

2. In a carpet-sweeper, the combination with the casing, of a pair of parallel shafts extending through horizontal slots in the ends of the casing and carrying wheels on their outer ends; bowed springs secured at one end to the casing and pressing the shafts toward the center line of the sweeper; a brush-spindle reduced in diameter near its ends; rollers formed on the spindle and yieldingly held between the wheels above their center lines; a pair of vertically-adjustable brush-adjusters having horizontal spring members to yieldingly press the upper side of said spindles; and openings in the casing for the passage of the spindles, said openings being larger than the spindles, the brush being supported and rotated independent of the casing.

3. In combination with a carpet-sweeper casing having wheel-shafts mounted in horizontal slots and yieldingly pressed toward the center line of the casing; a brush-spindle extending through openings in the casing, said openings being larger than the spindle to permit its independent horizontal and vertical movement; a vertically-adjustable brush-adjuster near each end of the spindle, comprising a vertical rod bent horizontally near its lower end to form a horizontal spring member; said brush-spindle being held in place and not in contact with the casing by the combined action of the wheels and the spring brush-adjuster, for the purposes set forth.

4. In a carpet-sweeper, a rotatable brush having the ends of its spindle supported by the combined action of the horizontally-yielding wheels and a vertically-yielding spring member above the spindle; whereby the brush-spindle is capable of moving with the wheels and in contact with them in both a horizontal and vertical direction, substantially as described.

5. In a carpet-sweeper having horizontally-yielding wheels spring-pressed toward each other, the combination of a brush-spindle having rollers engaged between said wheels above their center line, and a downwardly-pressing adjustable spring having a horizontal lower face to take the upward thrust of the spindle, said spindle passing freely through the casing and being supported solely by the combined action of the wheels and the spring, substantially as described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SYLVANUS J. REYNOLDS.

Witnesses:

I. GOULD,

E. F. WARREN.