

(No Model.)

2 Sheets—Sheet 1.

C. O. ALLEN.
CARPET SWEEPER.

No. 503,107.

Patented Aug. 8, 1893.

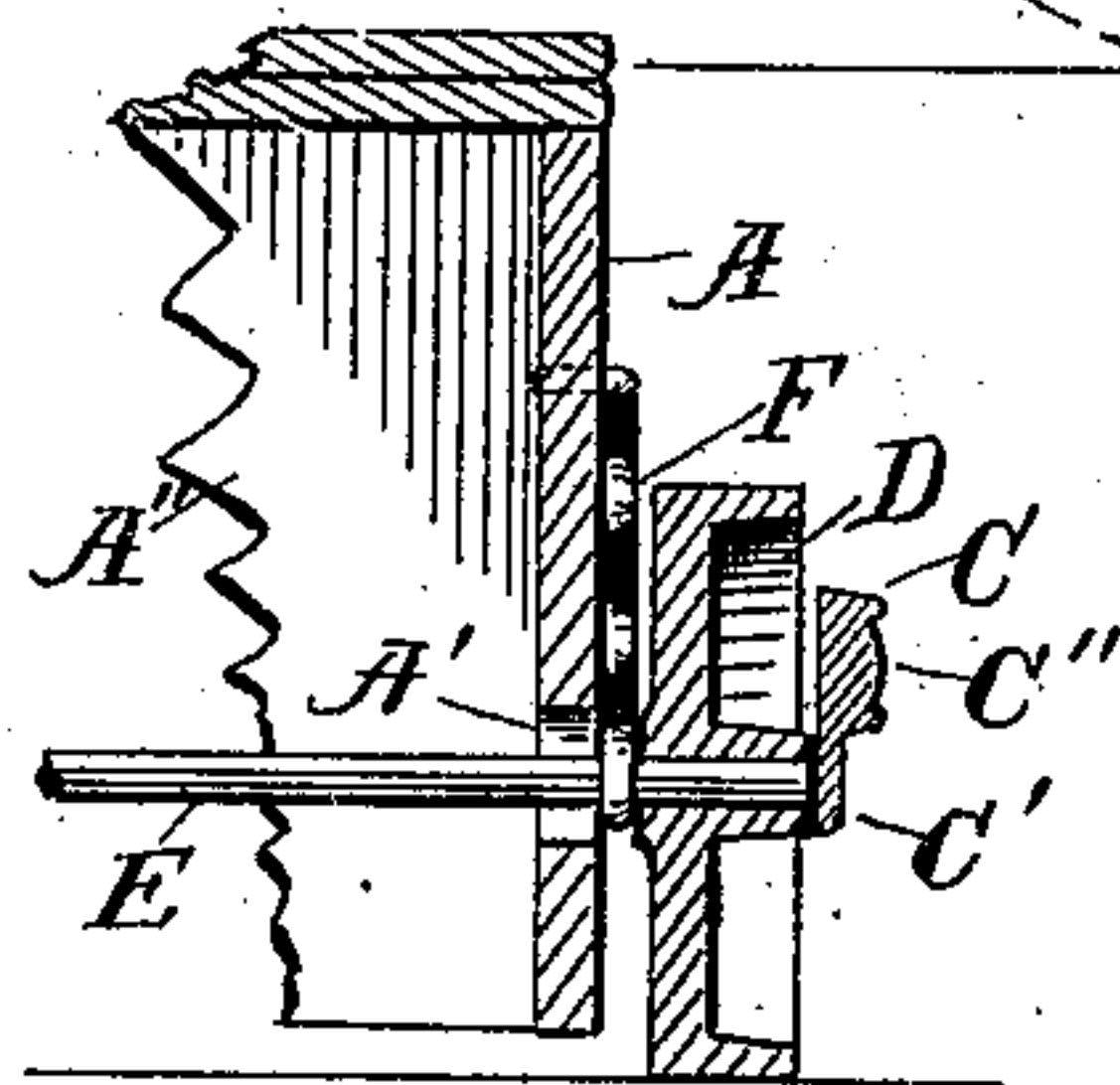
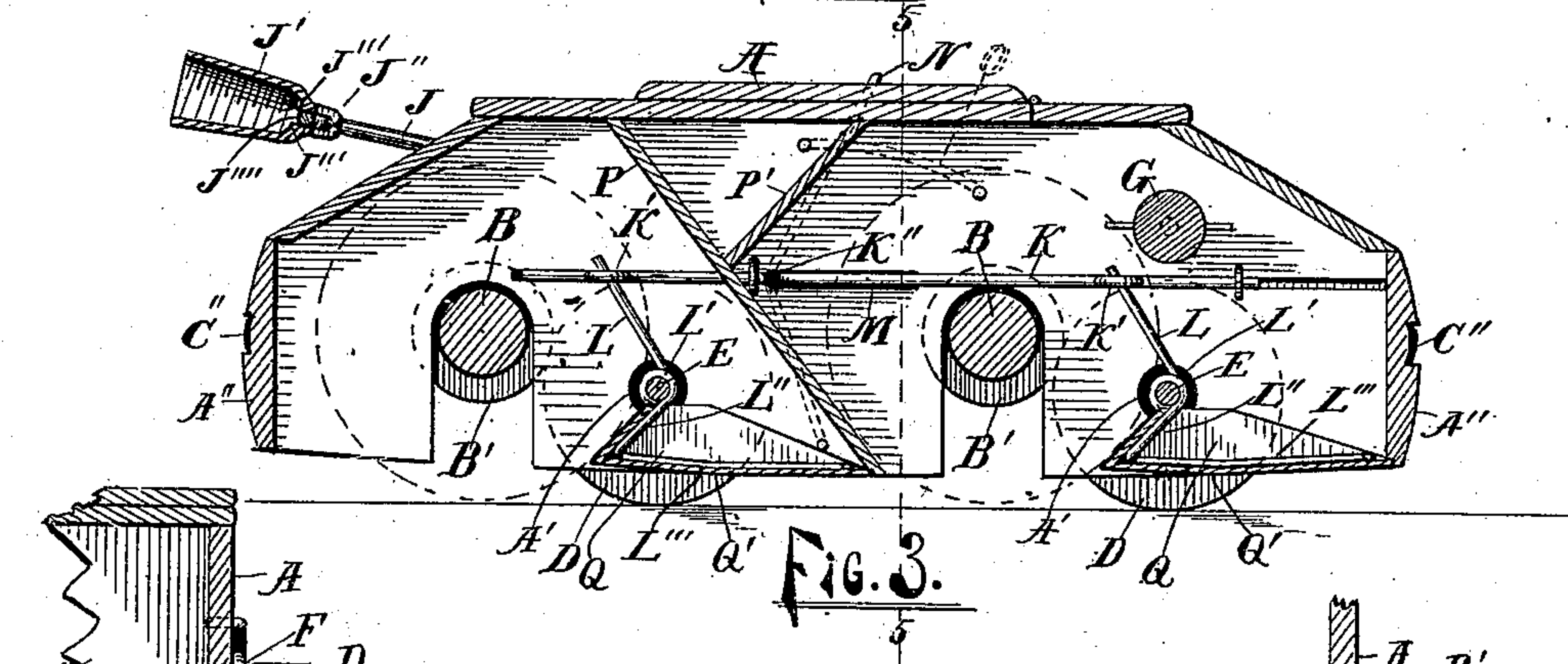
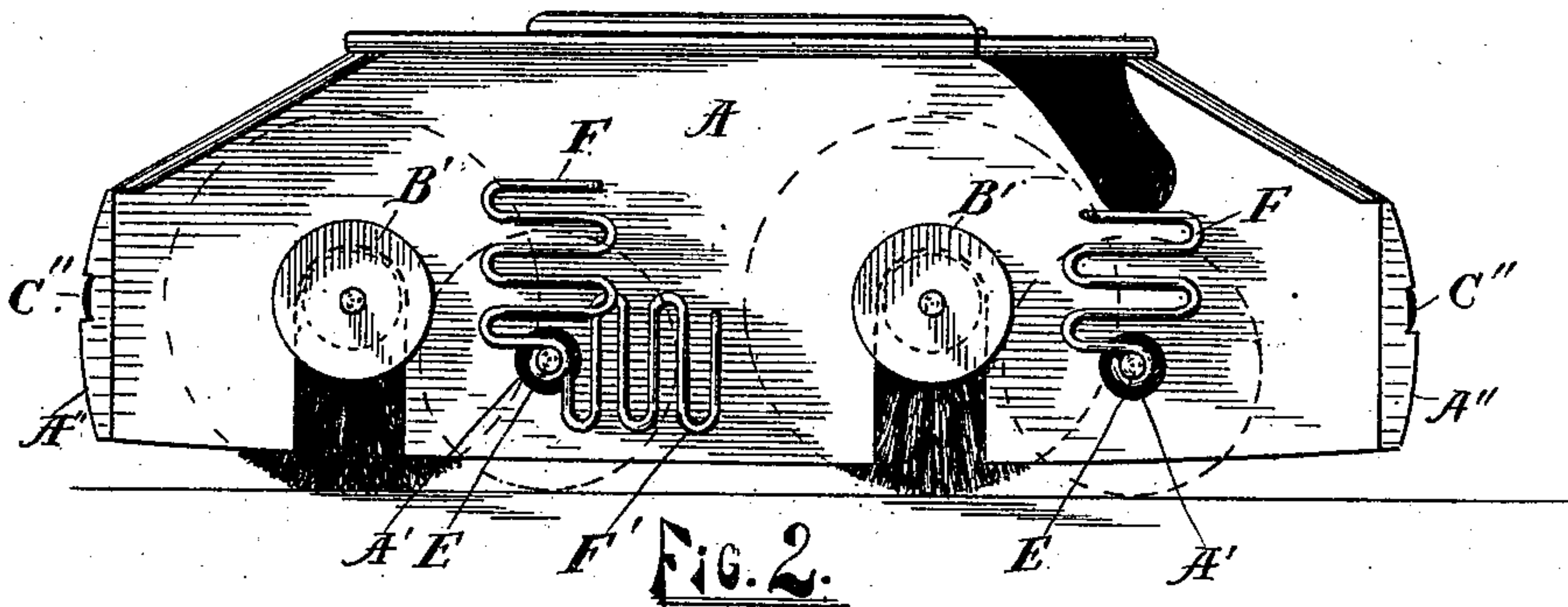
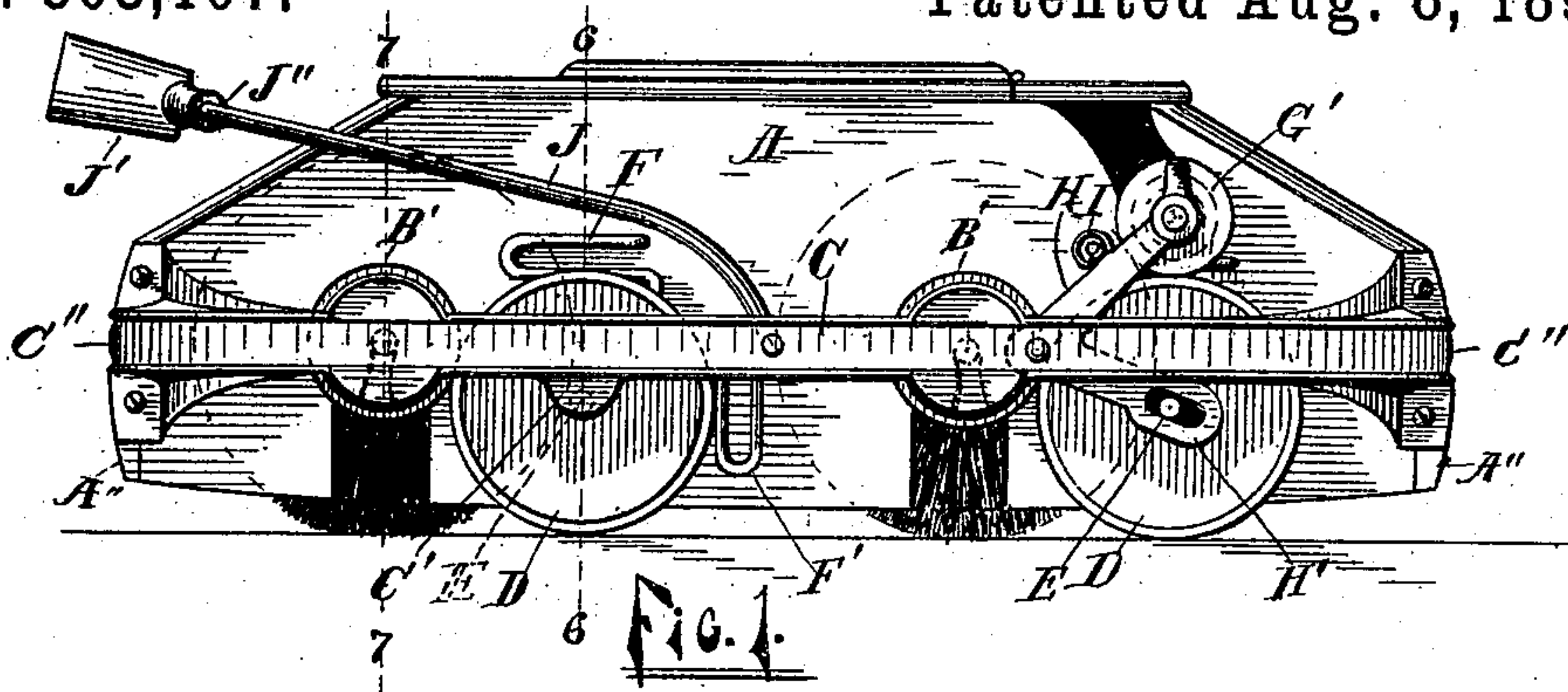


FIG. 6.

WITNESSES:

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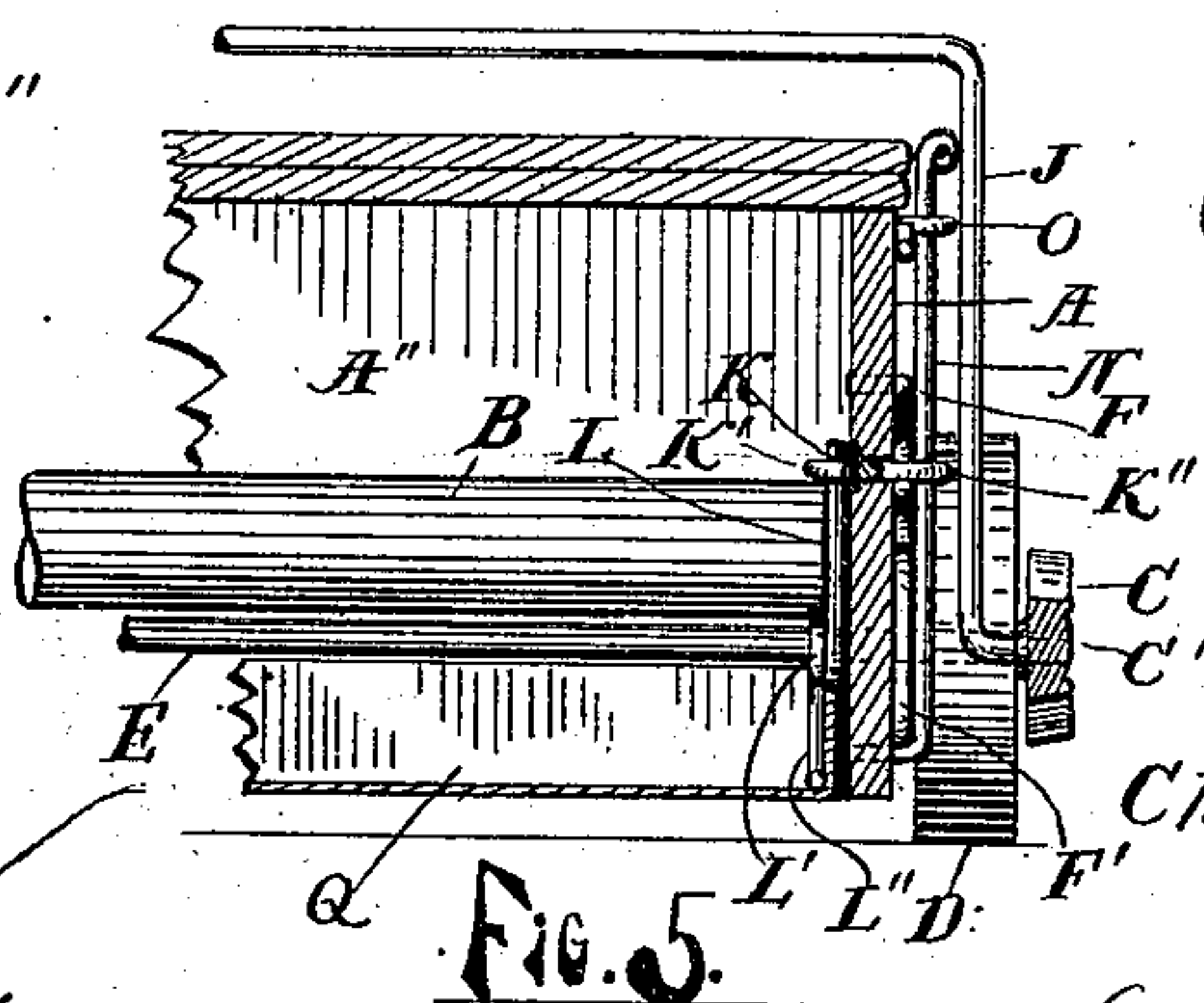


FIG. 5.

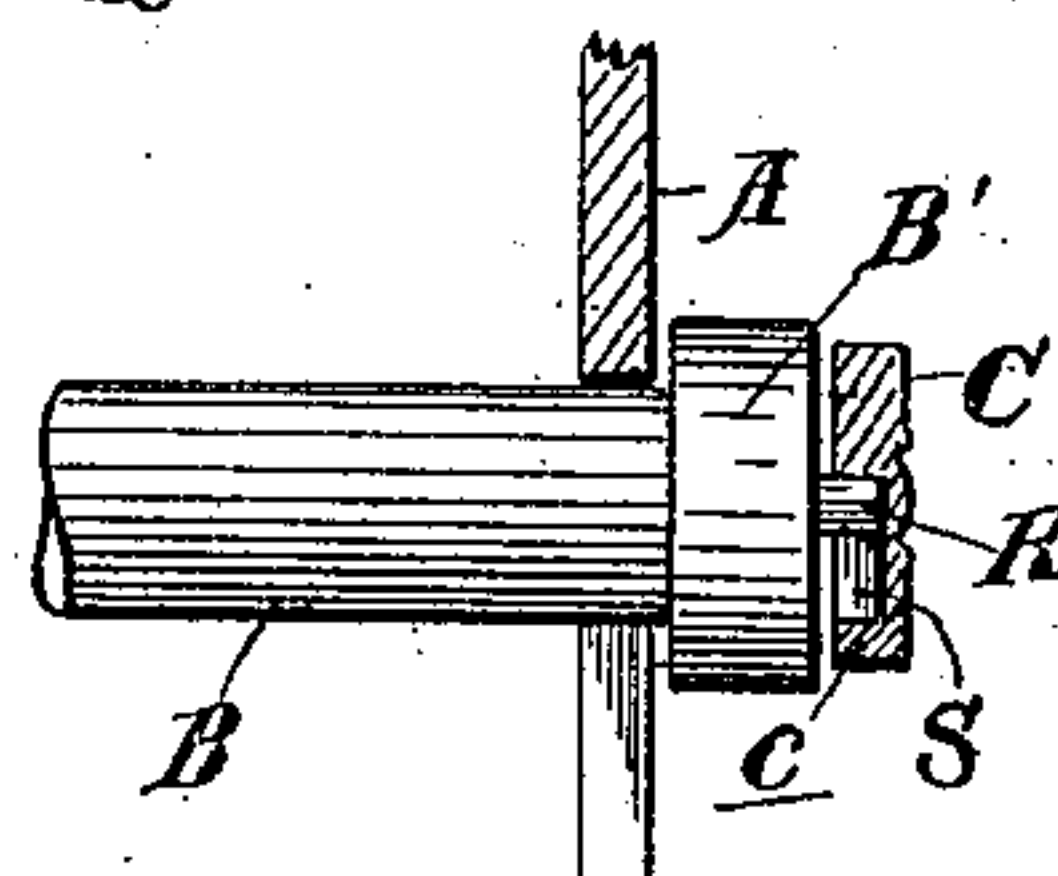


FIG. 7.

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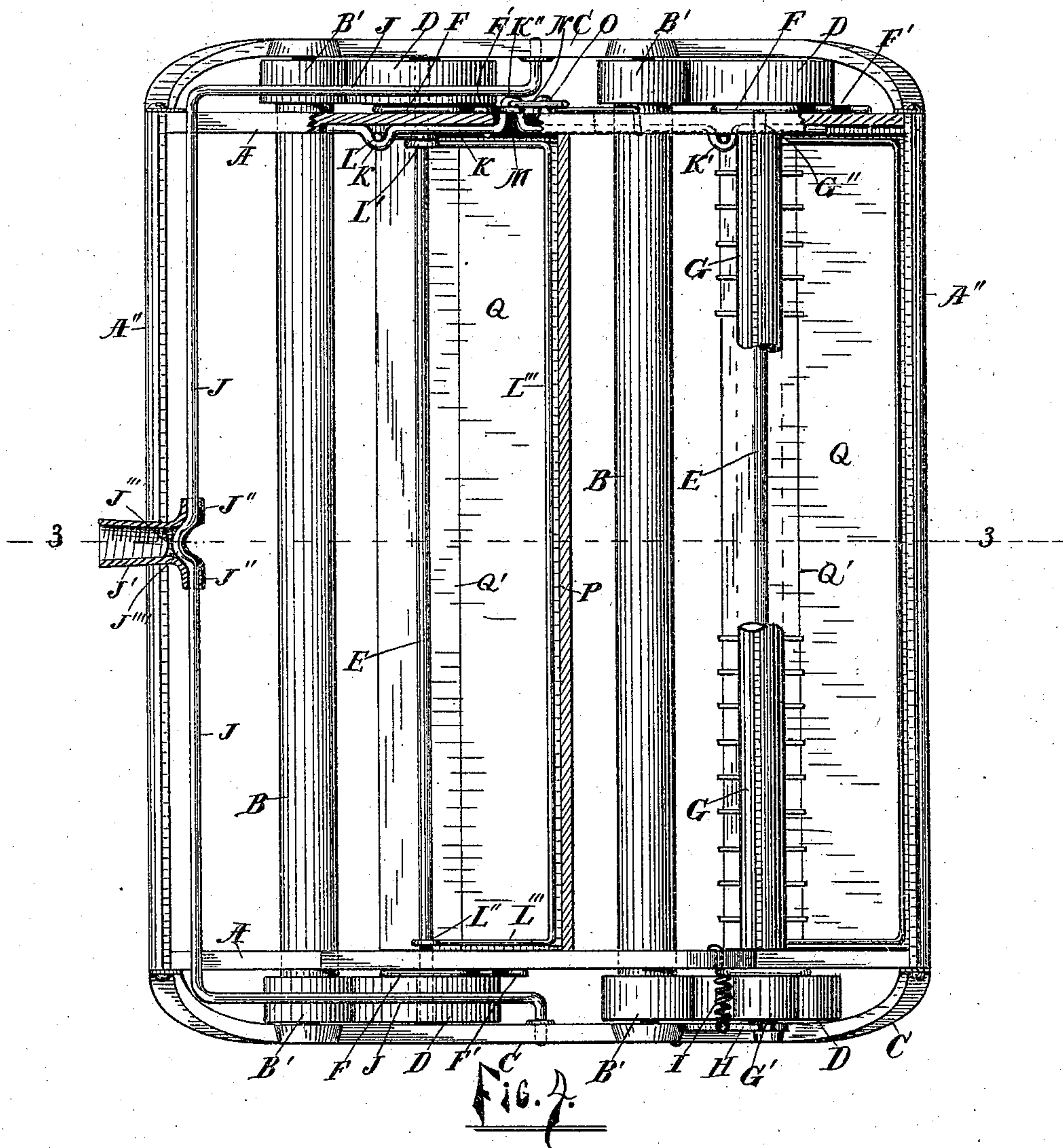
(No Model.)

2 Sheets—Sheet 2.

C. O. ALLEN.
CARPET SWEEPER.

No. 503,107.

Patented Aug. 8, 1893.



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CHARLES O. ALLEN, OF GRAND RAPIDS, MICHIGAN.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 503,107, dated August 8, 1893.

Application filed June 29, 1892. Serial No. 438,391. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. ALLEN, a citizen of the United States, residing at Grand Rapids, in the county of Kent 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.

My invention relates to improvements in carpet sweepers, and its object is to provide the same with certain new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation of a device embodying my invention; Fig. 2 the same with the parts removed to better show the spring bearings for the drive wheels. Fig. 3 is a central vertical section of the device on the line 3—3 of Fig. 4, which latter is a plan view of the device with the top removed and parts broken away. Fig. 5 is a detail in vertical section on the line 5—5 of Fig. 3 showing the pan operating mechanism. Fig. 6 is a detail in vertical section on the line 6—6 of Fig. 1, showing detail of drive wheel and journal; and, Fig. 7 a detail in vertical section on the line 7—7 of Fig. 1, showing brush shaft bearing.

Like letters refer to like parts in all of the figures.

A represents the end walls of the case and A' the side walls of the same.

B B are two rotary brush shafts adapted to operate brushes which engage the carpet in succession. Said shafts are provided with the usual pulleys B' at each end, which pulleys engage separate supporting and driving wheels D, which wheels are journaled on the ends of rods E passing through enlarged openings A' in the case, and abutting against flanges C' on the guard bars C. These flanges engage the hubs of said wheels, and the ends of said rod and keep them in place. Said rods are free to move laterally in the openings A', and are sustained in place within the openings and connected to the case by vertical pendulum springs F and horizontal springs F' the former yielding to pressure upon the bale and

thus lowering the brushes toward the floor, and the latter pressing the drive wheels against the pulleys B'. Said springs are made serpentine to pass between the driving wheels and case, and each is attached at one end to the rod E and pivoted at the other end to the end wall A.

G is a rotary comb engaging the forward brush for the purpose of removing strings, hairs and other analogous materials from the same, which comb is journaled at one end in the end wall A at G'', and at the other end is provided with a pulley G' engaging the driving wheel D beneath the same. This end of the comb is also journaled in the upper arm H of a bell crank lever, pivoted to the guard C at its angle and having its lower arm H' provided with a slot engaging the end of the rod E, which rod at this end has no horizontal spring, thus leaving the vertical spring F free to swing like a pendulum away from the brush pulley B' on the return or backward stroke, whereby the movement of the rod E in the slot in the arm H' raises the upper arm H and disengages the pulley G' from the drive wheel D. I thus avoid running the comb backward, which would tend to unwind its contents and return them to the brush. By journaling the comb in the case as described, and providing the adjacent end of the rod E with the horizontal spring F' the brush shaft will be driven on both forward and backward movements of the device.

I is a contractile spring to keep the arm H in engagement with the journal of the comb shaft, which shaft may be disengaged from the same and removed from the case by springing said arm outward, and replaced in like manner. The brush shafts have journals R at each end, which engage downwardly open bearings in the guard C. The bale arms J are also bent outward at their ends and engage openings in said guard. I am thus able to easily attach and detach the parts of the case by removing the fastenings at the ends of the guards only. The brushes may be prevented from falling out of their bearings when the sweeper is raised, by means of horizontal flanges c on the guards, or by any other suitable means.

The bale arm J is preferably of a single piece of rod or wire suitably bent, and hav-

ing a handle socket J' attached at the middle, for which attachment said socket is provided with oppositely projecting arms J'' channeled out to receive the arms J and turned or bent down around the same as indicated in Fig. 3. The wire forming the arms J, is also at its middle provided with a lateral bend or loop J''' out of line with the axis of the same, which curve is embraced by the parallel faces J''' in the bale socket. Said socket can thus be made separately, and consist of a single casting and attached to the wire arms of the bale so that it will not become detached, or moved either laterally or about the axis of the same and require no bolts or rivets.

The pans are supported upon the rods E and journaled upon the same by means of a spring wire, having a coil L' surrounding said rod, and extending downward at one end L'' is secured to said pan and extending upwardly at L, forms a flexible arm which engages loops K' in a wire K, which wire slides longitudinally in a groove in the end wall A of the case, in which wall is a slot M through which projects a loop K'' in the wire K which loop engages a lever N pivoted at the lower end to the case, and engages a latch O at its upper end by means of which lever the wire K is moved and held in position to open and close the pans. By thus attaching the pans to the rods E, they do not descend and drag on the carpet when the case is lowered, but retain their relative position to the drive wheels, and thus can be adjusted closer to the carpet. The case engages the movable edges of said pans which by the action of the spring coils L' is held firmly closed against the same. I also provide the pans with a downwardly projecting angle Q' nearer the free side than is the pivot upon which it turns. This angle will contact the carpet first and prevent any opening of the pan thereby. The pans are also strengthened and held in place by a wire L''', extending along each side and across the front, and connected at one end of the wire L. By this means the end opposite the lever L is prevented from springing open. The case is divided into two separate and independent compartments by the partitions P and P', which partitions serve to direct the dust, &c., from each brush to the respective pans, and prevent its passing from one brush to the other. Said brushes may be of differing grades and the forward brush adjusted the highest, whereby it will take up the strings, hairs and coarse stuff, and the rear brush prevented from receiving the same, which brush can be set lower and kept in good condition to take up the finer particles, thus doing better and more work.

C'' is a groove in the side walls A and guards C, in a horizontal plane, to hold a rubber band, which groove is made with a convex bottom to raise the middle part of the rubber band, which is no thicker than the projecting sides of the groove, which thus en-

gage the edges of the said band and thus protect the outer angles of the same. This makes said band more durable and serviceable than a thicker flat band and cheaper than a molded band.

What I claim is—

1. In a carpet sweeper a rotary brush, a driving wheel journaled on a bearing, adapted to move away from the shaft of said brush on the back or return stroke, a rotatable shaft having teeth engaging said brush and journaled in a pivoted lever, connected to said movable bearing, substantially as described.
2. In a carpet sweeper a rotary brush, a driving wheel journaled on a bearing attached to one end of a spring, said spring also pivoted to the case to swing said bearing away from the brush shaft, a bell crank lever having a slotted opening in one arm, engaging said driving wheel bearing and rotating comb journaled in the other arm of said bell crank, and having a pulley engaging said driving wheel, substantially as described.
3. In a carpet sweeper a rotary brush, having pulleys at each end, drive wheels engaging said pulleys, and journaled on each end of a rod, springs attached to one end of said rod arranged both horizontally and vertically, and a spring attached to the other end of said rod arranged to swing away from said brush shaft on the backward stroke, and a rotating shaft having teeth engaging said brush, and journaled in a pivoted lever connected to the end of said rod last named, substantially as described.
4. In a carpet sweeper the combination of a divided case and two brushes arranged to operate in succession, dust pans at the same side of each brush, said pans pivoted at their sides adjacent to said brushes, and also opening in the same direction, and connected to open simultaneously, substantially as described.
5. In a carpet sweeper, the combination of the case, the driving wheels journaled on vertically movable bearings, and dust pans pivoted to and supported on said bearings of the driving wheels, substantially as described, whereby the pans will not descend with the case when the latter is lowered, as specified.
6. In a carpet sweeper, the combination of the case, a rod, flexible supports for said rod, said supports being attached to said case, driving wheels journaled on said rod, and a dust pan, pivoted upon said rod at one side and engaging the case at the other side, substantially as described and for the purpose specified.
7. In a carpet sweeper the combination of a rod passing through the case, driving wheels journaled on the ends of said rods, a dust pan and a wire attached to said pan, having a coil surrounding said rod, and an upwardly extending arm, engaging mechanism to open and close said pan, substantially as described.
8. In a carpet sweeper, parallel rods extending through the case, driving wheels jour-

naled on said rods, dust pans having wires attached said wires having coils surrounding said rods and upwardly extended arms, and a slide arranged to move longitudinally and having loops engaging said arms, and a loop extending through the case, and engaging mechanism for holding said slide, substantially as described.

9. In a carpet sweeper, parallel rods having driving wheels journaled thereon, dust pans journaled on said rods and having upwardly projecting flexible arms, a wire arranged to move longitudinally having loops engaging said arms and a loop engaging a lever pivoted to the case at one end and engaging a catch or stop near the other end, substantially as described.

10. In a carpet sweeper, the combination of the case, a rod extending through said case, driving wheels journaled on the ends of said rod, a rotary brush having pulleys engaging the driving wheel, a bail having outwardly turned ends, and bars C secured to said case and having openings receiving and forming bearings for the journals of said brush shaft

and bail arms, said bars also having flanges engaging the hubs of said driving wheels and against which the ends of said rod abut, substantially as described, whereby the parts may be removed simply by detaching said bars, as specified.

11. In a carpet sweeper in combination with a brush shaft having end bearings, a rod extending through the case, driving wheels journaled on the ends of said rod, and a rotary comb journaled in one arm of a bell crank, the other arm of which engages said rod, guard bars detachably secured to the case, having bearings for the brush shaft, and abutting against the ends of said rods and the hubs of said wheels, and having said bell crank pivoted thereto, substantially as described.

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

CHARLES O. ALLEN.

Witnesses:

LOIS MOULTON,

LUTHER V. MOULTON.