(No Model.) 2 Sheets—Sheet 1.

C. P. JOHNSON.

MACHINE FOR CLEANING BROOMS.

No. 464,970. Patented Dec. 15, 1891.

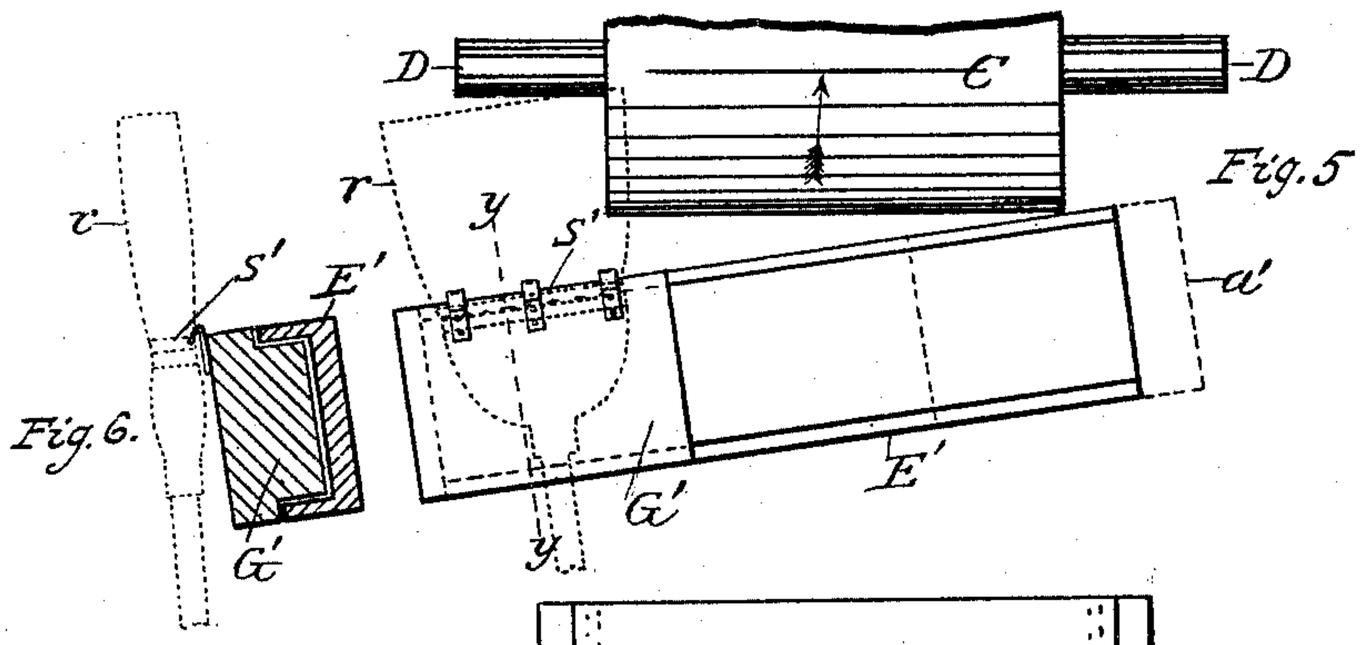

Fig. 5

Fig. 6.

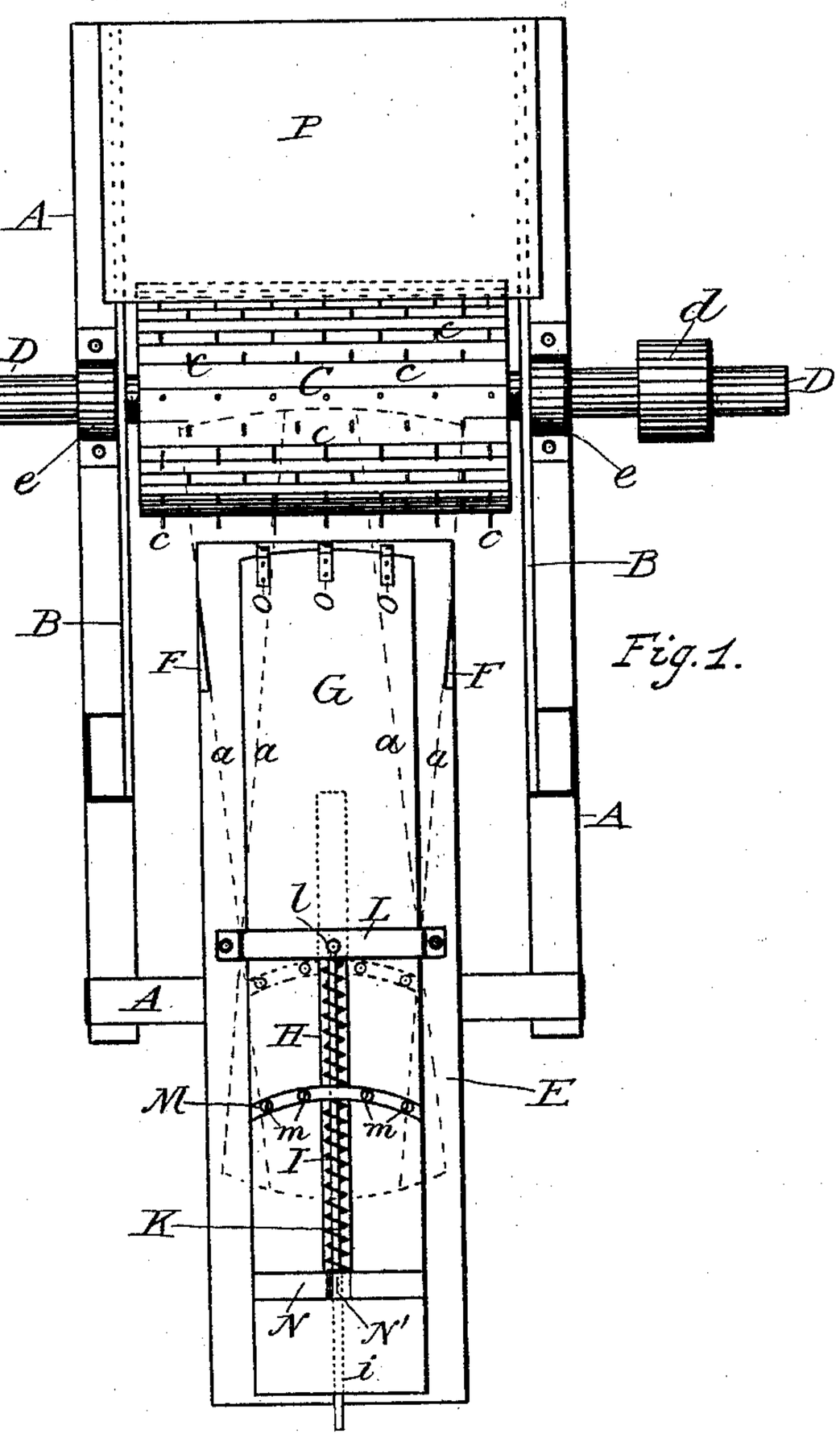

Fig. 1.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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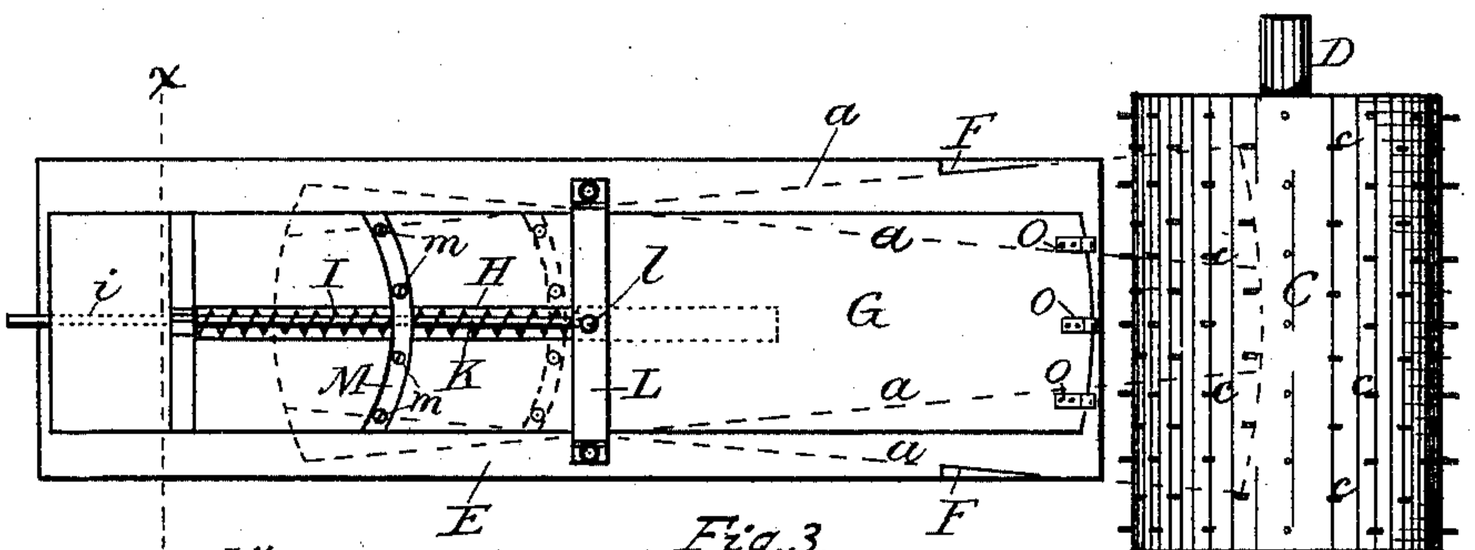

Fig. 3.

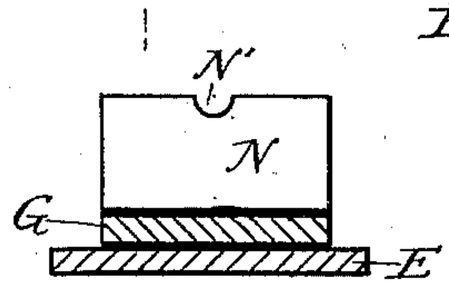

Fig. 4.

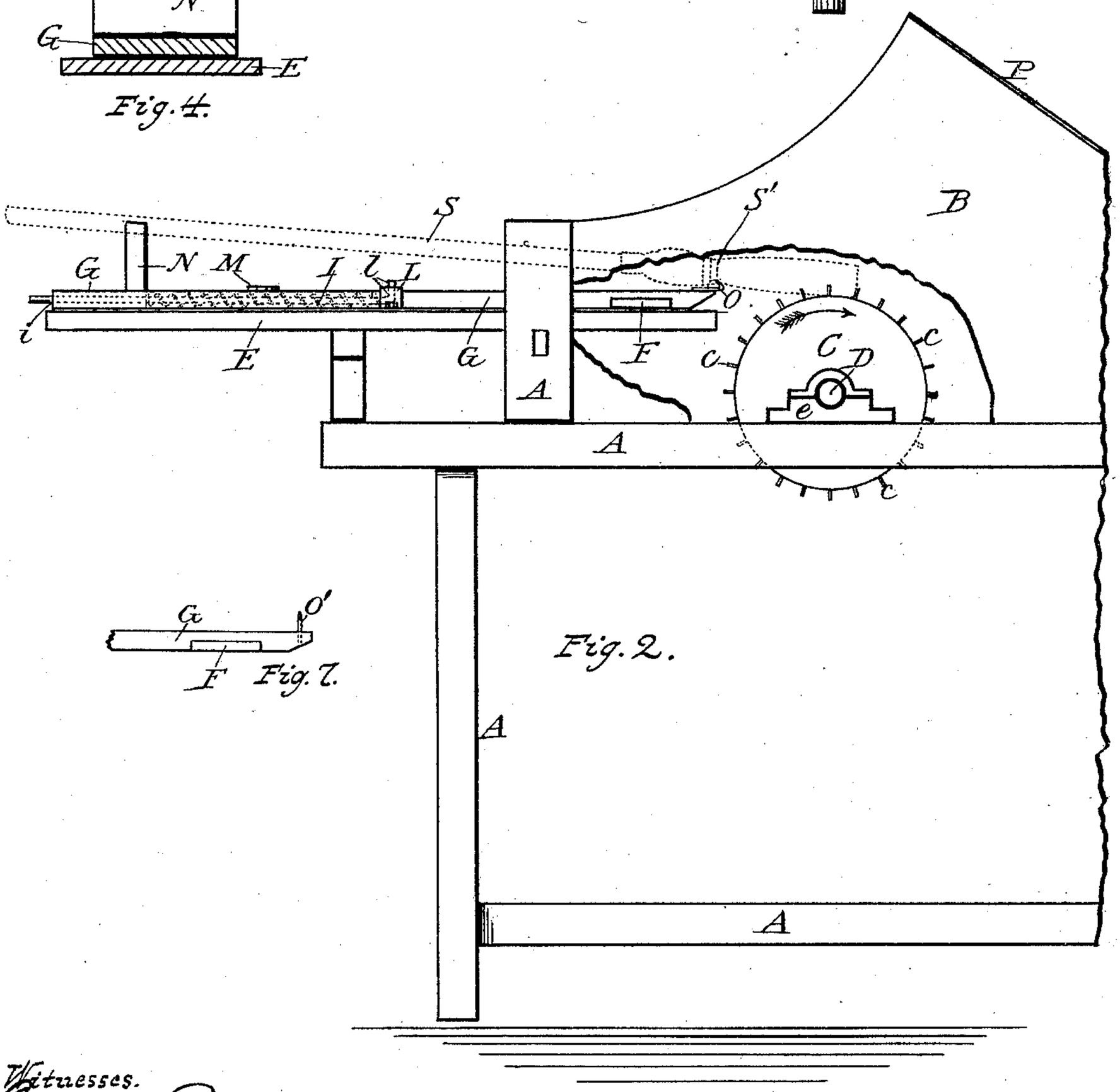

Fig. 2.

Fig. 7.

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UNITED STATES PATENT OFFICE.

CHESTER P. JOHNSON, OF AMSTERDAM, NEW YORK, ASSIGNOR TO JOHN D. BLOOD, JAMES BLOOD, AND FRANK A. BLOOD, OF SAME PLACE.

MACHINE FOR CLEANING BROOMS.

SPECIFICATION forming part of Letters Patent No. 464,970, dated December 15, 1891.

Application filed July 24, 1891. Serial No. 400,556. (No model.)

To all whom it may concern:

Be it known that I, CHESTER P. JOHNSON, a citizen of the United States, residing at the city of Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Machines for Cleaning Brooms; 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 machinery for scraping or combing brooms, after being made, of the seeds that remain upon the brush of the broom and straightening out in proper form the brush that may have become tangled or mislaid in the process of making. I attain these objects by the special and novel mechanism illustrated in the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan. Fig. 2 is a side elevation. Fig. 3 is a partial plan. Fig. 4 is a partial sectional elevation upon the broken line *x* in Fig. 3. Fig. 5 is a modification of a part of my invention. Fig. 6 is a transverse section on the broken line *y* in Fig. 5; and Fig. 7 exhibits a vertical spur O′, which is an equivalent for the hooks O.

Similar letters of reference refer to similar parts throughout the several views.

The arrows indicate the direction of motion.

The wooden pieces A constitute the frame that supports the working parts of the machine. The cylinder C is provided with teeth *c* of the ordinary kind used for that purpose, and is supported and revolves upon its central shaft D in suitable boxes *e*, placed upon the frame A, by power communicated from any prime motor by a belt-engaging pulley *d*.

B are side boards, and P is a cover thereto to prevent the seeds and dust that is combed or brushed from the brooms from flying unnecessarily around the room wherein the machine is placed.

E is a bed-sole of the general form and construction and secured to the frame A, substantially as indicated and shown in the several views of the drawings. The bed-sole E may be substituted with any other suitable support for the carriage G—as, for instance, simply cross-rods would perform the same functions.

G (see the several drawings) is a carriage of the relative proportions, substantially as shown, and provided with a rest-piece N, having a semicircular depression N′ to receive the upper part of the broom-handle while the broom is being cleaned and an oblong slot H to receive the spring-supporting rod K and the spring I. The spring I, slot H, and rod K may be entirely dispensed with and the machine be used successfully by operating the carriage G by hand. The only difference in the operation is with the rod and spring the carriage G is automatically returned to its normal position, when without the spring the carriage G is returned to its normal position by hand. However, I prefer the employment of the spring and rod, as the machine is somewhat more convenient to use.

The extreme forward end of the carriage G, I construct somewhat of the form of a section of a circle, substantially as shown in the several views of the drawings, and place at nearly equal distances apart the retaining-hooks O, substantially of the form as shown in the drawings, and more particularly in Fig. 2. These hooks O engage the broom S against and with their points extending under the lower seam S′ of the seams or stitchings, which prevents the broom while being operated upon from being drawn forward by the force of the combing-cylinder far enough to injure the seaming with the teeth *c* of cylinder C. I can also clean or comb off all seeds, &c., from brooms without the use of these hooks O, just above described, by holding the broom entirely by hand or by placing a gage at the extreme rear end of the handle of the broom S in such position that when the handle of each broom is pressed firmly rearward against a gage the brush will extend forward to the action of the combing-cylinder a positive distance as a matter of course. This last-mentioned arrangement of holding the handle of the broom firmly rearward against a stationary gage requires great skill and care in operating on account of the great danger, from accident or carelessness, of the seaming or stitching of the broom coming in contact with

the cylinder-teeth, which revolve at a high velocity, thereby destroying the broom and exposing the operator's hands to injury. With the use of this particular part of my invention—to wit., the hooks O and the manner of using them—it would be impossible to injure the seaming or stitching, as the gage M may be so closely adjusted that the teeth *c* will reach within one-quarter of an inch of the seaming S′, thereby securing perfect work and safety to the broom being operated upon, and without any danger of injury to the operator by the broom through carelessness or accident being suddenly torn forward by the action of the rapidly-revolving cylinder.

Figs. 5 and 6 of the drawings represent a modification of my invention wherein C is the cylinder, D the central shaft, G′ the carriage containing the hooks O, and E′ the track or way upon which the carriage G′ travels. The track is placed obliquely to the cylinder, substantially as shown in the drawings. The carriage G′ and track E′ extend to the left end of the cylinder a sufficient distance to allow a broom to be placed upon hooks O, as indicated by the broken lines *r*, representing a broom, with the lower seam or stitching of the broom firmly secured upon the hooks O, as heretofore described. The operator simply pushes the carriage G′, holding the broom, slowly to the right to the position shown by the broken lines *a*′. This convergent movement of the carriage G′, as relates to the cylinder C, causes the brush to be submited to the action of the cylinder-teeth from the extreme ends up to or near the lower seam or stitching S′, engaging the hooks O. By passing the carriage containing the broom back to its normal position the operator is enabled to release the broom from the hooks O and then submit the opposite side of the broom to the same operation, thereby cleaning the broom successfully and without danger of injury.

Over the central part of the carriage G, I secure to the bed-sole E the strap L, constructed of the form substantially as shown in Figs. 2 and 3, and of sufficient length and height to allow the carriage to freely pass forward and backward, and also to have a lateral movement, as indicated by the broken lines *a a a a*. (See Figs. 1 and 3.) Within the slot H, I insert the rod K, with its forward end angled upward, as shown in Figs. 1, 2, and 3, and secured to the strap L, through perforation *l*, with the rear end of the said rod extending through a central longitudinal pole *i* (see Figs. 1, 2, and 3) in carriage G. This rod K is introduced to support and hold into place the spring I, which said spring I is employed to automatically return the carriage G to its normal position, as heretofore referred to and described.

M is a gage, which I adjust with the screws *m* at an equal distance from the strap L, that I desire to comb or clean the broom; or, in other words, this gage M may be adjusted at any desired place, as just above indicated, to suit the requirements of the different lengths of the brush used in the manufacture of the brooms desired to be cleaned. The strap L performs the functions of and is a stop for the gage M to contact with, thereby stopping the carriage at that point.

F (see Figs. 1, 2, and 3) are stops to gage the lateral motion of the forward part of the carriage G while being moved forward and backward to present the broom to the action of the cylinder C.

The operation of my invention is as follows: Proper motion is given to the cylinder in the direction as indicated by the arrows. The carriage G is presumed to be in its normal position, as shown in the several views of the drawings. The operator places a broom upon the hooks O so that the said hooks O shall engage the lower seam S′ of the seams or stitchings, thereby preventing the broom from being drawn farther forward by the action of the cylinder, while the upper end of the handle is held firmly in the depression N′ of the rest-piece N. The attendant then pushes the carriage forward, at the same time giving the carriage a lateral movement, as indicated by the broken lines *a a a a*, until the gage M contacts with the stop or strap L, and then allows the carriage G to return by the force of the spiral spring (which was compressed by the forward movement of the carriage) to its normal position. During the return movement it is also advisable to give the carriage a lateral movement, as indicated by the broken lines *a*. The broom is then turned over, and the same operation is repeated with the opposite side, as just above described. The operation is rapid, simple, and very effective. The gage M may be set so close and accurately that the broom may be combed by the cylinder-teeth to within one-quarter of an inch of the lower seam S′ without injury to the stitching, which I am not aware has heretofore been accomplished.

I will here remark that the rest-piece N may be dispensed with and like results be produced by a simple readjustment of the bed-sole piece E, so as to present the brush to the action of the cylinder-teeth in a proper manner. However, I prefer the use of the rest-piece N, as it elevates the handle a short distance above the carriage G between the brush of the broom and the rest-piece N, thereby enabling the operator proper facilities to grasp the handle without injury to his hands by contacting with the carriage.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cylinder provided with teeth, combined with hooks secured to a carriage, and adapted to hold the broom by engaging a seam or stitching of the broom.

2. The cylinder provided with teeth, combined with a carriage provided with hooks and a gage, all operating as described and set forth.

3. The cylinder provided with teeth, combined with a carriage provided with hooks and an adjustable gage and a stop, all operating as and for the purposes set forth.

4. The cylinder provided with the teeth, combined with a carriage provided with hooks and an adjustable gage, a stop L, and a solepiece E, all operating as and for the purposes set forth.

5. The carriage G, having a longitudinal and lateral movement, combined with the cylinder C, provided with teeth, all operating as and for the purposes set forth.

6. The carriage G, having longitudinal and lateral movements and provided with hooks to engage and hold a broom in position while being cleaned, combined with the cylinder C, provided with teeth, substantially as shown, described, and set forth.

7. The combination of the cylinder C, provided with teeth, with the carriage G, provided with hooks O, the spiral spring I, and guide-rod K, and susceptible of longitudinal and lateral movements, as specified and set forth.

8. The cylinder C, provided with teeth, combined with the carriage G, provided with hooks O, guide-rod K, surrounded with spiral spring I, and a rest N, and susceptible of a longitudinal and lateral movement, as specified, set forth, and described.

In witness whereof I hereunto subscribe my name and affix my seal this 20th day of July, 1891.

CHESTER P. JOHNSON. [L. S.]

Witnesses:
JNO. V. A. LANSING,
JNO. H. LANSING.