

C. B. FOSTER & W. W. GLIDDEN.

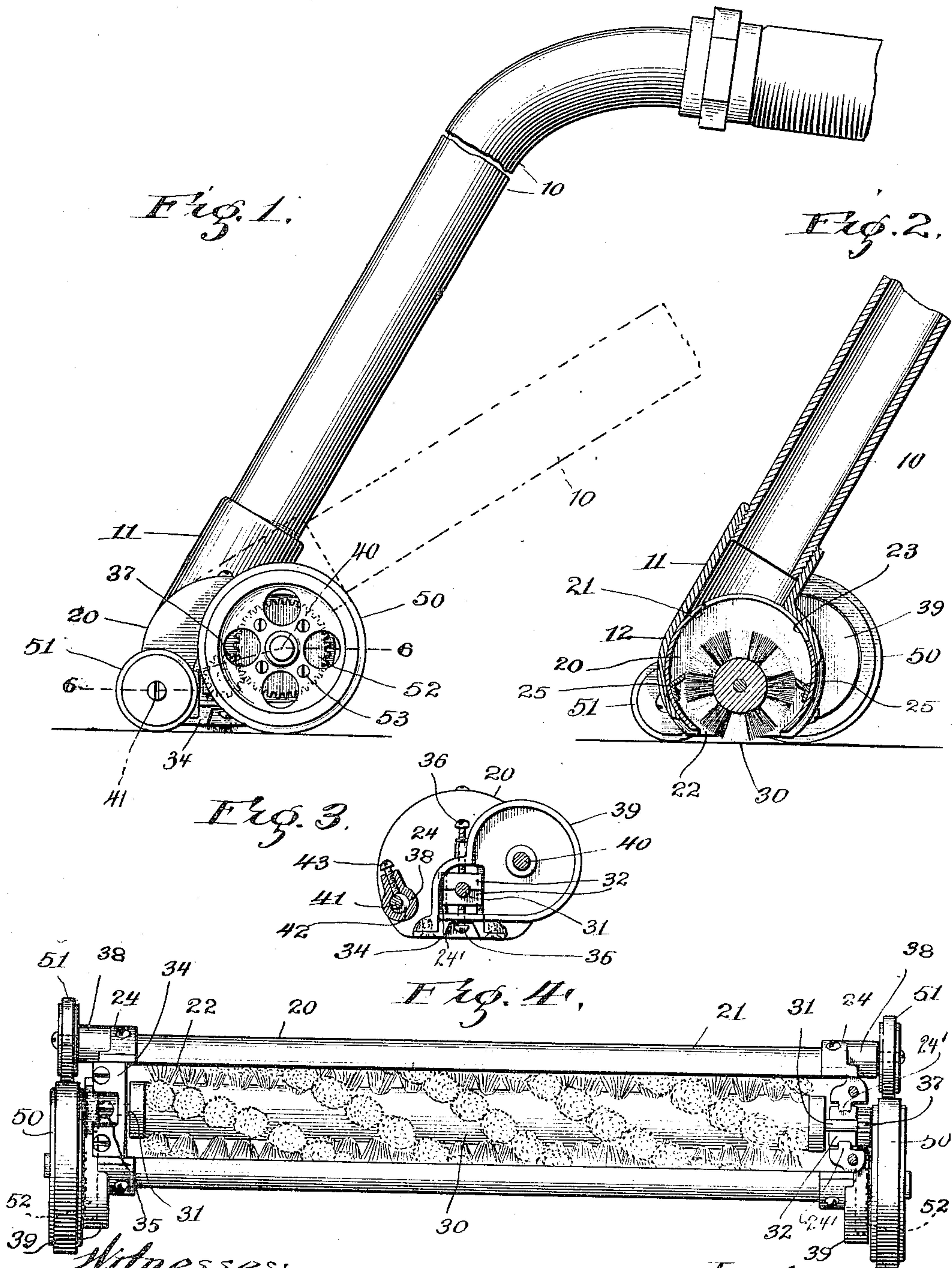
VACUUM CLEANER.

APPLICATION FILED FEB. 21, 1908.

959,729.

Patented May 31, 1910.

2 SHEETS—SHEET 1.



Witnesses:  
Lemuel S. Russell  
Frank Beaman

Inventors:  
Charles B. Foster and  
Wilnot W. Glidden,  
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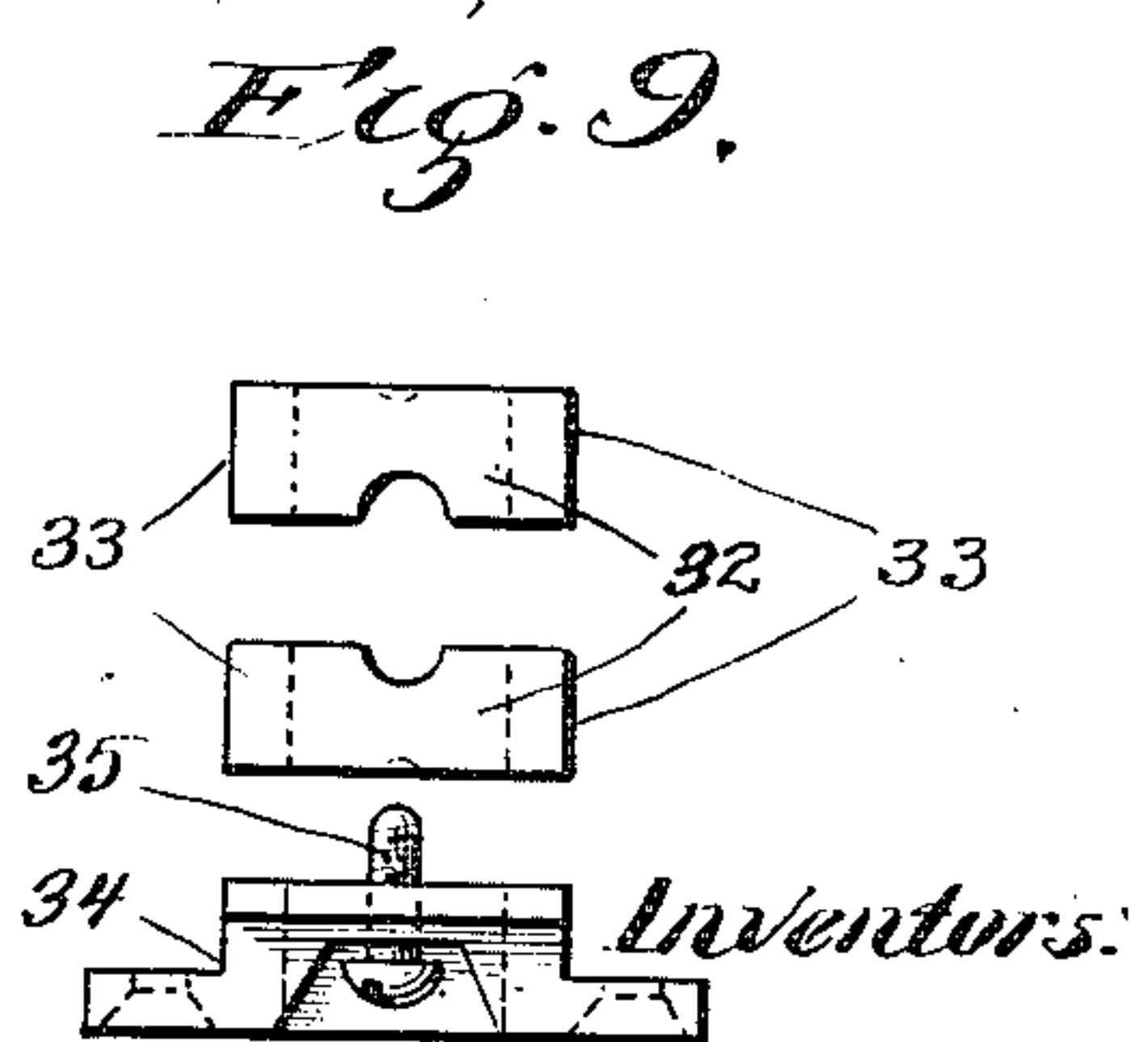
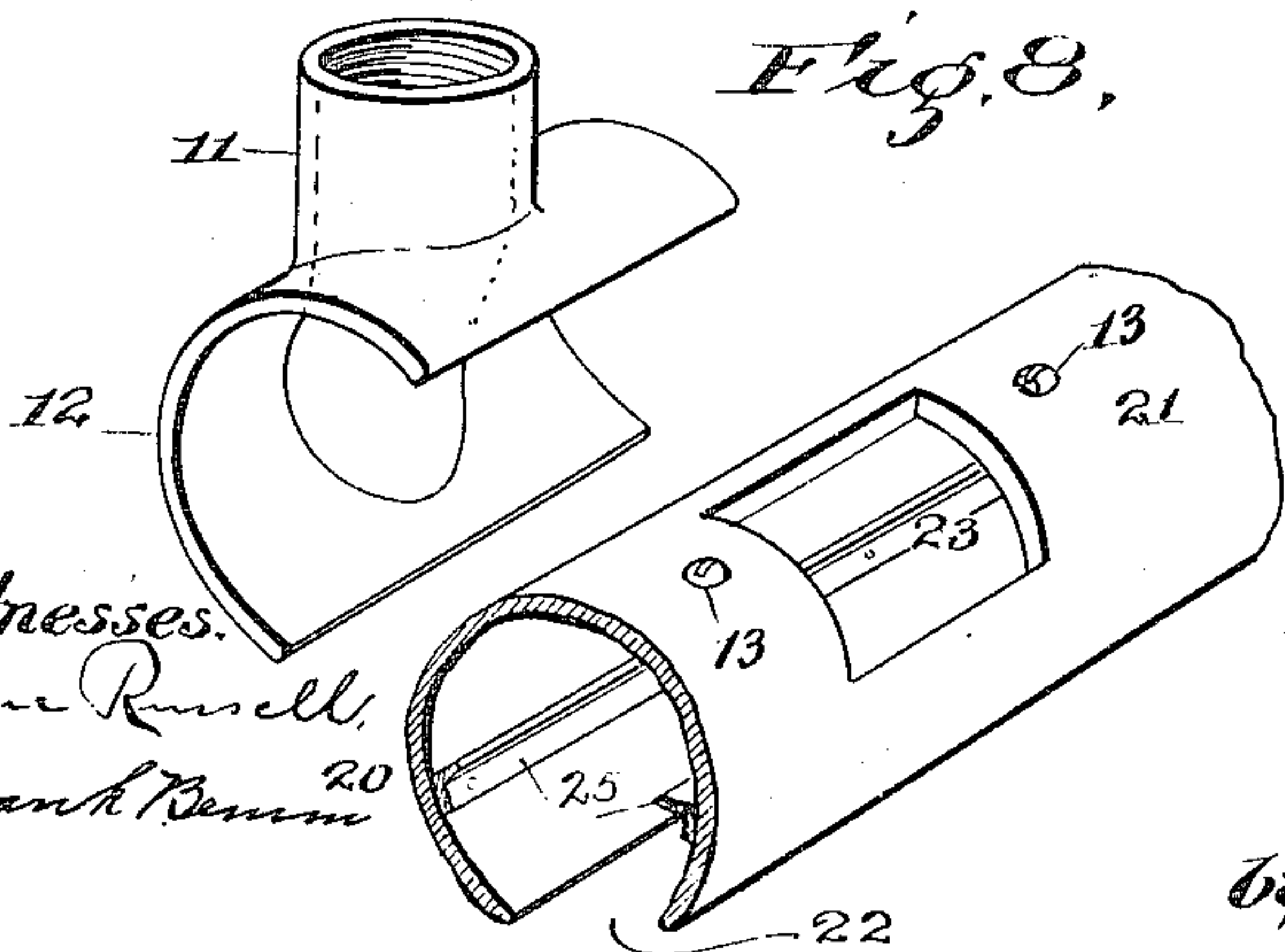
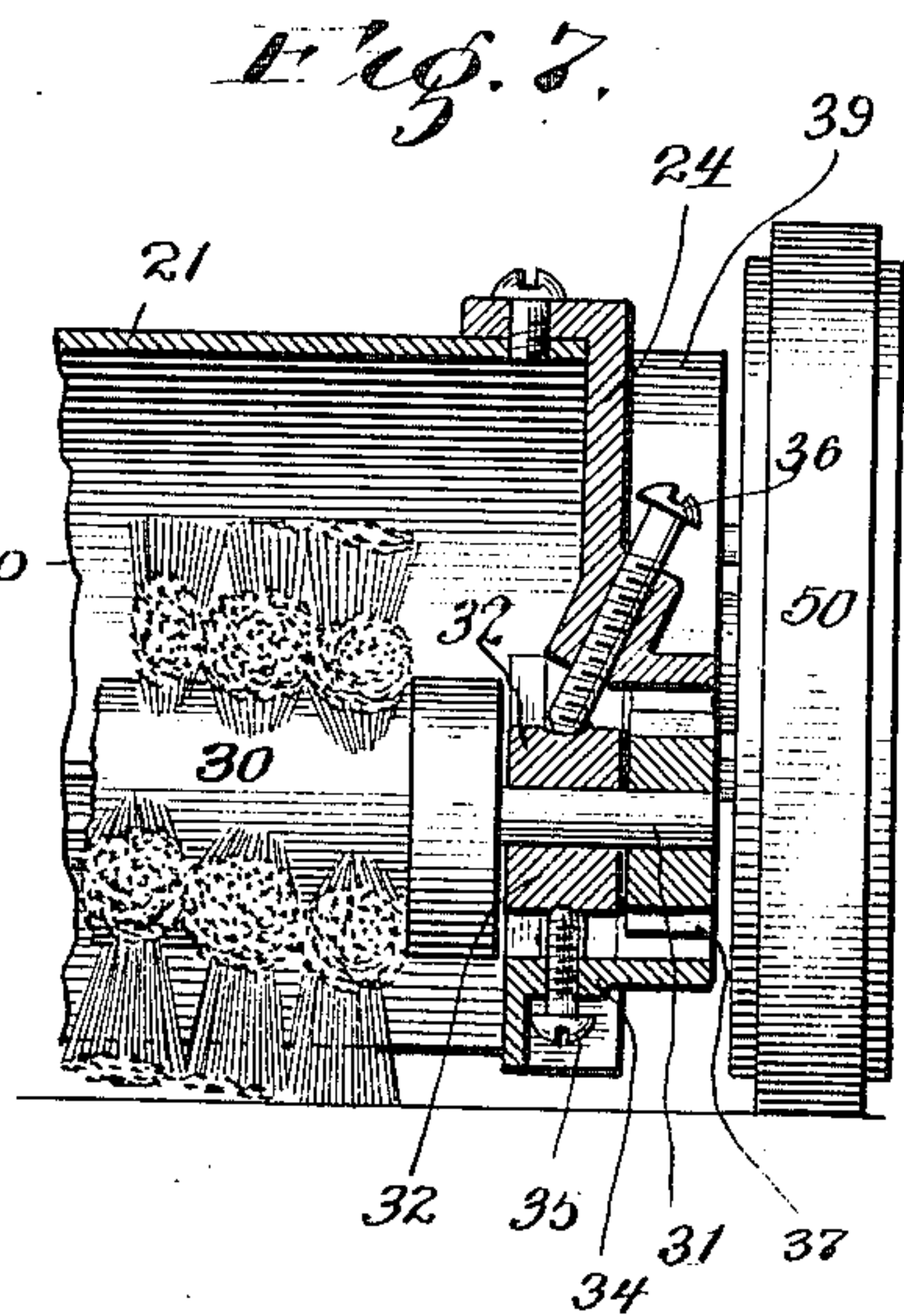
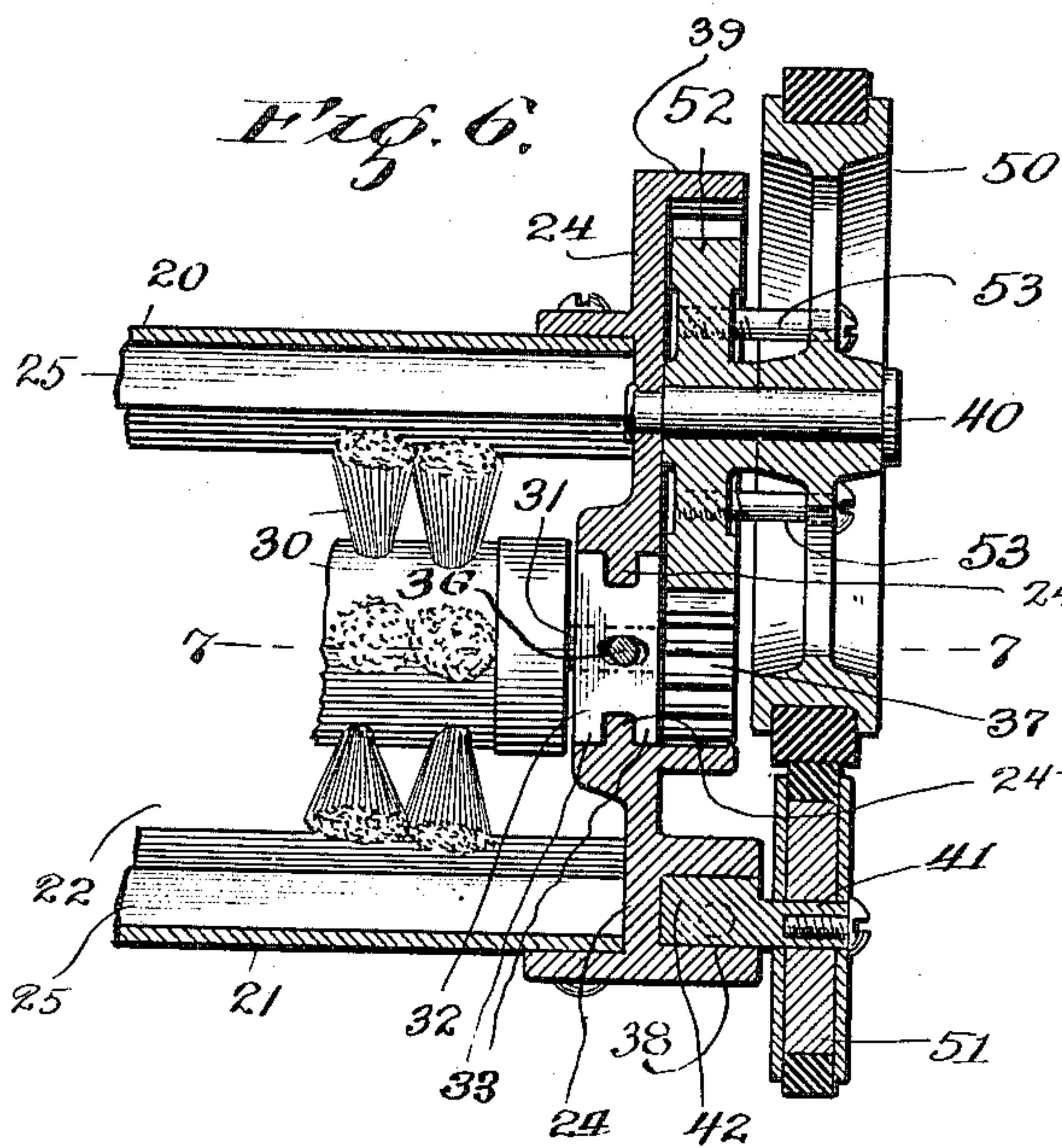
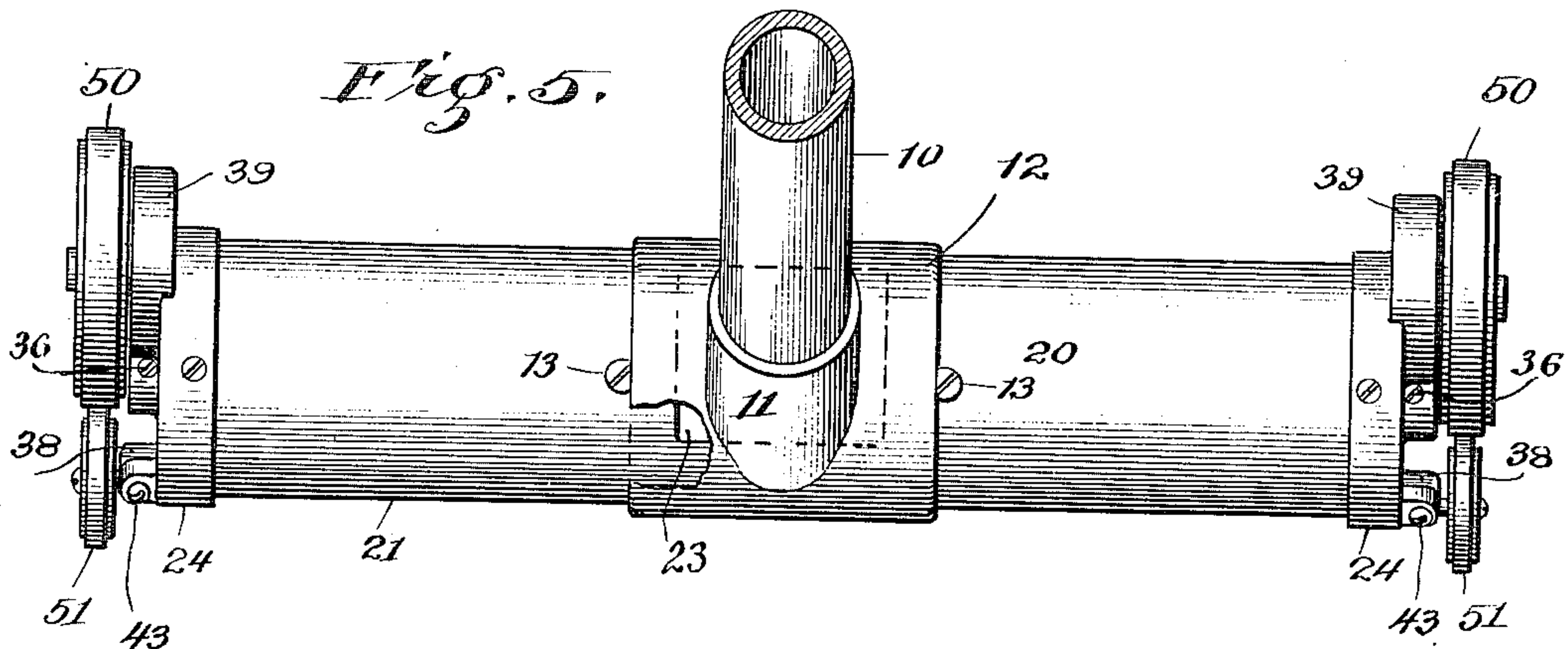
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2 SHEETS—SHEET 2.



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Lena Russell,  
Frank Remm

Inventors:  
Charles B. Foster, and  
Wilmot H. Glidden,  
by Charles C. Sherway  
Attys.



# UNITED STATES PATENT OFFICE.

CHARLES B. FOSTER AND WILMOT W. GLIDDEN, OF OAK PARK, ILLINOIS.

VACUUM-CLEANER.

959,729.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed February 21, 1908. Serial No. 416,974.

*To all whom it may concern:*

Be it known that we, CHARLES B. FOSTER and WILMOT W. GLIDDEN, citizens of the United States, residing in the village of Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vacuum-Cleaners, of which the following is a full, clear, and exact description.

Our invention relates to certain new and useful improvements in vacuum cleaners and more particularly to improvements in the hand implements thereof.

The object of this invention is to provide a hand implement for use in removing dust and small light particles such as pins, tacks, or other like articles from floors or other parts of the house.

Another object is to provide, in a cleaner of this class, an agitating brush for loosening the dirt and dust, and sweeping it into the receiving chamber of the implement.

Another object is to provide means for receiving and holding pins, tacks or like objects which are too heavy to be carried away by the suction and which are swept into the receiving chamber by the brush.

Another object is to furnish means for raising or lowering the inlet slot and for raising or lowering the brush.

Another object is to furnish means for permitting oscillation of the handle portion with respect to the head or nozzle without necessarily tilting or swinging the inlet slot away from the floor.

Another object is to furnish means for the ready removal of the articles that lodge in the receiving chamber.

To such end this invention consists in certain novel features of construction and arrangement, a description of which will be found in the following specification and the essential features of which will be definitely set forth in the claims appended hereto.

The invention is clearly illustrated in the drawings furnished herewith in which—

Figure 1 is a side view of an implement or cleaner embodying our invention, the handle portion being partly broken away. Fig. 2 is a central vertical section through the handle and nozzle portion. Fig. 3 is a side view of the nozzle with certain parts in vertical cross section. Fig. 4 is an under plan view of the nozzle. Fig. 5 is a plan view of the nozzle. Fig. 6 is a horizontal section taken on the broken line 6—6, Fig.

1. Fig. 7 is a vertical section taken on the line 7—7, Fig. 6. Fig. 8 is a perspective view of a fragment of two members of the nozzle, and Fig. 9 is a side view of a brush bearing.

In these views 10 represents a tubular handle portion that is adapted to be connected with a hose which leads to a suitable vacuum apparatus for producing suction in the nozzle. These connections may be of any of the well known forms and require no especial description so far as this specification is concerned. The lower end of the handle is threaded and is screwed into a nipple 11, formed on a head 12, which is adapted to be removably secured to the nozzle 20. Said nozzle comprises a chambered casing 21, preferably tubular in form and containing an inlet opening 22 in its lower side, and an outlet 23 in its upper side, said openings furnishing the entrance to the handle. The casing 21 contains end walls 24, that are screwed or otherwise secured to the casing wall 21, and these end walls carry the brush, supporting wheels and gearing between the wheels and brush.

The brush is shown at 30, and is preferably of cylindrical form, containing a core and radially extending bristles. The brush is provided with gudgeons 31, that are journaled in bearing blocks 32, (see Fig. 9) guided upon the end walls and adjustably mounted thereon. The end walls 24, are vertically slotted to receive the bearing blocks, and inwardly projecting flanges 24' are provided upon the casing, which are confined between flanges 33 of the bearing blocks 32. Brackets 34, are screwed to the bottom of the end walls, immediately below the bearing blocks, and adjusting screws 35 are threaded in said brackets and bear upon the lower bearing blocks 32. Screws 36, are provided for the upper bearing blocks which screws are threaded in the end walls and bear upon the upper bearing blocks. By raising or lowering the screws 35—36, the brush may be raised or lowered to maintain it in proper working relation with the floor.

Within the casing are two shelves 25, that are adapted to receive particles, such as pins, tacks or the like, which the brush sweeps into the casing and are too heavy to be carried away by the suction. The brush is revolved quite rapidly in the operation of the device and such articles as are swept into the casing, are carried around by the brush and



fall upon the projecting shelf or ledge. Two pins or studs 40, 41, are provided upon end walls and upon these pins are journaled the supporting wheels 50—51. These wheels are preferably rubber tired, the wheels 50 serving as traction wheels and operating to revolve the brush. The wheels 50, carry gear wheels 52, which as shown are connected to the wheels 50, by screws, 53, although this form of connection is wholly immaterial to our invention, broadly considered. The gear wheels 52, mesh with pinions 37, that are secured upon the gudgeons 31, of the brush 30 and cause the brush to revolve very rapidly as the cleaner is moved back and forth across the floor. Each pin 41, contains a head 42, which is eccentrically disposed with respect to the pin proper, and this head is seated in a socket 38, formed on the end wall and the pin is secured in place by means of a screw 43 that is threaded in the socket and bears upon the head of the pin. By turning the pins in the sockets the wheels 51, can be raised or lowered with respect to the casing to bring the inlet slot closer to or farther away from the floor. A flange 39 is provided upon each end wall 24 which partially incloses the gearing between the traction wheels and brush.

The wall of the head 12 is in the form of a segment and is greater than a semi-circle and embraces the tubular casing, sliding freely around the same when taken off or re-assembled and in using the cleaner the handle may turn upon the casing without disturbing the position of the nozzle. Side movement of the head is prevented by means of two screws 13 which engage the side edges of the head and hold it in its place upon the casing. In applying the head or removing it, one edge is carried around until it enters the inlet slot whereupon the other edge can be swung over or away from the upper side of the casing, as the case may be.

In operation the cleaner is moved forward and backward across the floor in the ordinary manner. The traction wheels 50 are thereby caused to rotate, which movement is transferred to the brush through the gearing. The brush acts to sweep the dirt, dust, small particles and the like, into the casing, whereupon the suction carries them up through the casing, handle and hose. Such particles as are too heavy to be carried off by the suction fall upon the shelves 25 and remain there until the nozzle is removed from the handle portion, whereupon they may be discharged therefrom by inverting the nozzle and shaking them out through the outlet 23. It will be obvious that where a brush is used in a device of this kind, the inlet slot, through which the brush projects, must necessarily be quite wide, hence the velocity of the air is apt to be considerably less than in an implement containing a much narrower

slot. For this reason, the shelves have been provided to catch the heavier particles, which the suction is unable to carry away.

The casing can be lowered upon its supports to bring the inlet slot closer to the floor by turning the eccentric pin 41, to the proper position, and the brush can be adjusted by means of the screw 35—36. The cleaner operates very satisfactorily on wood, tile, linoleum or any other like floors.

Various alterations and modifications of the device are possible and we do not, therefore, desire to limit ourselves to the specific construction shown and described.

We claim as new and desire to secure by Letters Patent:

1. In a vacuum cleaner; a tubular handle arranged to be connected with a suction apparatus, and having a nozzle supporting head in communication therewith, a nozzle revolubly attached to said head and opening into the same, and a suitably operated agitating brush mounted in said nozzle.

2. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, and having a chambered supporting head in communication therewith, a chambered casing revolubly attached to said head and having an inlet slot, and a suitably operated rotary brush mounted in the chamber in the casing.

3. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus and having a chambered supporting head in communication therewith, a chambered casing revolubly supported in said head and having an outlet opening communicating with said head and having an inlet slot, a suitably operated rotary brush mounted in the chamber of said casing, and a shelf, supported within said chamber and arranged to receive particles thrown thereupon by the brush.

4. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus and having a chambered supporting head in communication therewith, a chambered casing revolubly supported in said head and having an outlet opening communicating with said head and having an inlet slot, a rotary brush journaled in the chamber of the casing and a traction wheel running upon the floor and arranged to revolve the brush.

5. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus and having a chambered supporting head in communication therewith, a chambered casing revolubly supported in said head and having an outlet opening communicating with said head and having an inlet slot, a rotary brush journaled in the chamber of the casing, a traction wheel running upon the floor and gearing between the wheel and brush arranged to transform the



rotary movement of the wheel to a high speed rotatory movement of the brush.

6. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus and having a chambered supporting head in communication therewith, a chambered casing revolubly supported in said head and having an outlet opening communicating with said head, and having an inlet slot, a rotary brush journaled in the chamber of the casing, a traction wheel running upon the floor, gearing between the wheel and brush and means for adjusting the brush vertically of the chamber.

7. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, a chambered casing revolubly attached to the handle and having an inlet slot, a rotary brush journaled in the chamber of the casing, a traction wheel arranged to rotate the brush, and means for raising and lowering the position of the inlet slot with respect to the floor.

8. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, a chambered casing revolubly attached to said handle and having an inlet slot, a vertically adjustable rotary brush journaled in the chamber of said casing and a traction wheel arranged to revolve said brush.

9. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, a chambered casing revolubly mounted in said handle and having an inlet slot, means for affording vertical adjustment to said chamber, a vertically adjustable rotary brush journaled in the chamber of said casing and a traction wheel arranged to revolve said brush.

10. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, a chambered casing revolubly mounted upon said handle, two pairs of wheels carrying said chamber, means for affording vertical adjustment between one pair of wheels and the casing, a rotary brush in the chamber of said casing and connections between the other pair of wheels and brush for rotating the brush.

11. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, and having a hollow segmental head, a cylindrical chambered casing removably seated in said head and having an inlet slot, and having an outlet slot communicating with said handle, and a suitably operated rotary brush journaled in the chamber of said casing.

12. In a vacuum cleaner, a tubular handle arranged to be connected to a suction ap-

paratus, and having a hollow segmental head, a cylindrical chambered casing removably seated in said head and having an inlet slot, and having an outlet slot communicating with said handle, and arranged to be disconnected from said handle to discharge the contents through the outlet slot and a suitably operated rotary brush journaled in the chamber of said casing.

13. In a vacuum cleaner, a tubular handle arranged to be connected to a suction apparatus, a hollow head secured upon said handle and having a segmental wall, a cylindrical chambered casing removably seated in said segmental wall and having an inlet slot, and having an outlet slot communicating with said hollow head, a shelf in the chamber of said casing and a suitably operated rotary brush journaled in said chamber, said handle and chamber being arranged to be disconnected to discharge the contents of the chamber out through the outlet slot.

14. In a vacuum cleaner, a tubular handle portion arranged to be connected to a suction apparatus, and having a suitable head, a chambered casing journaled in said head and having an inlet slot, and a suitably operated rotary brush journaled in the chamber of said casing.

15. In a vacuum cleaner, a tubular handle portion arranged to be connected to a suction apparatus, and having a suitable head, a removable chambered casing journaled in said head and having an inlet slot, and a suitably operated rotary brush journaled in the chamber of said casing.

16. In a vacuum apparatus a tubular handle portion arranged to be connected to a suction apparatus, and having a segmental head, a cylindrical chambered casing removably journaled in said head, having an inlet slot and having an outlet slot opening into the head and a rotatable brush journaled in the chamber of said casing.

In witness whereof this specification has been executed by CHARLES B. FOSTER, this 10th day of February 1908, at Buffalo, N. Y. and by WILMOT W. GLIDDEN, this 12th day of February, 1908, at Oak Park, Ill.

CHARLES B. FOSTER.  
WILMOT W. GLIDDEN.

Witnesses as to the signature of Charles B. Foster:

MOREY C. BARTHOLOMEW,  
A. GLENN BARTHOLOMEW.

Witnesses as to the signature of Wilmot W. Glidden:

HELEN GLIDDEN,  
NELLIE GREGORY.