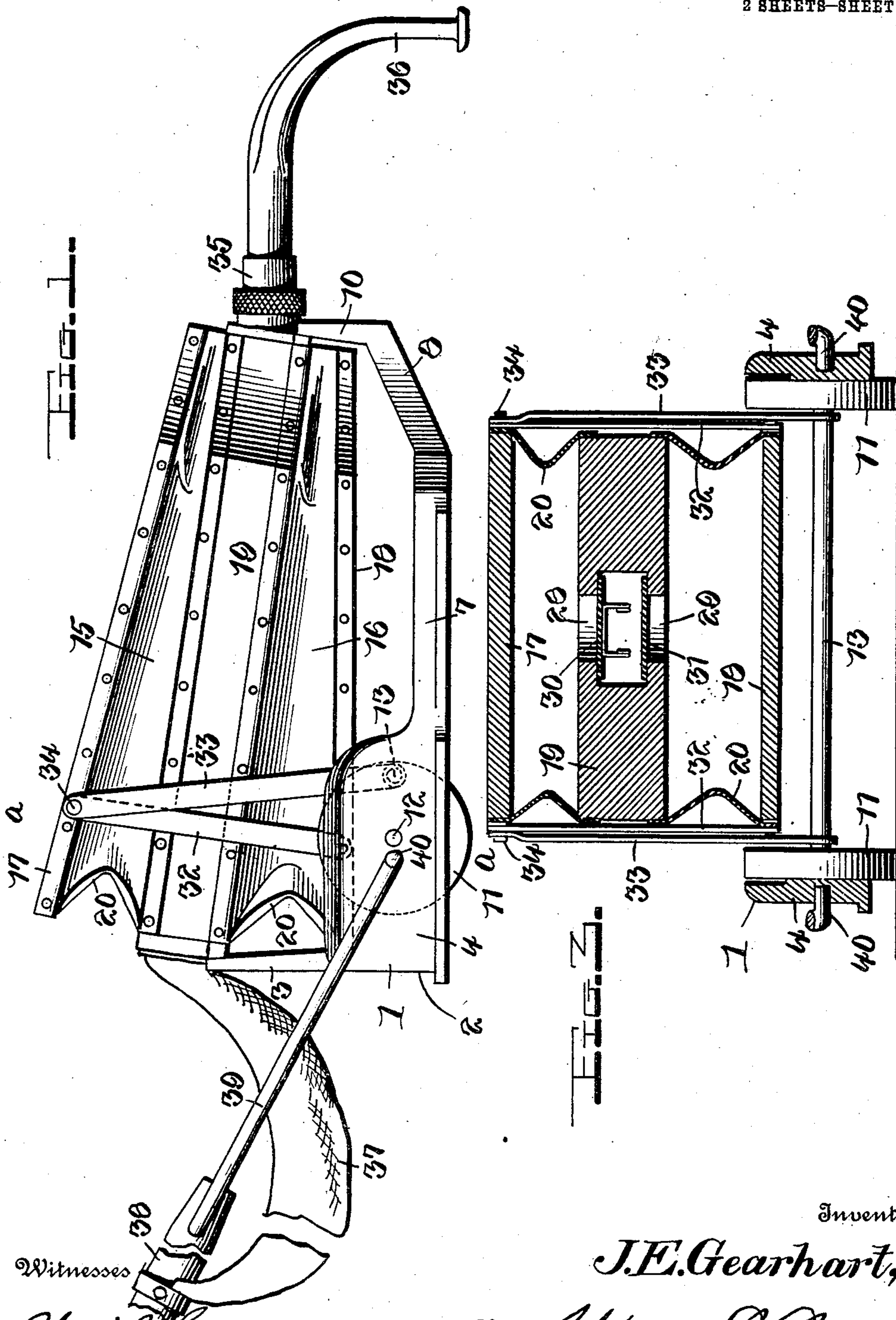


J. E. GEARHART.  
VACUUM CLEANER.

998,891.

Patented July 25, 1911.

2 SHEETS-SHEET 1.



Witnesses

Chas. L. Griebauer.

M. K. Reed

Inventor

J. E. Gearhart,

334 Watson E. Coleman.

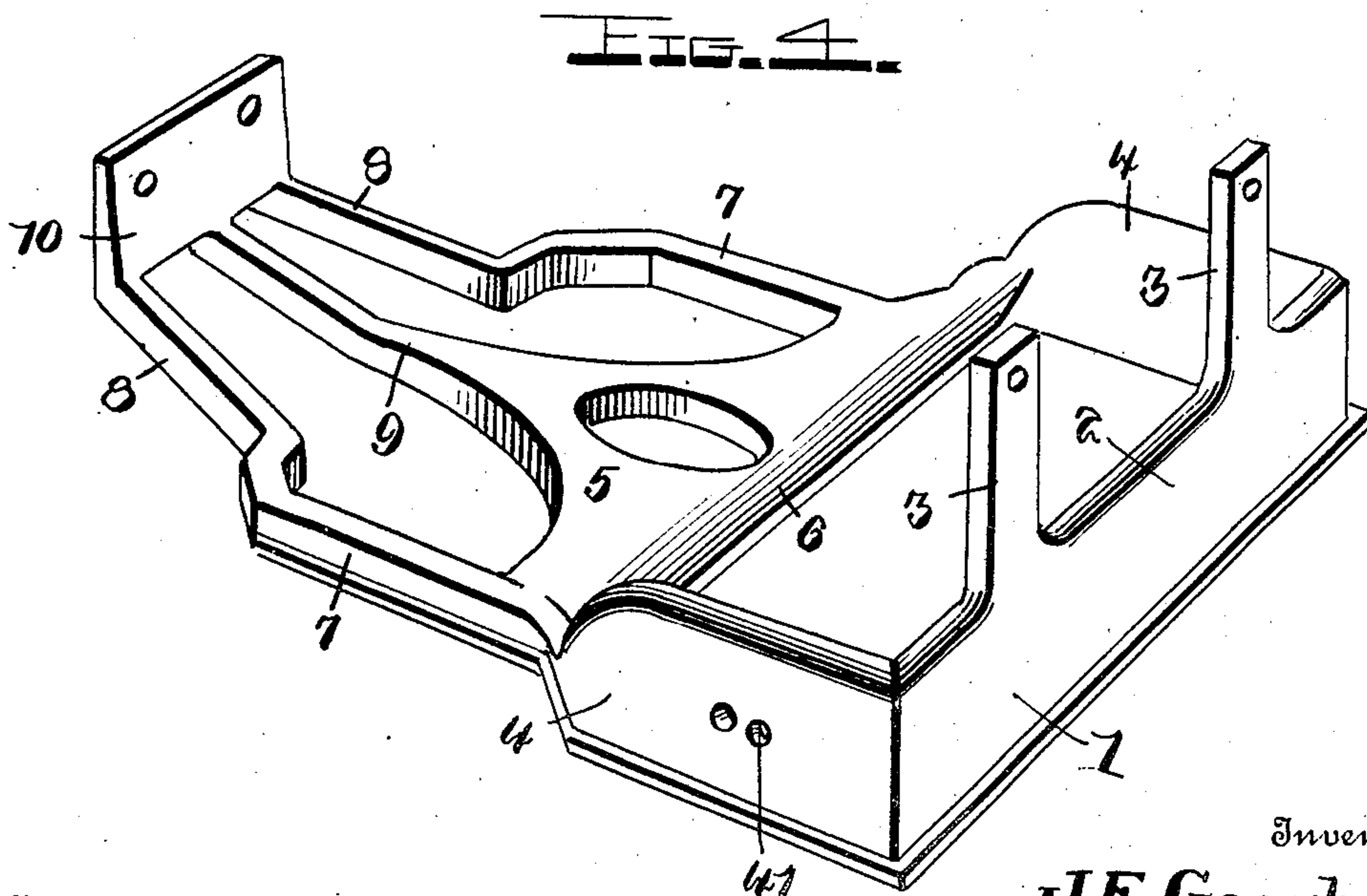
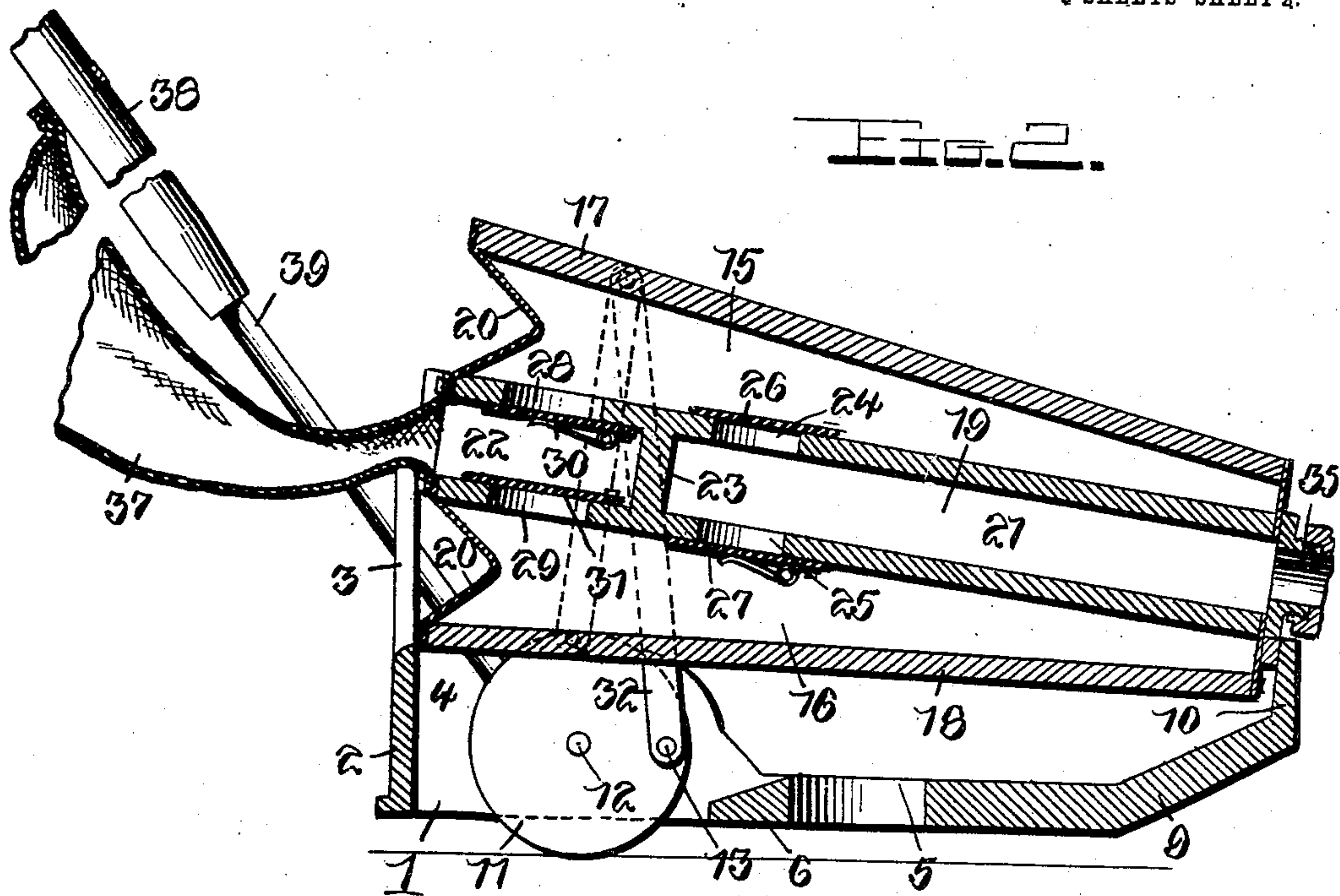
Attorney

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Chas. L. Grissauer.  
M. J. Reed.

Inventor

J. E. Gearhart.

By Watson E. Coleman  
Attorney



# UNITED STATES PATENT OFFICE.

JOSEPH E. GEARHART, OF CLEARFIELD, PENNSYLVANIA.

VACUUM-CLEANER.

998,891.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed July 30, 1910. Serial No. 574,636.

*To all whom it may concern:*

Be it known that I, JOSEPH E. GEARHART, a citizen of the United States, residing at Clearfield, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Vacuum-Cleaners, of which the following is a specification, reference being had to the accompanying drawings:

10 This invention is an improved vacuum cleaner for use in cleaning carpets, rugs, and the like, the invention consisting in the construction, combination and arrangement of devices hereinafter described and  
15 claimed.

One object of the invention is to effect improvements in the construction of the bellows which creates the exhaust currents of air that operate to remove the dust and dirt  
20 particles from the surface or material cleaned by the machine.

A further object is to provide improved means for operating the bellows.

In the accompanying drawings—Figure  
25 1 is a side elevation of a vacuum cleaner constructed in accordance with my invention. Fig. 2 is a vertical longitudinal central sectional view of the same. Fig. 3 is a vertical transverse sectional view of the  
30 same. Fig. 4 is a detail perspective view of the frame of the machine.

The frame 1 of my improved vacuum cleaning machine is preferably a casting. The cross bar 2 which forms the rear end  
35 thereof is provided in its ends with a pair of upwardly extending arms 3. The sides 4 correspond in height at their rear portions with the rear cross bar 2 and are connected together at a suitable point in advance of  
40 the rear cross bar 2, by means of a web 5 which comprises a rear transverse portion 6, side arms 7 having upwardly converging front portions 8, an intermediate arm 9 which extends forwardly from the center of  
45 the transverse portion 6, and a vertical transverse portion 10 which connects the front ends of the said arms 8, 9. On the inner sides of the side portions 4 of the frame are mounted a pair of driving and  
50 supporting wheels 11, which are here shown as mounted on stub axles 12. The said wheels are connected together by a crank 13 which is disposed eccentrically with reference thereto.

55 My improved vacuum cleaner is provided with a pair of bellows 15, 16 arranged one

above the other, and disposed longitudinally in the frame. Each bellows has the usual angularly movable side, that of the bellows 15 being indicated at 17, and that of the  
60 bellows 16 being indicated at 18, a longitudinal centrally disposed body 19 being provided which is common to and disposed between the bellows, and forms the intermediate fixed side for each of them. The said  
65 body is connected at its front end to the portion 10 of the frame, and at its rear end to the arms 3. The usual leather or other flexible fabric 20 connects the intermediate body of the bellows to the sides 17, 18 there-  
70 of, and is provided with a longitudinal intake duct 21 which extends from its front end to within a suitable distance of its rear end, and a discharge duct 22 which is open at its rear end and is separated from the  
75 intake duct by a partition or wall 23. The intake opening 24 of the upper bellows 15 is in the upper side of the duct 21, that of the lower bellows 16 being indicated at 25 and in the lower side of said duct. Valves  
80 26, 27 which are here shown as flap valves are provided for the said intake openings respectively, and open toward the movable sides of the bellows. The discharge openings 28, 29 for the bellows are respectively  
85 in the upper and lower sides of the duct 22, and are respectively provided with valves 30, 31, located in the upper and lower sides of said duct, and which are reversely arranged with respect to the inlet valve so  
90 that when one of the inlet valves is opened, the corresponding outlet valve is closed. The movable sides 17, 18 of the bellows are connected together for simultaneous movement by links 32. The upper movable side  
95 17 of the upper bellows 15 is connected to the crank 13 of the walls 11 by means of pitmen 33, the upper ends of which are here shown as pivotally connected to the side edges of the side 17 by the same bolts  
100 34 which are employed to secure the upper ends of the said links 32 to the said side.

It will be understood from the foregoing description that when the machine is operated and the wheels caused to rotate by  
105 frictional contact with the carpet, rug, floor or other surface, on which the machine is used, the links and crank, and pitman connection between the movable sides of the bellows and the wheels will cause the said  
110 movable sides of the bellows to operate simultaneously and in the same direction, so



that air will be drawn into one bellows at the same time that air is being discharged from the other, and conversely, the said bellows acting alternately to create an exhaust current of air through the duct 21, and to discharge air through the duct 22.

The suction spout 35 is connected to the front end of the duct 21, and is provided at its lower downwardly curved end with a laterally broadened exhaust nozzle 36 which bears and runs over the carpet, rug, or other surface which is being cleansed, and hence the exhaust current of air through the said nozzle and caused by the operation of the bellows, sucks up all of the dust and dirt particles, and the same are carried through the exhaust duct, and discharged from the discharge duct into a suitable bag or other suitable receptacle 37 which may be of usual construction, and is here shown as attached at its outer end to a handle 38, the said handle having a bail 39, the sides of which are provided with inturned studs 40 which engage openings 41 in the sides of the frame 1, near the rear corners of the latter, said bail and openings effect a pivotal connection between the handle and the frame of the machine and enable the machine to be readily pushed forward or back as may be required in the operation thereof.

My improved vacuum cleaner is extremely cheap and simple, and is thoroughly efficient and is not likely to get out of order.

I claim:—

The herein described vacuum cleaner comprising a frame having a bottom provided with a transverse opening near its rear end, and also provided at its front end with a vertical portion, and at its rear end with a vertical cross bar, and vertical sides, supporting wheels in said opening in the bottom of the frame, and having their bearings in the said sides, a crank connecting the supporting wheels, a pair of bellows carried by the frame, and comprising an intermediate body common to the bellows and secured at its ends to the said vertical front portion of the frame, and to the said vertical cross bar thereof, said pair of bellows also comprising a movable side for each bellows, and the said body having an exhaust duct, a discharge duct and exhaust and discharge valves for said ducts respectively, links connecting the movable sides of the bellows for simultaneous movement, and pitmen connected to the crank and also to the said links and operating together with the wheels and the said crank in the said opening in the bottom of the frame.

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

JOSEPH E. GEARHART.

Witnesses:

PERRY E. HURD,  
O. P. CONKLIN.