

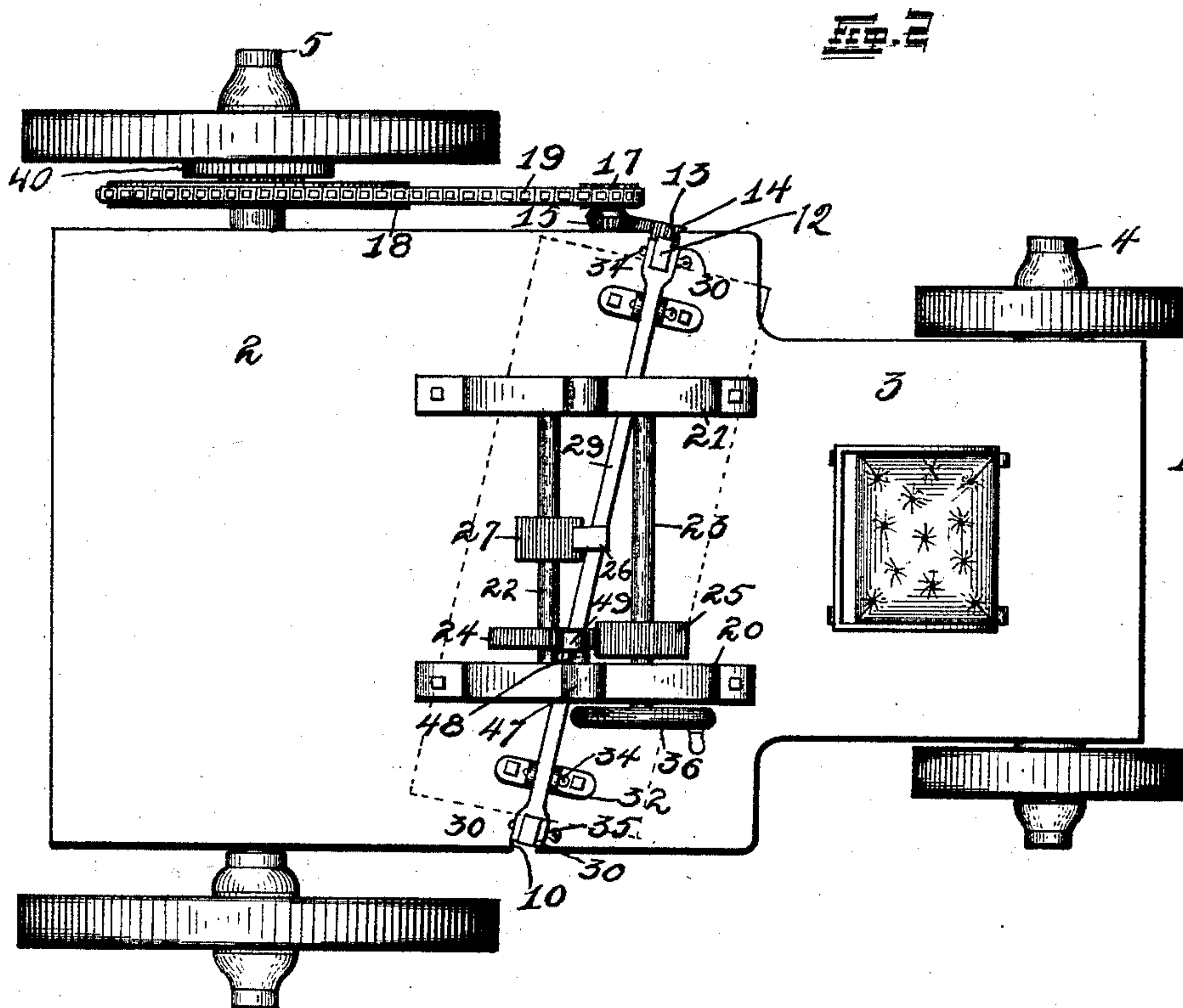
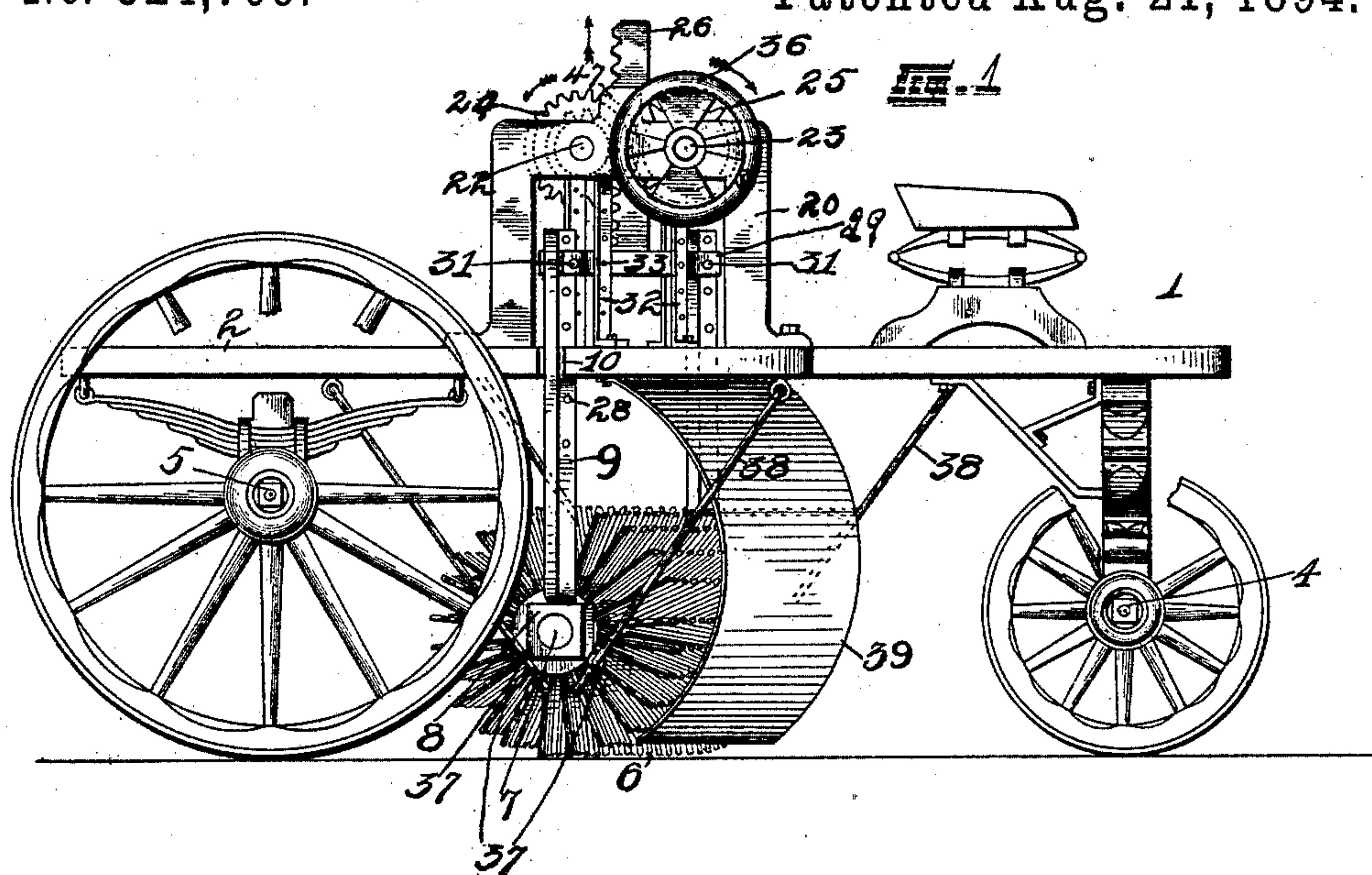
(No Model.)

2 Sheets—Sheet 1.

C. FISHER.  
STREET SWEEPER.

No. 524,709.

Patented Aug. 21, 1894.



WITNESSES

*Louis R. Hoier.*  
*A. H. Chapman.*

INVENTOR

*Charles Fisher*  
By *Pickert & Robinson*, ATTORNEYS.

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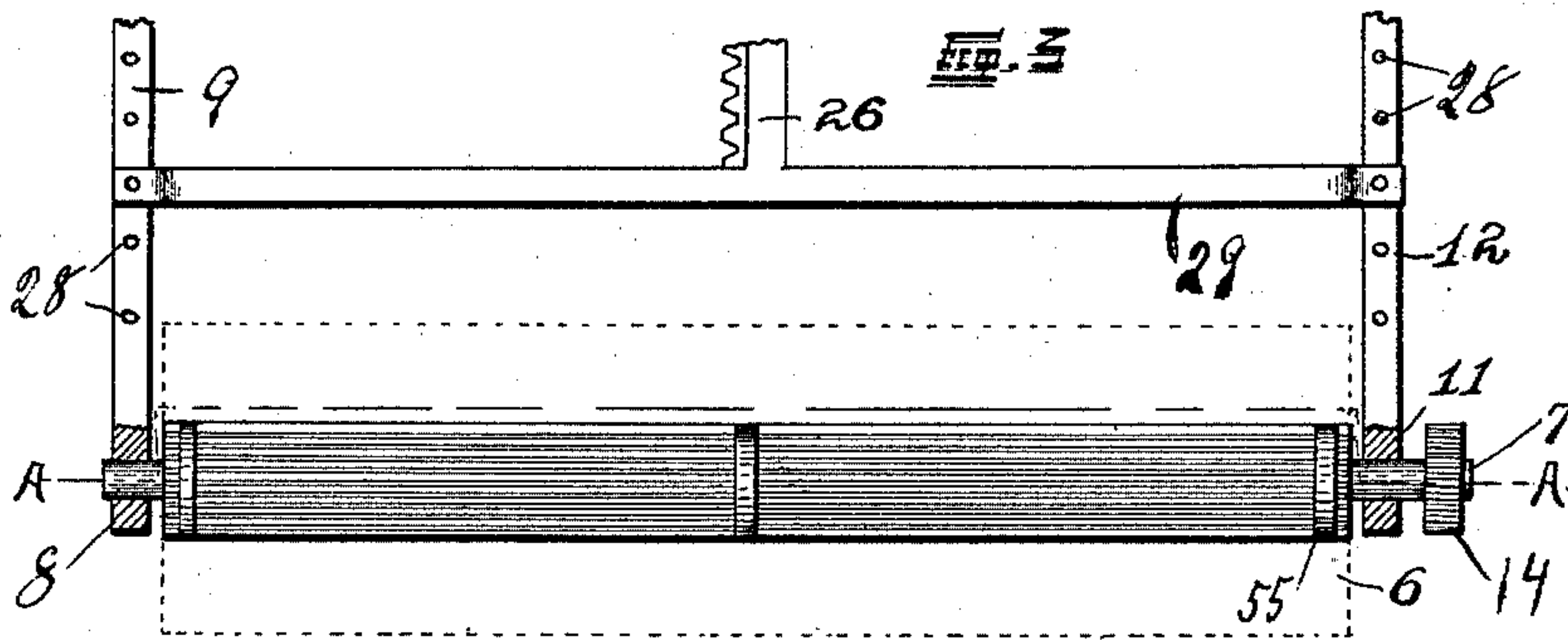


Fig. 4

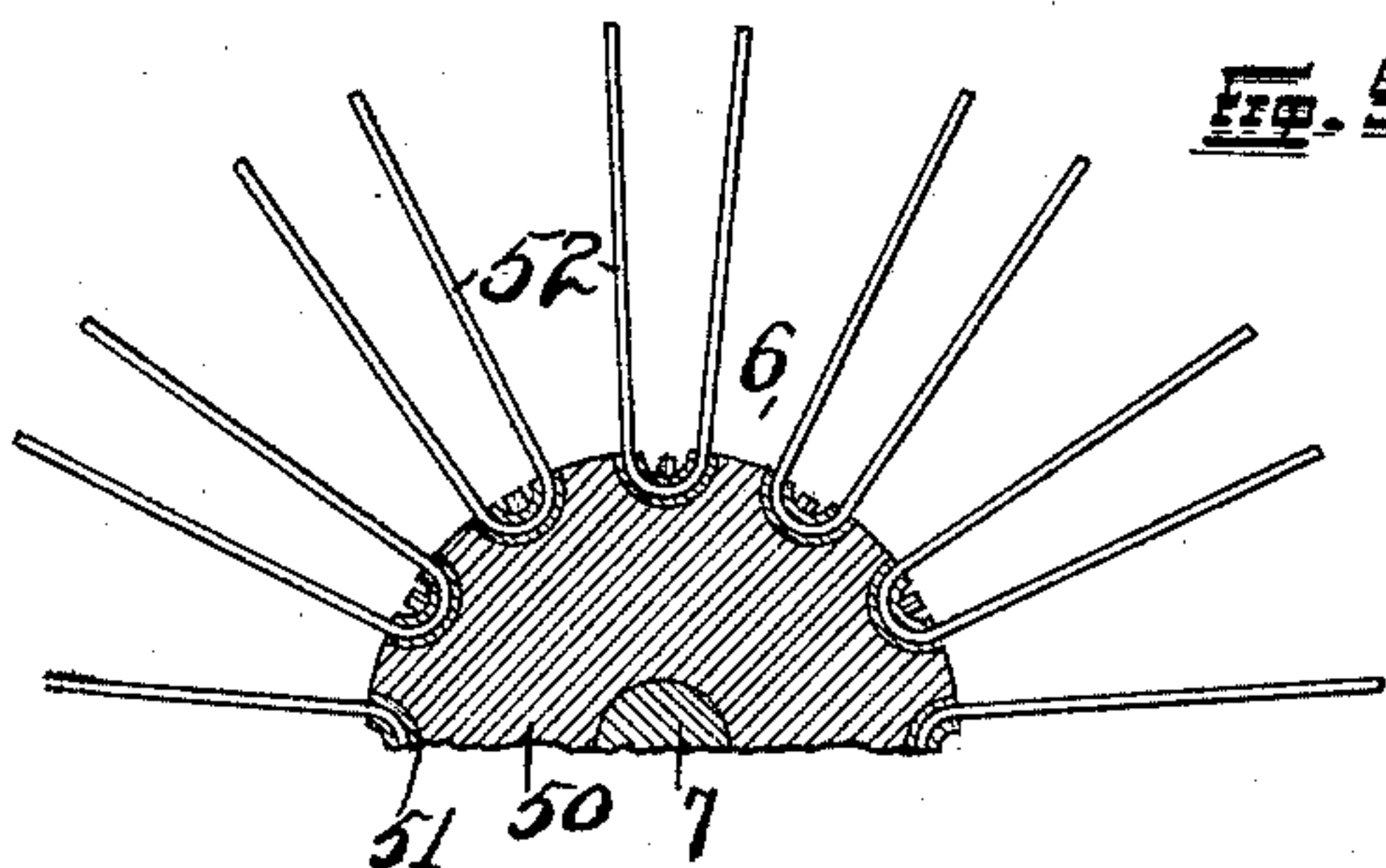
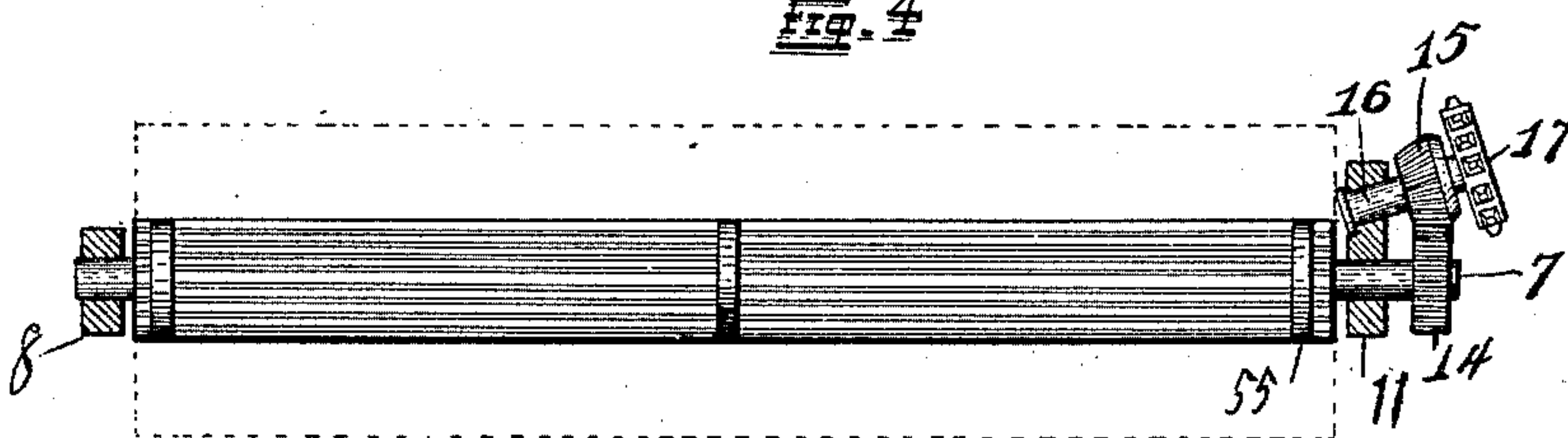


Fig. 5

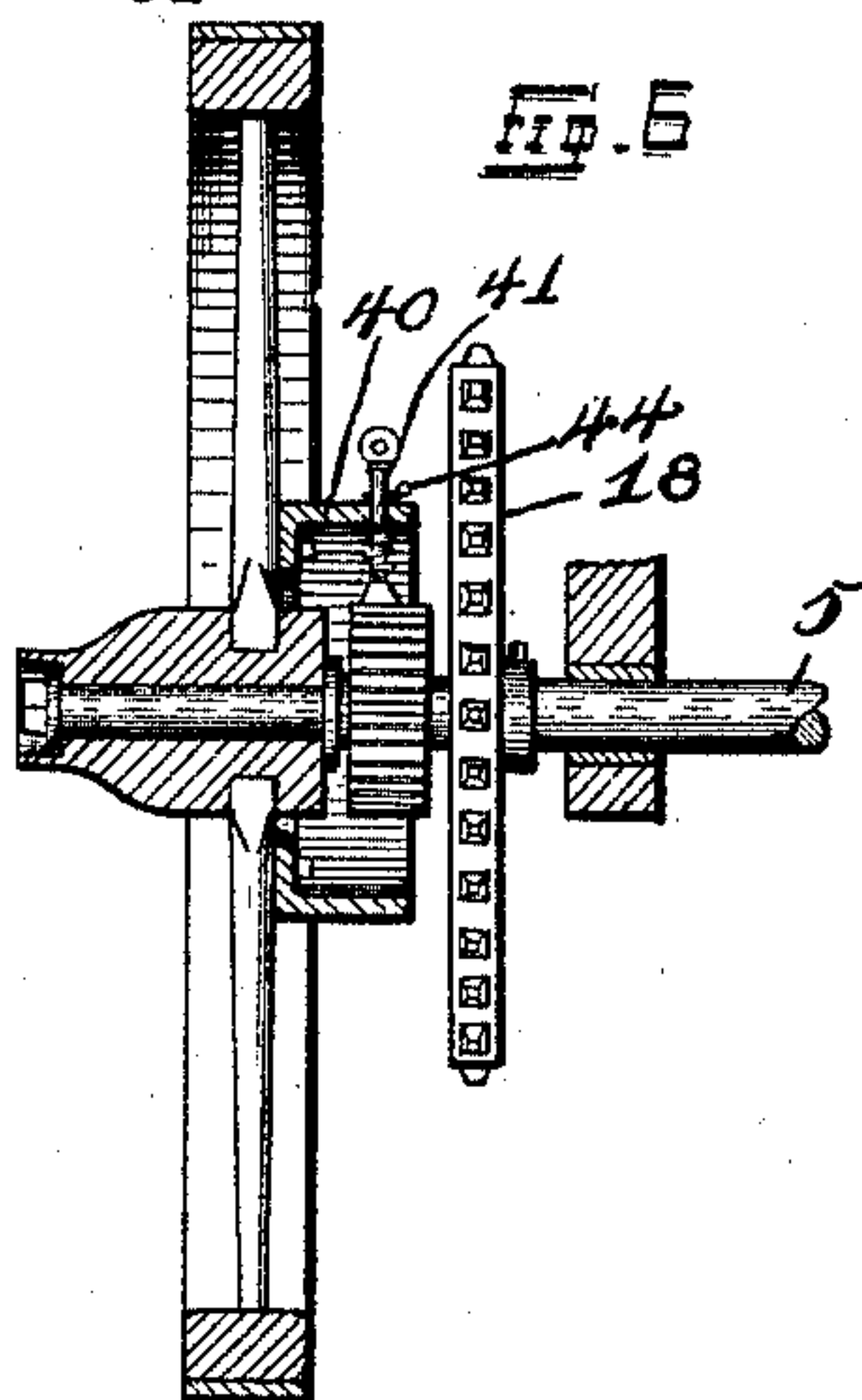


Fig. 6

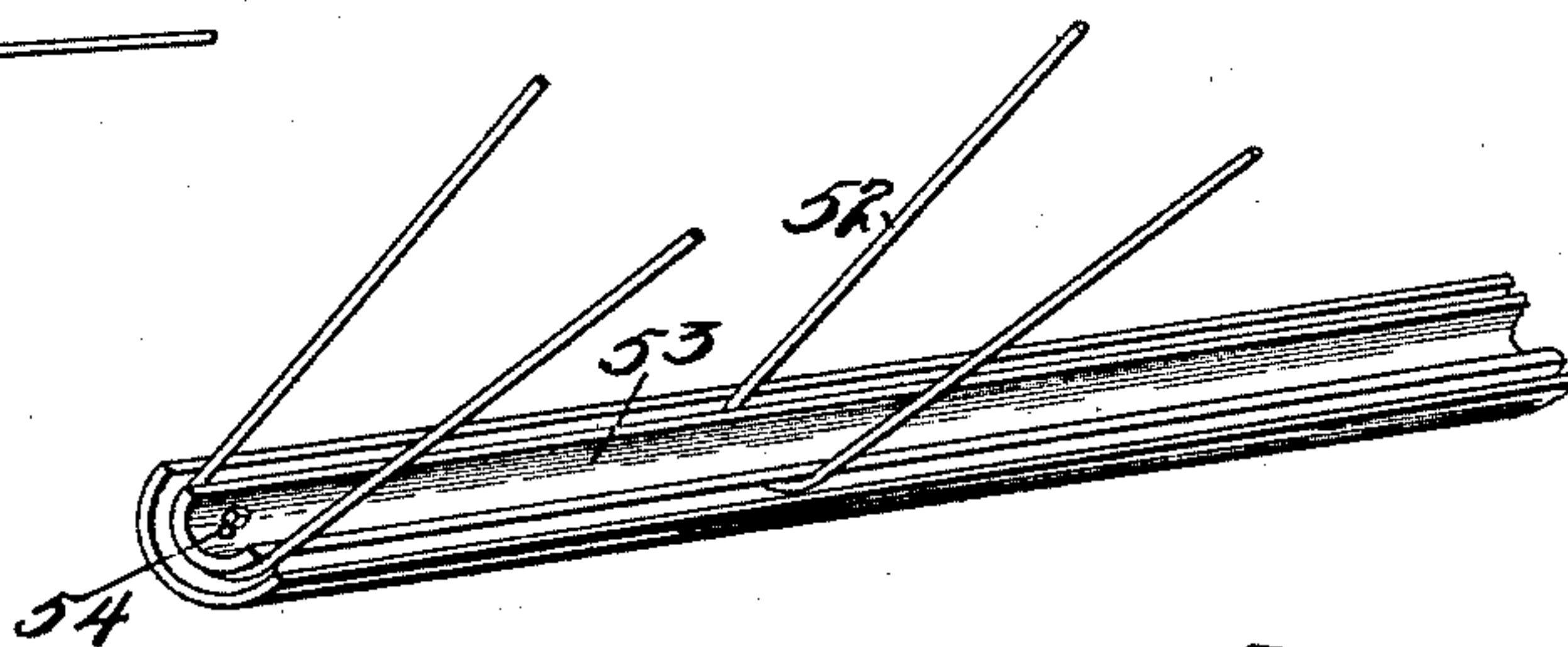


Fig. 7

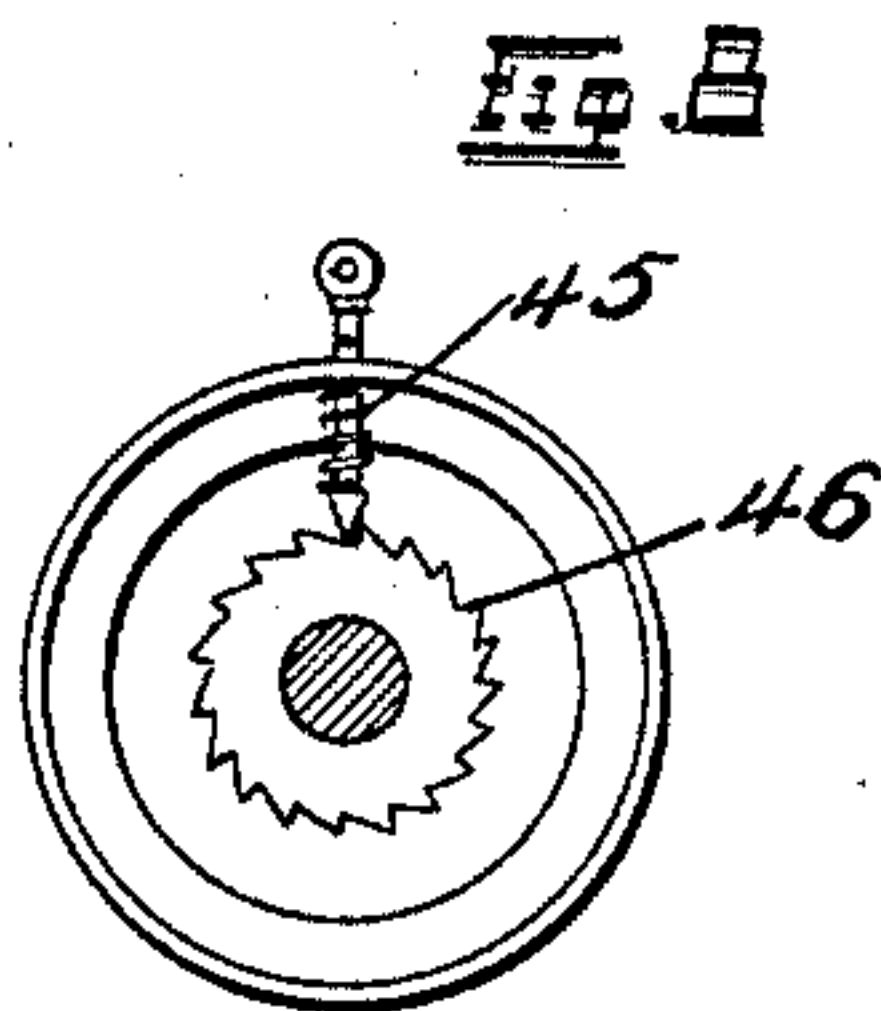


Fig. 8

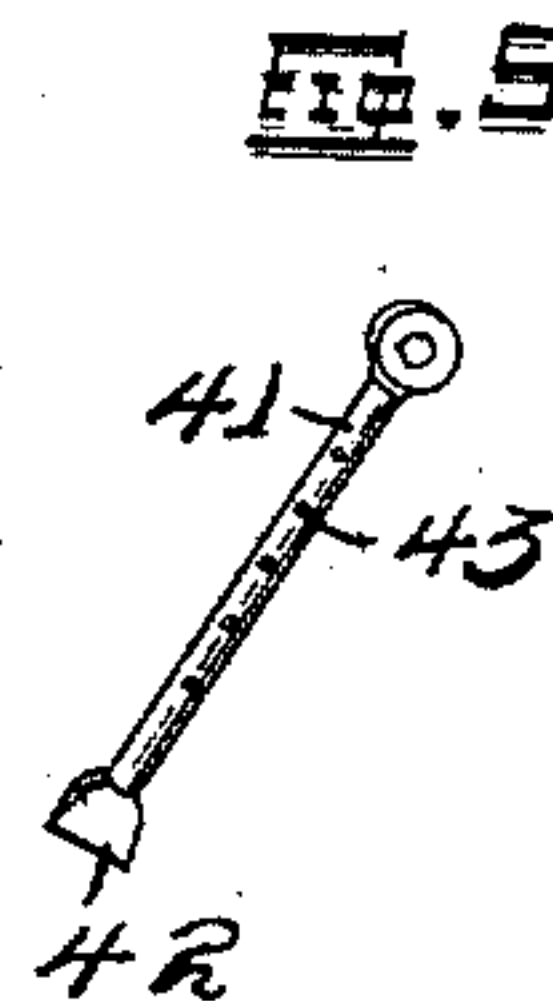


Fig. 9

WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES FISHER, OF ST. LOUIS, MISSOURI.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 524,709, dated August 21, 1894.

Application filed October 20, 1893. Serial No. 488,710. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES FISHER, of St. Louis and State of Missouri, have invented certain new and useful Improvements in Street-Sweepers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in "streetsweepers," and consists in the new and novel construction and combination of parts as will be more fully hereinafter described and set forth in the claim.

The object of my invention is to simplify the construction and operation of a single brush sweeper and improve the construction of the brush itself.

It has been the aim of my invention to include only such features as are necessary to the successful operation of the machine. This success means that the machine must at the same time, be light and durable in order that its wearing qualities will be unquestionable.

The brush is constructed with a view to easy repair in case it should become disabled and ready replacement in case the steels become worn out.

As I use metallic brushes I desire to state that after a varied experience in handling these machines, I find that for thorough work, they far excel the rattan or other lighter form of material, besides giving better satisfaction in the way of wear.

Paper and like débris upon a street are not readily taken up by any but steel or metallic brushes and it is for this more than any other reason, that I have elected to use the same in carrying out the idea of my invention.

The accompanying drawings and specification will serve to give a clear and concise idea of my invention and its novelties and substantiate the claims I make for improvement.

In the drawings:—Figure 1 is a side elevation of the complete sweeper as constructed after the method of my invention, with some parts broken away to more clearly display my improvements. Fig. 2 is a top plan view of the machine as seen in Fig. 1. Fig. 3 is a

front view of the brush-core, with some parts removed and others broken away, and the brush outlined in dotted lines. Fig. 4 is a top plan sectional view taken on the line A—A in Fig. 3 to show the brush bearings. Fig. 5 is an enlarged transverse sectional view of the brush. Fig. 6 is an enlarged detail view of the brush operating mechanism and gear release. Fig. 7 is a perspective view of a portion of the brush showing the manner of inserting the brush material. Fig. 8 is a side view of a portion of the gear releasing mechanism. Fig. 9 is an enlarged perspective view of a part of the gear release.

By referring to Fig. 2 in particular, it will be observed that the sweeper 1 has a platform 2, the front portion 3 of which is narrower in width than the rear portion. The front portion 3 provides a location for the driver's seat and from which can be manipulated the entire workings of the sweeper. The entire platform 2 is mounted upon a front axle 4 and a rear axle 5 which are constructed in the usual manner with the necessary gearing which in this case is strictly modified to conform with the ideas of my invention. The brush 6 is located in a depending position obliquely of and beneath the platform 2 between the two running gears. This point equalizes the weight of the machine and does not necessitate any heavy supporting construction near the rear of the machine.

The brush proper has a shaft 7 running through its center, said shaft forming a fixed axle for the revolutions of the brush. On one end, the axle has a bearing in a box 8 which is secured upon the lower end of a vertical sliding standard 9 which passes upward through an opening 10 in the side of the platform 2 and has connection with other parts located above the platform. The opposite end of the shaft 7 is similarly provided with a bearing in a box 11 dependent upon the lower end of a vertical standard 12 and which passes upward through an opening 13 in the opposite side of the platform.

The shaft 7 at the above mentioned side of the machine projects beyond the box 11 and is provided with a straight gear wheel 14 which is engaged by a bevel gear 15 mounted



upon a shaft 16 carried in the box bearing 11 as will be readily understood by referring to Figs. 3 and 4.

The projecting end of the shaft 16 beyond the gear wheel 15 provides a location for an ordinary sprocket wheel 17, which is at right angles with the rear axle 5 when all the parts are in position.

Secured to the axle 5 and inside of the wheel is a large sprocket wheel 18 which is connected with the smaller sprocket wheel 17 by means of a sprocket chain 19 thus furnishing the power transmission to the brush 6. The connection by means of the chain involves the bevel gear 15 and this in turn furnishes power to the gear 14 located upon the end of the shaft 7.

As shown in Fig. 2, it will be seen that there are two vertical frames 20 and 21 secured to the platform 2 and which provide support for the manipulating mechanism by the use of which, I am enabled to operate the entire machine from the driver's seat. As seen in Figs. 1 and 2, said standards provide bearings for two horizontal shafts 22 and 23 upon which are keyed meshing gear wheels 24 and 25, one of said shafts being adapted to be operated by hand power to raise or lower the brush, the power therefrom being transferred to the other shaft, from which it is given to a vertical rack bar 26 by means of an intermediate gear 27 upon the shaft 22.

The two vertical standards or bars 9 and 12 project above the platform of the sweeper and are provided with series of circular openings 28. Said bars are connected by a horizontal bar 29, the ends of which are split to form ears 30 which fit against both sides of the bars 9 and 12 as seen in Fig. 2. The rack-bar 26 is secured at its lower end to the horizontal bar 29, from which it projects upwardly at right-angles. The ears 30 upon the ends of the bar 29 are provided with aligned openings 31 which are also in alignment with the openings 28 in the bars 9 and 12 to enable the vertical adjustment of the bar 29 in relation to the vertical standards or bars 9 and 12. The bar 29 has vertical movement in a pair of guides 32 which consist of upright bars provided with openings 33 to enable the adjustment of the bar 29 in relation with the body of the sweeper by means of said guides, said adjustment being had by the use of pins 34 which are changed to suit the necessities of the occasion and in this connection I desire to state that a pair of pins 35 are used to manipulate the changing of the bar 29 in relation to the upright bars 9 and 12. The shaft 23 projects beyond the standard 20 and provides a support for a manipulating wheel 36 which is used by the driver of the machine to lift or lower the brush 6.

Secured to the boxes 8 and 11 are rings 37 through which are passed rods 38 to keep the brush 6 in a practically steady position without wobbling to one side or the other.

An apron 39 is secured under the platform and dependent therefrom in order to catch the dirt as it is brushed up and facilitates its passage to the forward end of the brush where it is kept in a continual movement to the outside of the machine to form the windrow.

It is apparent that some means must be provided to enable the throwing in or out of gear of the machine in order that the brush will be dormant when the sweeper is going along a street which has been previously swept. To this end I have provided a circular rim 40 which is secured to the spokes of one of the rear wheels as shown in Fig. 6. Passing through this rim is a spring controlled pin 41, provided upon its lower end with a tooth 42 and throughout its length with openings 43 adapted for the reception of a key 44. The spring 45 is located upon the lower portion of the pin and engages between the inner edge of the rim 40 and the tooth 42. Said tooth 42 is provided to engage in teeth upon a ratchet 46, to compel the revolving of the axle 5 during such engagement and its inactivity when disconnected. The key is provided to hold the pin out of engagement with the ratchet by its insertion in one of the openings in the length of said pin.

The standard 20 is provided with a projection 47 which provides suitable bearings for a shaft or stud 48 supporting a pawl 49 to prevent the slipping of the parts after the brush has been raised.

It is thought that a detailed description of the operation of the machine as above described would be superfluous and for that reason I will proceed to describe a peculiar method which I employ in the construction of the brush, and which I have found gives it a longer life with less expense for wear and repairs.

The reason which is given for constructing the machine so simply is because I have aimed to build a lasting machine which will cause little or no trouble in order to attain successful results. Its operation, being so very simple, is apparent, and as I have stated its superior advantages I will not give further details.

The brush consists of a core 50 provided with a serial arrangement of parallel semi-circular shaped grooves 51 which are preferably lined with a removable lining of metal, temporarily held in by any mechanical devices.

In constructing the brush, a number of metal rods 52, bent double, are inserted as shown in Fig. 7 and a retaining strip 53 placed so as to hold an entire row of the bristles thus formed. Said retaining strip is held in position by a necessary number of set screws 54 which insures the retention of the steel wires in a stationary and permanent position. When the wires have become entirely worn down, the set screws are removed, the stubs taken out and new wires put in and the brush is complete. To further strengthen the brush



it is found desirable to place a couple of bands of metal 55 around the brush to hold the linings and in fact all the parts in a stationary position. It will thus be seen that my sole aim in perfecting the original ideas of my invention has been to simplify the principle upon which most machines are now constructed and it is assumed that the complete sweeper is an improvement over other ones.

10 Having fully described my invention, what I claim as new is—

In a single brush street sweeping machine, the combination of a wheeled truck, frames 20, 21 secured to and vertically extending from said truck, a bar 29 horizontally positioned within the frames 20, 21, transversely of the machine, a rack bar mounted on said horizontal bar, a plurality of shafts mounted for rotation in said frame and provided with 20 intermeshing gears, standards 9 and 12 ver-

ically positioned at the sides of the truck and pivotally connected with the bar 29, guides fixed to said truck and adapted for engagement with the horizontal bar, a gear wheel 27 mounted on one of the shafts and meshing 25 with the rack bar, bearing boxes depending from the lower end of the said standard, a brush roller mounted for rotation in said bearing boxes and extending obliquely transversely of the machine, gear connections between the brush roller and the traction wheel 30 of the truck and the crank wheel mounted on one of said shafts whereby the connected parts may be manipulated and adjusted.

In testimony whereof I affix my signature in 35 the presence of two witnesses.

CHARLES FISHER.

Witnesses:

HERBERT P. ROBINSON,  
ALFRED A. EICKS.