

No. 721,157.

PATENTED FEB. 24, 1903.

W. E. COLEMAN.  
FAN.

APPLICATION FILED AUG. 16, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

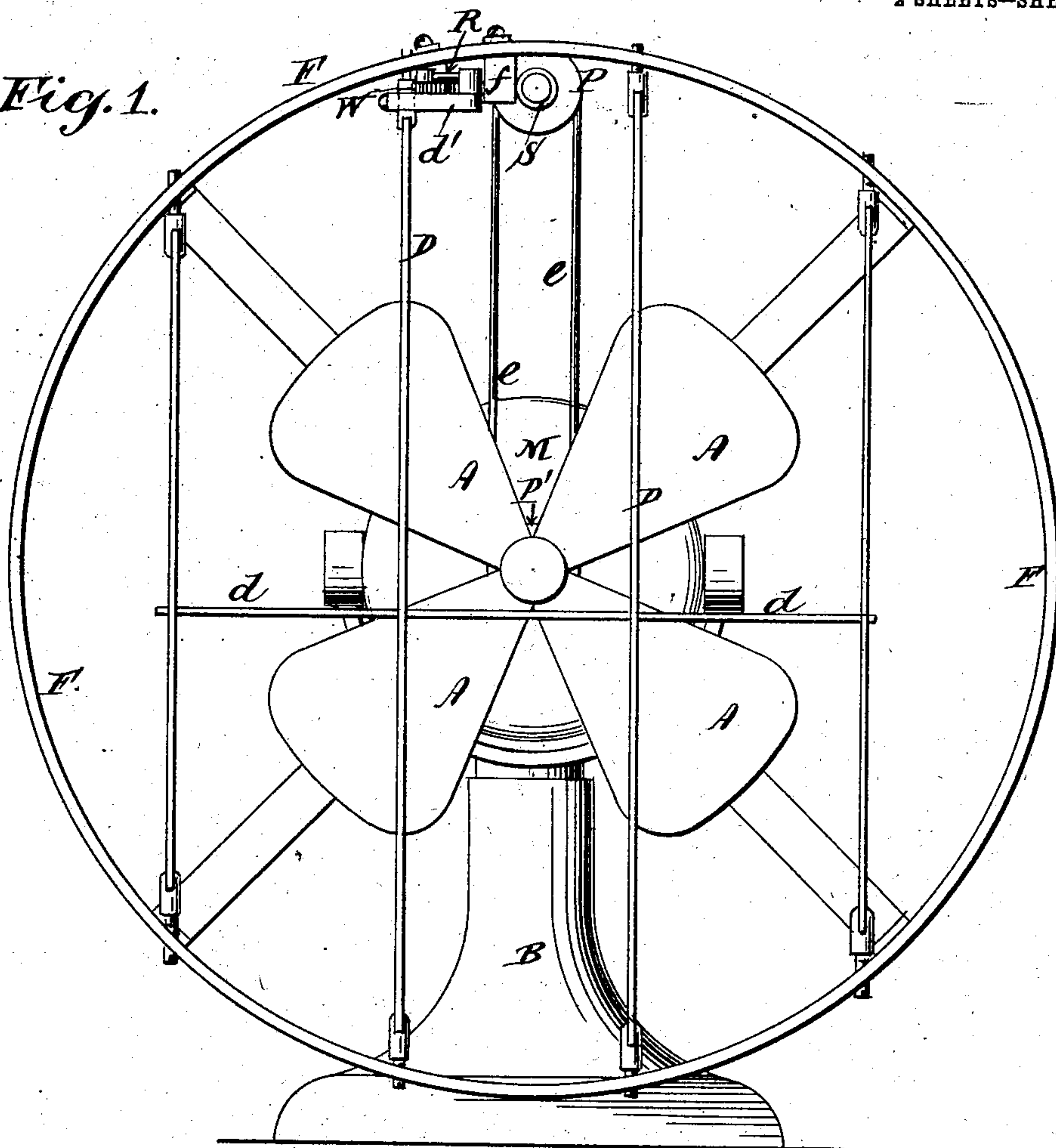
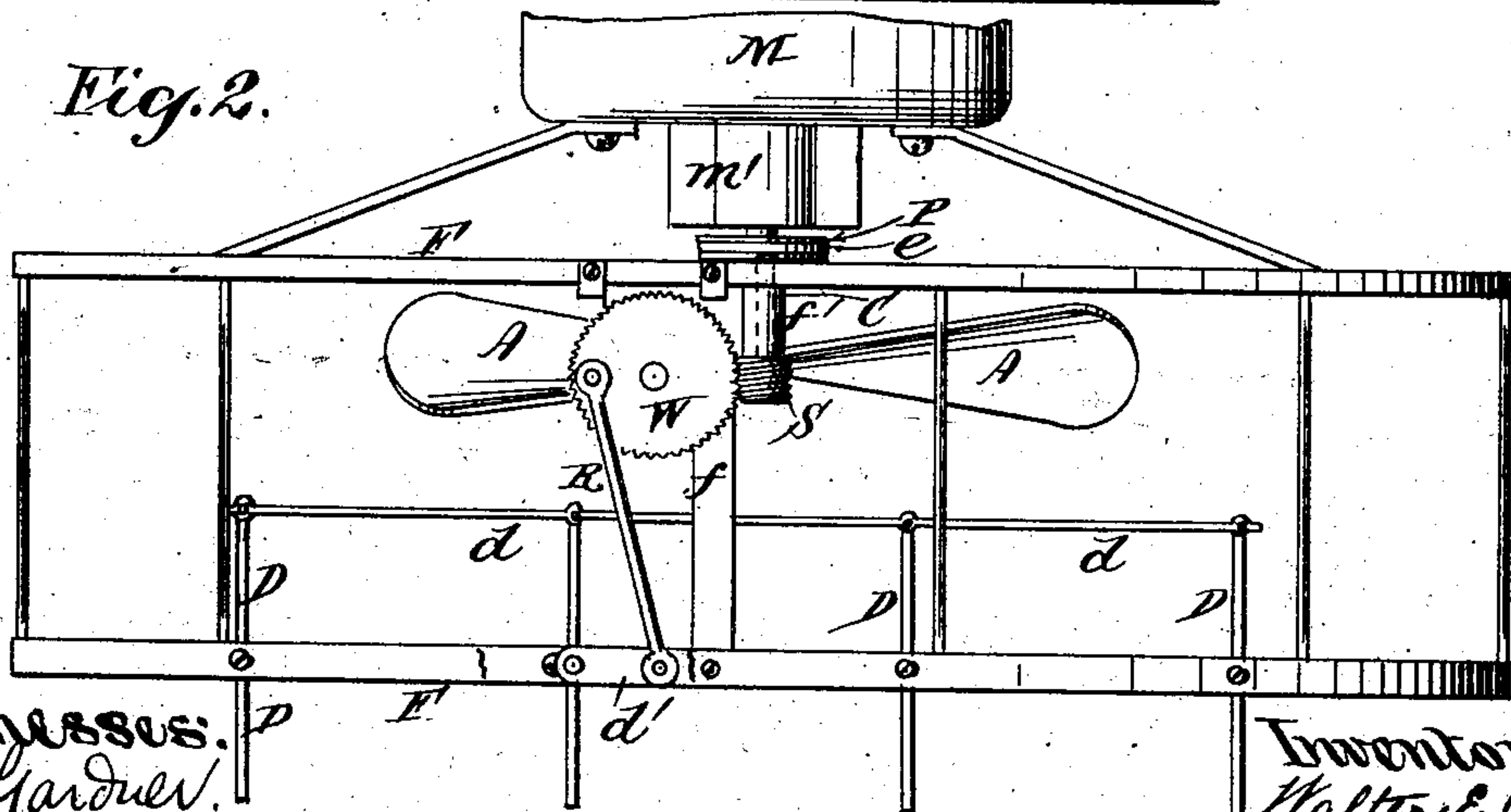


Fig. 2.



Witnesses:  
R. W. Gardner.  
F. Connel

Inventor:  
Walter E. Coleman  
By his attorney  
Geo. H. H. H. H.

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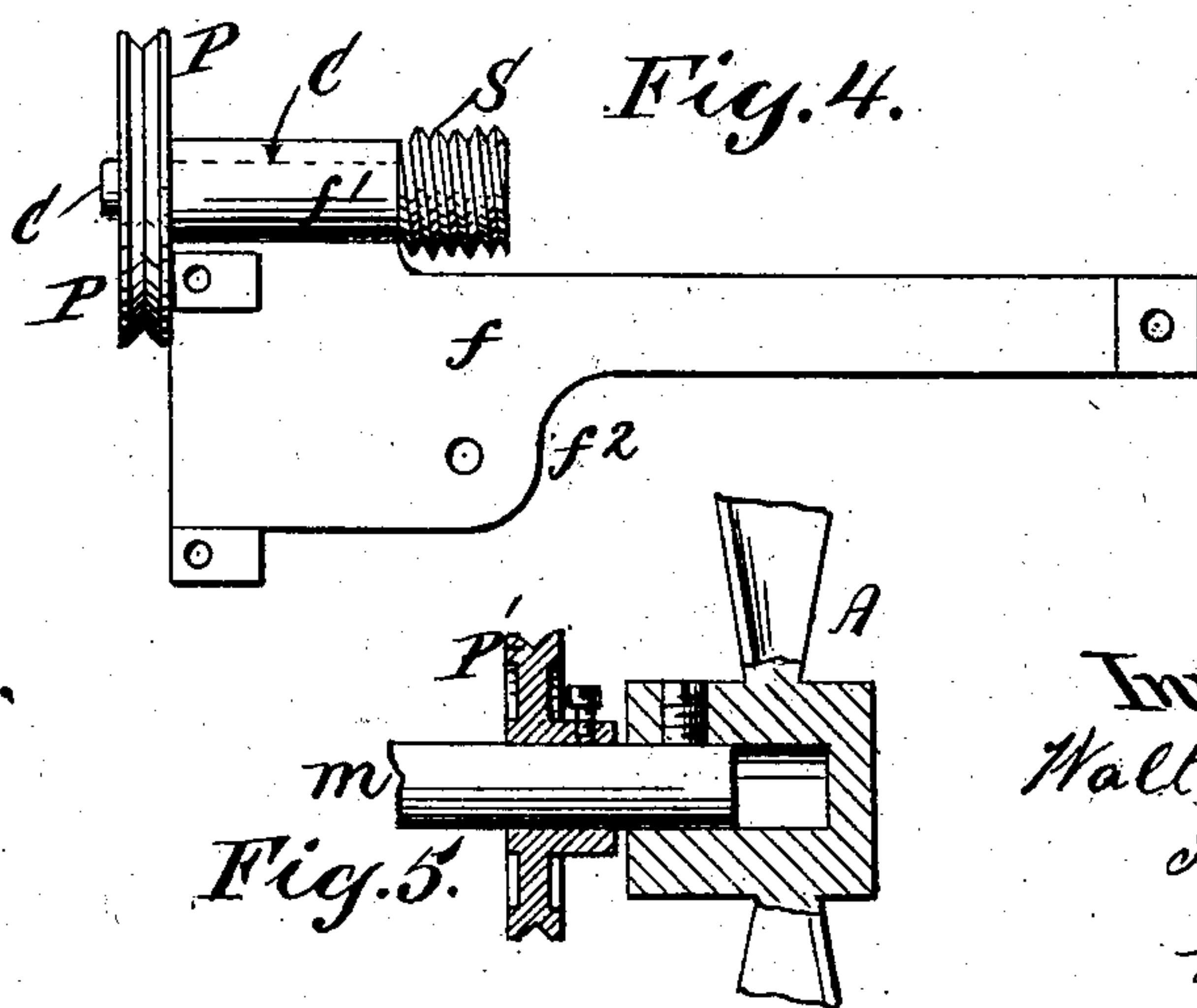
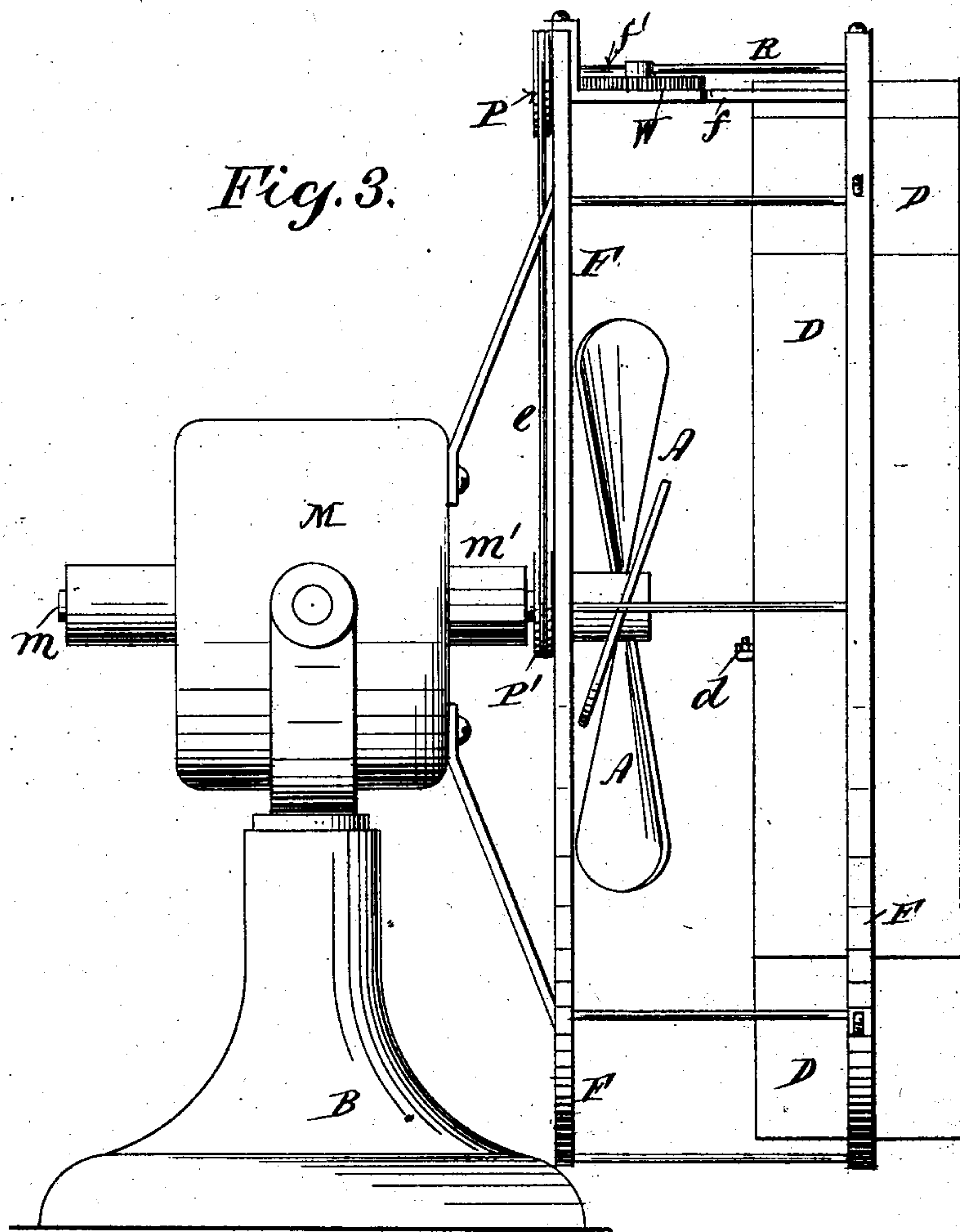
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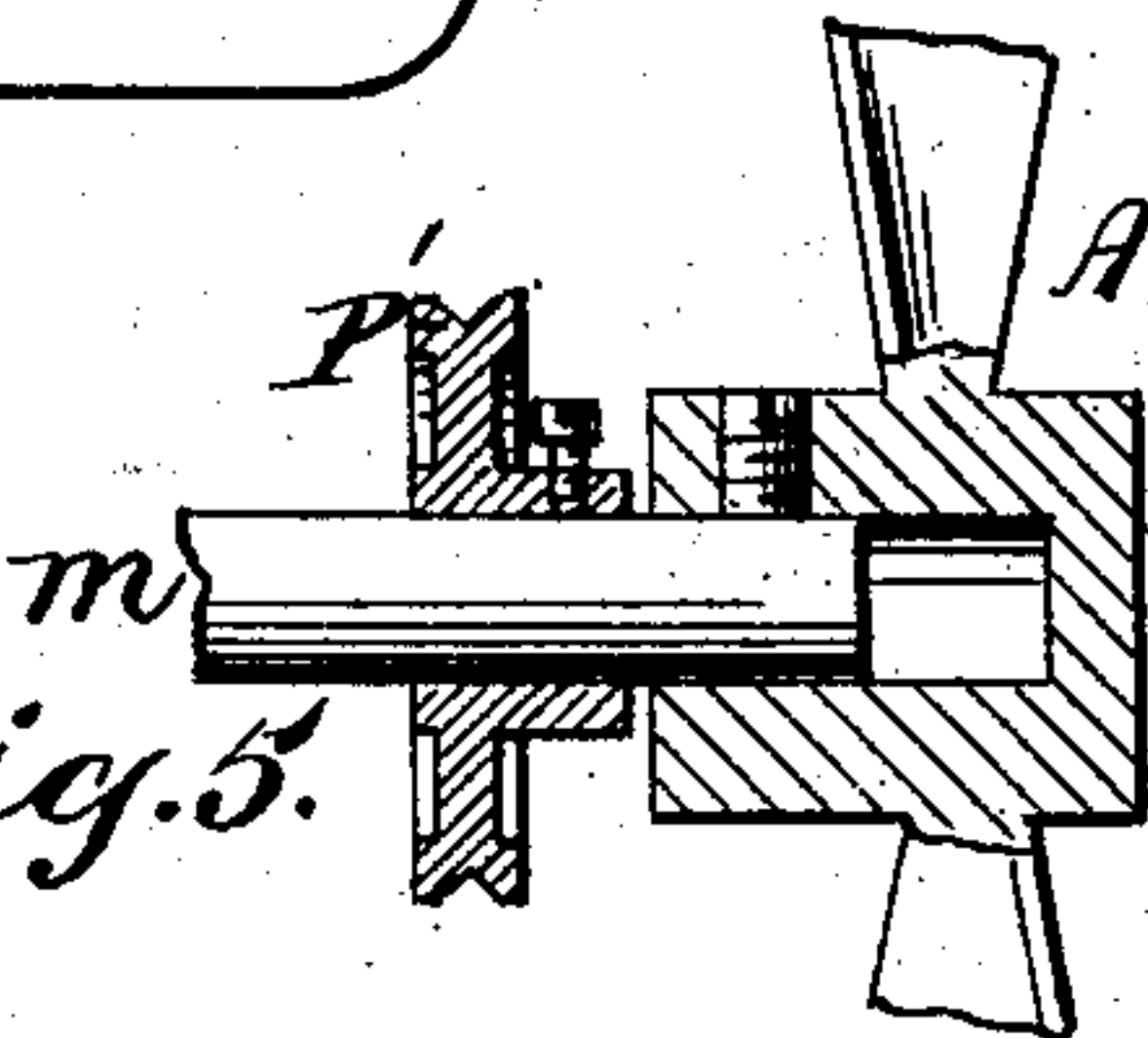
NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:  
D. W. Gardner.  
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*Fig. 5.*



Inventor:  
Walter E. Coleman  
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# UNITED STATES PATENT OFFICE.

WALTER E. COLEMAN, OF NEWDORP, NEW YORK.

## FAN.

SPECIFICATION forming part of Letters Patent No. 721,157, dated February 24, 1903.

Application filed August 16, 1902. Serial No. 119,862. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER E. COLEMAN, a citizen of the United States, residing at Newdorp, Richmond county, and State of New York, have invented certain new and useful Improvements in Fans, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My improvements relate to electric fans in which a series of deflectors are actuated by power derived from the motor-shaft, as set forth in my concurrent application, Serial No. 90,144, filed January 17, 1902.

The main object of my present invention is to simplify and cheapen the construction of the parts and render my deflecting mechanism applicable to the various forms of electric fans now in the market without the need of altering or modifying the construction of the latter. This I accomplish in such manner that unskilled labor may be employed in quickly and conveniently effecting the attachment of my deflecting mechanism, which becomes thus practically and simply an attachment for electric fans generally.

In the accompanying drawings, Figure 1 is a front elevation of an electric fan provided with my improved attachment; Fig. 2, a top view of the fan and attachment and adjoining portion of electric motor; Fig. 3, a side elevation of the electric fan and deflecting mechanism; Fig. 4, a detail view of the worm-gear and bracket; Fig. 5, a sectional elevation showing in detail the application of the driving-pulley to the fan-shaft.

M is an electric motor mounted on the base B, preferably, but not necessarily, in such manner as to be rotatable thereon.

F is the deflector-frame, secured rigidly, preferably, to the motor-casing, so as to move therewith, although in cases where the motor is rigidly attached to its support it is obvious that the deflector-frame F may be secured to any stationary support in proper relation to the motor and fan.

D D are the deflectors, one or any desired number of which may be mounted pivotally upon the frame F. Where a plurality of deflectors is used, they are connected by a coupling or rod *d*, so as to move simultaneously in the same direction.

Mounted upon the frame F at any desired point is a counter-shaft C, carrying a pulley P and screw worm-gear S, the latter meshing into a spur-wheel W, which is connected by means of a rod R with a crank-arm *d'*, projecting from one of the pivotal supports of one of the deflectors D. The means shown in the drawings (to which I do not, however, limit myself) for supporting the gearing consists of a bracket or plate *f*, secured to the frame F and formed with a bearing-sleeve *f'* for the support of the counter-shaft C and with an extension *f*<sup>2</sup> for the support of the spur-gear W.

Attached to the motor-shaft *m* is the driving-pulley P', situated between the fan A and the journal-bearing *m'*. An endless belt *e* connects this driving-pulley P' with the pulley P on the counter-shaft C, so that it will be seen that the deflectors are actuated indirectly by the motor-shaft through the medium of the pulleys, worm-gear, and crank in a much simpler manner than disclosed in the concurrent application hereinbefore referred to. Thus in order to apply my deflectors, fan-guard, and mechanism for operating the deflectors it is only necessary to unscrew the original fan-guard accompanying an electric fan, together with the fan, from the motor-shaft, then place and secure the driving-pulley P' in position on the said shaft *m*, and replace the fan and guard, substituting my form of guard carrying the deflectors, &c., for the original guard, but using the same screw-holes and screws for the purpose. The driving-pulley P' and the pulley P on the counter-shaft C are then connected by means of the endless band *e* and the whole device is ready for use. The length of the motor-shaft *m* and the width of the fan-hub are sufficient to admit of the interposition of the driving-pulley P' between fan and the motor, as illustrated in Fig. 5. Since it is obvious that unskilled labor may be utilized in effecting the change, it is obvious that a great advantage is attained in adapting my device for use as an attachment to fan-motors already in use or on sale.

A distinguishing feature of my present construction as compared with that disclosed in my concurrent application hereinbefore referred to consists in supporting the mechanism actuating the deflectors upon the fan-



guard frame instead of hanging the parts on the motor-shaft, thereby making such mechanism more in the nature of an attachment than a permanent part of the motor, simplifying and cheapening the construction, and rendering it readily attachable or detachable, as desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

10 1. The combination of an electric motor, a fan upon the motor-shaft, a fan-guard supported permanently in position with relation to said motor and fan, one or more deflectors mounted pivotally upon said fan-guard, a  
15 counter-shaft mounted on said fan-guard and carrying a pulley connected by an endless band with the power-pulley upon the motor-shaft, said endless band, and mechanism interposed between said counter-shaft and the  
20 deflectors for vibrating the latter, substantially as set forth.

2. The combination of an electric motor, a fan mounted upon the motor-shaft, a driving-pulley mounted upon said motor-shaft a fan-guard secured permanently in position with  
25 relation to said fan and motor, a plurality

of deflectors pivotally mounted on said fan-guard, a coupling-rod pivotally connecting said deflectors, a counter-shaft mounted upon the fan-guard, a pulley on said counter-shaft, 30 an endless band connecting said pulley with the driving-pulley upon the motor-shaft, a worm-gear on said counter-shaft, a spur-gear mounted on said fan-guard and meshing with the worm-gear, a connecting-rod connecting 35 said spur-gear with a crank-arm attached axially to one of the deflectors, and said crank-arm, the whole arranged and operating substantially as and for the purpose described.

3. The combination of the electric motor M, 40 fan A, driving-pulley P', guard-frame F, deflectors D, D, coupling-rod *d* counter-shaft C, pulley P, worm-gear S, spur-gear W, connecting-rod R, crank *d'*, attached axially to one of the deflectors D, and the endless band 45 *e*, connecting the pulleys P and P', for the purpose and substantially in the manner set forth.

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Witnesses:

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GEO. WM. MIATT.