

H. WALTHER.
ACTUATING MEANS FOR BLOWERS.
APPLICATION FILED FEB. 1, 1909.

970,448.

Patented Sept. 13, 1910.
2 SHEETS—SHEET 1.

Fig. 1.

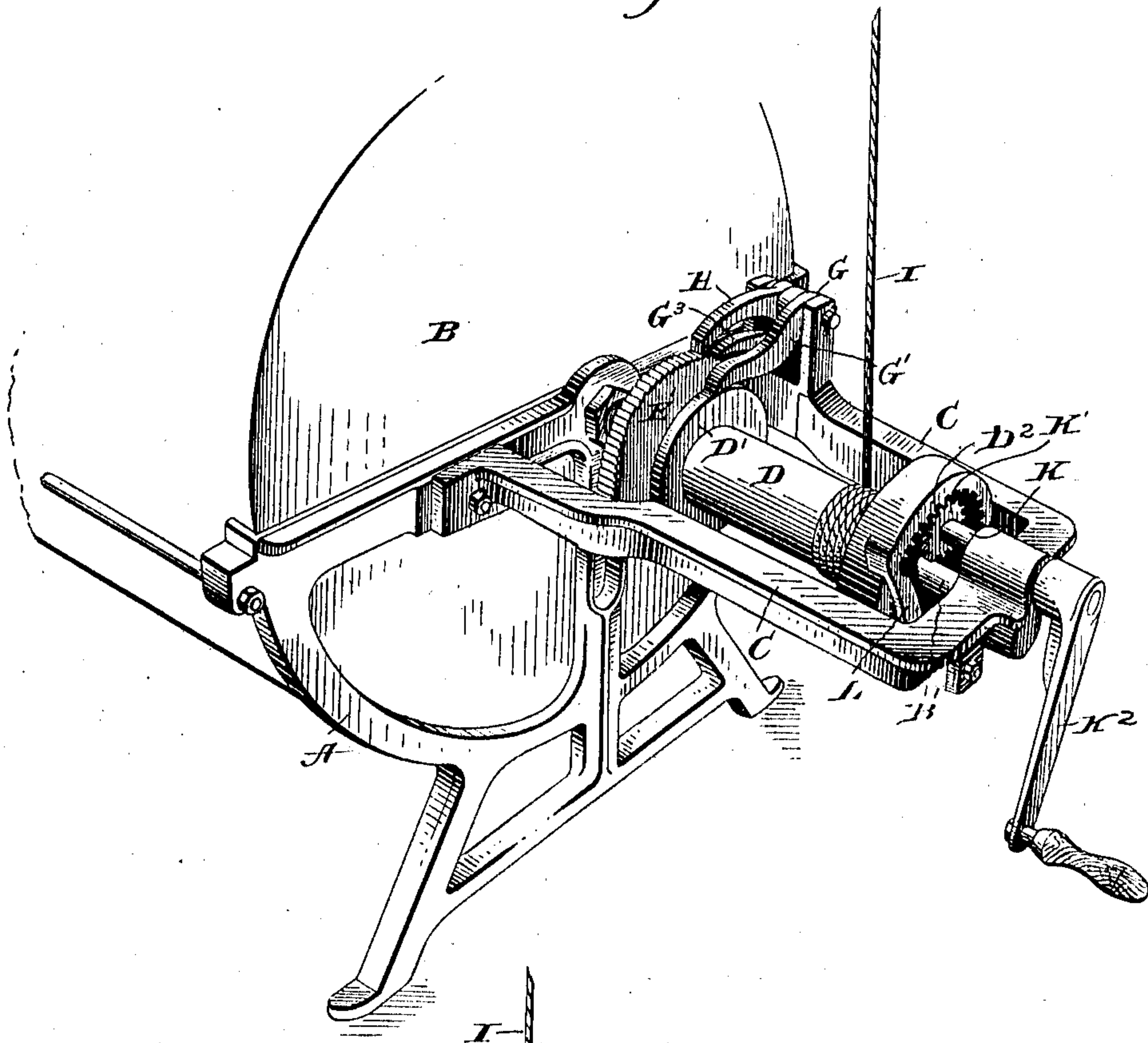
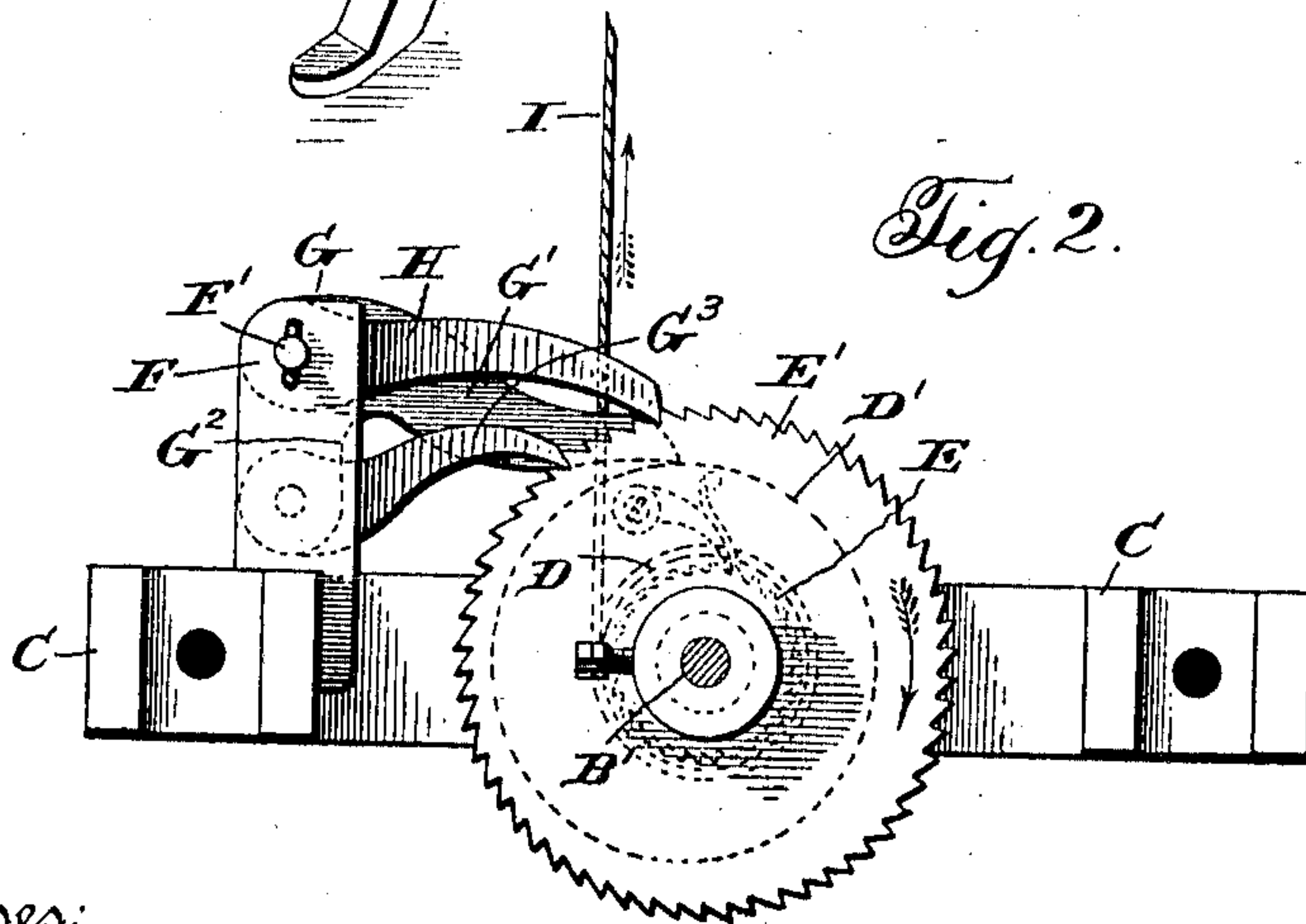


Fig. 2.



Witnesses:
Jas. Hutchinison:
Thos. C. Steath.

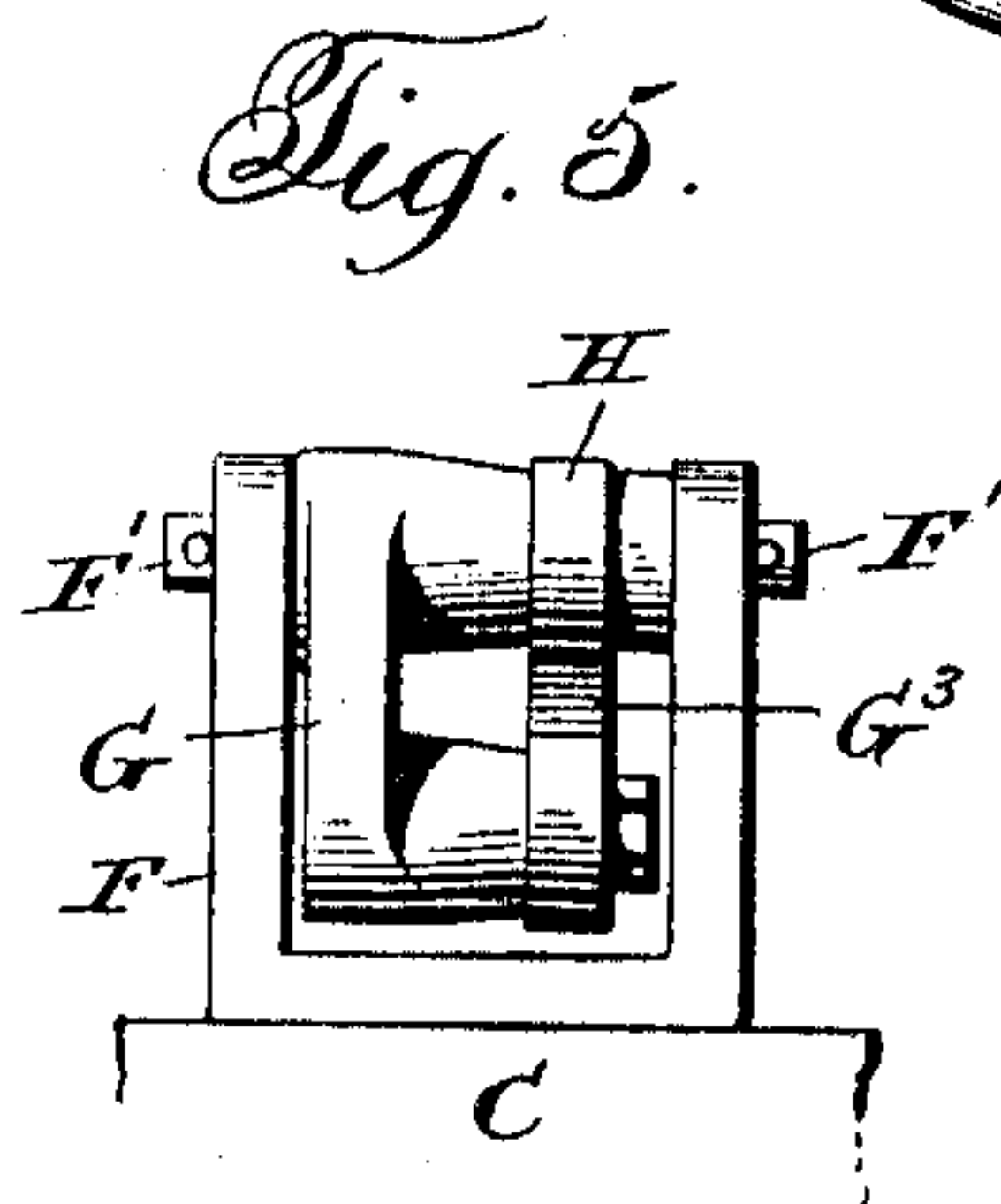
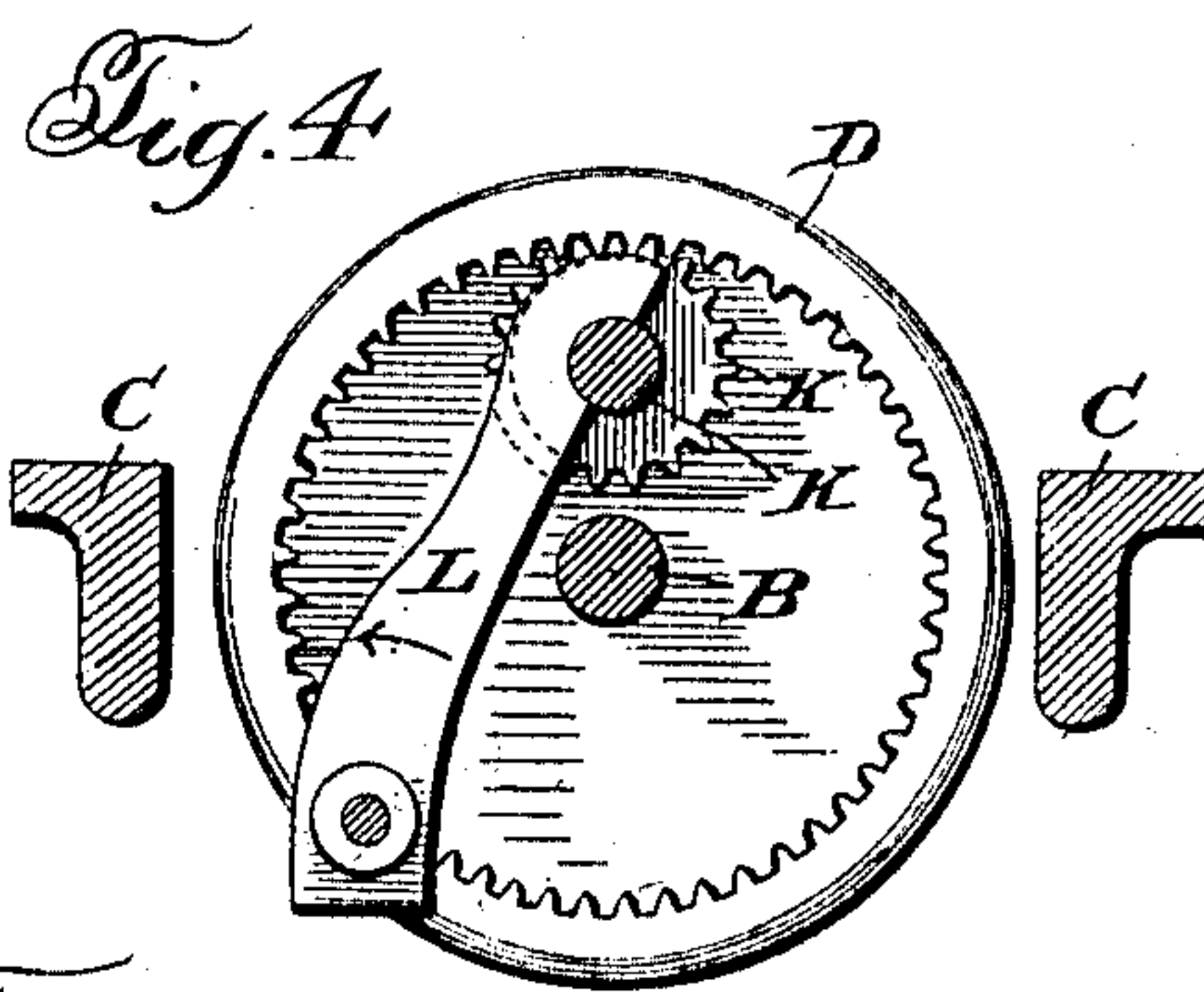
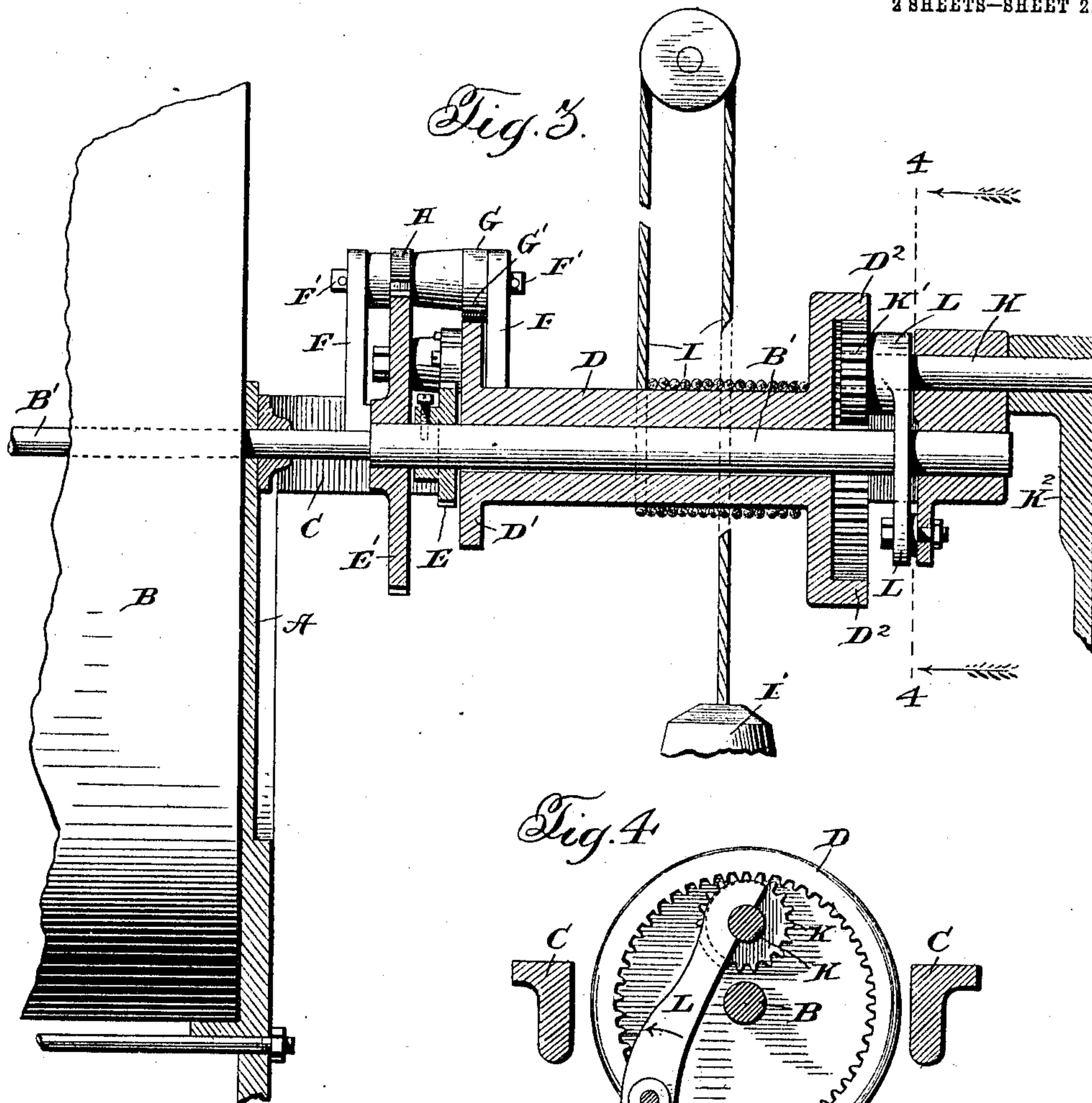
Inventor:
Herman Walther,
By *Wm. W. Adams* Attorney.

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Witnesses:

James Hutchinson
Thos. R. Strath

Inventor.

Herman Walther
By T. W. Williams Attorney

UNITED STATES PATENT OFFICE.

HERMAN WALTHER, OF DAVENPORT, IOWA.

ACTUATING MEANS FOR BLOWERS.

970,448.

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Application filed February 1, 1909. Serial No. 475,488.

To all whom it may concern:

Be it known that I, HERMAN WALTHER, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Actuating Means for Blowers, of which the following is a specification.

This invention relates to an improvement in actuating means for blowers designed particularly for use in connection with oil gas systems.

A well known method of actuating such blowers is through the medium of a reel which is operatively connected in any convenient manner with the blower and which has wound thereon a cable to one end of which is attached a weight, so that during the descent of the weight the reel and consequently the blower are caused to rotate. With such a construction the reel must of course be frequently wound up and the usual practice is to discontinue the operation of the blower during the rewinding of the reel. This is objectionable as it permits the air pressure to fall to such an extent that the lights of the system become dim, flicker, and frequently go out, and the principal object of the present invention is the provision of a device of this character of such a construction that the blower will be actuated properly both during the movement of the reel due to its motor and during the movement of the reel in the opposite direction when the motor is being rewound, so that the pressure in the system is maintained constant at all times.

Other objects of the invention will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings forming a part hereof, wherein a convenient embodiment of the invention is illustrated and wherein like numerals of reference refer to similar parts in the several views.

In the drawings: Figure 1 is a perspective view of a blower equipped with the improved actuating means, Fig. 2 is an end elevation of the blower actuating means, Fig. 3 is a longitudinal section of the actuating means, the blower being shown in elevation, and Figs. 4 and 5 are detail views.

Referring now more particularly to the drawings, A designates a frame in which is supported a blower B which may be of any well known type and the drum of which is

provided with an actuating shaft B', which projects for a considerable distance beyond one of the end pieces of the frame A and has its outer end journaled in an open reel supporting frame C which is secured in any suitable manner to one of the end pieces of the frame A and projects outwardly therefrom. Loosely mounted on the portion of the shaft B' within the frame C is a reel D which is provided at its inner end with an eccentric flange D', and at its outer end with an internally geared annular flange D². Fixedly mounted in any suitable manner upon the shaft B' and lying immediately along side of the eccentric flange D' of the reel D is a small ratchet wheel E, the end of the reel D being provided with a spring actuated pawl which normally engages the ratchet wheel E so that when said reel is rotated in one direction, the blower shaft B will be actuated directly from the reel, while when the reel is rotated in the opposite direction the pawl carried thereby will ride over the ratchet wheel E carried by the blower shaft. Fixedly secured to the blower shaft B' immediately along side of the ratchet wheel E is a large ratchet wheel E', the teeth of which extend in the same direction as the teeth of the small ratchet wheel E. Secured to one side of the reel supporting frame C is a U-shaped bracket F, in the upper portion of which is fixedly secured a shaft F'. Loosely mounted upon the shaft F' is a bell crank lever G, the long arm G¹ of which is weighted so as to continually rest upon the periphery of the eccentric flange D' and the short arm G² of which has pivotally secured thereto an actuating pawl G³ which constantly engages the periphery of the large ratchet wheel E' heretofore referred to. Loosely mounted upon the shaft F' along side of the bell crank lever G is a retaining pawl H, which constantly engages the ratchet wheel E' and the function of which is to prevent movement of said ratchet wheel except in one direction.

The reel D has wound thereon the usual cable I, the free end of which passes over a pulley and has attached thereto a weight I', which may be of any well known construction, the cable being so wound thereon that during the rotation of the reel caused by the descent of the weight I', the pawl carried by the reel will engage the small ratchet wheel E on the blower shaft B' and movement will in consequence be transmitted directly from

the reel to the blower shaft. During the rotary movement of the reel in this direction, the eccentric flange D' thereof will of course cause the long arm of the bell crank lever G to move up and down, which will cause the short arm of the bell crank lever to reciprocate and move the actuating pawl G³ carried thereby back and forth on the periphery of the large ratchet wheel E'. This will have no effect on the rotation of the blower shaft B', however, as the movement of the ratchet wheel E' is so fast when the reel travels in this direction that it will run ahead of the pawl G³. When, however, the reel is rotated in the opposite direction to effect the rewinding of the cable, it will be seen that the pawl carried thereby will slip on the ratchet wheel E and motion will no longer be imparted directly to the blower shaft G'. As when the reel is moved in the other direction, however, the eccentric flange thereof will continue to reciprocate the long arm of the bell crank lever G which will through the pawl G³ acting on the periphery of the large ratchet wheel E' impart a step by step movement to the shaft B' in the same direction as when said shaft is operated directly by the reel. It will thus be seen that the blower shaft is continuously rotated in one direction both when the reel is being actuated by its motor and when it is being rotated in the opposite direction to reset the motor.

To effect the rewinding of the cable on the reel, a shaft K is journaled in the outer end of the reel supporting frame C so as to be capable of both a rotary and longitudinal movement therein, to the inner end of which shaft is secured a gear wheel K', which is adapted to mesh with the internally geared annular flange D² of the reel D, and to the outer end of which shaft is secured an operating handle or crank K². During the ordinary operation of the device, the shaft K is moved outwardly until the gear wheel K' carried thereby is disengaged from the internally geared annular flange D², but when it is desired to rewind the reel, said shaft is moved inwardly until the gear engages said internally geared annular flange and the rewinding effected through the actuation of the crank or handle K². To hold the gear K' in operative position during the rewinding operation, a member L is provided, which is pivoted to the reel carrying frame C and the free end of which is fashioned so as to fit over that portion of the shaft K lying between the gear wheel K' and the adjacent portion of the reel carrying frame C, when said shaft is in its innermost position with the gear K' thereof in mesh with the internally geared annular flange D² of the reel D. It will be apparent from this construction that the gear wheel K' cannot be withdrawn from engagement with

the internally geared flange of the reel until the member L has been moved out of engagement with the shaft K.

While the improved actuating means herein possesses particular utility as a driving means for a blower for gas systems, it will be obvious that it is not necessarily restricted to any such use, as it may be used with many other devices of various characters.

While a convenient embodiment of the invention has been herein described and illustrated in the accompanying drawings, it will be understood that many changes may be made in the form shown and described without in any way departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described the invention what is claimed is:—

1. The combination with a driven shaft, a reel loosely mounted thereon, a weighted cable wound on said reel, a ratchet wheel mounted upon said driven shaft, a pawl adapted to cooperate with said ratchet wheel, means for directly driving said driven shaft from said reel when the same is rotated in one direction, and means for operating said pawl when the reel is rotated in a reverse direction to effect the rewinding of the cable.

2. The combination with a driven shaft, a reel loosely mounted thereon and having a pawl and ratchet connection therewith, means for rotating the reel in one direction, a ratchet wheel fixedly secured to said driven shaft, a pivotally supported bell crank lever having one arm operatively associated with the reel so as to be reciprocated by the rotation thereof, and a pawl carried by the other arm of the bell crank lever and engaging the ratchet wheel of the driven shaft.

3. The combination with a driven shaft, a reel loosely mounted on the driven shaft and having a pawl and ratchet connection therewith, an eccentric on said reel, means for rotating said reel in one direction, a ratchet wheel carried by the driven shaft, a bell crank lever having one of its arms weighted and resting upon the eccentric carried by the reel, and a pawl carried by the other arm of the bell crank lever and engaging the ratchet wheel on the driving shaft.

4. In a device of the character described, a driven shaft, a rotatable driving member, a pawl and ratchet connection between the driving and driven members acting to cause the driven member to rotate with the driving member when the driving member is rotated in one direction, and a separate pawl and ratchet connection between said driving and driven members acting to impart a positive intermittent drive to the driven shaft when the driving member is rotated in the opposite direction.

5 5. In a device of the character described,
a driven shaft, a driving member loosely
mounted relatively thereto, a ratchet wheel
carried by the driven shaft, a pawl for actu-
ating said ratchet wheel, an eccentric car-
ried by said driving member and means
operated by the rotation of said eccentric for
actuating said pawl.

10 6. In a device of the character described,
a driven shaft, a reel loosely mounted on
said driven shaft and having a pawl and
ratchet connection therewith, said reel being
provided with a gear, a ratchet wheel fixedly

secured to the driven shaft, a pawl for actu-
ating said ratchet wheel, and means adapted 15
upon the rotation of said reel to actuate
said pawl, and a gear movable into engage-
ment with the gear on the reel.

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

HERMAN WALTHER.

Witnesses:

GERTRUDE ROHLE,
LOUIS BLOCK,
J. B. PLATKE.