(No Model.) 2 Sheets—Sheet 1.

E. G. PASSMORE.

SWEEPING MACHINE.

No. 283,415. Patented Aug. 21, 1883.

FIG. 1.

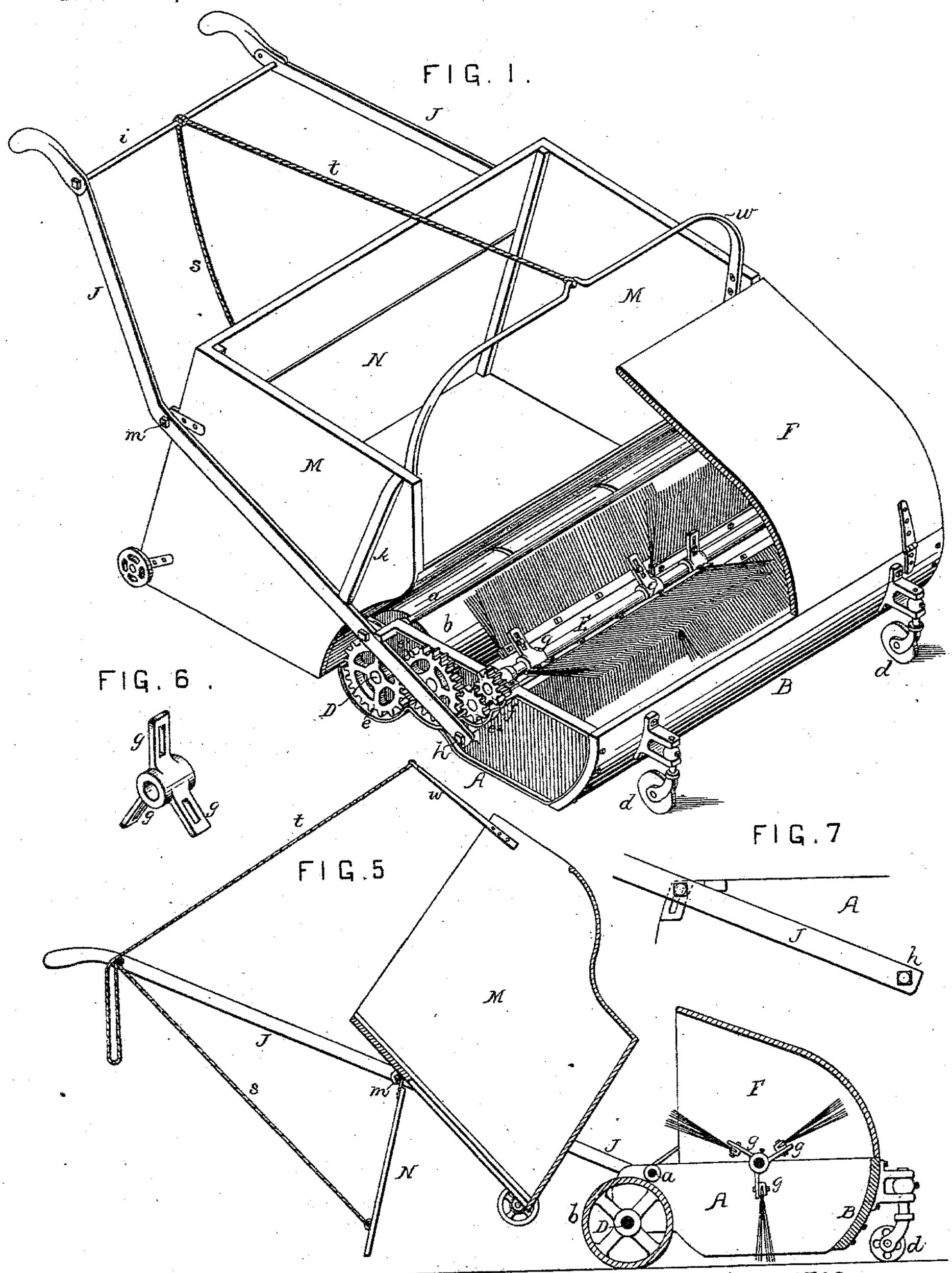

FIG. 6.

FIG. 5

FIG. 7

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 2.

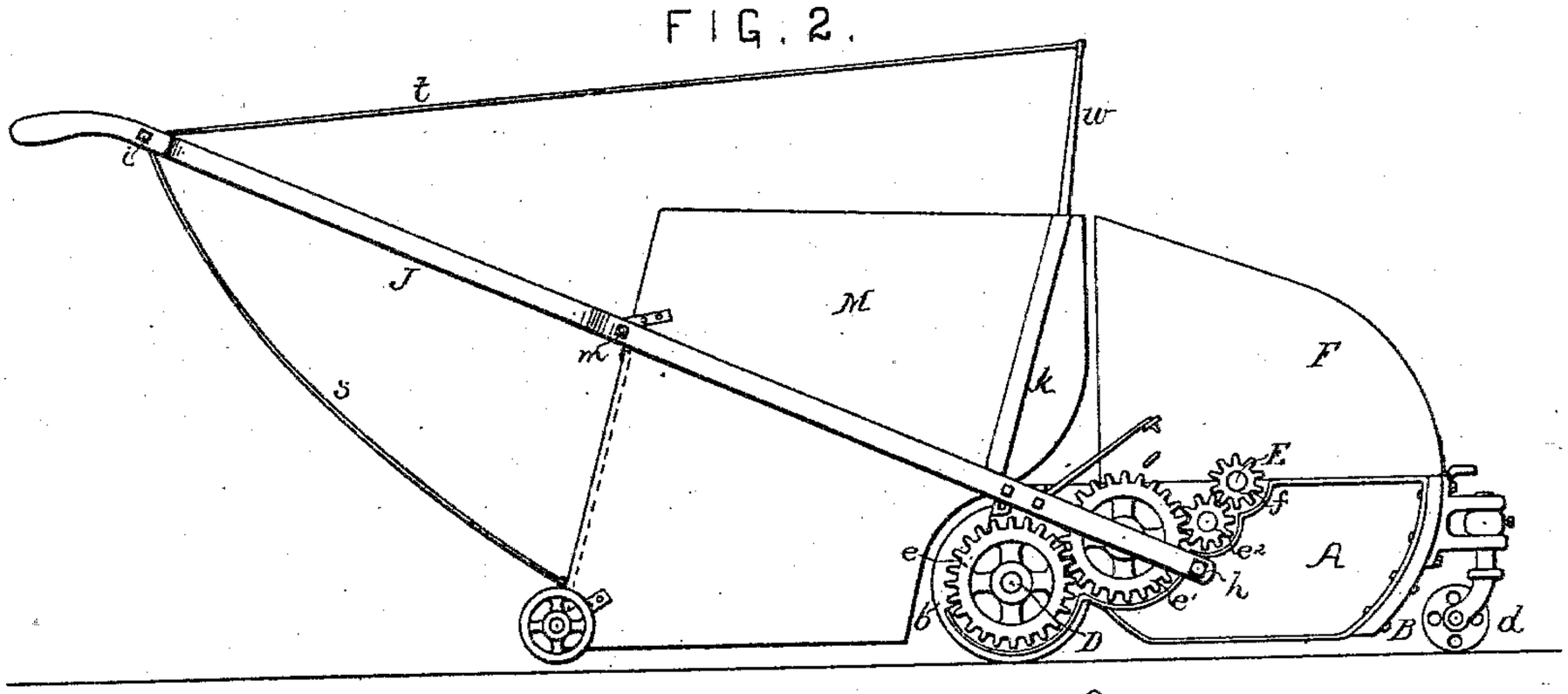


FIG. 3.

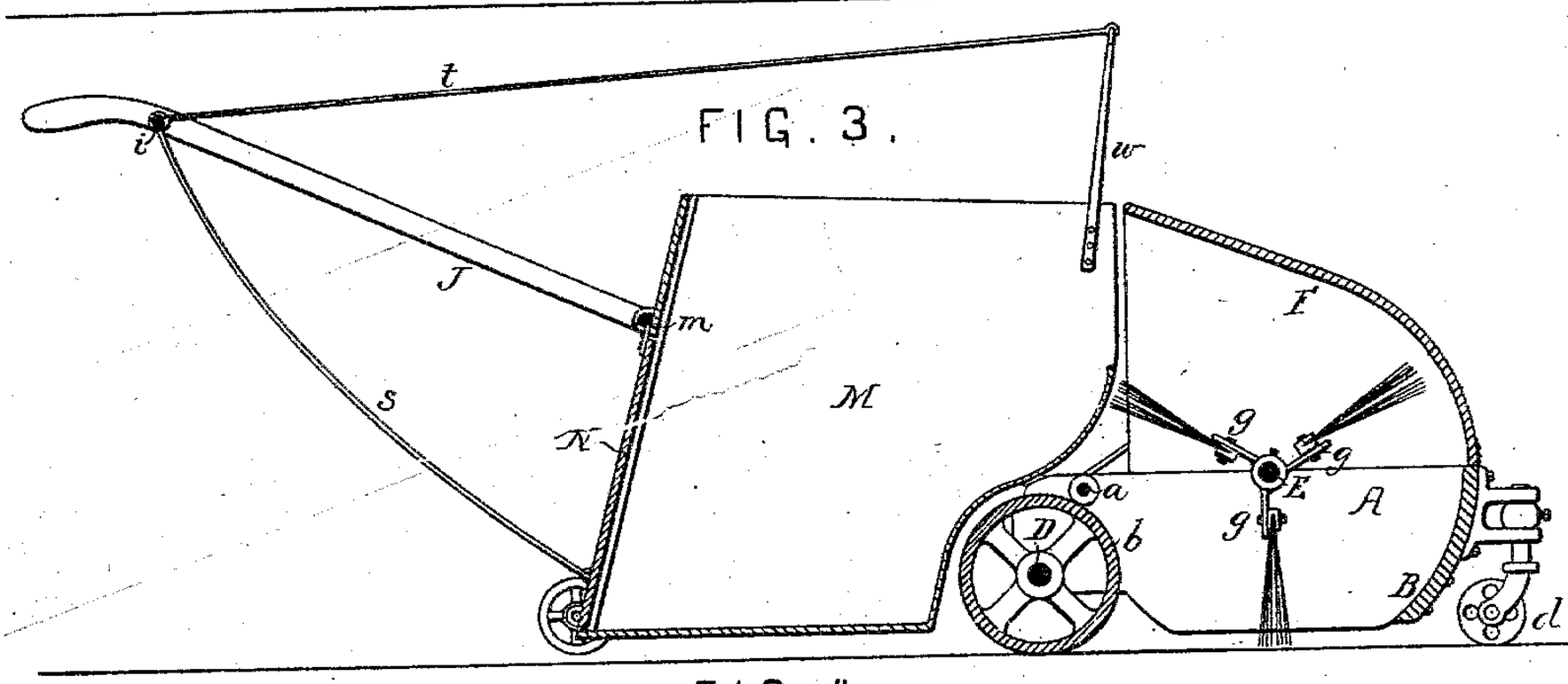
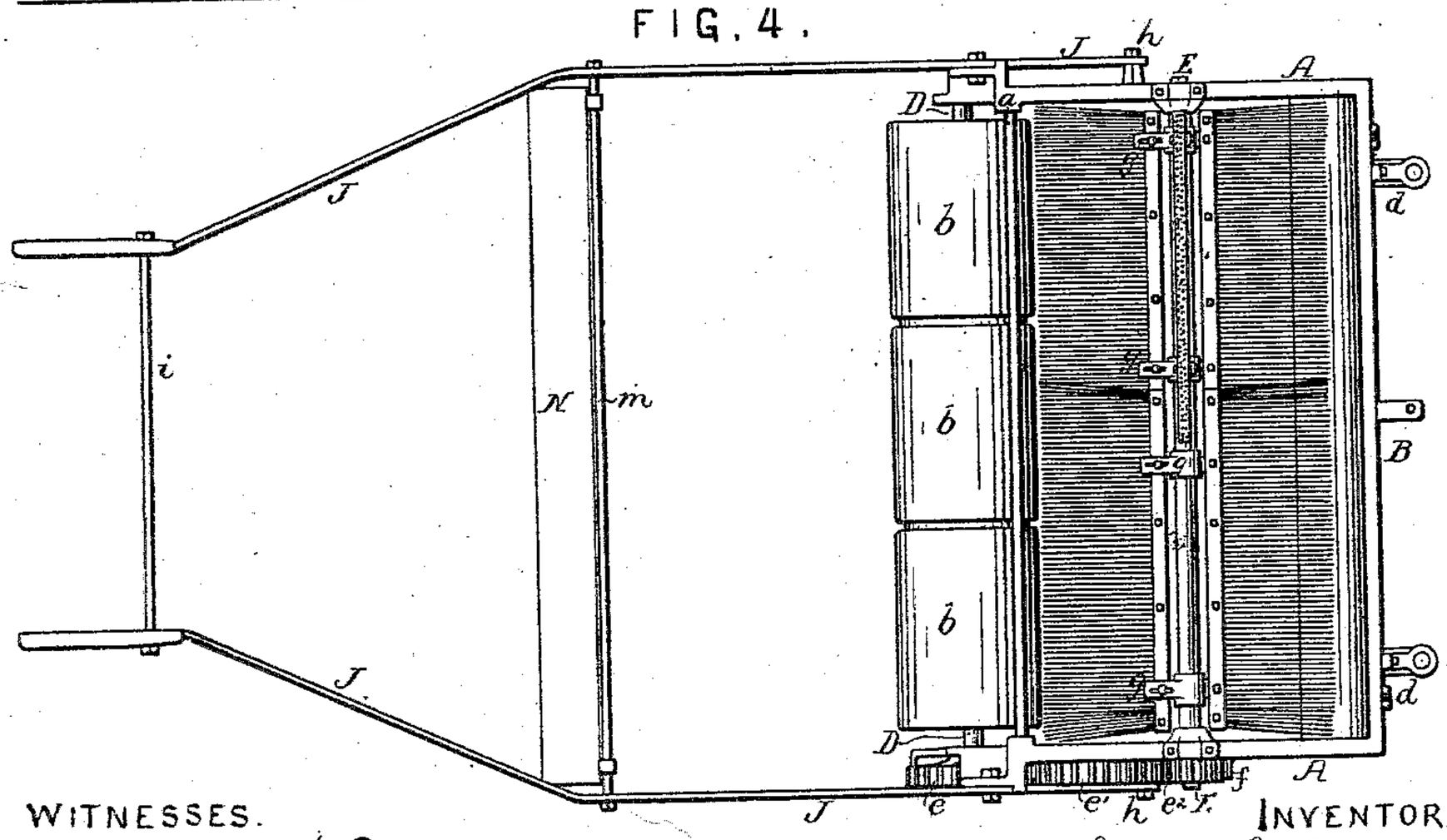


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

EVERETT G. PASSMORE, OF PHILADELPHIA, PENNSYLVANIA.

SWEEPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,415, dated August 21, 1883.

Application filed April 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, EVERETT G. PASSMORE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Sweeping-Machines, of which the following is a specification.

The object of my invention is to construct a machine adapted for sweeping grass-clippings, leaves, &c., from lawns—an object which I attain in a manner too fully described hereinafter to need preliminary description.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view, partly in section, of my improved sweeping-machine; Fig. 2, Sheet 2, a side view of the same; Fig. 3, a longitudinal section; Fig. 4, a sectional plan; Fig. 5, Sheet 1, a sectional view, showing the receptacle tilted in order to discharge its contents, and Figs. 6 and 7 detached views of parts of the machine.

A A are the opposite side frames of the machine, which are connected together in front by the concavo-convex plate B, the rear ends of said frames being connected by means of a transverse bar, *a*. In the side frames are formed bearings for the driving-shaft D and brush-shaft E, one of the side frames being also provided with studs forming bearings for the cog-wheels, referred to hereinafter.

The machine is supported upon wheels or rollers *b* on the shaft D and on front supports, *d*. The wheels or rollers *b* are provided with ratchet mechanism or equivalent devices, whereby on the forward movement of the machine the shaft D will be caused to turn with the rollers, but on the backward movement the rollers are free to turn independently of the shaft. The front supports, *d*, consist of two caster-wheels, the hangers of which have stems adapted to blocks supported by forked brackets projecting from the front plate, B, of the frame. The stems pass through openings in the brackets, and are adjustable vertically in respect to the blocks, being secured in position after adjustment by suitable set-screws. One end of the shaft D carries a cog-wheel, *e*, which gears into a cog-wheel, *e'*, the latter engaging with a cog-wheel, e^2, which gears with a pinion, *f*, on the end of the brush-shaft E. This shaft E carries two sets of three brushes each, the brushes of each set extending from a point near one end of the shaft to a point at or beyond the center of the same, and the brushes of one set coinciding with the spaces between the brushes of the other set. By this means I am enabled to use a multiplicity of brushes, so that the action of sweeping is almost continuous, and the work to be done is rendered uniform, while at the same time the power required to operate the brush is not so great as would be necessary if each brush extended from end to end of the shaft.

The heads carrying the brush material are secured by bolts and nuts to radial slotted arms *g*, Fig. 6, formed on hubs secured to the brush-shaft, so that as the brushes become worn they may be adjusted to compensate for this wear. The chamber in which the brush revolves is open at the rear, but inclosed at the sides, in front, and on top, such inclosure being effected partly by the side plates, A, and front plate, B, and partly by a hood, F, which has end plates fitted to the plates A, the transverse portion of the hood being partly curved and partly straight, as shown in Figs. 1, 2, 3, and 5. This hood F is hinged to the front plate, B, so that it can be thrown up in order to expose the brush. The hood, however, should be provided at the rear end with staples adapted to hook on the side frames, or with some equivalent means whereby the hood may be secured in position, but may be elevated at the rear end, so as to govern its position in respect to the brush.

Hung to the side plates, A, of the machine, at *h*, are two bars, J, which extend rearwardly from said side plates, and are connected near their rear ends by a transverse bar, *i*, suitable handles being formed on the extremities of the bars, so that the machine may be pushed forward when used as a hand-machine, or guided when drawn by a horse.

The handles may be rigidly secured to the side frames; but it is preferable to pivot them loosely thereto, so that they are at liberty to yield upwardly, and thus allow the supporting rollers or wheels of the machine to follow the inequalities of the ground without imparting a like movement to the handle-bars; or, where uninterrupted upward movement is not desir-

able, the movement may be limited or the handles adjusted to different positions in respect to the frames by combining clamping-bolts on the bars with slotted plates on the side frames, as shown in Fig. 7.

A transverse bar, *m*, extends from one of the bars J to the other, and to this bar is hung a receptacle, M, which is closed at the sides, bottom, and back, and partly closed in front, the top of the box and a portion of the front of the same near the top being open. The front of the box is supported on the bars J by means of side strips, *k*, and said front portion is so formed as to project over the driving wheels or rollers *b*, so that the receiving end of the box is brought closely to the brush. The rear lower corner of the receptacle M has a roller, which, in the event of a sudden descent of the supporting wheels or rollers, comes into contact with the ground and prevents the receptacle from dragging. A door, N, forms part of the rear of the receptacle M, this door being hung to the bar *m*, and being, by preference, retained in position when the parts are as shown in Fig. 3, by means of a spring-catch or equivalent yielding retaining device. A cord, *s*, extends from the lower end of the door N to the transverse bar *i*, another cord, *t*, also extending from the latter to a bow, *w*, at the front of the receptacle M.

The operation of the machine is as follows: The front supports, *d*, being set in respect to the wheels or rollers *b* so that the brush properly touches the ground, the machine is pushed or drawn forward, and a forward movement is consequently imparted to the wheels or rollers *b*. The movement of the driving wheels or rollers is transmitted to the brush-shaft through the gearing shown and described; but owing to the character of this gearing, the direction of movement of the brush-shaft is the reverse of that of the driving wheels or rollers; hence the leaves, grass, clippings, &c., are swept up by the brush and discharged from the top of the same backward into the receptacle M, the hood F serving to properly direct the sweepings and prevent them from being thrown out above or in front of the machine.

When the receptacle becomes full and it is desired to empty the same, the attendant pulls upon the cord *t*, so as to cause the tilting of the receptacle on the pivot-rod *m*, the door N being retained by the cord *s* in the position shown in Fig. 5, so that it presents no obstacle to the free discharge of the sweepings from the receptacle. The door is at liberty to swing rearward, however, in order to clear the pile of sweepings, and on restoring the receptacle M to the position shown in Fig. 3 the door is again caught and retained by the spring-catch.

In a machine for sweeping lawns where the sweepings—such as leaves, grass, &c.—are bulky, it is essential that the receptacle shall be large in order to avoid the necessity of frequently dumping the contents. This feature I attain by causing the brush to discharge from the top, as by this means the closed front of the box may be extended up almost to the top line of the brush.

As the axis of the driving-shaft is located between the brush-shaft and the receptacle for the sweepings, the weight of the brush-shaft and its appurtenances is balanced by the weight of the receptacle, but the weight of both is borne almost entirely by the driving wheels or rollers, and proper traction of the latter is thus assured.

It will be observed that the supporting traction and driving devices do not extend laterally beyond the brush, but are entirely within the limits of the side frame, so that the machine can be made to sweep closely up to hedges, shrubbery, or other obstructions, no outside ground-supports being presented, as in the case of machines having exterior supporting and driving wheels.

Shoes or equivalent supports may be used in place of the casters forming the front ground-supports, *d*, and, if desired, the receptacle may be arranged in advance instead of in rear of the brush, and the latter may be caused to turn in the same direction as the driving wheels or rollers. The arrangement shown in the drawings, however, is preferable.

I claim as my invention—

1. The combination of the main frame, the brush-shaft, the supporting traction rollers or wheels in rear of the said brush-shaft and in front of the receptacle, and the ground-supports in front of the brush-shaft, as set forth.

2. The combination of the main frame, the receptacle, the rotary brush, and supporting traction wheels or rollers, the axis of which is between the brush-shaft and the receptacle whereby the weight of the brush-shaft and its appurtenances is balanced by the receptacle, and the weight of both is borne by the traction wheels or rollers, as specified.

3. The combination of the main frame, the supporting traction wheels or rollers, the rotary brush, gearing for driving the same, and a receptacle projecting over the said supporting wheels or rollers and close to the brush, as described.

4. The combination of the main frame, the driving and sweeping devices, the handle-bars, and a receptacle pivoted to said handle-bars and free to swing thereon, as set forth.

5. The combination of the handle-bars, the pivoted receptacle M, the closing door N, and the retaining-cord *s*, whereby said door is held in position when the receptacle is tilted to dump its contents, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EVERETT G. PASSMORE.

Witnesses:
JAMES F. TOBIN,
HARRY SMITH.