

N^o 20,282



A.D. 1904

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Complete Specification Left, 9th June, 1905—Accepted, 20th Sept., 1905

PROVISIONAL SPECIFICATION.

"Improvements in Bottle Washing Machines."

We, JOHN JAMES McLAUGHLIN of 11, Booth Street, Piccadilly, Manchester, Manufacturer, and JAMES ARTHUR NETHERWOOD, of Folly Hall, Huddersfield, Manufacturer, (a communication from Charles E. Tunelius of Chicago, U.S.A.), do hereby declare the nature of this invention to be as follows:—

5 This invention relates to bottle washing machines of the type wherein a number of bottles are held or arranged vertically in a circle on a rack which is periodically rotated to bring the bottles successively in contact with revolving brushes or other cleaning devices.

10 In such machines it is usual to provide spring actuated holders for the bottles and as the bottles travel round the machine and return to their initial position they are usually released by the operator depressing the holders against the action of the springs.

15 One object of the present invention is to effect the release of the bottle automatically. Another object is to provide a simple and efficient form of drive for rotating the bottle rack, the bottles themselves, and the brushes and other parts of the machine.

20 In carrying out the invention a circular bottle rack is mounted above a drip pan and periodically rotated in a suitable manner so as to bring the bottles successively into contact with external rotary brushes and over suitable positions to receive internal rotary brushes and rinsing devices, for instance in the manner described in Specification to Letters Patent No. 15962 of 1903. Instead however of employing worm gear to drive the various parts as therein described, spur gearing is used as it is found that not only is the friction less, but also the wear and tear thus lessening the cost for repairs. The substitution of spur gearing necessitates considerable modification in the machine. Upon the upper end of the central shaft, around which the circular rack is to rotate, is mounted a belt pulley receiving a belt preferably from guide pulleys carried on a secondary shaft supported by a bracket on the side of the machine. The pulley may be fitted with a clutch if desired or a fast and loose pulley 30 may be employed instead. A spur pinion on the central shaft meshes with a spur wheel on the secondary shaft upon which is the driving disc or equivalent device for periodically rotating the bottle rack, for example as described in the specification before referred to. The central shaft passes down through a hollow stationary pillar or sleeve and below the drip pan carries a spur wheel which 35 meshes with pinions on the spindles of reciprocating rotary brushes adapted to cleanse the interior of the bottles in a similar manner to those described in the aforesaid specification.

40 The bottles are carried vertically with the mouth downwards resting on sockets which are carried by slides adapted to move vertically, under the action of springs, on vertical guides, the guides with the sockets being arranged in a circle on rotary discs adapted to be periodically rotated to bring the bottles successively into contact with the cleaning brushes. The bottoms of the bottles

[Price 8d.]



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abut against sockets carried by the upper of the discs, the bottles being held up against such sockets by the springs of the slides carrying the lower sockets. Thus in order to insert or remove a bottle it is necessary to push down a lower socket against its spring. This if done by hand, as is usually the case, entails considerable labour. It is effected automatically according to the present invention by providing a cam on the stationary sleeve or pillar surrounding the rotary central shaft. This cam operates on pins or rollers carried by the various socket slides so that as the latter with the bottles are successively brought round to the starting point they are automatically depressed and the bottles released. The cam is so arranged as to allow the socket slides to remain up under the action of the springs so as to securely hold the bottles except when they reach the initial point where the socket is depressed. 5 10

In order to allow for bottles of different sizes the cam may be adjustably mounted. The cam may however be cast on the pillar or sleeve or it may be secured thereon in any convenient manner. The cam surface preferably projects and the rollers or pins of the various slides work under it, but it may be in the form of a slot. 15

Any other form of driving gear may be employed instead of belts to drive the main central shaft on which the initial spur pinion is mounted.

Dated this 20th day of September, 1904. 20

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13, Temple Street, Birmingham, and
30, Cross Street, Manchester.
Agents. 25

COMPLETE SPECIFICATION.**"Improvements in Bottle Washing Machines."**

I, JOHN JAMES McLAUGHLIN, of 11, Booth Street, Piccadilly, Manchester, Manufacturer, and JAMES ARTHUR NETHERWOOD of Folly Hall, Huddersfield, Manufacturer, (a communication to the said John James McLaughlin from Charles E. Tunelius of Chicago, U.S.A.) do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:— 30

This invention relates to bottle washing machines of the type wherein a number of bottles are held or arranged vertically in a circle on a rack which is intermittently rotated to bring the bottles successively in contact with revolving brushes or other cleaning devices. 35

In such machines it is usual to provide spring actuated holders for the bottles and as the bottles travel round the machine and return to their initial position they are usually released by the operator depressing the holders against the action of the springs. 40

One object of the present invention is to effect the gripping and release of the bottle automatically and gradually so as to avoid shock. Another object is to provide a simple and efficient form of drive for rotating the bottle rack, the bottles themselves, and the brushes and other parts of the machine. 45

In the accompanying drawings,

Figure 1 is a side elevation and

Figure 2 a sectional plan on A B Figure 1, of part of a machine according to the invention.

Figure 3 is a detail of a bottle holder.

Figure 4 is a front elevation illustrating an alternative driving gear. 50

In carrying out the invention a circular bottle rack *o* is mounted above a drip

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pan *p* and intermittently rotated in a suitable manner so as to bring the bottles successively into contact with external rotary brushes and over suitable positions to receive internal rotary brushes and rinsing devices, for instance in the manner described in Specification to Letters Patent No. 15962 of 1903.

- 5 Instead however of employing worm gear to drive the various parts as therein described, spur gearing is used as it is found that not only is the friction less, but also the wear and tear, thus lessening the cost for repairs. The substitution of spur gearing necessitates considerable modification in the machine. Upon the upper end of the central shaft, around which the circular rack *o* is to rotate, is loosely mounted a belt pulley *r* receiving a belt *x* preferably from
10 guide pulleys *s* carried on a secondary shaft supported by a bracket, or brackets, *t*, on the side of the machine. The pulley *r* may be fitted with a clutch *w* feathered on the central shaft and controlled by a handle *z* operating through any suitable means such as an eccentric 2, link 3, and lever *y*, as desired, or a
15 fast and loose pulley may be employed instead of the clutch. A spur pinion *i* on the central shaft meshes with a spur wheel *k* on the secondary shaft upon which is the driving disc *u* or equivalent device for intermittently rotating the bottle rack *o*, for example as described in the specification before referred to. The central shaft passes down through a hollow stationary pillar or sleeve *g*
20 and below the drip pan *p* carries a spur wheel *l* which meshes with pinions *m* on the spindles of reciprocating rotary brushes *n* adapted to cleanse the interior of the bottles in a similar manner to that described in the aforesaid specification. The clutch *w* and pulley *r* may be mounted on a shaft 4 below the drip pan *p* as shown in Figure 4, the shaft 4 driving the central shaft through bevel
25 gear 5, 6. The clutch may be controlled by a lever 7 adapted to be held in the engaged position by a catch 8.

- The bottles are carried vertically with the mouth downwards resting on sockets *a* which are carried by slides *b* adapted to move vertically, under the action of springs *d*, on vertical guides *c*, the guides with the sockets being
30 arranged in a circle on rotary discs *o* and *h* adapted to be intermittently rotated to bring the bottles successively into contact with the cleaning brushes. The bottoms of the bottles abut against sockets *v* carried by the upper of the discs, the bottles being held up against such sockets by the springs *d* of the slides *b* carrying the lower sockets *a*. Thus in order to insert or remove a bottle it is necessary to push down the lower socket against its spring. This if done
35 by hand, as is usually the case, entails considerable labour. It is effected automatically according to the present invention by providing a cam *f* on the stationary sleeve or pillar *g* surrounding the rotary central shaft. This cam operates directly on pins or rollers *e* carried by the various socket slides *b* so
40 that as the latter with the bottles are successively brought round to the starting point they are automatically depressed and the bottles released. The cam is so arranged as to allow the socket slides to remain up under the action of the springs so as to securely hold the bottles except when they approach the initial point where the socket is gradually depressed. This arrangement of cam for
45 operating directly and constantly on the pin or roller admits of the latter being gradually held and gradually released so as to avoid sudden shocks on inserting the bottle in or removing it from the machine.

- In order to allow for bottles of different sizes the cam may be adjustably mounted. The cam may however be cast on the pillar or sleeve or it may be
50 secured thereon in any convenient manner. The cam surface preferably projects and the rollers or pins of the various slides work under it, but it may be in the form of a slot.

- Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that
55 what we claim is:—

1. In a bottle washing machine of the type described, the combination of a

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driving clutch with a belt pulley for transmitting motion directly or by means of bevel or the like wheels to the gearing wheels, that effect the rotation of the internal and external cleaning brushes and the bottle rack, substantially as hereinbefore described and as illustrated in the accompanying drawings.

2. In a bottle washing machine of the type described in which springs are employed to keep the bottles in position upon the holders, a cam for automatically and gradually effecting the opening and the closing of the holders, substantially as hereinbefore described and as illustrated in the accompanying drawings. 5

3. In a bottle washing machine of the type described the combination of a stationary sleeve through which a driving spindle passes and having upon its outer end a single spur driving wheel for giving motion to the independent pinions mounted upon the internal brush spindles substantially as hereinbefore described. 10

Dated this 9th day of June, 1905.

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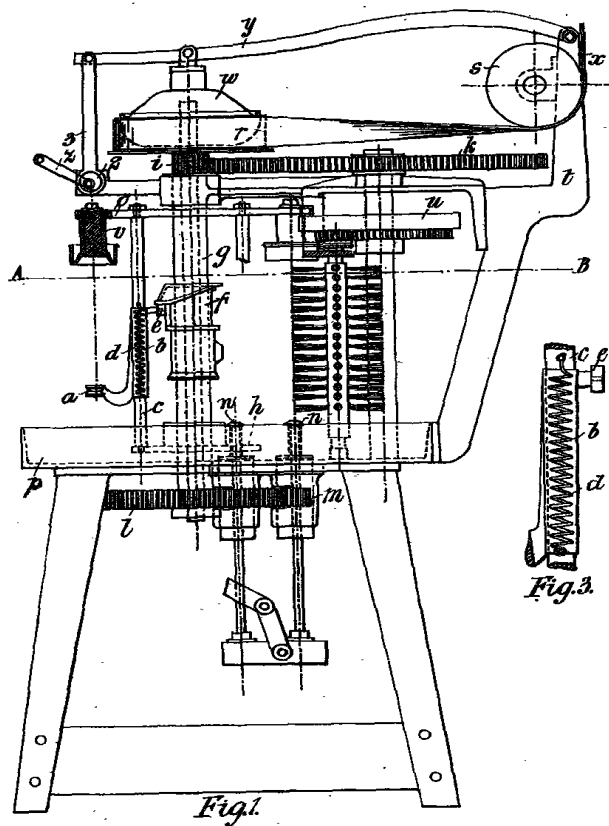


Fig. 1.

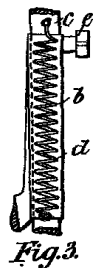


Fig. 3.

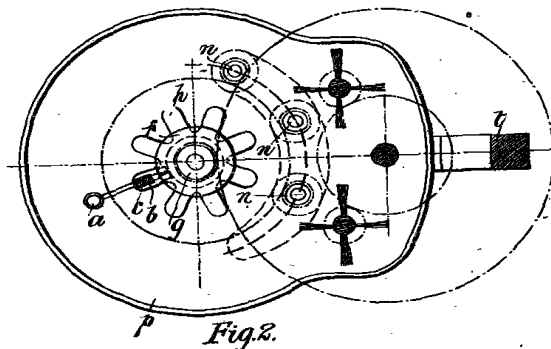


Fig. 2.

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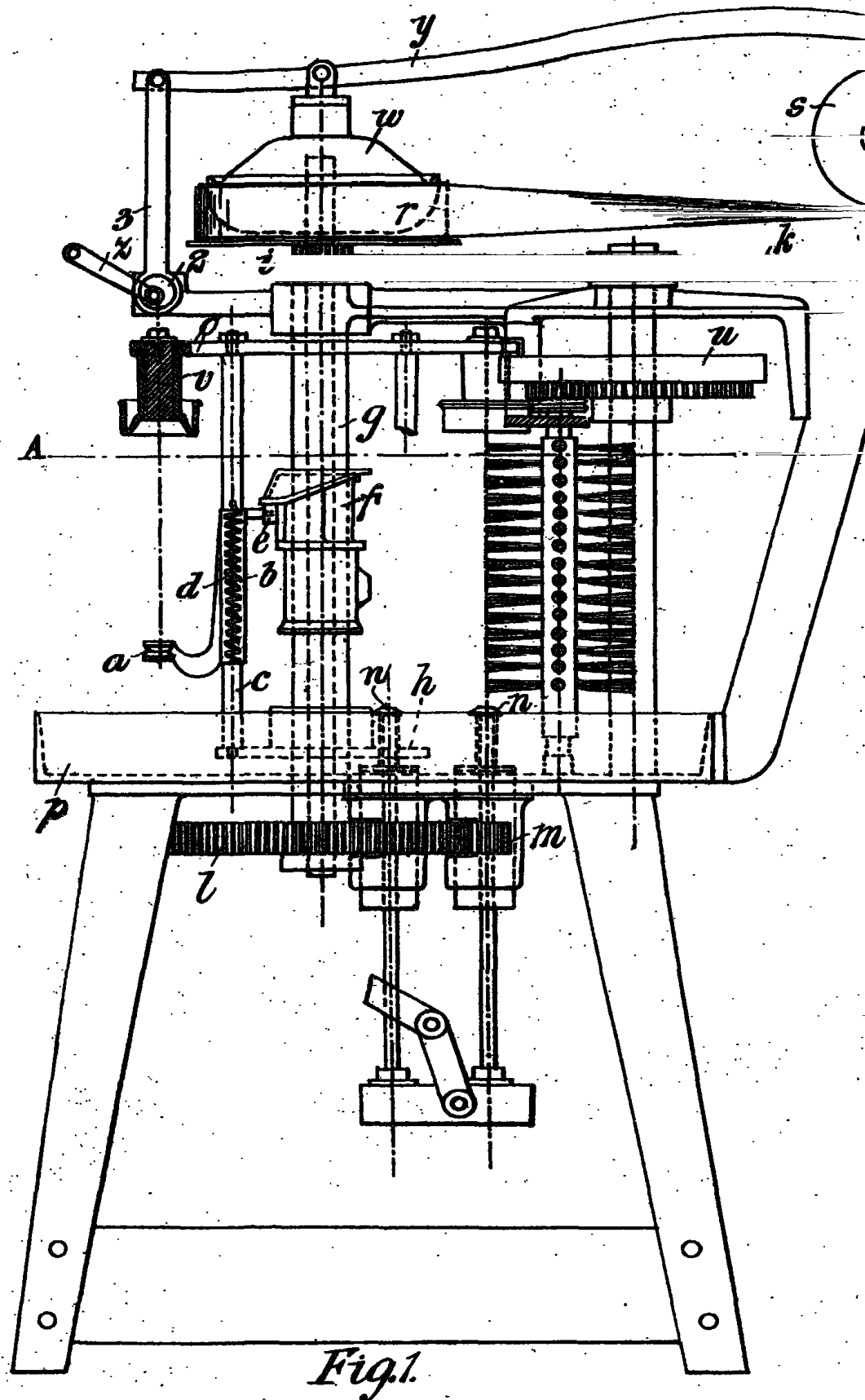


Fig. 1.

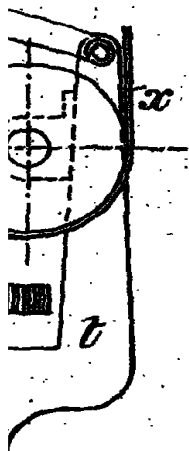
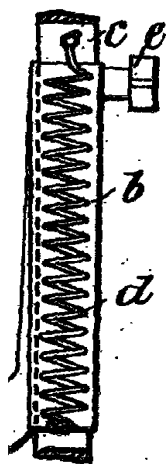
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Fig. 3.

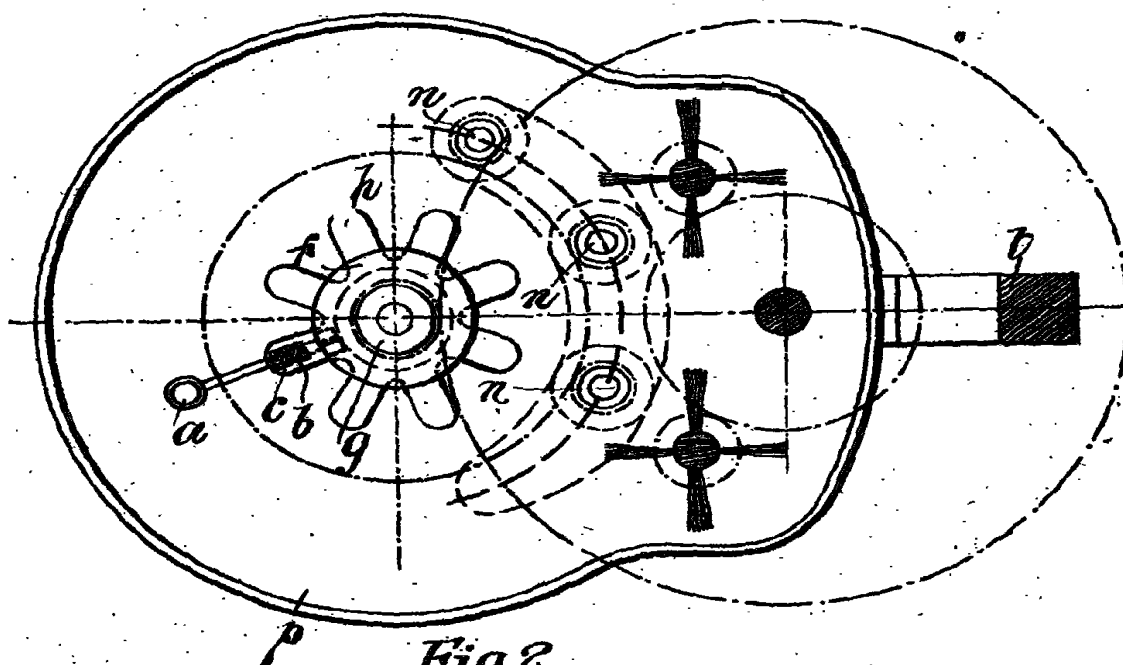
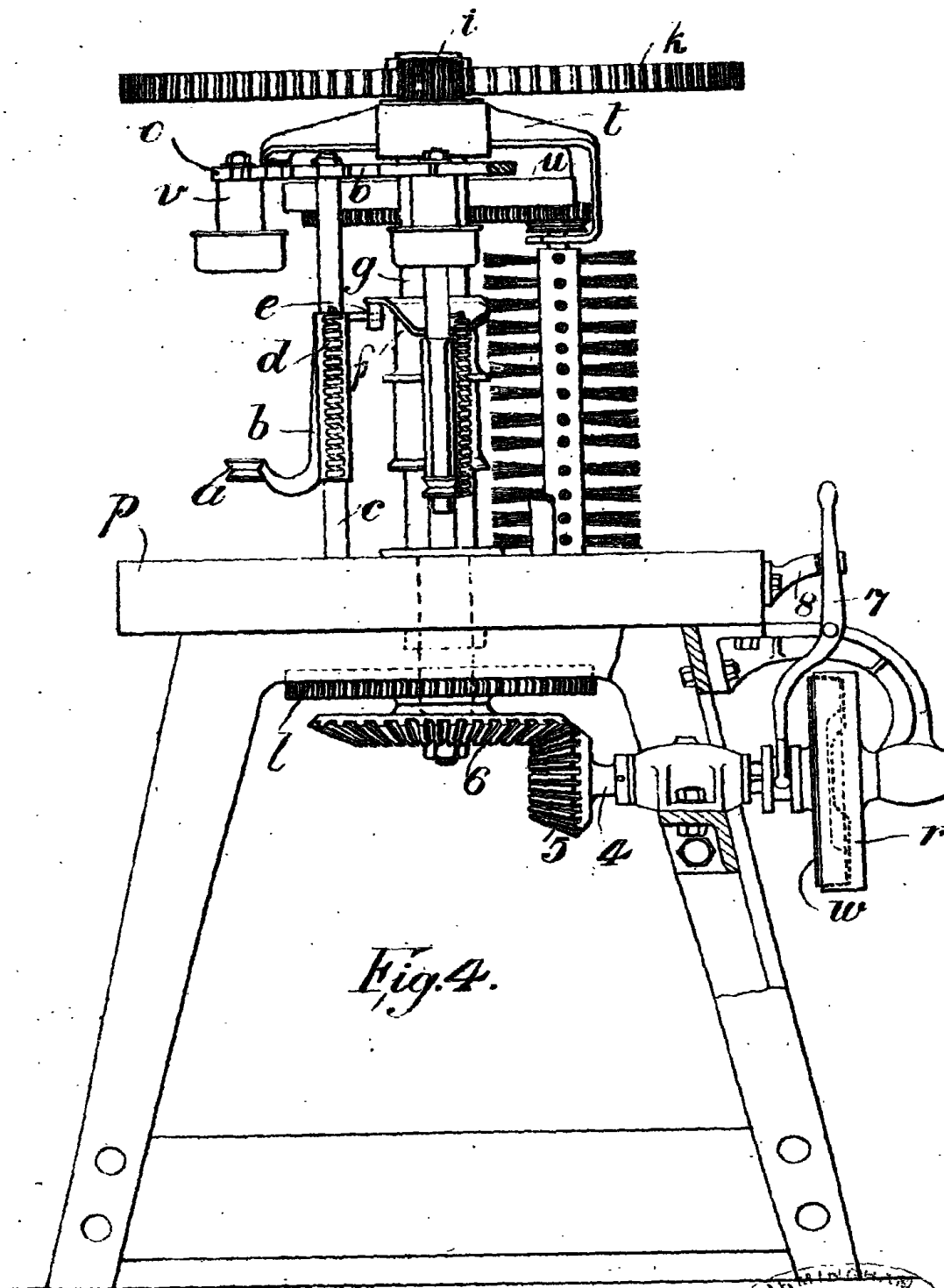


Fig. 2.



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