No. 831,669. PATENTED SEPT. 25, 1906.

C. H. LEGGETT.

POWDER DISTRIBUTER.

APPLICATION FILED JUNE 17, 1905.

6 SHEETS—SHEET 1.

FIG. 1.

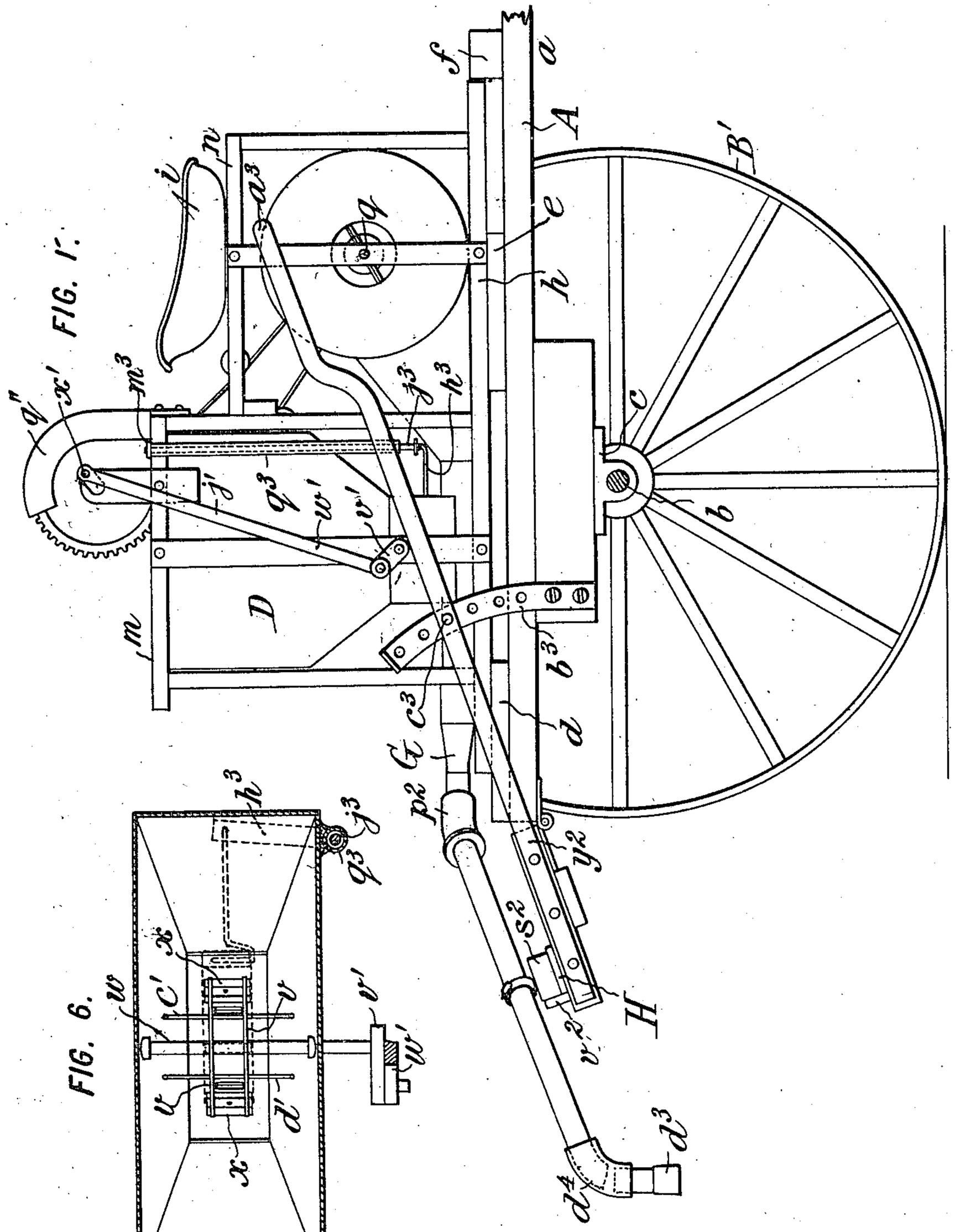

FIG. 6.

WITNESSES:

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René Bruine

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5 SHEETS—SHEET 2.

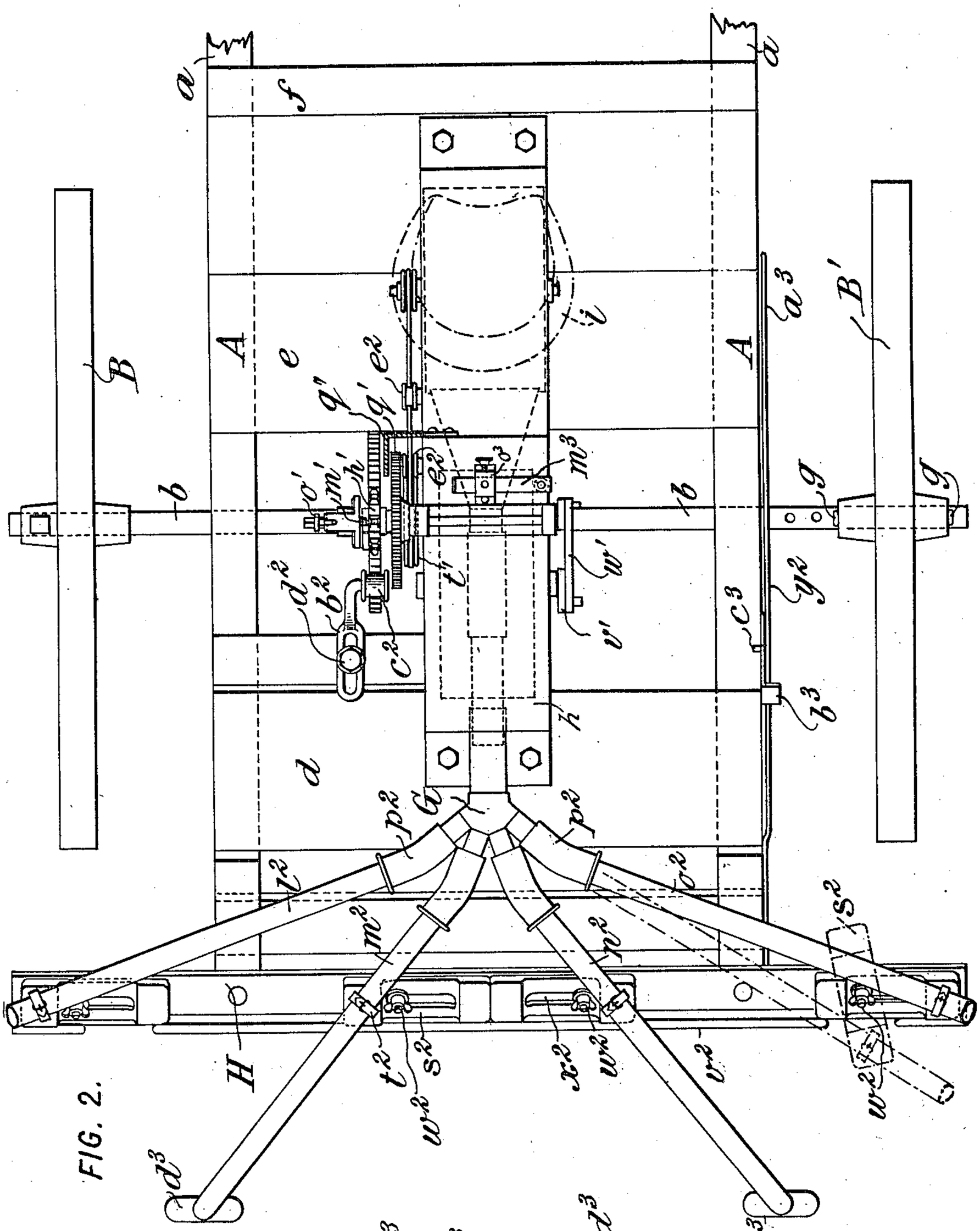

FIG. 2.

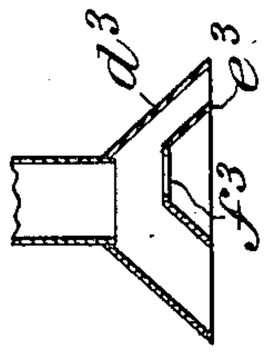

FIG. 8.

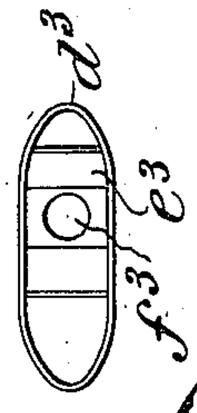

FIG. 9.

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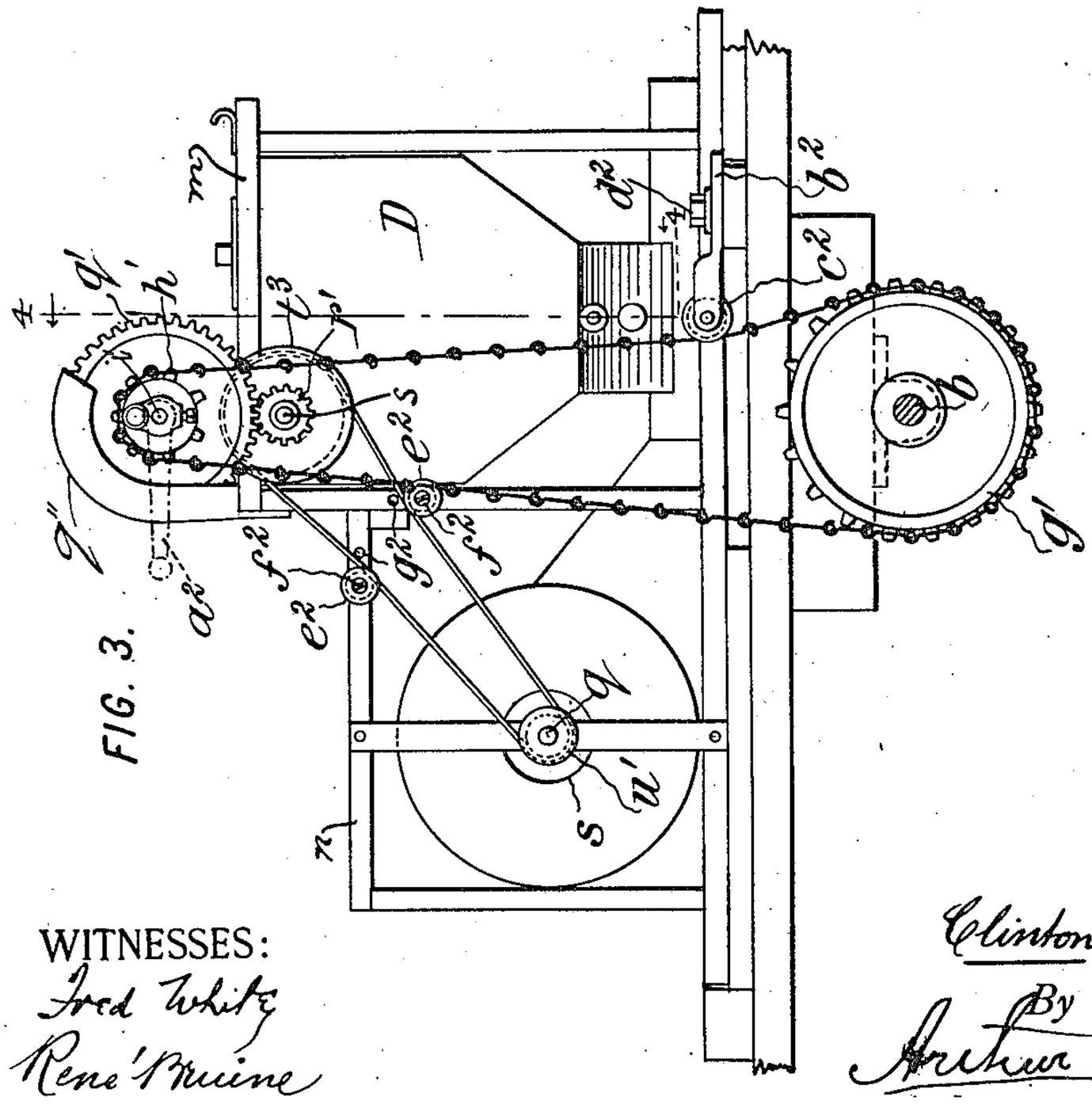
5 SHEETS—SHEET 3.

FIG. 4.

FIG. 3.



WITNESSES:

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6 SHEETS—SHEET 4.

FIG. 7.

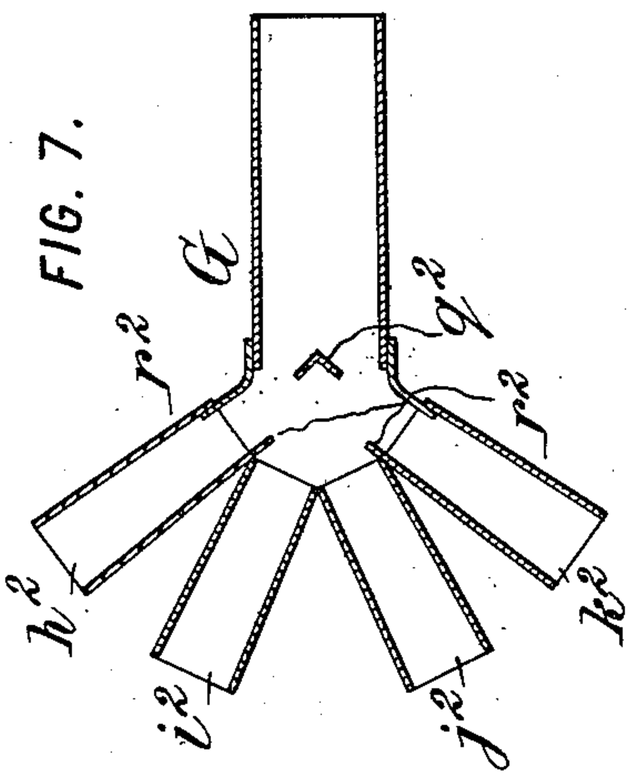
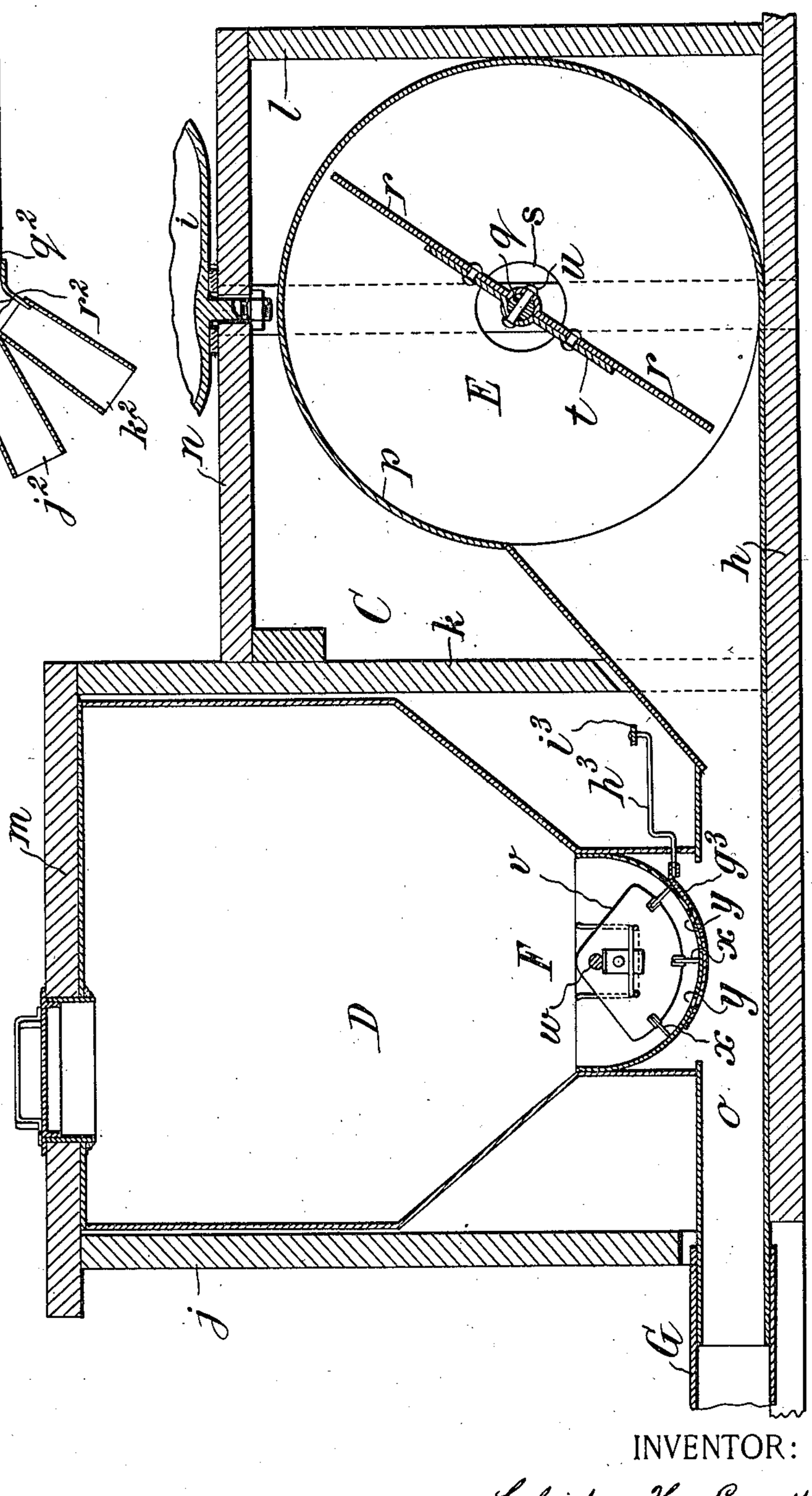


FIG. 5.



WITNESSES:

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APPLICATION FILED JUNE 17, 1905.

5 SHEETS—SHEET 5.

FIG. 10.

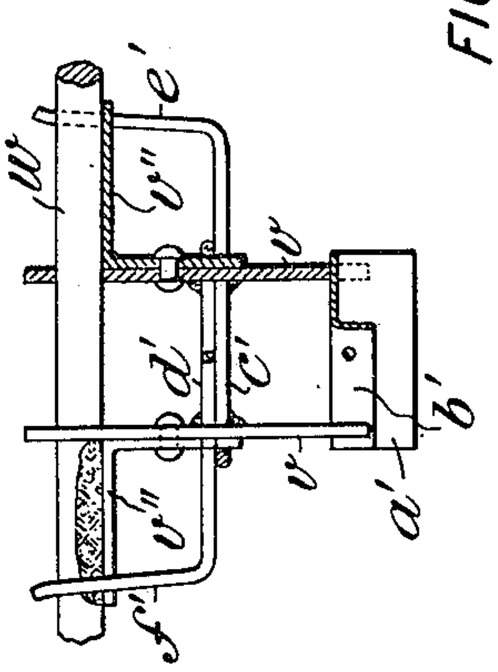


FIG. 13.

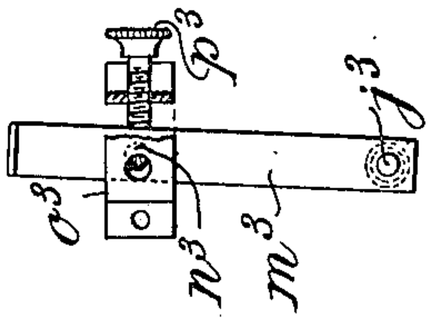


FIG. 11.

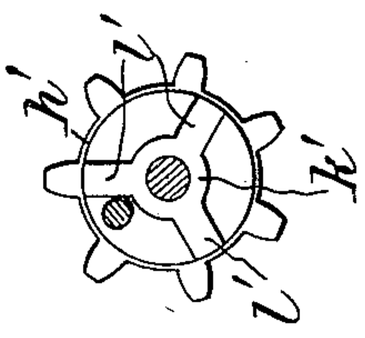


FIG. 12.

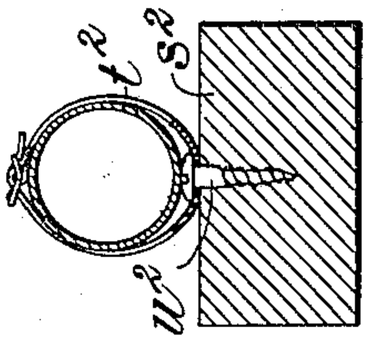
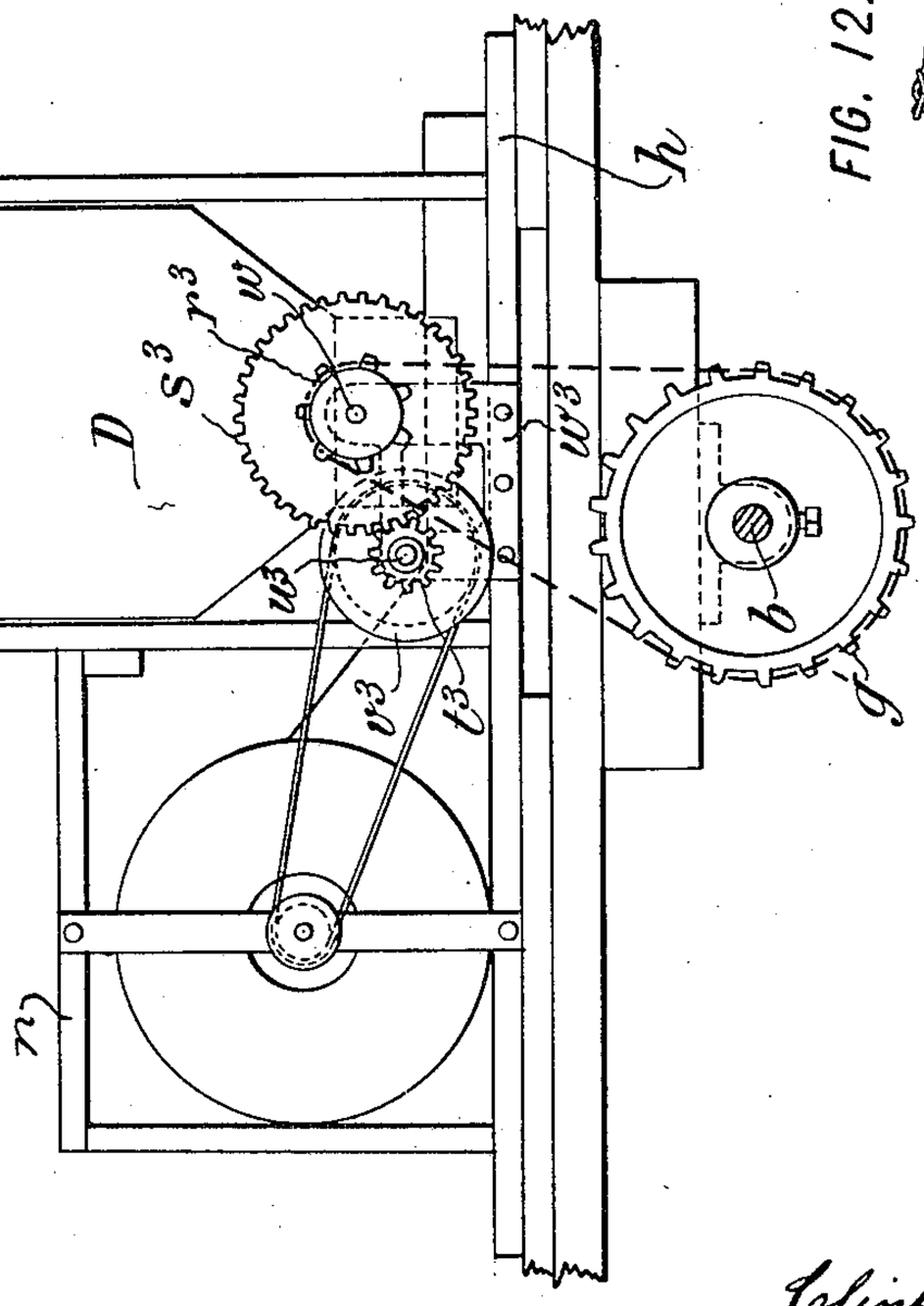


FIG. 14.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CLINTON H. LEGGETT, OF NEW YORK, N. Y.

POWDER-DISTRIBUTER.

No. 831,669. Specification of Letters Patent. Patented Sept. 25, 1906.

Application filed June 17, 1905. Serial No. 265,799.

To all whom it may concern:

Be it known that I, CLINTON H. LEGGETT, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Powder-Distributers, of which the following is a specification.

This invention relates to powder-distributers or the like, and aims to provide certain improvements therein.

The device provided by my present invention is designed, primarily, for use in distributing paris-green or other insecticide upon potato or other plants which are ordinarily grown in parallel rows, its purpose being to simultaneously distribute the insecticide over several rows.

In the preferred form of my invention means are provided for adapting the device to rows which are spaced apart different distances and to plants of different heights. Means are also provided for regulating the quantity of insecticide distributed, such means being adapted to be actuated from a point within easy reach of the operator. Preferably the device is provided with wheels and is adapted to be drawn by a horse; but other means of moving it may be employed, if desired.

My invention includes other features of improvement, which will be hereinafter referred to.

Referring to the drawings, Figure 1 illustrates an elevation of the right-hand side of the preferred form of my invention, the principal portion of the shafts being omitted. Fig. 2 is a plan. Fig. 3 is a side elevation looking from the left, the distributing-tubes and connected parts being omitted. Fig. 4 is an enlarged vertical section approximately on the line 4 4 in Fig. 3, the upper gear, belt, and belt-tighter being omitted. Fig. 5 is an enlarged vertical section taken at right angles to Fig. 4 on the line 5 5 thereof. Fig. 6 is a horizontal section on the line 6 6 in Fig. 4. Fig. 7 is a horizontal section of the distributing-nozzle. Fig. 8 is a vertical section of one of the discharge-nozzles. Fig. 9 is an under side view thereof. Figs. 10 to 13 are enlarged views of details, and Fig. 14 is an elevation of a modified construction.

In the drawings I have illustrated my invention as applied to a two-wheeled cart adapted to be drawn by a horse or other animal, the power required to drive the distributing mechanism being taken from the shaft of the vehicle. In the construction shown the cart proper comprises two side bars A, which are preferably elongated to form shafts *a*, (partly broken away,) a pair of wheels B B′, mounted upon a shaft *b*, journaled in bearings *c c*, fixed to the bars A, and a series of transverse boards or strips *d*, *e*, and *f*, connecting the bars *a*. One of the wheels, as B, is fixed to the shaft *b*, and the other, as B′, is adapted to slide upon the shaft, being confined in its adjusted position by cotter-pins *g*, fitting in suitable holes formed in the shaft. By these means the shaft is rotated by the traction of the wheel B, and the distance between the wheels is adjustable to accommodate the device to rows having different spaces between, them. As shown, the proportions of the cart are such that the wheels run in the spaces on the outer sides of two adjacent rows, the horse traveling in the space between such rows.

The insecticide-distributing mechanism (shown as a powder-distributer) is arranged above the body of the cart upon a base-board *h*, (see Fig. 5,) which is supported upon the transverse boards *d e* of the cart-body. Preferably a protecting frame or casing is provided for the distributing mechanism, which also serves the purpose of supporting the driving mechanism for the distributer and the seat *i* for the driver when one is used. This frame or casing consists in the form shown of three vertical boards or planks *j k l* and two horizontal boards *m n*, the latter of which serve to support the seat *i*. This framework or casing may be made of wood or other suitable material and conforms in a general way with the shape of the distributer C.

The distributer proper or "duster," as best seen in Fig. 5, comprises a reservoir D, having a series of openings in its bottom, through which the insecticide falls into a discharge-passage *o*, from which it is ejected by a current of air supplied by a fan E. The fan E preferably comprises a circular casing *p*, within which is mounted to rotate a shaft *q*, having blades *r* fixed thereto, the casing having an opening *s* at either side thereof, through which air is admitted to the fan. (See Fig. 3.) The preferred construction of fan is shown in Fig. 5, wherein the blades *r* are formed of

a single piece of sheet metal curved at its middle to fit around the shaft *q*, a clamping-plate *t* extending around the opposite half of the shaft and being riveted to the blades, as shown. Preferably a pin *u* is provided for fixing the blades to the shaft *q*.

To facilitate the feeding of the insecticide from the reservoir D into the discharge-passage *o*, I preferably provide the reservoir with a semicircular bottom wall, in which the feed-passages are arranged, and with a feeding device F, having scrapers or wipers which are designed to be moved forward and backward across the feed-passages of the reservoir, and means for agitating the powder immediately above the feed-passages to break up any lumps which may be present. The preferred form of such device is shown in Figs. 5, 6, and 10. As shown in these figures, I provide two or more plates *v*, which are fixed to a shaft *w*, extending through the lower part of the reservoir D, scrapers or wipers *x x* being fixed to the lower edges of the plates *v* and being adapted to pass across the feed passages or openings *y* in the bottom of the reservoir. Such scrapers or wipers are each preferably formed of an elongated strip of leather *a'*, Fig. 10, held between the opposite sides of a sheet-metal plate *b'*, which is bent at its middle, as shown, to clamp the strip of leather and which is held in slots formed in the plates *v* by solder or otherwise. One or more indentations in the plate *b'* suffice to hold the leather strip firmly in place. The means for agitating the powder and breaking up any lumps which may be present therein are preferably mounted upon the plates *v* and in their preferred construction comprise a pair of wire members *c' d'*, each consisting of a single piece of wire having two legs which pass through the plates *v*, such legs being bent upwardly to form agitating-arms *e' f'*. Preferably the agitators *d' c'* are arranged oppositely, as shown in Fig. 10, being fastened to plates *v* by solder or otherwise. The plates *v* are secured to the shaft *w* in any suitable way—as, for instance, by soldering a plate or plates *v''* to plates *v* and the shaft, as shown in Fig. 10. This method of construction results in a very strong and durable feeding mechanism at a very small cost. The plates *v* may, if desired, be formed as disks, in which case, however, the feeder should have a rotative instead of a reciprocating movement.

According to my invention the fan E and feeding mechanism F are both driven from the cart-shaft *b*. Any suitable connection may be provided for this purpose; but that which I prefer to use is illustrated in Figs. 1, 3, and 4. As shown in these figures, a driving sprocket or pulley *g'* is fixed to the shaft *b* and is belted to a sprocket *h'*, Figs. 3 and 4, which is loosely mounted on a shaft *i'*, carried in a bracket *j'* on the top board *m*. The sprocket *h'* is designed to be coupled to the shaft *i'* when it is desired to operate the distributer, any suitable means being provided for this purpose. As shown in Fig. 4, the sprocket is provided with a lateral extension *k'*, which is formed with a number of arms *l'*, which are designed to engage a spring-actuated bolt *m'*, carried upon a hub *n'*, which is fixed to the shaft *i'* by a set-screw or otherwise. The bolt *m'* is provided with an operating-handle *o'*, by means of which it may be drawn outwardly by the operator when it is desired to release the clutch. It is also provided with lugs *p'*, which pass through suitable slots formed in the side of the hub *n'* when it is desired to withdraw the bolt. By turning the bolt so that the lugs do not coincide with the slots the bolt may be held in its disengaged position.

It is desirable that the fan E should be driven at a much higher speed than the shaft *b* of the cart. For this reason I interpose a suitable system of gearing between the shaft *b* and the fan-shaft. This, as shown in Figs. 3 and 4, comprises a gear *q'*, fixed to the shaft *i'*, which meshes with a pinion *r'*, fixed upon a shaft *s'*, carried by a depending arm of the bracket *j'*. Upon the same shaft *s'* is fixed a pulley *t'*, which is belted to the fan-pulley *u'*. A guard *q''* is preferably provided to prevent the clothing of the operator from being caught by the gear *q'*.

The feeding mechanism F is preferably actuated from the shaft *i'*, as shown in Figs. 1 and 4. As therein shown, the shaft *w* of the feeding mechanism is provided at one end with a crank *v'*, which is connected by a rod *w'* with a crank *x'*, carried at one end of the shaft *i'*. The proportions are such that as the latter rotates the shaft *w* is rocked to and fro, with the result that the wipers *x* and agitators *d' c'* of the feeding device are reciprocated in the manner hereinbefore described.

The bracket *j'* is preferably provided with depending portions *y' z'*, the former of which is utilized as a supporting means for the pinion *r'* and pulley *t'*, as before stated. These depending portions are also designed to fit closely the sides of the top board *m*, thus providing a strong and rigid mounting for the bracket.

It will be observed that by the construction just described I am enabled to locate the clutch mechanism at a point which is adjacent to the position of the driver, so that he may conveniently throw the device into or out of action without changing his position. It will also be observed that the intermediate gearing (comprising the parts *h''*, *q'*, *r'*, and *t'*) is carried by a single bracket and is easily accessible to the driver without leaving his seat for oiling, &c. Should it be desired to operate the device when the cart is not in motion, the sprocket-chain connection with the axle need not be disturbed, it being nec-

essary only to fit a handle a^2 (shown in dotted lines in Figs. 3 and 4) to the shaft i', the end of which is squared for this purpose. The present construction is especially fitted for such hand operation, it being necessary for the operator to merely reverse his position upon the device, so that he faces the rear of the cart, the seat i being revoluble for this purpose. The handle a^2 will be found to be in correct position for this method of operation. When used as a stationary distributer, any appropriate form of delivery-nozzle may be employed.

I prefer to provide means for taking up the slack of the sprocket-chain and belt used in the device, such means being shown in Figs. 2 and 3. In these figures a slide b^2, carrying at one end a roll c^2, is mounted to slide transversely upon the frame of the cart, as shown, a set-nut d^2 being provided to maintain the slide in its adjusted position. By this means the sprocket-chain is held in any desired degree of tension. As a means of tightening the fan-belt I provide rolls e^2 e^2, which are mounted to rotate on screw-bolts f^2 f^2, a series of holes g^2 being provided for the reception of the bolts. By setting the latter in the appropriate holes the desired degree of tension may be obtained.

I will now describe the means by which the insecticide as it is forced from the passage o by the current of air from the fan E is accurately distributed over several successive rows of plants. The present machine is designed to operate simultaneously upon four rows; but it will be understood that by proper modification it may be adapted to operate upon any suitable number.

In the present construction I provide a distributing-nozzle G, Fig. 7, which is connected with the passage o, preferably so that it may be easily detached therefrom, said distributing-nozzle having at its outer end a series of branches h^2, i^2, j^2, and k^2. Such branches are adapted to be connected with distributing-pipes l^2, m^2, n^2, and o^2 by suitable connections p^2, as best seen in Fig. 2. I have found in practice that in the use of a distributing-nozzle, such as G, that the bulk of the material tends to pass through the middle branches i^2 j^2, a relatively small quantity passing through the outer branches. To obviate this difficulty, I provide a deflecting-plate q^2, Fig. 7, which is preferably angular in cross-section, as shown, and which deflects the powder toward the outer branches h^2 k^2. I have found in practice that if plates r^2 are arranged between the outer and inner tubes, as shown, the action of the deflector q^2 is considerably improved and that a substantially equal quantity of powder is delivered through each of the branches. The plates r^2 may be separate plates or they may be formed as parts of the branch tubes.

My invention provides means for adjusting the distance between the delivery ends of the distributing-pipes l^2 m^2 n^2 o^2 in order to accommodate the device to rows which are planted different distances apart. To this end the connections p^2 of the delivery-pipes with the distributing-nozzle, are made of flexible material, such as rubber hose, the connections embracing the ends of the tubes and the branches of the delivery-nozzle, as shown in Figs. 1 and 2. To hold the several pipes at a suitable distance above the ground, I provide a support H, (best seen in Fig. 2,) which support is arranged at the rear of the cart, as shown in Fig. 1.

In the preferred construction shown each of the distributing-pipes is connected with a sliding block s^2 in such manner that the pipe is capable of longitudinal movement with relation to the block. The device shown for this purpose consists of a strap t^2, as shown in Fig. 12. Such strap, as shown, is provided with a buckle at one end and a tongue at its opposite end and is connected to the block s^2 by a single screw u^2. The distributing-pipe is in this construction strapped loosely to the block, so as to permit longitudinal movement of the pipe with relation to the block, the pipe and strap being, in effect, swiveled to the latter, so as to permit a relative turning movement around the screw u^2. Each of the blocks s^2 is adapted to slide along the support H, being preferably held against displacement by a guard v^2, secured to the outer side of the support. Each of the blocks is limited in its movement by a bolt w^2, provided with a thumb-nut or like device, which bolt passes through a slot x^2, formed in the block, as best seen in Fig. 2. To provide a wide range of movement for each of the distributing-pipes, the strap t^2 is connected to the block at one end thereof, and the block is adapted to swing around the bolt w^2 as a pivot, as illustrated in the lower part of Fig. 2, the guard v^2 being cut away at the proper point to permit this turning movement. When the block is turned end for end, it may be adjusted so that the pipe is a considerable distance beyond the other side of the pin. If an intermediate adjustment is desired, the block may be fixed in its half-turned position, as shown in dotted lines in Fig. 2.

In order to adjust the height of the delivery-pipes above the ground, I hinge the support H to the cart-body and provide a lever y^2, which is fixed at one end to the support and formed at its other end with a handle a^3 adjacent to the seat i and by means of which the driver can raise or lower the series of pipes, as desired. To provide a means for holding the pipes in their adjusted positions, I mount upon the cart-body a curved plate b^3, provided with a series of apertures adapted to receive a pin c^3, carried by the lever y^2. By making the lever y^2 of slightly-springy

material it may be easily sprung sidewise sufficiently to remove the pin c^3 into or out of any of such apertures.

The delivery ends of the distributing-pipes should pass over the successive rows at about the middle portion of each row and should be capable of delivering the insecticide evenly to both sides of the row. To spread the powder, each of the pipes is provided at its end with a delivery-nozzle d^3, Figs. 8 and 9, having a deflector e^3, such deflector comprising an angular partition provided with an aperture f^3. I have found in practice that if the deflector e^3 is arranged at the middle of the nozzle d^3 the latter will not distribute the insecticide evenly if such nozzle does not extend at right angles to the delivery-pipe. When used as shown in Fig. 2, with the nozzle extending at right angles to the row to be dusted, the larger proportion of the insecticide is delivered to the outer half of the row. This is apparently because of the fact that the outer portion of the nozzle is more nearly in line with the distributing-pipe and the powder finds its path of least resistance through such portion. I find that by properly restricting the effective passage through such portion of the nozzle this defect can be completely remedied and an even distribution of the insecticide obtained. For this purpose the deflector e^3 may be displaced slightly to one side of the nozzle, as shown in Figs. 8 and 9, or other means may be provided to attain this end. The delivery-nozzles may be detachably secured to the distributing-pipes by short lengths of hose, as shown at d^4 in Fig. 1. By this means a strong connection is attained which permits easy removal of the nozzles when very low plants are to be dusted and which permits the nozzle to yield upon striking an obstruction, thus avoiding breakage.

I preferably provide a means for regulating the quantity of insecticide delivered by the machine from a point within easy reach of the operator, and in Figs. 1, 2, and 5 I have shown a means for effecting this result. Such means comprises a curved plate g^3, Fig. 5, fitting against the under side of the curved bottom of the reservoir and provided with a series of holes adapted to register with those of the bottom, as shown. The plate g^3 is adapted to be moved by a link h^3, connected at one end to an arm i^3, fixed to the lower end of a rod j^3, Fig. 1, which leads from the distributing device to a point just above the top board m. The upper end of the rod j^3 has fixed to it an arm m^3, which, as shown in Fig. 13, is provided with an aperture n^3, preferably of the same size as those in the curved plate g^3 at the bottom of the reservoir. An indicator-plate o^3, mounted above the arm m^3, is provided with a similar aperture, which is preferably of the same size as the apertures y, formed in the bottom of the reservoir. By this construction as the arm m^3 is moved across the plate o^3 the curved plate g^3 is moved along the bottom of the reservoir to the same extent, and the effective opening of the two more or less alined apertures of the plate o^3 and arm m^3 corresponds to the effective opening for the passage of the insecticide out of the reservoir. By this means the operator has always before him a visual indication of the rate of feed. To provide a means for accurately adjusting the arm m^3, and hence the rate of feed, I employ a thumb-nut p^3, which screws into the plate o^3 and engages the arm, as shown in Fig. 13.

Any suitable bearings may be provided for the rod j^3; but I prefer to employ a tube q^3, as best seen in Fig. 1, for this purpose, such tube being held in position in any suitable way—as, for instance, by soldering it to the wall of the reservoir or otherwise.

It will be seen that by my invention I provide an extremely efficient device for applying insecticide to several rows of plants simultaneously and that the insecticide is evenly distributed over all portions of the row. It will also be seen that the quantity of powder distributed is at all times under the immediate control of the operator without requiring the latter to leave his seat or stop the machine. It will also be observed that the operator without leaving his seat may cause the machine to feed or not at will and may alter the position of the distributing-nozzles to suit the varying heights of rows and that the machine may be adjusted to rows differently spaced apart. The gearing is always immediately accessible to the operator, and the machine is always available for operation by hand. The device is of cheap and simple construction and not liable to get out of order.

Various changes may be made in the construction shown without departing from the invention. In Fig. 14 I have shown a modified construction of transmission-gearing. In this construction the sprocket-wheel g' on the shaft b of the cart is connected to a sprocket-wheel r^3 upon the agitator-shaft w. In this construction the shaft w carries a large gear s^3, which meshes with a pinion t^3, carried upon a shaft u^3, upon which is mounted the driving-pulley v^3, which is belted to the fan. In this construction I provide a bracket w^3, which serves as a bearing for the shafts w and u^3, such bracket being bolted or otherwise secured to the baseboard h, as shown in this figure. This construction is somewhat more compact than that shown in the other figures, but necessitates the use of a long lever to actuate the clutch, if one is used. Other modifications may be made without departing from the invention.

I claim as my invention the following-defined novel features substantially as hereinbefore specified, namely:

1. In a powder-distributer, the combina-

tion of a vehicle, an insecticide-distributing mechanism mounted thereon, means for actuating said mechanism while the vehicle is in motion, and a plurality of inflexible distributing-pipes arranged to simultaneously deliver the insecticide to a succession of rows, said pipes having flexible connections with said mechanism, whereby they may be adjusted laterally to accommodate the device to differently-spaced rows.

2. In a powder-distributer, the combination of a vehicle, an insecticide-distributing mechanism mounted thereon, means for actuating said mechanism while the vehicle is in motion, a plurality of inflexible distributing-pipes arranged to simultaneously deliver the insecticide to a succession of rows, said pipes having flexible connections with said mechanism, whereby they may be adjusted laterally to accommodate the device to differently-spaced rows, and means for holding said pipes in their adjusted positions.

3. In a powder-distributer, the combination of a vehicle, an insecticide-distributing mechanism mounted thereon, means for actuating said mechanism while the vehicle is in motion, a plurality of inflexible distributing-pipes arranged to simultaneously deliver the insecticide to a succession of rows, said pipes having flexible connections with said mechanism, whereby they may be adjusted laterally to accommodate the device to differently-spaced rows, a support upon which said pipes rest, and along which they are adjustable, and means for holding said pipes in different positions thereon.

4. In a powder-distributer, the combination of a vehicle, an insecticide-distributing mechanism mounted thereon, means for actuating said mechanism while the vehicle is in motion, a plurality of inflexible distributing-pipes arranged to simultaneously deliver the insecticide to a succession of rows, said pipes having flexible connections with said mechanism, whereby they may be adjusted laterally to accommodate the device to differently-spaced rows, a support, and slides connected with said pipes, and adapted to be moved along said support to adjust said pipes.

5. In an insecticide-distributer, a vehicle, a powder-forcing device thereon, a distributing-pipe connected to such device and having its end extended therefrom, and a delivery-nozzle connected to such end by a flexible connection, whereby said nozzle may yield upon striking an obstruction.

6. In a powder-distributer, a distributing-pipe, a member connected to said pipe, a support for said member upon which the latter is adapted to slide transversely, and a pin-and-slot connection between said member and said support, whereby said pipe may be adjusted transversely to any position between its limits of movement.

7. In a powder-distributer, a distributing-pipe, a member connected to said pipe, a support for said member upon which the latter is adapted to slide transversely, and a pin-and-slot connection between said member and said support, said parts being formed to permit said member to be turned about said pin so that it may be reversely adjusted.

8. In a powder-distributer, an inflexible distributing-pipe, a member for adjusting said pipe, and a connection between said member and pipe permitting the latter to slide automatically relatively to the former as said member is adjusted.

9. In a powder-distributer, an inflexible distributing-pipe, a member for adjusting said pipe, and a connection between said member and pipe permitting the latter to slide relatively to the former as said member is adjusted, said connection comprising a strap encircling said pipe, and attached to said member in such manner as to permit a relative turning movement of said strap and member.

10. In a powder-distributer, the combination of a distributing mechanism adapted to be moved to deliver powder to a succession of rows simultaneously, a distributing-nozzle connected to said mechanism, a series of inflexible distributing-pipes, and flexible connections between said pipes and nozzle whereby said pipes may be adjusted to accommodate the device to differently-spaced rows.

11. In a powder-distributer, a distributing-nozzle having a plurality of branches, and means for equalizing the quantities of powder forced through said branches.

12. In a powder-distributer, a distributing-nozzle having a plurality of branches, and a deflector for deflecting powder tending to pass into one of said branches into another of said branches.

13. In a powder-distributer, a distributing-nozzle having a plurality of branches and a deflector q^2 arranged in said nozzle and adapted to modify the proportion of powder passing through said branches.

14. In a powder-distributer, a distributing-nozzle having a plurality of branches and a deflector r^2, arranged between two of said branches.

15. In a powder-distributer, a distributing-nozzle G having two inner branches i^2 j^2, and two outer branches h^2 and k^2, a deflector q^2 in advance of said branches, and deflectors r^2 between the branches h^2 and i^2 and the branches j^2 and k^2, each of said deflectors r^2 being arranged between an outer branch and an adjacent inner branch, and said deflectors being adapted to equalize the quantities passed through said branches.

16. In a powder-distributer, a nozzle having a plurality of discharge-openings, and means for restricting one of said openings.

17. In a powder-distributer, a nozzle having a deflector arranged at one side thereof whereby to modify the proportion of powder passing through such side.

18. In a powder-distributer, a delivery-nozzle, a passage for powder angularly connected to said nozzle, whereby the latter tends to deliver a greater quantity of powder from one side thereof, and means within said nozzle adapted to equalize the delivery therefrom.

19. In a powder-distributer, a delivery-nozzle d^3 having a deflector e^3 arranged therein, said deflector being displaced toward one side of said nozzle.

20. In a powder-distributer, a vehicle having a seat or the like, a distributing mechanism carried by said vehicle, a distributing-pipe connected with said mechanism, a support for carrying said pipe hinged to the rear of said vehicle, and an elongated lever fixed at its rear end to said support and extended forwardly to a point adjacent to said seat, whereby said support may be moved from said seat directly by said lever without intermediate connections.

21. In a powder-distributer, a vehicle having a seat or the like, a distributing mechanism carried by said vehicle, a distributing-pipe connected with said mechanism, a support carrying said pipe hinged to the rear of said vehicle, and an elongated lever fixed at its rear end to said support and extended forwardly to a point adjacent to said seat, whereby said support may be moved from said seat directly by said lever without intermediate connections, and means for holding said lever in varying positions.

22. In a powder-distributer, a vehicle having a seat or the like, a distributing mechanism carried by said vehicle, a distributing-pipe connected with said mechanism, a support for carrying said pipe hinged to the rear of said vehicle, and an elongated lever fixed at its rear end to said support and extended forwardly to a point adjacent to said seat, whereby said support may be moved from said seat directly by said lever without intermediate connections, and means for holding said lever in varying positions, said lever being adapted to be sprung into and out of engagement with said holding means.

23. In a powder-distributer, a vehicle having a seat or the like, a distributing mechanism carried by said vehicle, a distributing-pipe connected with said mechanism, a support for carrying said pipe hinged to the rear of said vehicle, and an elongated lever fixed at its rear end to said support and extended forwardly to a point adjacent to said seat, whereby said support may be moved from said seat directly by said lever without intermediate connections, and means for holding said lever in varying positions comprising a plate having a series of apertures, said lever having a pin adapted to enter said apertures and being adapted to spring sidewise to remove said pin therefrom.

24. In a powder-distributer, a vehicle having a seat, a powder-forcing device carried thereby, said device having a reservoir the top of which is adjacent to said seat, means for driving said device from the vehicle including a series of gears arranged at the top of said reservoir at a point adjacent to said seat, and a clutch connected to one of said gears whereby said clutch may be directly operated from said seat without an intermediate connection.

25. In a powder-distributer, a vehicle having a seat, a powder-forcing device carried thereby, said device having a reservoir the top of which is adjacent to said seat, a sprocket connected with the vehicle-axle, a driving-shaft at the top of said reservoir, a loose wheel on said shaft belted to said sprocket, and means for clutching said wheel to said shaft, said means being operable directly from said seat without an intermediate connection.

26. In a powder-distributer, a vehicle having a seat, a powder-forcing device carried thereby and having a driving-shaft adjacent to said seat, a loose wheel on said shaft, means for rotating said wheel, and a clutch for clutching said wheel to said shaft, said shaft being adapted for connection with a crank whereby said shaft may be turned independently of said rotating means when said loose wheel is unclutched from said shaft.

27. In a powder-distributer, a shaft, a gear on said shaft, a second shaft, a pinion and a driving-wheel thereon, a bracket having bearings for both said shafts, and having depending portions and a support for said bracket confined between such portions.

28. In a powder-distributer, a reservoir having a feed-passage, means at the lower part of said reservoir for regulating the passage of powder therethrough, a rotatable rod having its lower end connected with said means, and being extended vertically to a point near the top of said reservoir, and an arm at the upper end of said rod by which the latter may be rotated to actuate said regulating means.

29. In a powder-distributer, a reservoir having a feed-passage, means at the lower part of said reservoir for regulating the passage of powder therethrough, a rotatable rod having its lower end connected with said means, and being extended vertically to a point near the top of said reservoir, and an arm at the upper end of said rod by which the latter may be rotated to actuate said regulating means, and an indicating device coöperating with said last-named arm for determining the effective opening of the feed-passage.

30. In a powder-distributer, a reservoir

having a feed-passage, a plate for regulating the feed therethrough having a corresponding opening, and an indicating mechanism comprising two parts capable of relative movement, said parts having indicating devices comprising holes corresponding to said feed-passage and said opening respectively.

31. In a powder-distributer having a seat, a reservoir, a feeding mechanism therefor and a regulating device, including a vertically-arranged rod, a tube forming a bearing for said rod, and an operating-arm connected to the upper end of said rod.

32. In a powder-distributer, a feeding mechanism having a pair of plates, and a wiper carried thereby, said wiper comprising a strip of flexible material and a metal plate bent to clamp said strip on both sides thereof.

33. In a powder-distributer, a feeding mechanism having a pair of plates and a pair of oppositely-arranged wire members, each of which comprises a single piece of wire having a middle portion contacting with one of said plates, and legs passing through both of said plates.

34. In a powder-distributer, a feeding mechanism having a pair of plates and a pair of oppositely-arranged wire members, each of which comprises a single piece of wire having a middle portion contacting with one of said plates, and legs passing through both of said plates, the ends of said legs being bent angularly thereto to form agitating-arms.

35. In a powder-distributer, a vehicle, a powder-forcing device mounted thereon, said device being adapted to be driven from said vehicle or by hand, and a seat for the operator normally facing forward, and adapted to be reversed when it is desired to drive said device by hand.

36. In a powder-distributer, a vehicle, a powder-forcing device mounted thereon, means for driving said device from said vehicle, and means for driving it by hand.

37. In a powder-distributer, a vehicle, a powder-forcing device mounted thereon, means for driving said device from said vehicle, a seat for the operator, and means for driving said device adapted to be operated by hand, said means being located adjacent to said seat, whereby the operator may operate the same while occupying said seat.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CLINTON H. LEGGETT.

Witnesses:
EUGENE V. MYERS,
FRED WHITE.