

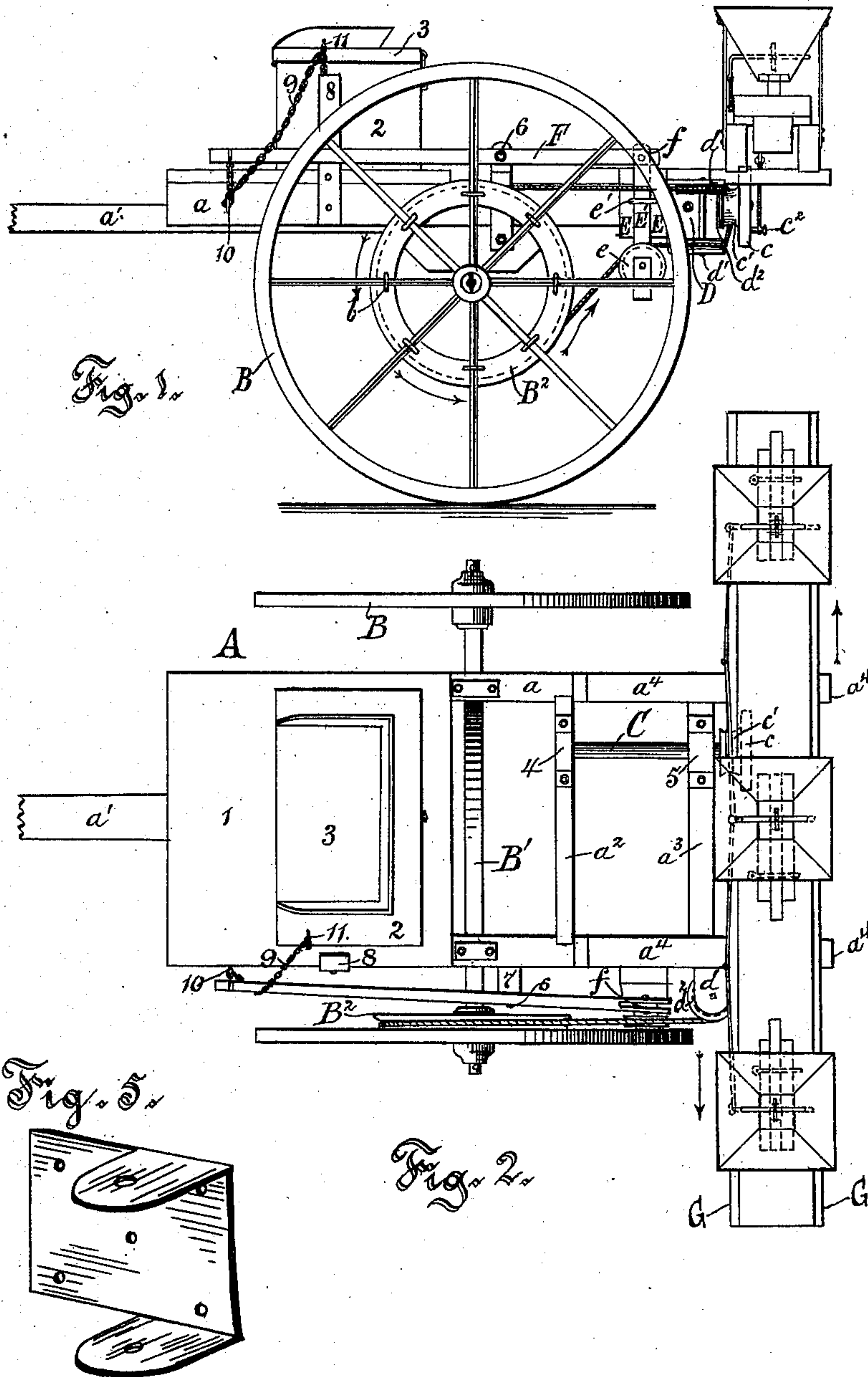
(No Model.)

2 Sheets—Sheet 1.

C. B. GLOVER.
INSECT POWDER DUSTER.

No. 401,941.

Patented Apr. 23, 1889.



Witnesses:
Edw. C. Clement
Jas. H. Jacobson

Charles B. Glover
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Lewis Abraham
Attorney.

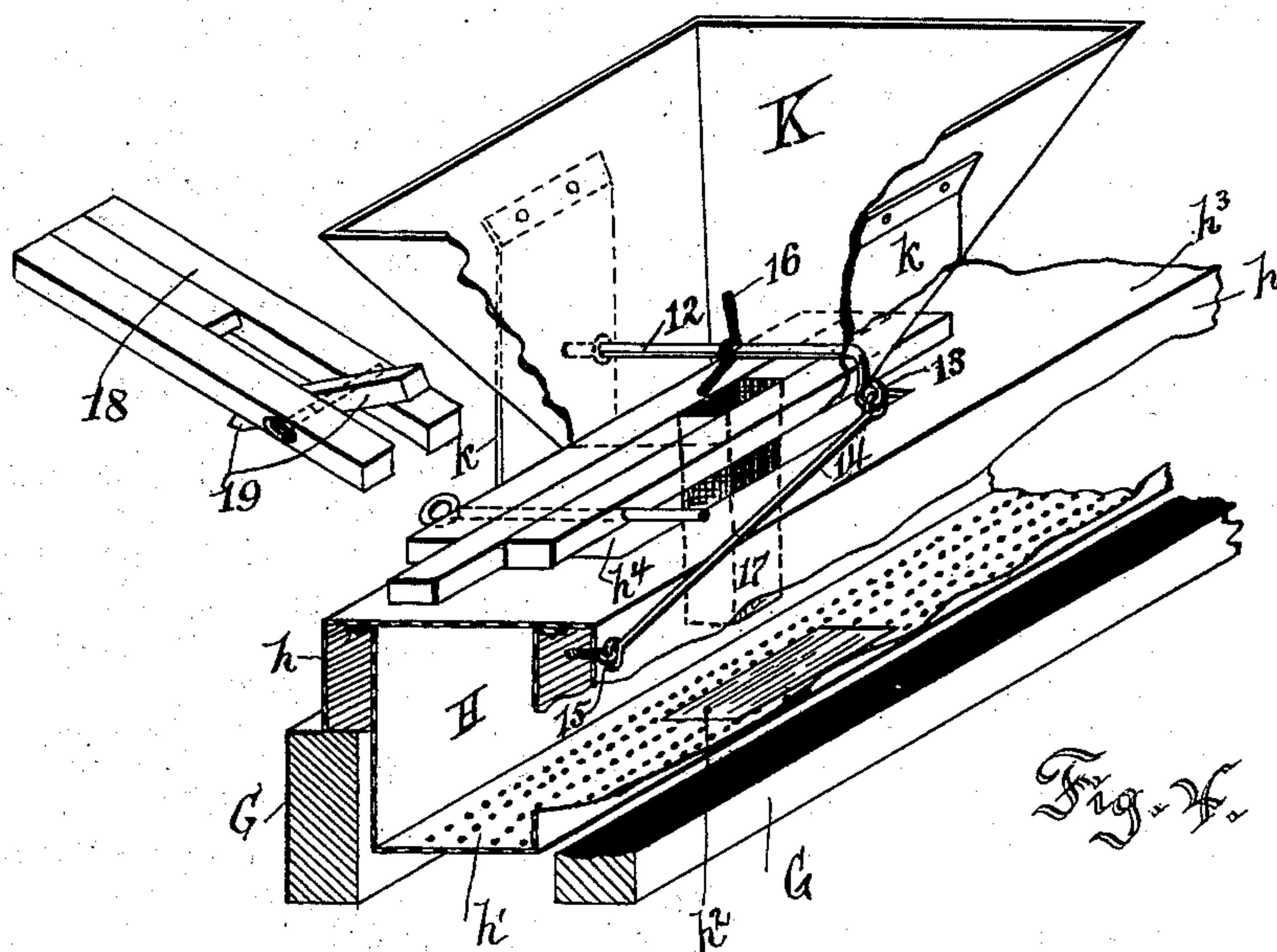
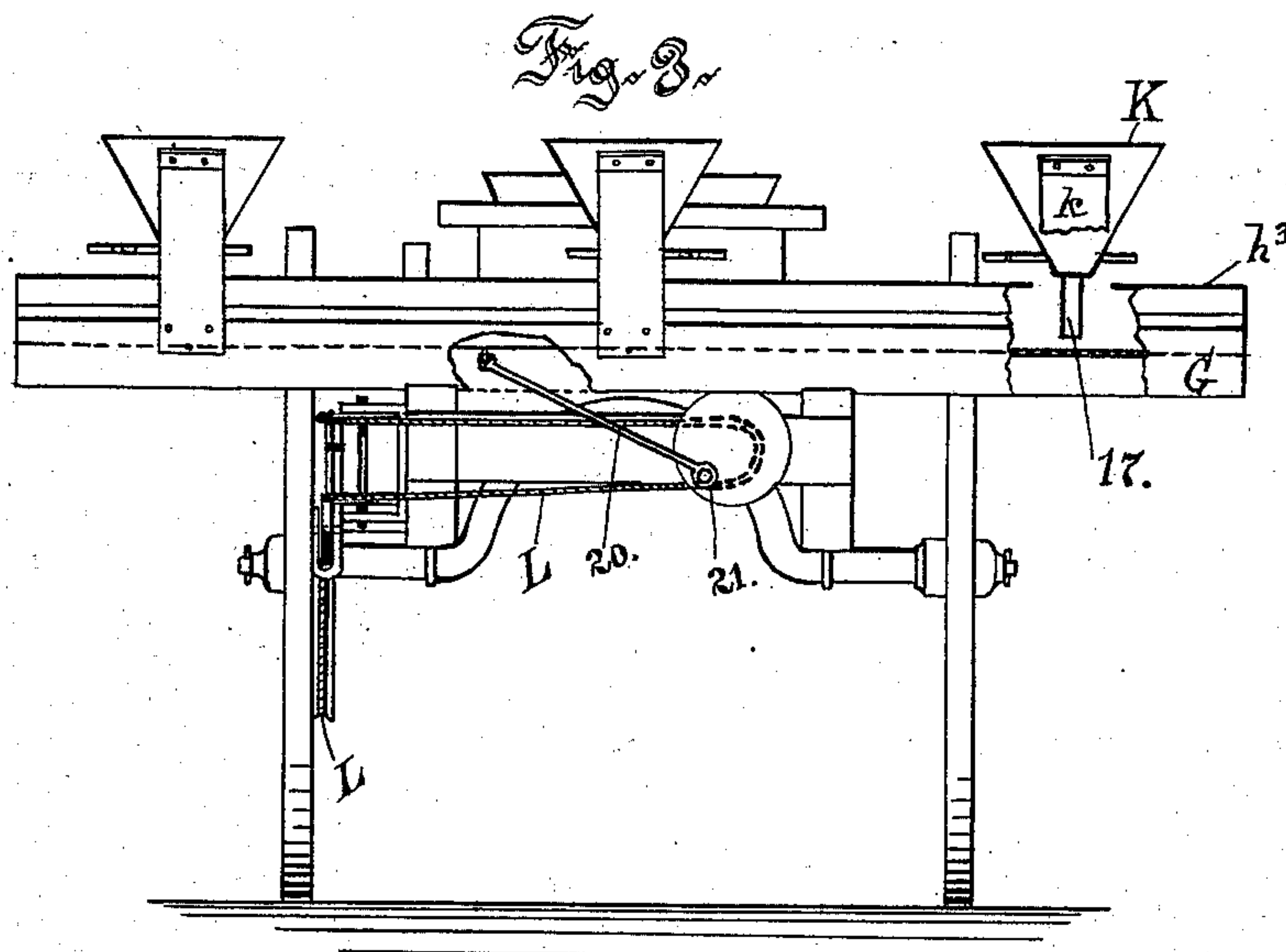
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UNITED STATES PATENT OFFICE.

CHARLES BAZEL GLOVER, OF HOUSTON, TEXAS, ASSIGNOR OF ONE-HALF TO
WILLIAM OWEN ELLIS, OF SAME PLACE.

INSECT-POWDER DUSTER.

SPECIFICATION forming part of Letters Patent No. 401,941, dated April 23, 1889.

Application filed June 25, 1888. Serial No. 278,197. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BAZEL GLOVER, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented a new and useful Improvement in Insect-Exterminators, of which the following is a specification.

My invention relates to machines for distributing poisonous powder over fields.

In carrying out my object I provide a truck mounted upon wheels, to the rear end of which is adjusted a sifter that, as the machine is progressing, will have lateral reciprocating motion imparted thereto and eject powder through an attached meshed screen.

Although the general description of my invention is confined to its employment as an insect-exterminator, I do not desire to limit myself to its use to such purpose, as it is equally adaptable for spreading fertilizing-powders and for distribution of seed.

My invention consists of the mechanical devices hereinafter fully described, and in combinations thereof, as illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, wherein like letters of reference point out similar parts on each figure, Figure 1 is a side elevation of my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a rear view of the machine, partly broken away. Fig. 4 is a detail view, on an enlarged scale, of one of the hoppers, part of the movable screen, and their attachments. Fig. 5 is a detail view of the pulley-bearing plate attached to the operative side of the truck.

In the drawings, A represents the truck; a , its side beams; a' , the tongue for attachment of whiffletree, or any suitable draft device.

1 represents a platform forward of the truck, upon which is fastened a box, 2, for containing a supply of the material to be distributed. Said box has a hinged cover, 3, which serves as a driver's seat.

B B are truck-wheels journaled at opposite sides of the machine upon an arched axle, B' . Upon the inner side of one wheel B is a pulley, B^2 , having a grooved periphery, for a purpose presently set forth. Said pulley is of smaller

circumference than the wheel to which it is attached, and is connected to said wheel in any suitable manner, so as to rotate therewith.

In the drawings I show staples b strapping the spokes of the wheel B, the points of said staples being driven into the pulley B^2 . Rearward of the axle and reaching across the truck from each side beam, a , is a transverse bar, a^2 , provided with a journal-box, 4, and a^3 is the back cross-beam of the truck-frame, provided with a journal-box, 5, in alignment with the journal-box on the bar a^2 . Mounted within the journals of the beams a^2 a^3 and extending therefrom lengthwise of the truck is a short shaft, C, which carries at its rear end a rotatable disk-wheel, c , having on its forward side a hub, c' , that serves as a pulley. Upon the rear face of said disk-wheel c and eccentrically attached thereto is an outwardly-extending short stud or pin, c^2 . The side beams of the frame of the truck carry short beams a^4 rearwardly extending therefrom, which support the distributing devices, as hereinafter pointed out.

D is a metal plate fastened at one side outwardly to the rear end of the truck-frame. It has upper and lower overturned flanges d d , each having an orifice to receive the ends of the vertical rod or axle d' , upon which are loosely mounted two small pulleys, d^2 d^3 .

E is a block forward of the plate D, fastened to the extension-beam a^4 at the operative side of the machine. Upon said block, and movable thereupon vertically, is a bar, E' , hooked over at its lower end, said hooked end carrying a small pulley, e , journaled to revolve within said hooked end, as plainly seen in the drawings. The bar E' is movable up and down upon the block E by reason of it being loosely connected thereto by a staple, e' . Said bar at its upper end is pivotally connected to the rear end of a brake-lever, F, which is forked at f to receive said bar E' . The lever is pivoted at 6 to a short upright, 7, firmly fastened to the side of the truck. Forward of said upright 7 and attached to the same beam, a , is a short guide-post, 8, which, as the lever is moved on its pivot, prevents it being drawn laterally from its true line. The lever is adapted to be operated by

the driver, and for this purpose has fastened thereto a chain or cord, 9. Said chain is carried through a sheave or staple, 10, and is from thence led up to the driver's seat, which is provided with a hook, as 11, a cleat, or any suitable fastening device. The function of the pivoted lever is to move vertically the bar E' , and with it the pulley journaled within its hooked end, and to maintain said pulley and its connections in position, for it is only when said pulley is at a proper elevation that the working parts of the machine can be brought into operation. Secured at the top of the projections a^4 , and at right angles thereto, at the rear of the machine, at a suitable distance apart, are two transverse beams, G, the intermediate space forming an open way or channel for passage of the sifter. Said sifter consists of an elongated box, H, having on each side the full length thereof outwardly-extending cleats h , which, respectively, rest upon a beam, G, which thereby forms a track upon which said cleats h traverse laterally to and fro when motion is imparted to the machine. The sifter-box H is preferably composed of metal, having closed sides and a foraminous bottom, h' . At suitable distances upon said bottom are imperforated panels h^2 , which panels, when brought into coincidence with the open end of the hopper-spouts, serve as closures and stop direct outflow of material fed therefrom. The sifter H has a top or covering, h^3 , having ports or openings h^4 , within each of which extends an eduction-duct or hopper-spout, 17, through which flows into the box H the material to be spread over the field.

K represents stationary hoppers supported in position by straps k , fastened at one end to said hoppers and at the opposite end to a beam, G. Across the inside of each of said hoppers, and resting within apertures at opposite sides of the mouth thereof, is a rod, 12, terminating outwardly on one side in a hook, 13. Each of said hooks is in turn connected to a wire, 14, lengthwise of the sifter-box and intermediately of its length secured to a pin or staple, as 15, upon the forward cleat h . About the middle of the length of each rod 12 is twisted a short length of metal wire or band having free lengths thereof extending radially from said rod to form stirring-arms 16. It is manifest that as the box H is caused to move transversely within the beams G the effect will be to turn the rods 12, with their attached arms 16, and thereby to agitate the contents of the respective hoppers and keep the same from being agglomerated. Each hopper K has an eduction-spout, 17, extending vertically therefrom down to and within the open box H, but not the full depth thereof. Each hopper K has its spout 17 provided with a trap-cover (see detail to Fig. 4) adjusted to slide laterally through openings on opposite sides near the lower ends of said hoppers and above each spout, whereby each of said spouts can be independently

opened or closed. The trap-covers consist of a flat bifurcated strip, 18, having pivoted between the openings of the fork a tongue, 19, which can be swung on its pivot, thus causing its end over the spout to drop obliquely therein and uncover said spout. Each of the hopper-spouts is supplied with an independent sliding trap-cover. It will be manifest that when said cover is wholly withdrawn from the top of the respective spouts, the whole contents of the hopper will be free to descend through its special spout into and within the sifter-box. It may be, however, desired while the hopper is closed to discharge from time to time a limited supply from one or more of said hoppers, and then to immediately arrest the outflow. For this purpose said covers are provided with a pivoted tongue or trap, 19, which can be temporarily tipped by hand, and when released will recover its horizontal position between the bifurcated strip 18. To the under side of the bottom of the sifter-box H, and fastened by a staple or pin thereon, is a short pitman-rod, 20, its opposite end having an eye, 21, which takes onto the stud c^2 of the disk-wheel c . As before set forth, said pin is located eccentric to the center of said disk. It will be readily understood that as said disk is caused to rotate it will carry said rod with it, and thereby impart reciprocal transverse motion to the sifter H.

L is an endless band. It surrounds the pulley B^2 . From thence the lower length of said band falls into the peripheral groove of the pulley e , journaled between the hooked end of the vertical bar E' . The band then takes into the grooved peripheries of the pulleys d^2 d^2 , and is then led rearward of the machine, and is finally looped over the hub c' of the disk c .

From the foregoing description, in connection with the drawings, of the machine its nature and object and its operation will be readily understood by all familiar with the art to which my invention is allied. Its operation may be thus described:

The various members of the device being mounted on the truck, as fully illustrated in Figs. 1, 2, and 3, the driver is seated on the box upon the platform. He then depresses the lever F, thereby drawing up the bar E' , and with it the pulley within its hooked end. This has the effect of drawing taut the band L. When the machine is drawn forwardly, the pulley B^2 will rotate with the wheel B, to which it is attached, carrying the band L, which will turn the shaft C, and with it its disk c . This will operate the pitman-rod 20, and impart lateral reciprocal motion to the sifter-box H. The material to be spread over the field is, previous to starting, emptied into the respective hoppers, and will descend into the sifter-box through an eduction-spout when the tongue 19 of the slide 18 is tilted. As the box H moves to and fro laterally, it will carry with it the wire 14, which in turn will oscillate the respective wires 12, and the arms 16

thereon will stir up and agitate the contents of each hopper, thus preventing said contents passing downwardly in lumps or clods. If the slide 18 is withdrawn outwardly from each hopper, it is manifest that the contents of all the hoppers will uninterruptedly flow into the box H, and be gradually sifted therefrom through its foraminous bottom; but one or more of the slides 18 may be kept in closed position, so as to prevent any outflow from such closed hopper. The object of having each of the slides to act independently is as follows: For some purposes it may be requisite to spread only a certain character of material onto the field. In such case only the hopper or hoppers containing that special substance will have the slide or slides withdrawn. Another of the hoppers may be fed with a different material, which it may be desired only for some purposes to intermingle with the outflow from one or the other hoppers. It is manifest that by opening or closing individual hoppers the eduction of the separate contents can be controlled, and a special material or an intermingled compound be fed into the box H, to be sifted there-through, as occasion may require, at such times and in such quantities as may be necessary for the field under treatment. I consider this an important feature of the invention, very useful in spreading some classes of fertilizers, certain qualities of poisonous compounds, and in sowing special or intermingled seed.

Having thus fully described my invention, what I claim; and desire to secure by Letters Patent, is—

1. A device for spreading insect-exterminating powder or distributing other material over a field, mounted on wheels, having on rearward extensions of the truck-frame a transverse sifting-box provided with a foraminous bottom, said box having side cleats resting upon beams, extending crosswise of the truck, and adapted to move to and fro between said beams, in combination with hoppers having eduction-spouts passing through ports in the top of the box into and within the sifter-box, substantially as described.

2. In a device for spreading material over a field, mounted upon a propellable truck, to one traction-wheel of which is attached a pulley, B², adapted to turn with said wheel, in combination with revoluble shaft C, journaled between beams a² a³, crossing the truck-frame, said shaft having at its rear end a disk-wheel, c, provided with an extension-stud, c², said wheel B² and shaft C geared to rotate at right angles to each other by operative band L, which band intermediately of said shaft and wheel takes onto the grooved peripheries of guide-pulleys d² d³, journaled between upper and lower flanges d d of a

metal plate, D, connected to the rear end of one side of the truck-frame, substantially as described.

3. In a device for spreading material over a field, having at one of its sides a lever, F, pivoted about midway of its length at 6 to a post uprising from the side of the truck, the forward end of said lever taking onto a fastening device, 10, and having pivoted to its rear end a vertical bar, E', within the lower hooked end of which is journaled a pulley, e, all in combination with the gearing of the machine, said gear adapted to be tightened by depression of said lever and released from tension by elevation thereof, substantially as described.

4. In a device for spreading material over a field, the sifter-box H, adjusted to reciprocatingly move transversely across the rear of a propellable truck-frame, said frame having hoppers K, having eduction-spouts extending through port-holes at the top of said box, and having within the mouth of each hopper oscillating stirrer-arms radiating from rods 12, extending within and across each hopper, one end of each rod 12 reaching through one side of each hopper and having a terminal hook, 13, in combination with wire 14, one end of which takes into said hook 13 and the opposite end firmly adjusted to a side, h, of the sifter-box H, whereby, as said box has motion imparted thereto, the stirrer-arms 16 will agitate the contents of each hopper, as and for the purpose intended, substantially as described.

5. In a device for spreading material over a field, having rearwardly of a propellable truck a sifter, H, movable transversely on said truck, provided with feed-hoppers K, the trap-cover shown and described, consisting of a bifurcated strip, 18, having pivoted within its forked opening a tongue, 19, in combination with said hoppers K and sifter H, as and for the purpose intended, substantially as described.

6. In a machine for distributing material over a field, provided with a sifter-box, H, the rotatable disk c, having a forward hub, c', extended upon the rear end of a rotatable shaft, C, in combination with pitman-rod 20, one end of which is pivoted to a stud, c², extending outwardly from the disk c and eccentric from the center of said disk, the opposite end of said pitman being attached to the bottom of the sifter-box H, whereby, when the shaft C is rotated, said box will be reciprocatingly moved transversely across the truck-frame, substantially as described.

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