J. SENSENIG.

FERTILIZER DISTRIBUTER.

No. 183,869. Patented Oct. 31, 1876.

Fig. 2

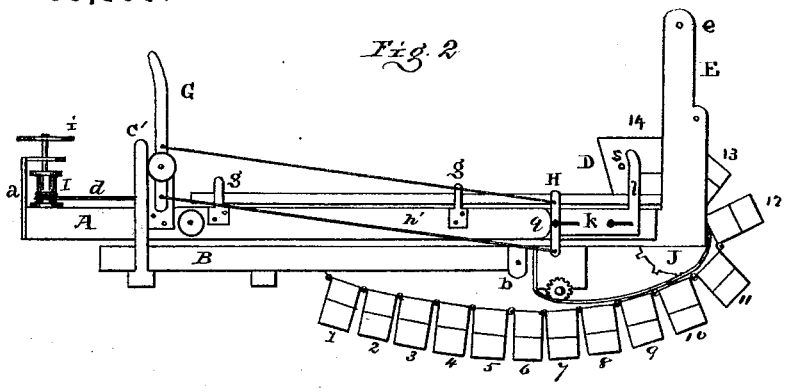


Fig. 1

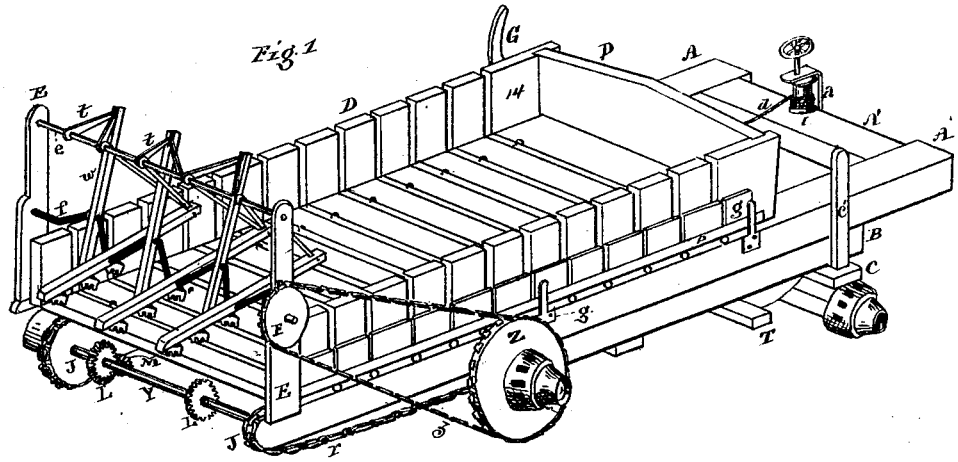


Fig. 4.

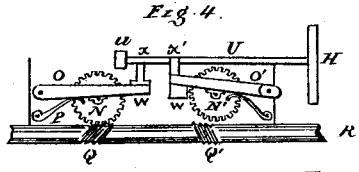


Fig. 3.

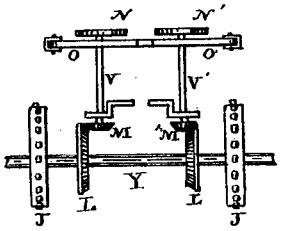
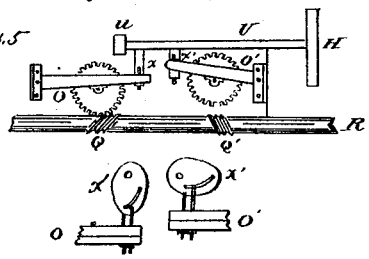


Fig. 5



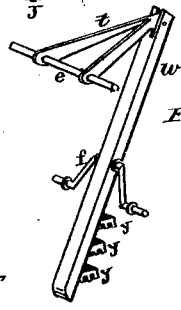


Fig. 6

Witnesses-

W. B. Miley

Jacob Stauffer

-Inventor-

Joseph Sensenig

UNITED STATES PATENT OFFICE.

JOSEPH SENSENIG, OF EARL TOWNSHIP, LANCASTER COUNTY, PA.

IMPROVEMENT IN FERTILIZER-DISTRIBUTERS.

Specification forming part of Letters Patent No. **183,869**, dated October 31, 1876; application filed April 1, 1876.

To all whom it may concern:

Be it known that I, JOSEPH SENSENIG, of Earl township, near Reidenbach's Store P. O., Lancaster county, State of Pennsylvania, have invented certain Improvements in Fertilizer-Distributers, of which the following is a specification:

The object of this invention is to simplify the arrangement and operation of the machine patented June 9, 1874, No. 151,720, and to operate, by a single lever, two separate cog-wheels differing in size, to put either the one or the other into gear with a worm or screw-gear on the axle of the vehicle, in order that more or less of the fertilizing material may be distributed at pleasure on any desired portion of the soil, or to arrest the action of both, according to the position of the lever, while the vehicle keeps its regular motion over the ground.

The accompanying drawing illustrates the construction. A brief explanation of the letters of reference marked thereon will enable those skilled in the art to make and understand the operation in use.

Figure 1 is a perspective view of the rear and one side, with the parts in place. Fig. 2 is an elevation of the opposite side of the same, with the segmental bed drawn back and under. Figs. 3, 4, 5, and 6 are detached illustrations, separately shown.

A represents the side beams of an upper frame, joined at three places by cross-pieces A′, to answer also for bearings or their support of gear. This frame is supported by the axle R. Said frame extends beyond the axle, and supports the traveling bed D on its upper surface. On each side there is a guide-bar, *p*, affixed to standards *q*, as shown; and supports also the operating gear and their bearings. There is also a frame, B, to which a wagon-bolster, *c c′*, is attached, and to which the front wheels of an ordinary farm-wagon may be connected for use. The uprights *c′* of the bolster form guides to the upper frame A, when elevated in front by means of a false bolster, or rack and lever, if preferable, the frames A and B being hinged together by a pivot-bolt at *b* in side plates.

The traveling bed (as in my former patent) is made up of fourteen segments. Thirteen are of equal width. Between each pair there is a friction-roller resting on the top of the frame A on each side. The rag or chain pulleys J has spurs at intervals to receive the links or segments between the intermediate faces in the ordinary endless-chain action, to carry the bed back under the spreaders and partially under the vehicle, for which purpose side guides *r* are provided to avoid contact with the axle R of the vehicle and extending the chains around a pulley, *k*, in front, attached to the inner side of the frame A or on a shaft. I show a bearing, *a*, centrally in front on the cross-piece A′, and a windlass, I, and turn-handle *i*, with a cord, *d*, attached to the lower part of the front section 14 of the bed, by which the bed is again drawn forward in position for being loaded with a fresh supply.

The duplicate operation of the gear beneath the traveling bed, and supported by suitable bearings upon or under the cross-pieces A″ A‴ of the frame A may be thus described: The rear shaft Y that supports the rag or chain wheels J (to operate the segmental bed) has a right-and-left bevel cog-wheel, L L′. These receive motion from a bevel-pinion, M M′, respectively. These latter have each their distinct shaft V V′ at right angles to the shaft Y. On the inner end of these shafts V there is a cog-wheel, N N′, the one larger than the other, each held in its own vibrating bearing O O′, resting upon central keepers or loops W W′. When in gear, or held by slotted eccentrics X X′, these bearings O may have springs beneath them to raise them out of gear. In order to put the larger or smaller cog-wheel in gear with the action of the axle R of the vehicle, there are two worm-gears, Q Q′, right and left, centrally upon the axle, so as to come directly under the bearings in O. There is a shaft, U, with an end bearing in a plate or bracket, *u*, extending through the frame A to the outside, where it connects centrally with a two-armed lever, H. This shaft U has, over the separate bearings O, a lug or eccentric, *x*, so placed that the turning of the shaft to the right beyond the center will cause one lug to act upon the top of the vibrating lever *o*, and depress it so as to put the cog-wheel connected with it into gear with the screw on the axle, while the other bearing is raised or released, and

raises the wheel connected with it out of gear by the spring or slotted eccentric action. To actuate this shaft by its connection with the two-armed lever H, each arm has a wire attached equidistant from the central fulcrum or shaft V. These wires *h h'* are parallel and carried forward to a hand-lever, G, by extending the upper arm. The wires are in like manner equidistant from the fulcrum, so that both levers G and H act in unison; hence, when drawn forward from its vertical position, the lug *x*, for the purpose, depresses one of the bearings and puts its wheel in gear, and, by pushing the lever G back beyond the center, the action will be reversed and the other wheel put in gear. The lever, with reference to the bearings, is so arranged that, when vertical, both wheels are out of gear.

In order to unshift mechanically when the segmental bed D has been carried back its full extent, the segment 14 or front has a pin, *s*, which comes in contact with a vertical arm, *l*, affixed to a slotted sliding plate, *k*. This plate extends beyond the double lever H, and has a rear flange to act against the lever when pushed forward, so as to bring the lever to a vertical position. The lever-arms H, whichever way inclined by the action of the wires, tend to slide the plate *k* from it by coming in contact with said flange *q*, said plate being free to slide, whether pressed upon by the end of the lever-arm above or below, or when pushed forward by the pin *s* on the bed D to bring the levers to a vertical position.

The chain-pulley Z on the hub of the wheel, operating, by the links of an endless chain, *z*, the crank-pulley F, and duplicated cranks on shaft *f*, for actuating the distributing-shafts *w* reciprocally, present no special novelty. In this the rod *e* is nearly vertically over the cranks, on which rod the brackets *t* have their bearing, a pair being jointly hinged in a slot made in the end of the distributing-shafts *w* by a pivot-bolt. These shafts are provided at three points on their under side with a hoe-like appendage, *y*, each having three rounded teeth, for the purpose of scattering the fertilizer, or more effectually distributing the same, in conjunction with the traveling bed D, operated by the movement of the machine by their respective gear, as herein described.

I may mention that on my machine in use I employ the shifting device as shown by Fig. 5—that is, instead of lugs *x*, keepers *w* and springs P, as shown by Figs. 4. I have two eccentrics, *x*, with an eccentric slot in each, through which I pass a staple provided with screw ends and nuts, by which the end of the vibrating lever *o* is held by the eccentric on the rod U, which is operated by the wires *h h'* and two-armed lever H in like manner, however, both alternately raising and depressing the bearings O. Without the use of springs these bearings O are also held on a pivot-bolt between the two flanges of a plate on the inside of the frame, having several perforations to adjust the heel of the bearings O of the variable diameters in the cog-wheels N at pleasure.

The hinging of the two frames A and B is with a view to enable me to incline the upper frame at any desired angle, and fix it for the time being, as the nature of the substance to be distributed may require. With a pole attached the vehicle with its own wheels may be used and tilted cart-fashion, as in my former machine, and the front hoisting apparatus dispensed with, as I now do with the distributing-cylinder.

I am aware that there is no novelty in the endless-link chain and pulley operation, or separate parts of the gearing and appliances, as such may be seen distributed in various mechanical contrivances. Hence, I do not, *per se*, claim such mechanical devices; but I am not aware that they were ever before combined and arranged substantially in the manner and for the purpose set forth and described; therefore

What I claim as my invention, in combination with a vehicle or farm wagon, is—

1. The combination of the frames A and B, hinged at *b*, with the attached bolster C, guide-bars *p* on side posts *g*, and the traveling sectional bed D, with its gearing, the whole arranged and operated substantially in the manner and for the purpose specified.

2. In combination with the shaft Y of the rear chain-pulleys J, the right-and-left beveled cog-wheels L L', and the beveled pinions M M' on their respective shafts V V' and bearings, the inner end of said shafts V, in connection with their respective cog-wheel N N', held in separate vibrating or hinged bearings O O', through which they can be alternately brought in gear with the worm or screw-gear Q Q' on the axle R of the vehicle, the whole arranged substantially as and for the purpose herein set forth.

3. In combination with the vibrating bearings O O', the shaft U, provided with depressing lugs or slotted eccentrics *x x'*, and the double-armed lever H, connected by parallel wires *h h'* with the hand-lever G, substantially in the manner and for the purpose mentioned.

4. In combination with the shaft U and two-armed lever H, the rear flange *q* on the slotted sliding plate *k*, with its vertical arm *l*, moved by the pin *s* in the front section 14 of the bed D, arranged and operated substantially in the manner and for the purpose described.

JOSEPH SENSENIG.

Witnesses:
WM. B. WILEY,
JACOB STAUFFER.