2 Sheets—Sheet 1.

J. C. BARLOW.

Seed-Planter.

No. 204,941. Patented June 18, 1878.

Fig. 1.

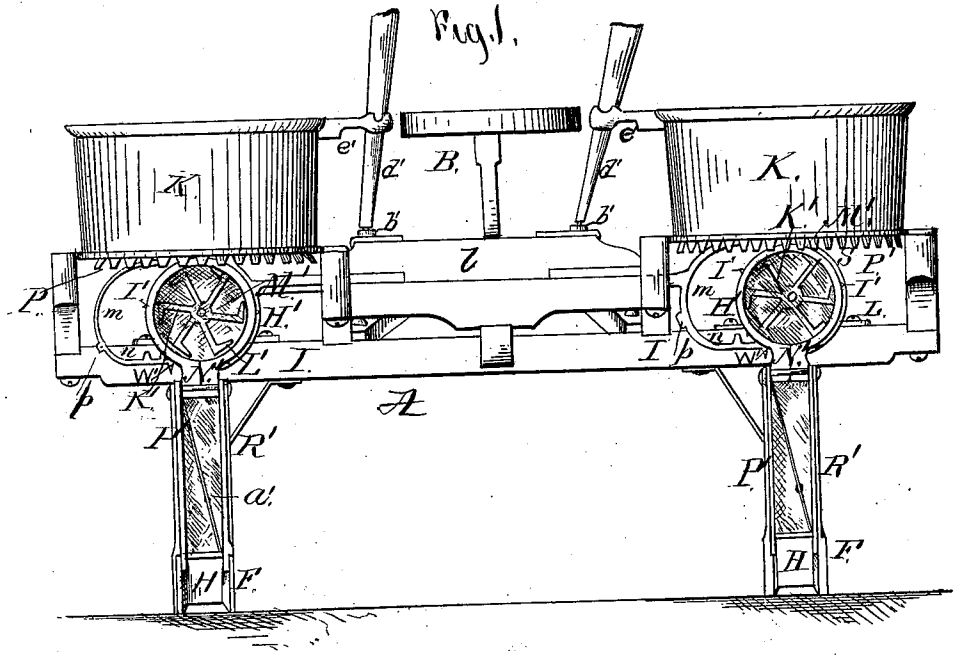
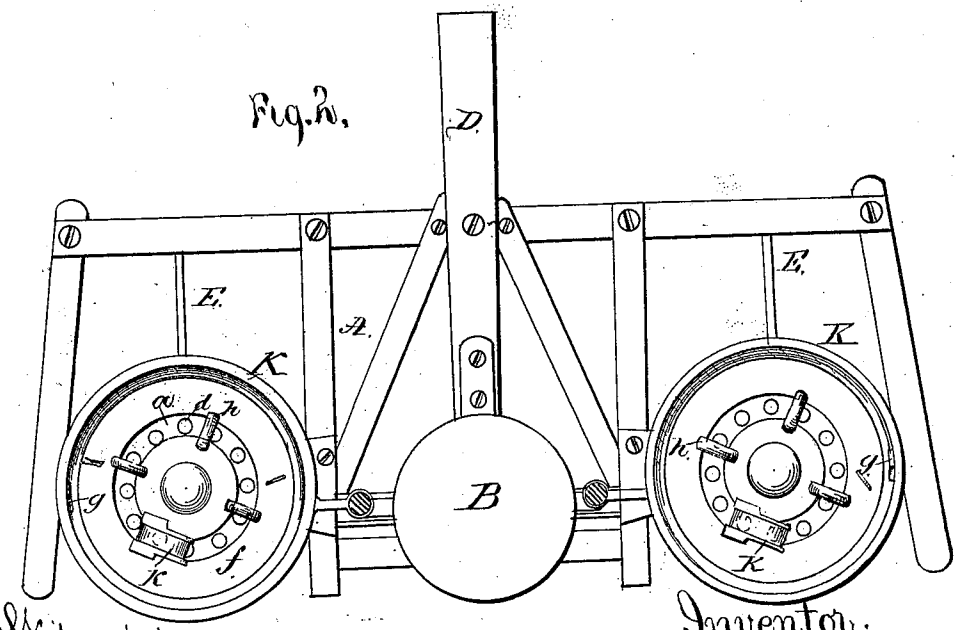


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 6.

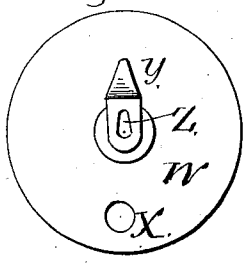


Fig. 3.

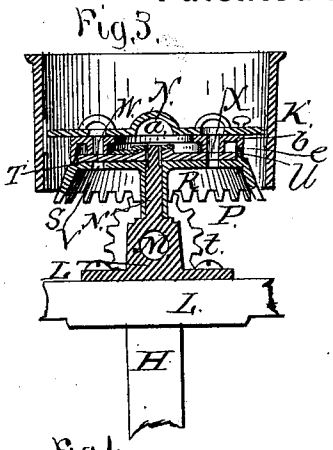


Fig. 9.

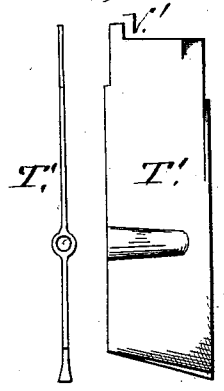


Fig. 7.

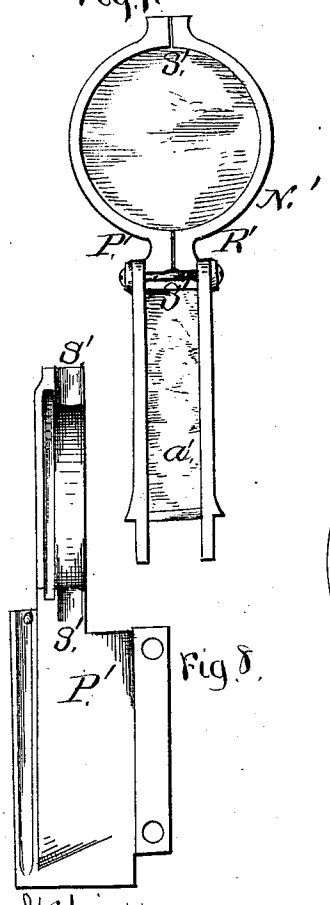


Fig. 8.

Fig. 4.

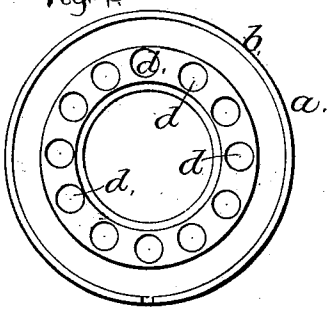


Fig. 5.

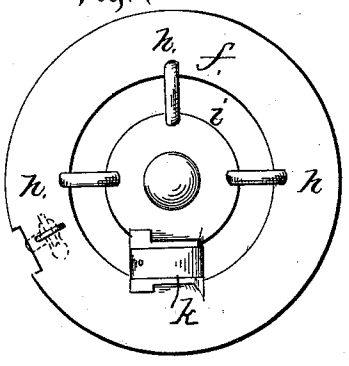


Fig. 10.

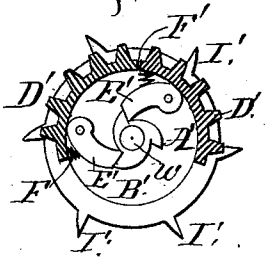
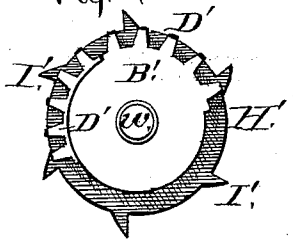


Fig. 11.



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UNITED STATES PATENT OFFICE.

JOSEPH C. BARLOW, OF QUINCY, ILLINOIS.

IMPROVEMENT IN SEED-PLANTERS.

Specification forming part of Letters Patent No. **204,941**, dated June 18, 1878; application filed January 22, 1878.

To all whom it may concern:

Be it known that I, JOSEPH C. BARLOW, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Seed-Planters, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improvement in seed-planters; and consists in the devices hereinafter fully set forth.

The object of the invention is to provide a suitable means for dropping seed, as specifically described hereinafter.

In the accompanying drawings, Figure 1 is a rear view of a device embodying the elements of the invention. Fig. 2 is a top view of same. Fig. 3 is a central vertical longitudinal section of one of the hoppers K, with interior mechanism. Fig. 4 is a bottom view of the plate *a*. Fig. 5 is a top view of the plate *f*. Fig. 6 is a like view of the plate W. Fig. 7 is a rear elevation of the casing N′. Fig. 8 is a side elevation of one section of same. Fig. 9 represents the face and edge of the valve T′. Fig. 10 is a plan view, partly in section, of the sectional gearing and ratchet. Fig. 11 is a plan view of the wheel H′, with gearing attached.

In the accompanying drawings, A represents the frame of the implement, which is furnished with the operator's seat B, and on its front portion with the tongue D. The runners E have their front ends secured to the lower front part of the frame A, and curve downward and rearward a suitable distance, their rear ends being split or forked, as shown at F, and containing in such forks the lower end of the standards H, which have their upper end secured to the cross-bar I, and serve as a support for the runners. Upon the cross-bar I, immediately above the standards H, and centrally beneath the seed-boxes K, which are mounted upon the rear corners of the implement, are rigidly affixed the journals L, having the elongated bearings M extending frontward, and supplied on their upper surface with the vertical shafts N, which pass upward within the seed-boxes, and receive the horizontal crown gear-wheels P, having the downwardly-deflecting peripheral flange R, carrying the teeth S, which engage the teeth of the pinion *t*, mounted upon the front end of the axle *w*, placed in the bearings M. Above the flanges R, and encircling the extreme edge of the wheels P, are cut the angular recesses T, at suitable points in which are secured the studs U, for the purpose hereinafter mentioned. The wheels P, at a proper position between their center and periphery, are supplied with the apertures V, of uniform size, and arranged in a circle around the shaft N. Upon the shaft N, and flat upon the upper surface of the wheel P, is placed the washer plate or disk W, which is of such size as to completely cover the said wheel out to the inner edge of the recess T, and is provided with an aperture, X, exactly corresponding in size and position with the apertures V, above which it is arranged.

The shafts N below the wheels P have a circular circumference; but above the wheels they are slightly reduced, and have their opposite sides flattened, the rear portion of said flattened surfaces being of slightly greater dimensions than the front portion thereof. The disk W is arranged upon this flattened end of the shaft, and has secured above its bearing, up through which the shaft passes, the plate Y, one end of which is rigidly attached to the disk, while the other end extends over the said bearing, and is furnished with a slot, Z, the contour of which is similar to that of the flattened end of the shaft N, and which is designed to be placed on the same, the thicker portion of the shaft being in the wider end of the slot.

The purpose of this construction is to prevent the disk W turning, and, when the edges of the slot shall have become worn by the jarring of the devices in operation, to tighten it upon the shaft. This is accomplished by simply tapping upon the plate Y in rear of the slot Z, driving the narrower end of the said slot upon the flattened sides of the shaft, and thereby producing a firm bearing.

The disk W is retained upon the shaft by a pin passing transversely through the same, or by other suitable means.

Over the disk W is placed the plate *a*, which may be made of any desired thickness to accommodate the elevation of a plate below it, and is furnished on its periphery with the downwardly-projecting flange *b*, and within

which are placed the apertures *d*, which are exactly similar in size and position to the apertures V and aperture X. The flange *b* passes downward beyond the disk W and into the angular recess T, which serves as its base. At a suitable point in the flange *b* is cut the recess *e*, which engages the stud U, and thus enables the wheel P and plate *a* to be revolved together, while the disk W remains stationary upon its shaft. The central portion of the plate *a* is removed to escape the upper end of the shaft N and to lighten the mechanism.

The plate *f* is arranged upon the plate *a*, and closely impinges its upper surface, being retained in such position by the studs *g*, secured upon the inner faces of the seed-boxes K. That portion of the plate *f* immediately above the circle of apertures *d* is removed, forming a circular guideway, *i;* and to secure the outer and inner parts thereof together, the plate may be cast with the connecting-braces *h*, which bow upward, and permit any matter that may be in the guideway *i* to pass beneath them. At a proper point in the guideway *i* is secured the spring cut-off *k*, which prevents the discharge of more than a limited quantity of seed from the apertures *d* at one time.

In the rear portion of the frame A, beneath the seat B and seed-boxes K, is suitably arranged the transversely-sliding connecting-bar *l*, which is supplied at each end, beneath the seed-boxes and just in rear of the shafts N, with the elliptical casings *m*, provided upon their upper and lower surfaces with the internal gearing *n*, and on their rear edges with the diagonally-arranged studs *p*, hereinafter mentioned.

The shaft *w* extends rearward beyond the bearing M, and through the casing *m*, within which, upon the said shaft, is rigidly secured the triple ratchet A′, upon each side of which is movably mounted upon the shaft the disks B′, provided on opposite edges with the segmental gearing D′, which engages the gearing *n*, causing the movement of the disks B′ when the sliding connecting-bar *l* is moved. Upon the disks B′, adjacent to the inner faces of the segmental gearing D′, are pivoted or otherwise secured the pawls E′, which are furnished with springs F′, to force their ends, which project in opposite directions, to engage the triple ratchet A′. The rear end of the shaft *w* is supplied with a wheel, H′, which has upon its periphery the equidistant studs or projections I′, and upon its rear face with the equidistant arms K′, radiating from the axle *w*, and having upon their ends the shorter arms L′, arranged at right angles to the arms K′, and at a tangent to the periphery of the wheel H′, thereby forming buckets or receivers M′.

Upon the outer extremities of the buckets M′, and closely impinging the rear edges of the wheel H′, is arranged a casing, N′, composed of the two sections P′ R′, which meet at the upper and lower edges of the wheel H′, where they are provided with spouts or apertures S′, arranged centrally beneath one of the apertures V in the crown gear-wheel P, the upper spout S′ being in juxtaposition to the lower surface of the said wheel P, the lower spout being centrally beneath the upper one and the wheel H′. The sections R′ P′ of the casing N′, below the wheel H′, are properly separated, and have their lower ends secured to the rear ends of the runners E, thereby forming a passage from the buckets M′ to the ground, or, in other words, constructing a tube, *a′*, for the purpose of guiding seed to the furrows made by the runners. Between the sections P′ R′, beneath the wheel H′, is pivoted to the standard H the valve T′, the upper end of which is provided with a stud, V′, which meshes with the studs W′, constructed on the under edges of the casings *m*. Thus, when the casings are moved, the bars T′ are moved on their pivots also. When the casings *m* are moved one way the bars are in a diagonal position in the tube *a′*, and when the above movement is reversed the bars will assume a reverse diagonal position, thereby opening and closing the passage through the tube, and permitting the escape of seed in given quantities.

The rear surface of the tube *a′* and wheel H′, carrying the buckets M′, is covered with glass or other transparent material, which is set in grooves in the edges of the casing N, and thereby permits the attendants to watch the dropping grain, and to count the same, if desired.

Upon the upper surface of the connecting-bar *l*, upon one or both sides of the operator's seat, are placed the sockets *b′*, which are designed to receive the lower ends of the levers *d′*, the upper ends of which pass upward through the hangers *e′*, within convenient reach of the operator, who may, by working the lever or levers from right to left, cause the bar *l* to have a corresponding sliding movement.

It is manifest that when the connecting-bar *l* is moved a half-throw of the lever toward the left, the upper and lower sections of segmental gearing D′, being engaged by the internal gearing *n*, will have a tendency to move upon their axle, and that as the point of the pawl E′ of the lower section of gearing D′ is bearing against a tooth of the ratchet A, and as the point of the pawl E′ of the upper section D′ can now slide forward over the ratchet, but not in a reverse direction, the force of the gearing *n*, bearing upon the ratchet A′ through the pawl E′ of the lower section of the gearing D′, will turn the shaft *w* one-sixth of a revolution, while the upper section of gearing D′ slides over the ratchet toward the lower section D′, and by its pawl prevents any reverse movement.

Now, when the above movement of the connecting-bar *l* is reversed, the lower section D′ slides over the ratchet A′, and the upper section D′, bearing against the ratchet with its pawl, continues to turn the shaft *w* in the same direction, each movement of the connect-

ing-bar causing the wheel H′ to revolve a distance equal to one-sixth of its circumference, or the distance of the space between any two of its radiating arms K′.

Now, the revolution of the shaft *w*, as before set forth, imparts a corresponding movement to the pinion *t*, secured upon its front end, which pinion in turn rotates the crown gear-wheel P and the disk *a*. The motion of the wheel P and disk *a* brings, at every one-sixth of a revolution of the wheel H′ and shaft *w*, the apertures V and *d* directly above and below the aperture X in the disk W, thereby affording at such stated intervals a clear passage for grain from the seed-boxes to the buckets M′, whence it is conveyed through the tubes *a*′ to the ground.

During the operation of the implement the segmental gearing D′ is prevented from turning too far by the studs I′ striking the studs *p* at each half-stroke.

The connecting-bar *l* may be supplied with any suitable number of anti-friction rollers for insuring an easy movement.

It is obvious that the wheel H′ may be provided with any desired number of buckets, according to the throw of the connecting-bar.

The feed-plates hereinbefore described are made the subject of a separate application for Letters Patent.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The wheel H′, provided with arms K′ and the arms L′, forming buckets M′, substantially as specified.

2. A seed-wheel the arms of which radiate from a common center, and are provided with an extension to retain the grain, substantially as set forth.

3. The segments D′, loosely mounted on the shaft *w*, and provided with pawls for engaging in reverse directions the triple rack A′, secured on the shaft *w*, substantially as specified.

4. In a seed-planter, a segmental cog loosely mounted upon a shaft, and provided with a pawl engaging a rack secured on the same shaft, in combination with a seed-wheel, substantially as specified.

5. The connecting-bar *l*, provided upon each end with a casing, *m*, constructed in one piece, and having the upper and lower racks *n*, in combination with the segmental cogs D′, pawls E′, and ratchet A′, substantially as set forth.

6. The casing N′, composed of the sections P′ R′, the upper portion of which is circular, and provided with a transparent face and seed-inlet, in combination with the seed-wheel H′, substantially as shown and described.

7. The casing N′, composed of the sections R′ P′, and provided with apertures S′, as shown, in combination with the seed-wheel H′, substantially as specified.

8. The toothed casings *m*, segmental cogs D′, provided with pawls and a rack, in combination with the seed-wheel H′, carrying buckets M′, and with the casing N′, substantially as specified.

9. The casing N′, composed of the sections P′ R′, constructed substantially as shown, so that its upper part closely encompasses the seed-wheel H′, while its lower portion has parallel sides and forms a seed-tube, substantially as shown and specified.

In testimony that I claim the foregoing improvement in seed-planters, as above described, I have hereunto set my hand this 21st day of January, 1878.

JOSEPH C. BARLOW.

Witnesses:
CHAS. C. GILL,
JOS. T. K. PLANT.