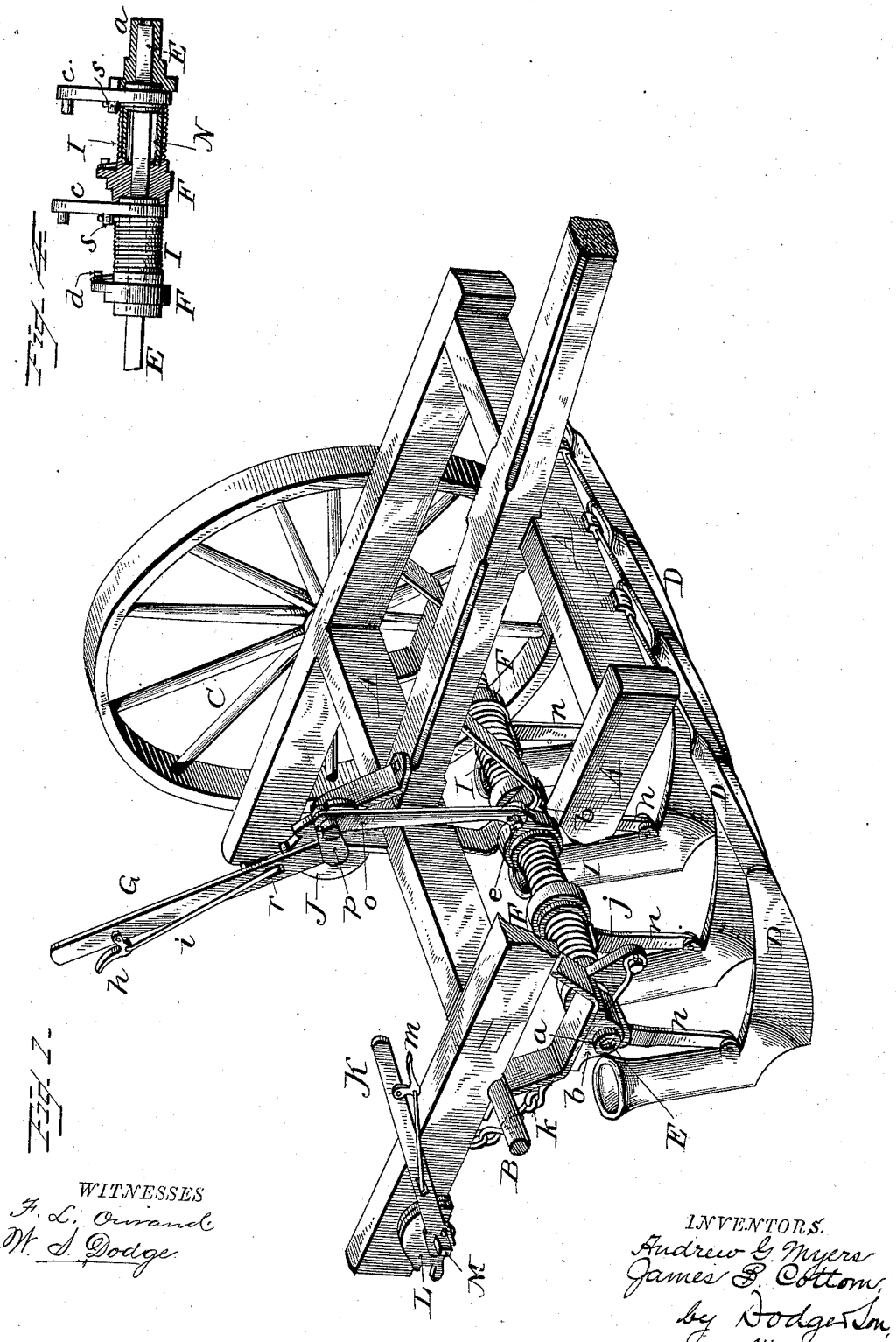
(No Model.)

A. G. MYERS & J. B. COTTOM.

2 Sheets—Sheet 1.

SEEDING MACHINE.

No. 313,013. Patented Feb. 24, 1885.



N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. G. MYERS & J. B. COTTOM.

SEEDING MACHINE.

No. 313,013. Patented Feb. 24, 1885.

Fig. 2.

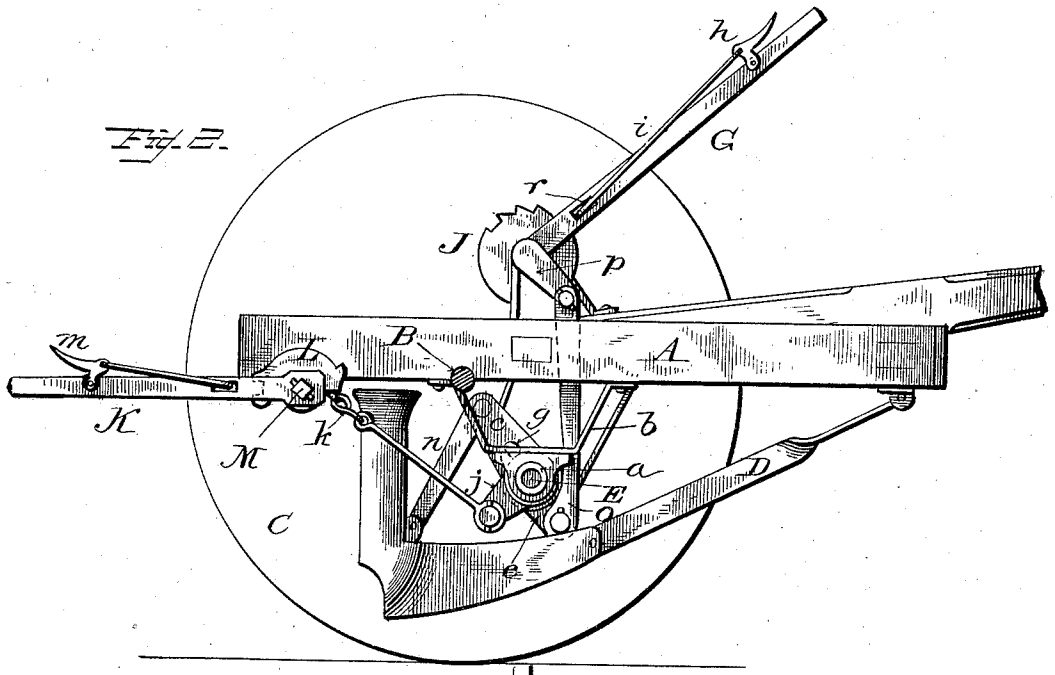
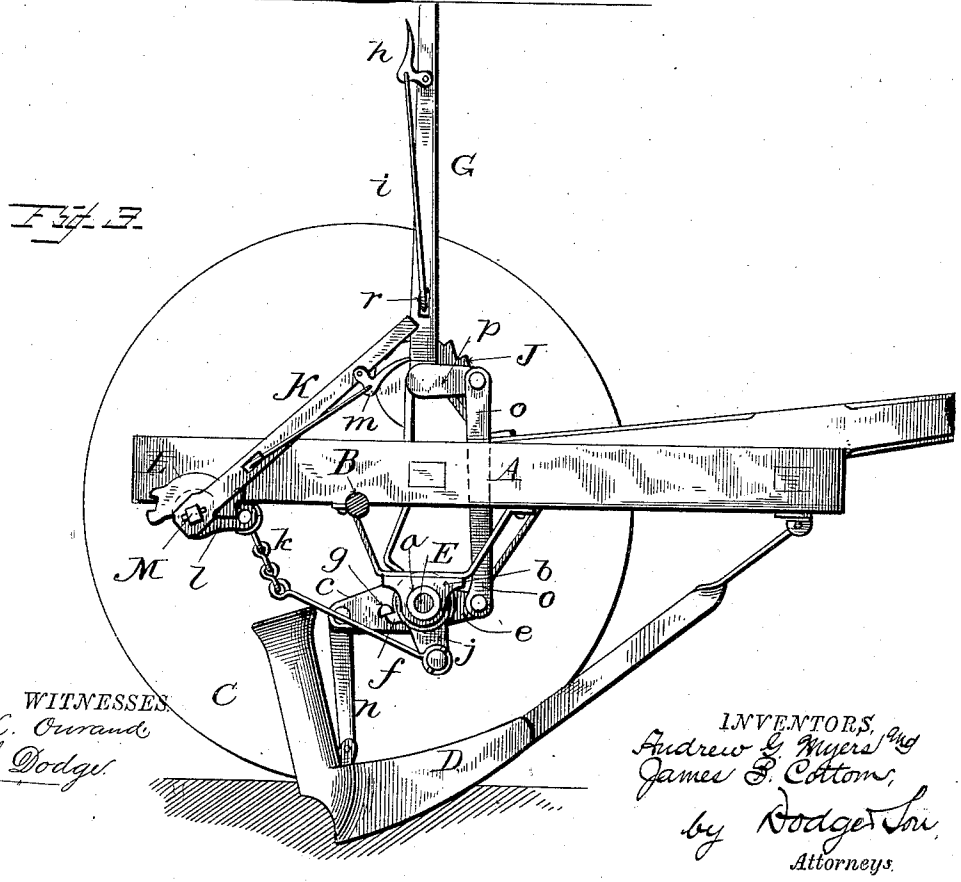


Fig. 3.



WITNESSES.
F. L. Ourand
W. J. Dodge

INVENTORS,
Andrew G. Myers and
James B. Cottom,
by Dodger Sons,
Attorneys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ANDREW G. MYERS AND JAMES B. COTTOM, OF DAYTON, OHIO, ASSIGNORS TO D. E. McSHERRY & CO., OF SAME PLACE.

SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 313,013, dated February 24, 1885.

Application filed July 9, 1884. (No model.)

To all whom it may concern:

Be it known that we, ANDREW G. MYERS and JAMES B. COTTOM, both of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Seeding-Machines, of which the following is a specification.

This invention relates to seeding-machines, cultivators, and like agricultural implements in which springs are employed to hold the hoes or teeth down to their work with a yielding or elastic pressure, so that they may ride over obstructions without injury to the machine; and the improvements consist in a novel construction and arrangement of the spring-pressure devices and of the mechanism for raising and holding the teeth or hoes out of action.

Figure 1 is a perspective view of a drill embodying our improvements, such parts as are not involved in the present invention being omitted because of ordinary construction and liable to render the drawings more difficult to understand. Fig. 2 is a side elevation of the machine with the drag-bars raised out of operative position. Fig. 3, a side elevation showing the drag-bars pressed down with a moderate pressure; Fig. 4, a detail view of the spring mechanism.

Prior to this invention mechanism has been invented and patented by which a variable pressure could be applied to the teeth or drag-bars, and said teeth or drag-bars lifted at will, the whole being controlled by one and the same hand-lever. Such mechanism, however, has generally required the springs to be put under strong tension, and so held when the teeth or hoes were lifted, a feature that is highly undesirable; and one object of the present invention is to obviate this objection, which we do by the construction herein shown and described, at the same time gaining other important advantages, hereinafter set forth.

A indicates a suitable frame, mounted upon an axle, B, which is carried by wheels C, as usual, the seeding apparatus when used being applied to the axle or to an independent shaft, as preferred. A series of drag-bars, D, are hinged or pivoted at the forward end of the frame A, as usual, and carry at their rear ends hoes, teeth, or runners of any desired form.

E indicates a shaft, preferably square in cross-section, and provided at its ends with cylindrical sleeves *a*, which turn in hangers or bearings *b*, secured to the main frame A.

Upon the shaft E are secured hubs or collars F, at suitable distances apart, each hub having recessed faces to receive and form bearings for the ends of sleeves N, of which there may be any desired number, according to the number of drag-bars employed. Each sleeve is formed with a radial arm, *c*, and is encircled by a spiral spring, I, one end of which is hooked over or around a stud, *d*, on the collar F, and the other end similarly attached to a stud, S, on the arm *c* of the sleeve, the rotation or movement of each sleeve being limited by stops *f* and *g*, formed upon the hub and arm *c*, respectively, as shown in Fig. 2. One of the collars F, preferably at or about the middle of the machine, is formed with a forwardly-extending arm, *e*, which is connected by a link, *o*, to the short arm *p* of an elbow-lever, G, pivoted to a rack, J, on the fame A. This lever G when raised or lowered rocks or turns the shaft E, and with it the hubs F, thereby causing the springs I to be placed under tension or compression or relieved therefrom, according to the direction of the movement of lever G. Lever G is furnished with a spring-locking dog or bolt, *r*, to engage in rack J, and with a releasing hand-piece, *h*, connected with the locking bolt or dog by a rod, *i*. By moving the lever G and locking it in the different notches of the rack, the arm *c* and consequently the shaft E can be held at any desired position or adjustment, thereby regulating the force or tension of the springs H as required. In like manner another of the hubs F, preferably at one side of the machine, is formed with a radial arm, *j*, from which a chain, *k*, or equivalent connection extends to a lever, K, pivoted to the side of frame A. For convenience, I prefer to apply said lever K to a short rock-shaft, M, bearing arm *l*, to which the chain *k* is connected, and in order to lock said lever in position I provide a notched rack, L, over which the lever moves, and with which its

locking dog or bolt *m* engages, except when raised by the hand-piece *m*, with which the lever is furnished, the same as lever G. Each arm *c* of the sleeves F is connected by a link, *n*, with a drag-bar, D, the joint or connection between the link and arm being thrown slightly in rear of a line passing through the axis of shaft E and the point of connection of said link with the drag-bar, the locking shoulders or stops *f* and *g* being so located and arranged as to effect this limitation of movement in a forward direction, though permitting the joint to yield to any desired extent in a backward direction. When lever G is thrown forward, shaft E is permitted to turn forward, thereby raising the arms *c* and lifting the drag-bar D without coiling the springs I beyond their normal condition. When the lever G is drawn back and located as in Fig. 1, the arms *c* will be thrown down and the shovels, teeth, or runners forced into the ground, though each free to rise when meeting with undue resistance, or with resistance sufficient to overcome the force of its spring, which spring immediately restores the tooth, shovel, or runner to its normal working position. When the lever G is released and the rock-shaft E permitted to turn without coiling the spring I, the lever K is thrown back and locked, drawing upon the chain or connection *k*, which, acting upon the arm *j*, rocks shaft E, raises arms *c*, and lifts the drag-bars clear of the ground, in which shape the machine is ready to be transported or stored, while the springs are free from any unusual or considerable tension or compression, and the locking devices, lifting-levers, and other parts completely relieved of the strain to which they are unavoidably subjected when the springs have to be compressed in order to lift the drag-bars.

It will be seen that the arms *c* and links *n* form a series of toggle joints or levers, which give a great leverage as they approach a straight line, and act with a rapidly-diminishing leverage as the point of unison is thrown out of line with the ends of the levers; hence acted upon by the springs they give a strong resistance and hold the drag-bars down with great force until an obstruction is met with which offers slightly greater resistance, whereupon the joint yields, and as the toggle gives or flexes, the resistance grows rapidly less, permitting the hoes, shovels, or teeth to readily free themselves.

By so constructing the rack and locking-dog of lever H that it may be held against both forward and backward movement, the lever G may be employed not only to depress the drag-bars and regulate the force or pressure of the springs, but also to raise the drag-bars and hold them out of action, thus dispensing with the second lever, K.

The construction may be further simplified by attaching the lever G directly to the hub or collar F, though the parts cannot be so coveniently located as under the arrangement described and shown.

Having thus described our invention, what we claim is—

1. In combination with a suitable frame, and with a drag-bar, a rock-shaft carried by said frame, a collar secured upon the rock-shaft, a sleeve encircling said rock-shaft and provided with a radial arm, a link connecting said arm with the draw-bar, and a spring having its ends attached respectively to the collar and the sleeve and acting to keep the radial arm and link in line, substantially as described and shown.

2. In combination with a suitable frame, and with drag-bars hinged or jointed thereto, a rock-shaft mounted in the frame, and provided with a series of spring-pressed toggles connected with and serving to depress the drag-bars, a lever connected with the rock-shaft, and arranged to rotate the same to increase the pressure of the springs and hold the shaft against the force of the springs, and an independent lever connected with and adapted to rotate the shaft when not held by the depressing-lever.

3. The combination, substantially as described and shown, of a wheeled frame, A, rock-shaft E. collars F, secured upon said shaft, sleeve N, encircling the shaft journaled in the collars F, and provided with an arm *c*, having a locking-stop to engage with a stop on the collar, drag-bars D, attached to the frame A, and connected with the arms *c* by links *n*, springs I, coiled about the sleeve N, and having their ends engaged, respectively, with the collar and sleeve, and a lever connected with the collar and serving to rotate the same and the shaft.

4. In a seeding or planting machine, the combination, with gravitating drag-bars, a rock-shaft carrying fixed collars, sleeves journaled in said collars and provided each with a radial arm and with a stop to limit their rotation, links connecting the radial arms and the drag-bars, and springs coiled about the sleeves, and serving to turn the sleeves in a direction to bring the arms and links into alignment, all substantially as described and shown.

5. In a seeding-machine, the combination of a wheeled frame, drag-bars hung thereto, toggles or jointed braces attached to the drag-bars and serving to depress the same, springs acting upon the toggles and tending to straighten or bring their members into alignment, and a rock-shaft acting upon said springs, substantially as described and shown, and serving to regulate the force of their action, substantially as described and shown.

6. The combination, substantially as herein shown and described, of a wheeled frame, A, a series of drag-bars, D, attached thereto, a rock-shaft, E, provided with collars F, sleeves N, journaled in said collars and provided with radial arms *c* and stops to engage

with like stops on the collars, springs I, encircling the sleeves N, having one end made fast to the collar and their other end acting against the arms *c*, links *k*, connecting said arms with the drag-bars, lever H, provided with a locking-bolt and connected by a link, *f*, to one of the collars F, lever K, provided with a locking-bolt, chain, or connection, *k*, extending from the lever to an arm, *j*, on one of the collars F, and a rack, L, adapted and arranged to receive the locking-bolt of the lever K.

ANDREW G. MYERS.
JAMES B. COTTOM.

Witnesses:
FRANK CONOVER,
JOHN A. SHANCK.