(No Model.) 2 Sheets—Sheet 1.

D. V. C. RAPP.

SPACING DEVICE FOR GARDEN CULTIVATION.

No. 391,077. Patented Oct. 16, 1888.

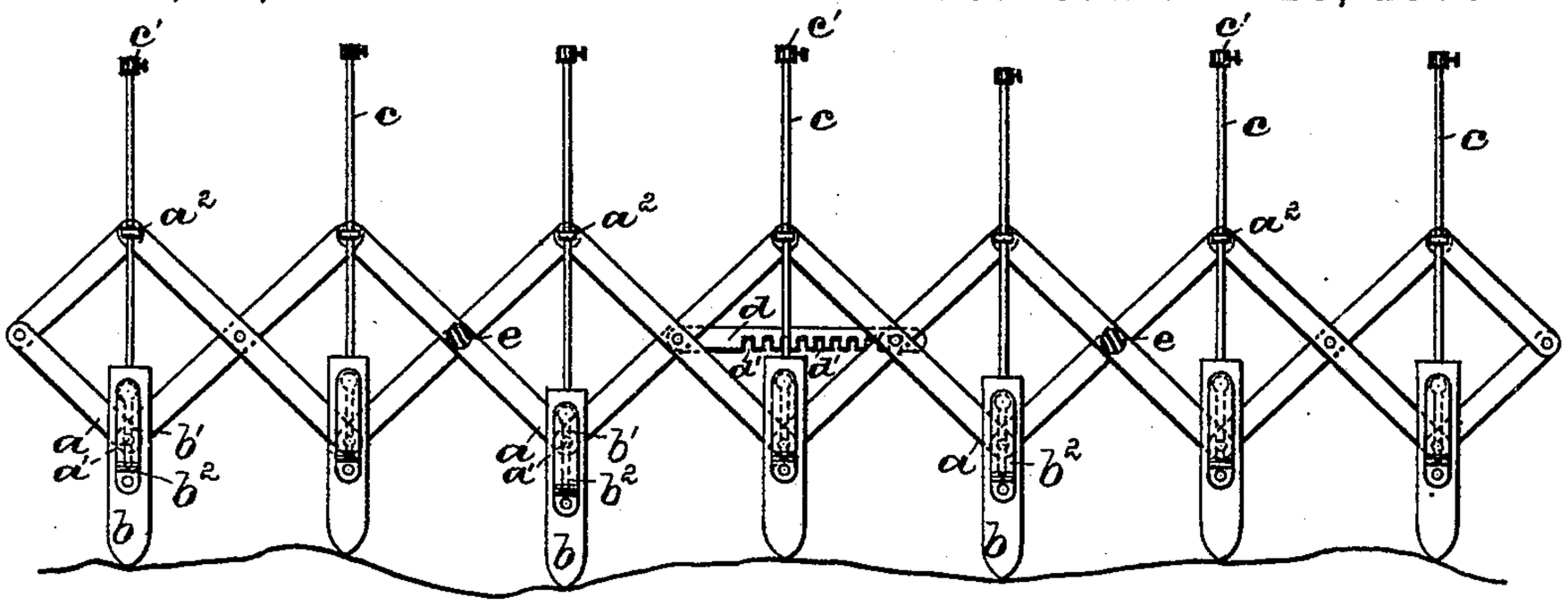

Fig. 1

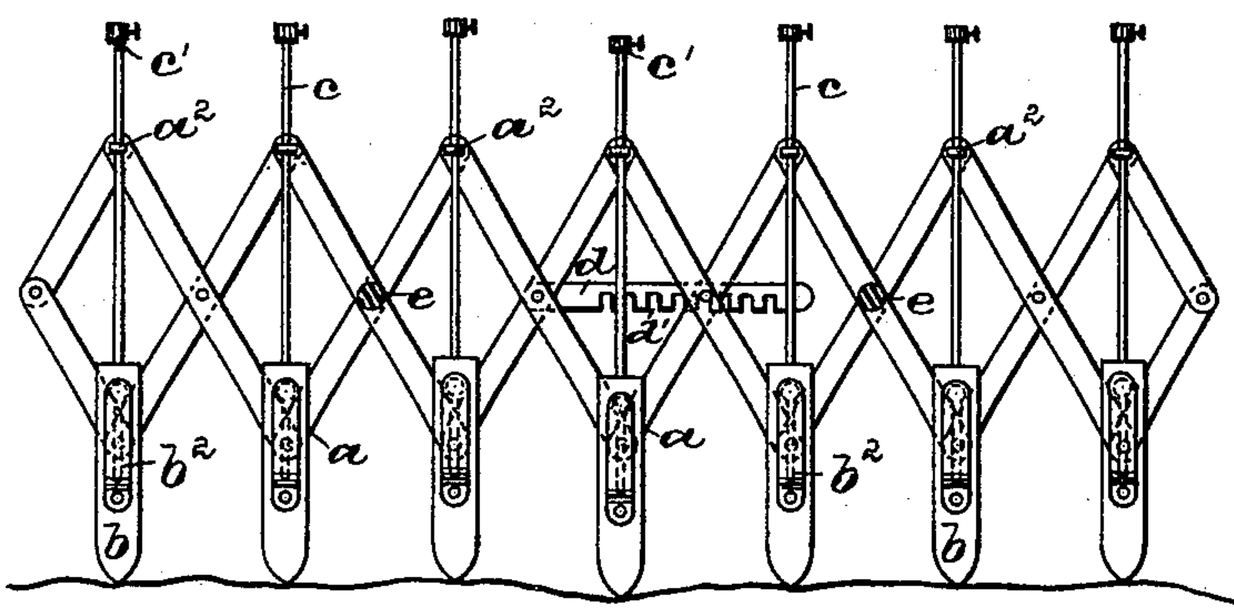

Fig. 2

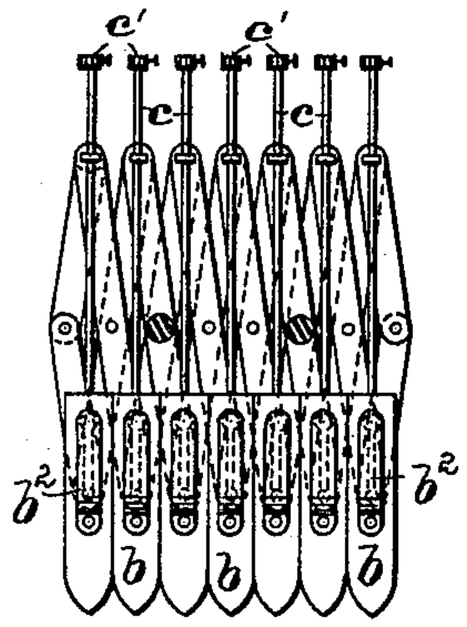

Fig. 3

WITNESSES:

Wm. E. Blewett Jr.

William Bennett

INVENTOR:

Daniel V. C. Rapp.

BY Campbell & Co. ATTYS.

(No Model.) 2 Sheets—Sheet 2.

D. V. C. RAPP.

SPACING DEVICE FOR GARDEN CULTIVATION.

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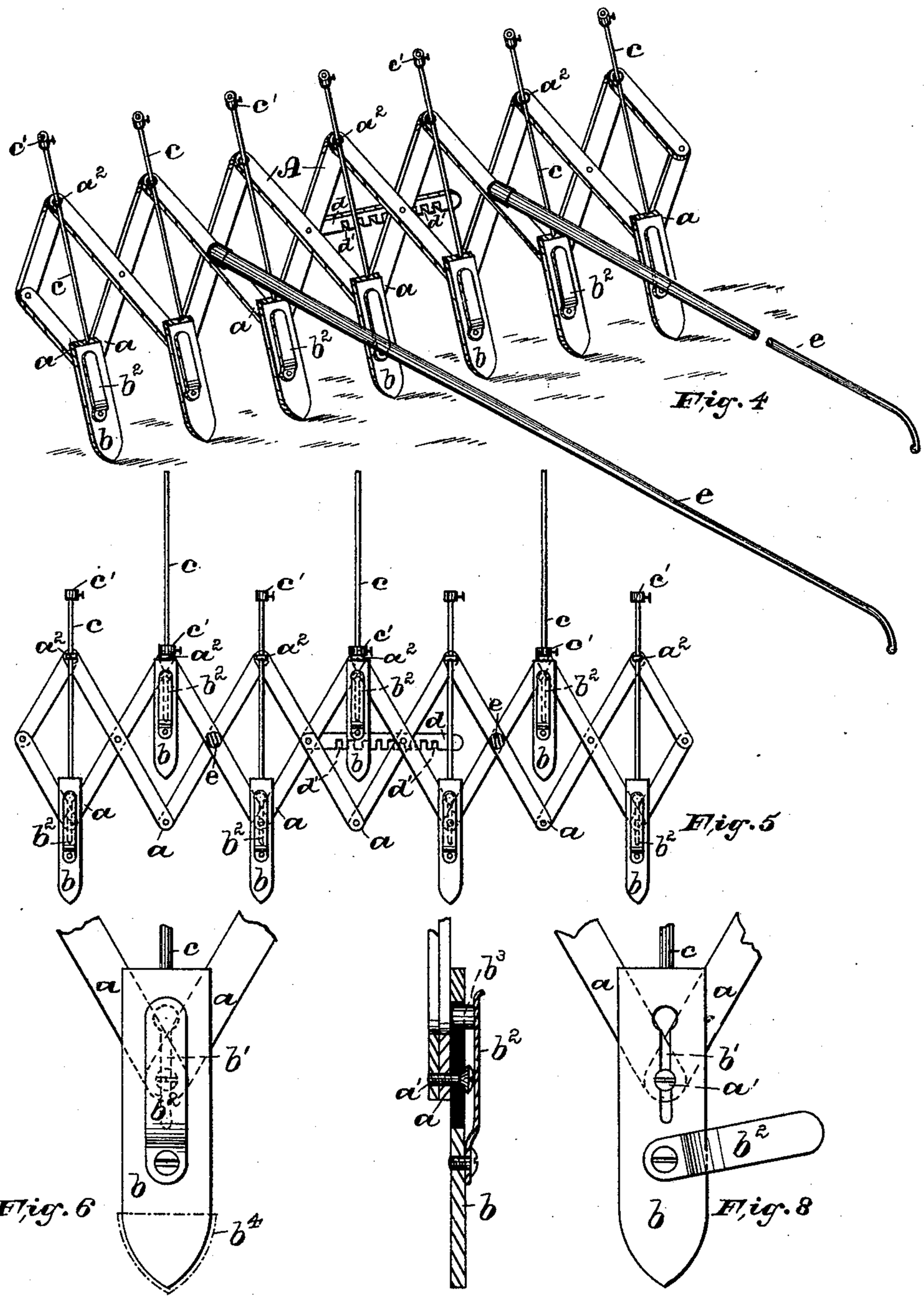

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

WITNESSES:

Wm. C. Blewett Jr.

William Blewett.

INVENTOR:

Daniel V. C. Rapp.

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UNITED STATES PATENT OFFICE.

DANIEL V. C. RAPP, OF JERSEY CITY, NEW JERSEY.

SPACING DEVICE FOR GARDEN CULTIVATION.

SPECIFICATION forming part of Letters Patent No. 391,077, dated October 16, 1888.

Application filed June 20, 1888. Serial No. 277,667. (No model.)

To all whom it may concern:

Be it known that I, DANIEL V. C. RAPP, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Spacing Devices for Gardening Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The purpose of the invention illustrated in the accompanying two sheets of drawings is to provide a simple, effective, and cheap device provided with spacers or markers which automatically adjust themselves to any unevenness in the ground. It is further designed to provide a tool which is adapted to mark off spaces which are parallel and of equal distances apart, and also to so construct the same as that the same tool may readily be adjusted to mark off spaces of either greater or less distance apart, as may be desirable.

In said sheets of drawings, in which similar letters of reference indicate corresponding parts in each of the views, Figure 1 is a front elevation of my spacing device when spread to its greatest extent. Fig. 2 is a view similar to Fig. 1, illustrating the positions of the spacers or markers when adjusted to mark off spaces of smaller distances apart; and Fig. 3 is a similar view thereof in its closed position. On Sheet 2 Fig. 4 is a perspective view of my spacer. Fig. 5 is a front elevation of the same, showing the position of the intermediate markers when it is desirable to space off distances which are to be farther apart than is possible when the device is spread to its farthest extent, as shown in Fig. 1. Fig. 6 is an elevation of one of the markers, showing the position of a locking spring or catch in relation thereto. Fig. 7 is a sectional view thereof, and Fig. 8 is a view similar to Fig. 6 with the spring in its unlocked position.

Referring to the drawings, A represents a system of levers commonly known as "lazy-tongs," which are pivotally connected with each other, as shown. Each end *a* of the lazy-tongs is provided with a screw or pin, *a'*, which extends into a slot, *b'*, in each marker *b*. This construction allows each marker to adjust itself in a vertical plane, thereby conforming to any unevenness in the ground, as will be understood from Figs. 1 and 2. One end of the markers is provided with a rod, *c*, which extends up into and passes through an eye, a^2, secured in the upper ends of the lazy-tongs, each rod being provided with an adjustable collar or nut, *c'*, at the top thereof.

Pivotally secured to each marker *b* is a spring-catch, b^2, which extends and passes over the head of the screw or pin *a'* in the ends *a* of the lazy-tongs. A projection, b^3, Fig. 7, on the under side of the spring-catch extends into an enlargement in each slot at the upper end thereof, which allows the passing of the screw-head therethrough when the spring-catch is thrown out of engagement with said screw; but when the spring-catch is in its locked position on the marker the projection b^3 closes the enlargement in the slot, and thereby prevents the falling out of any of the markers.

When it is desirable to remove any of the markers and to adjust the same, as indicated in Fig. 5, the spring-catch is turned on its pivotal point, and the screw or pin *a'* is passed along the slot *b'* until it reaches the enlarged part of said slot, when the marker can be withdrawn from the end *a* of the lazy-tongs. The rod *c* on the top of the marker is then passed up through the eye *a*, and the collar *c'* is adjusted on said rod by means of a set-screw or thumb screw in such a position as will prevent the marker from coming in contact with the ground, as will be understood from Fig. 5. By this means each intermediate marker may be removed or adjusted so as not to touch the ground, and spaces of much greater distances apart can be marked off.

The advantage attained by my device is that the distances between any two points of the markers can be doubled, trebled, &c., by the adjustability of the system of levers, or when the lazy-tongs have been spread to their greatest limit any intermediate number of markers can be adjusted by securing them out of the way at the top of the lazy-tongs, which enables the operator to lay off distances which are very wide apart.

It will be understood that any known fast-

ening mechanism can be used for locking the system of levers, that shown consisting of an arm, *d*, pivotally secured to one of the levers of the lazy-tongs at the back thereof and provided with notches *d'*, which drop over a pin secured to another one of the levers.

The adjustable markers attached to the lazy-tongs have another advantage, in that they can be removed when worn out and can be replaced by new ones, or each marker may be provided with a steel shoe, *b*, which can be ground down as the same becomes worn.

There are many other advantages derived from my invention, some of which are the ease and rapidity with which the device can be adjusted, the cheapness and simplicity of construction, which enables the same to be made of very light material, and therefore the ease of handling the same when in use or when carried.

It will further be understood that the number of markers and their relative lengths are not limited to those shown in the drawings; but the number may be increased or decreased, and the lengths of the markers may be varied, as may be desirable. As is evident, the diameters of the eyes a^2 are considerably larger than those of the rod *c*, in order to facilitate the movement of said rods through the same.

The operation of the device is as follows: After the lazy-tongs have been spread so that the markers will mark or point off the desired spaces, the system of levers is locked by the fastening mechanism *d* and the tool is drawn over the ground by means of two handles, *e*, in the manner that one would draw a rake over a flower-bed, the points of each marker marking off lines or grooves in the ground which are parallel and equidistant apart.

The arrangement of the handles may be varied without departing from the scope of my invention, so that horse-power can be applied to the same.

Having thus described my invention, what I desire to claim is—

1. In a spacing implement, a system of combined levers, as described, and automatically-adjustable markers or spacers attached thereto, for the purposes set forth.

2. The markers or spacers provided with slots into which extend pins or screws secured to lazy-tongs, substantially as described, and rods secured to said markers on the tops thereof and extending up and passing through eyes on the lazy-tongs, as and for the purposes set forth.

3. The markers or spacers provided with slots into which extend pins or screws secured to lazy-tongs, as described, rods secured to said markers at the tops thereof and extending up and passing through eyes on the lazy-tongs, and adjustable collars on said rods, all arranged substantially as specified.

4. In a spacing implement, the combination, with lazy-tongs, of a series of markers provided with slots, pins or screws secured to said lazy-tongs and extending within said slots, rods secured to the tops of each marker and extending up and passing through eyes in the lazy-tongs, and means for locking said lazy-tongs in position, as and for the purposes set forth.

5. In a spacing implement, the combination, with lazy-tongs provided with handles, of a series of automatically-adjustable markers, said markers being removably secured to said lazy-tongs, and a fastening device for locking the same, for the purposes set forth.

6. The herein-described connection for securing the markers in a spacing implement to lazy-tongs, consisting of pins or screws *a'*, extending within a slot in each marker, spring plates or catches overlapping said slots, and rods provided with adjusting collars, said rods extending up and through eyes, all of the parts being arranged substantially as described.

7. In a spacing device, the combination, with automatically-adjustable marking-pieces, of a spreading device to which said markers are secured, by means of which said markers are caused to approach or recede equal distances from each other, for the purposes set forth.

8. In a spacing implement, a system of combined levers or lazy-tongs having markers or spacers secured thereto, each of said markers being provided with a rod secured to the top thereof and extending up and passing through eyes in the lazy-tongs, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 18th day of June, 1888.

DANIEL V. C. RAPP.

Witnesses:
MARCY Z. TRUSDELL,
FREDK. C. FRAENTZEL.