No. 675,924. Patented June 11, 1901.

G. E. BLAINE.

CLOD CRUSHER AND LAND LEVELER.

(Application filed Jan. 14, 1901.)

(No Model.)

Fig. 1.

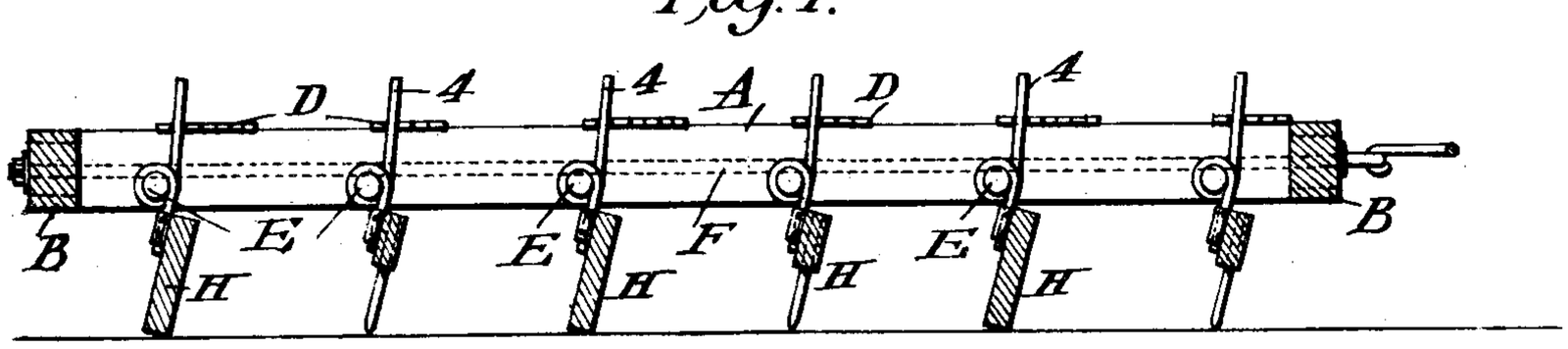
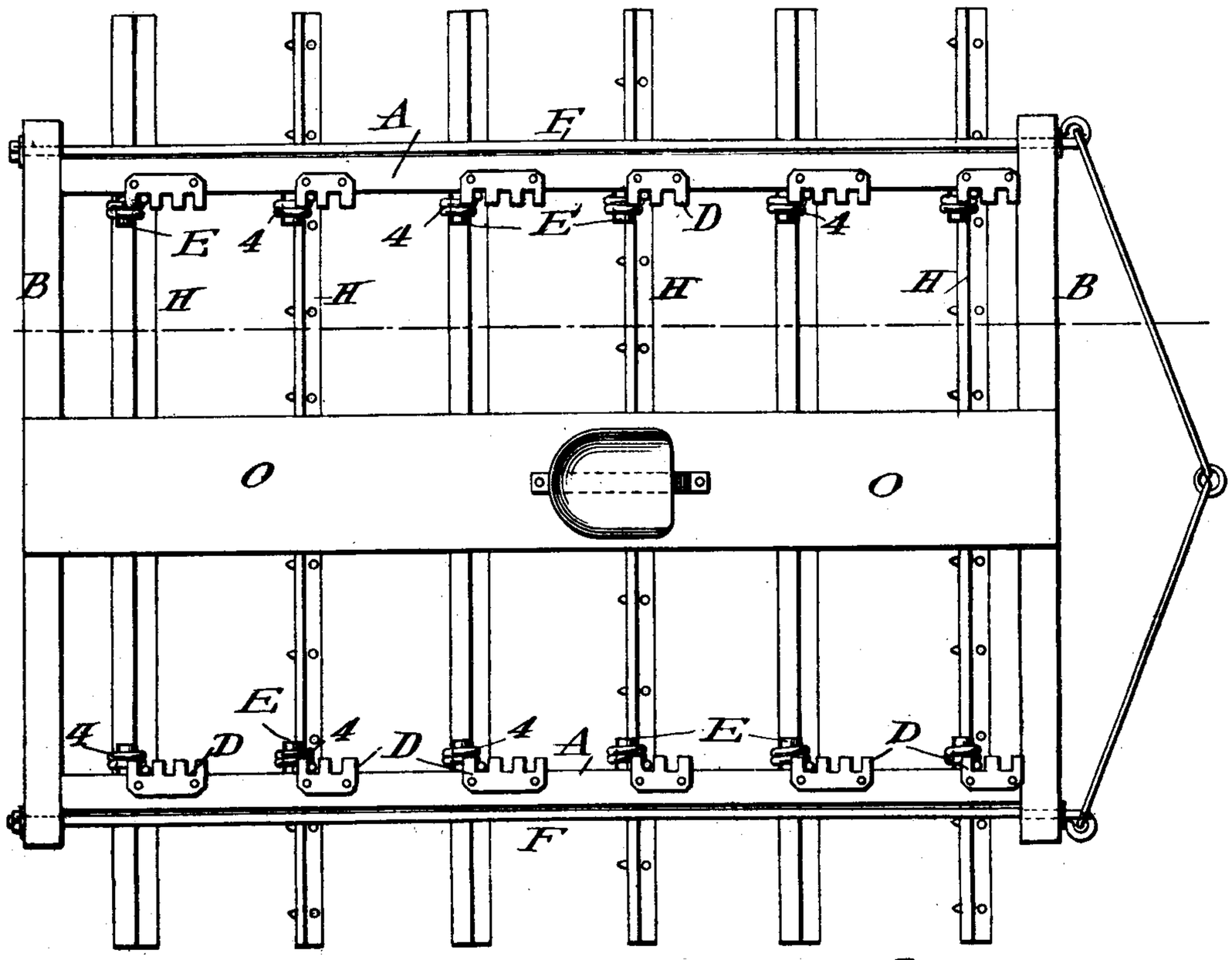


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE E. BLAINE, OF COSHOCTON, OHIO.

CLOD-CRUSHER AND LAND-LEVELER.

SPECIFICATION forming part of Letters Patent No. 675,924, dated June 11, 1901.

Application filed January 14, 1901. Serial No. 43,297. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. BLAINE, a citizen of the United States, residing at Coshocton, in the county of Coshocton and State of Ohio, have invented a new and useful Clod-Crusher and Land-Leveler, of which the following is a specification.

My invention relates to improvements in that class of clod-crushers and land-levelers in which drag-teeth and drag-bars are arranged to act alternately upon the soil to pulverize and smooth the same; and the objects of my invention are to simplify and cheapen the construction, to provide improved means for pivoting and adjusting the various drag-bars and tooth-bars, and to provide the device with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My invention consists, essentially, in the means for yieldingly and adjustably connecting the various bars to the main frame, said means being flexible rods attached to the bars and having coiled portions surrounding pivot pins or lugs on the frame and extending upward therefrom, and means for adjusting and holding said upward extensions consisting of notched plates engaging the same, as will more fully appear by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of a device embodying my invention, taken on the broken line of Fig. 2; and Fig. 2 is a plan view of the same.

Like characters refer to like parts in both figures.

A A represent the side beams, and B B the end beams, of a substantially rectangular frame, which is provided with stay-bolts F F to hold the frame together, to which bolts the draft means is attached.

O is a platform to afford a seat-support and also to strengthen the frame. Beneath this frame and at regular intervals are a series of transverse bars H, each alternate bar being wide enough to reach the soil and act as a drag-bar to smooth the same and crush the clods, and the other alternate bars are narrower and provided at the under side with drag-teeth to loosen and pulverize the soil. Each of the bars H is provided near the inner side of the respective beams A with an upwardly-projecting flexible rod 4, rigidly attached to the bar H at its lower end by means of a clip or other suitable fastening. Extending upward, this rod is provided with a coil adapted to surround and rotate around a pivot-pin E, projecting inward from the side of the beam A. This rod thence extends upward and engages a plate D, attached to the upper side of the beam A and provided with a series of recesses to engage and hold the rod 4. By the described means the bars H are each pivotally, yieldingly, and adjustably connected to the frame, each bar being independently adjusted. By detaching all the rods 4 on the drag-bars from the corresponding plates D these drag-bars can be thrown out of action and the drag-teeth only used, or in like manner the drag-teeth may be thrown out of action and the drag-bars only used, or by adjusting the respective rods of the respective series of bars the drag-teeth and drag-bars may be adjusted relatively to each other as occasion requires.

By means of the simple, durable, and effective structure shown I am able to produce a desirable article cheaply and furnish the same at less cost than the structures heretofore made for like purposes. It will also be observed that the device is readily taken apart for storage or shipment, it only being necessary to remove the bolts F F and detach the platform Q. The beams A and B are then readily separated and the rods 4 detached from the pins and plates.

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

1. The combination of a frame, flexible rods pivotally attached to the frame near the middle of the rods, bars attached to the flexible rods, and means for independent angular adjustment of the rods, substantially as described.

2. The combination of a frame, pivot-pins on the frame, flexible rods having coils surrounding and rotating on the pins, bars attached to the rods, and means for angular adjustment of the rods on the pins, substantially as described.

3. The combination of a frame, pivot-pins in the frame, flexible rods having coils engaging the pins and rotative thereon, and also

extending oppositely from the coils, bars attached to the lower ends of said rods, and means for adjusting the upper ends of the rods, substantially as described.

4. The combination of a frame having pivot-pins, rods having coils near the middle and engaging the pivot-pins, transverse bars attached to the lower ends of the rods, and notched plates on the frame and engaging the upper ends of the rods, substantially as described.

5. The combination of a frame having separable side and end beams, removable tie-bolts in the end beams, pivot-pins in the side beams, rods having coils detachably engaging the pivot-pins, plates on the side beams having notches detachably engaging the rods, and transverse bars attached to the rods, substantially as described.

6. The combination of a frame, a series of alternate wide and narrow transverse bars, teeth in the narrow bars, pivot-pins on the frame, flexible rods attached to the bars and having coils rotative on the pins, and means for independently adjusting the rods connected to the respective wide and narrow bars, substantially as described.

7. The combination of a frame having end beams and side beams, tie-bolts detachably securing the said beams, inwardly-projecting pins and notched plates on the side beams, alternate wide and narrow transverse bars beneath the frame, drag-teeth in the narrow bars, flexible rods attached to the bars and having coils rotatively engaging the pivot-pins, said rods also engaging the notches in the plates, substantially as described.

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