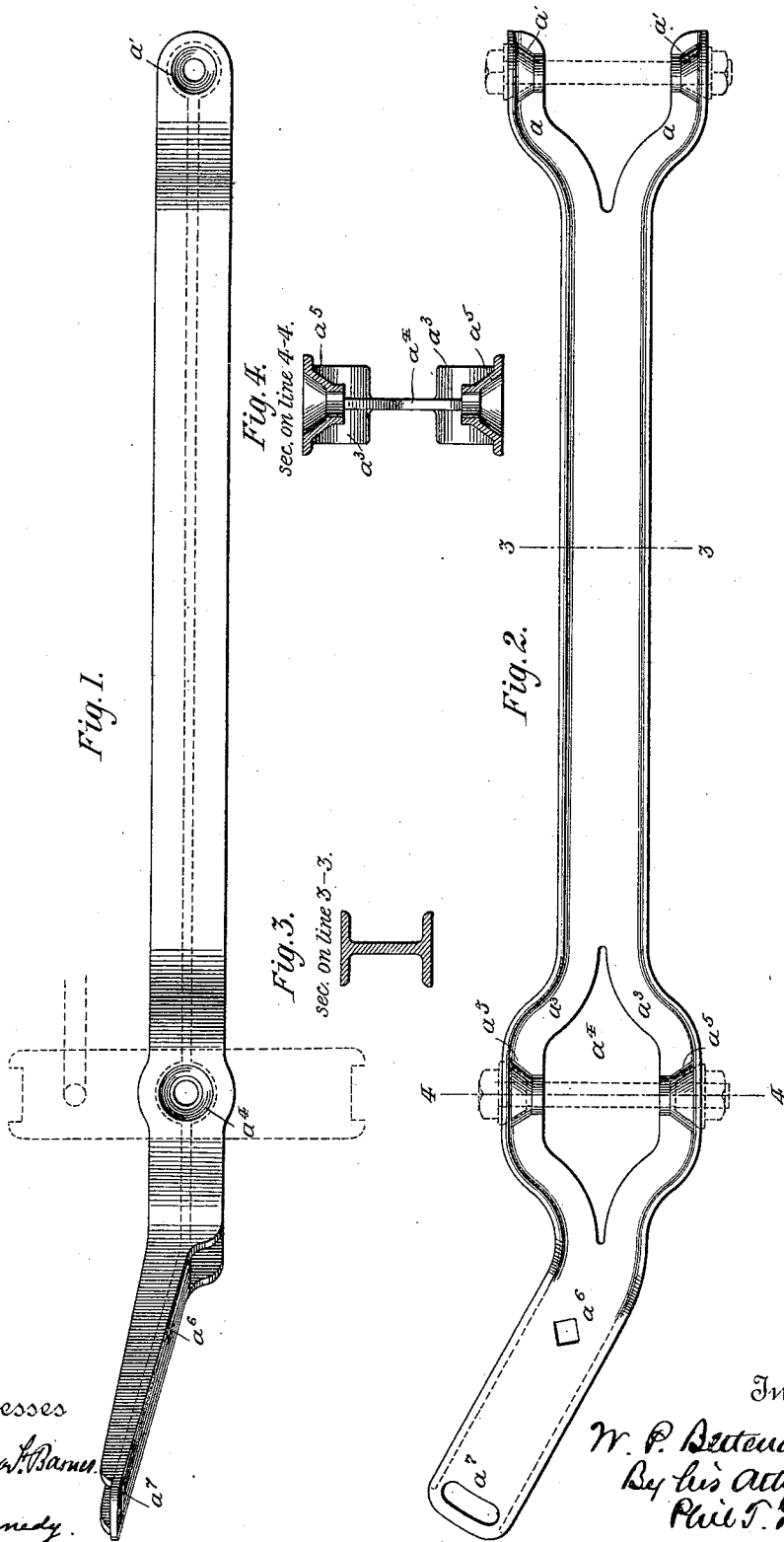


(No Model.)

W. P. BETTENDORF.
CULTIVATOR.

No. 466,215.

Patented Dec. 29, 1891.



Witnesses
Raymond A. Warner
A. R. Kennedy

Inventor
W. P. Bettendorf
By his Atty
Paul T. Dering
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 466,215, dated December 29, 1891.

Application filed August 5, 1891. Serial No. 401,755. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Cultivators, of which the following is a specification.

This invention relates to what are known as "drag bars or beams" for cultivators. These horizontal beams are jointed at their forward ends to the frame or axle, so that they may swing vertically and laterally at the rear end, and at the rear end they carry in various ways cross-heads or other supports, to which the shovels are attached.

It is the aim of my invention to provide a simple, light, and rigid beam; and to this end it consists, essentially, of a beam made complete in one piece from commercial angle-iron cut and bent at certain points, as hereinafter explained.

In the accompanying drawings, Figure 1 is a top plan view of a beam made in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a cross-section on the line 3 3. Fig. 4 is a vertical cross-section on the line 4 4.

In constructing my beam I make use of iron or steel bars of I form in cross-section. In order to produce a beam, I take a bar of suitable length and, after splitting or incising its forward end horizontally through the middle, bend the upper and lower portions apart, as shown at *a a*, Fig. 2, so that the front end of the beam presents a forked shape to receive a vertical pivot for connecting it with the draft-head or coupling.

In order to give an increased wearing-surface and prevent weakness at the point where the pivot passes through the forked end, I upset the arms by means of dies or other suitable means and give them the form of conical sockets *a'*, with vertical central holes there-through. These sockets are adapted to receive conical centers or pivots on the coupling-head and also adapted to receive the vertical pivot-bolt, as indicated by dotted lines.

If the beam is to be used in connection with a pivoted cross-head or yoke to carry the shovels, as indicated in dotted lines in Fig. 1, I make a slit or incision through the vertical web of the bar at a suitable point near its rear end and bend the metal upward and

downward, as shown at *a³*, Fig. 2, thus leaving the central opening *a⁴* through the beam for the admission of the cross-head. By suitable dies or other means such as will be adopted by the skilled mechanic I upset and laterally enlarge the bent portions *a³*, producing therein the conical sockets *a⁵* to receive the conical centers of pivots of the cross-head and the vertical pivot-bolt therefor, as indicated by dotted lines.

If the rear end of the beam is to receive a steering-handle, I give the same an upward curvature, as shown in Fig. 1, and shear away the upper and lower flanges on one side of this bent portion, thus leaving at the extremity a flat vertical face on one side of the web. Through this portion I form the horizontal hole *a⁶* and slit *a⁷* to receive the bolts for the attachment of the handle. This extended handle-receiving portion may also be given a lateral deflection, as shown in Fig. 2, in order to bring the handle in proper position. The form of the sockets and the shape and size of the forks at the front end and of the open portion at the rear end may be modified within the range of mechanical skill in order to adapt the beam for the peculiarities of the coupling or cross-head with which it may be used.

The cross-head (shown in dotted lines in Fig. 1) may of course be passed through the opening or arranged to encircle the widened part of the beam-heads, in both classes being well known in the art. In either case the vertical widening of the beam permits the centers to be widely separated, so that the head will be firmly held.

Having thus described my invention, what I claim is—

1. The metal cultivator-beam consisting of a single flanged bar having its forward end divided and spread vertically, as shown.

2. A cultivator-beam consisting of a single flanged metal bar having its forward end divided into two arms, the arms separated vertically and the ends of the arms upset and enlarged to form pivot-bearings.

3. A cultivator-beam consisting of a metal bar having near its rear end a transversely-incised and vertically-expanded portion with vertical sockets or pivot-bearings in the upper and lower edges.

4. A cultivator-beam consisting of a single flanged bar having its rear end divided and expanded vertically and having in its expanded portion conical sockets or pivot-bearings formed integral therewith.

5. The metal cultivator-beam formed in one piece with longitudinal flanges and with the upturned rear end free from flanges on one side.

6. As a new article of manufacture, the flanged metal cultivator-beam having divided and vertically-expanded portions at the front and rear.

7. The method of forming a metallic culti-

vator-beam, consisting in horizontally incising or dividing an I-beam at the required points, expanding the divided portion vertically to increase the depth, and upsetting the expanded portions to form pivot-receiving sockets or bearings.

In testimony whereof I hereunto set my hand, this 29th day of June, 1891, in the presence of two attesting witnesses.

WILLIAM P. BETTENDORF.

Witnesses:

THOS. B. CARSON,
EARLE CLARK.