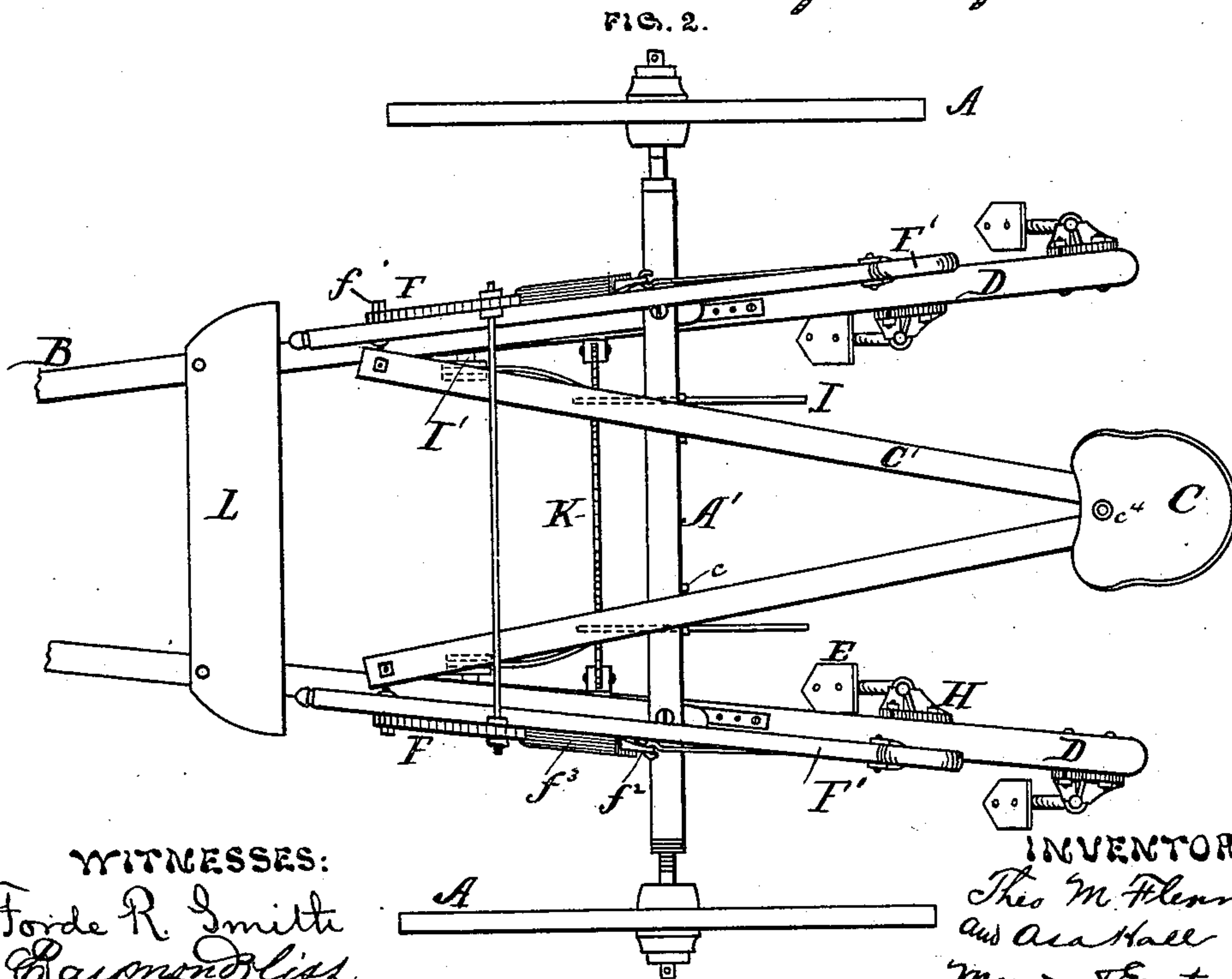
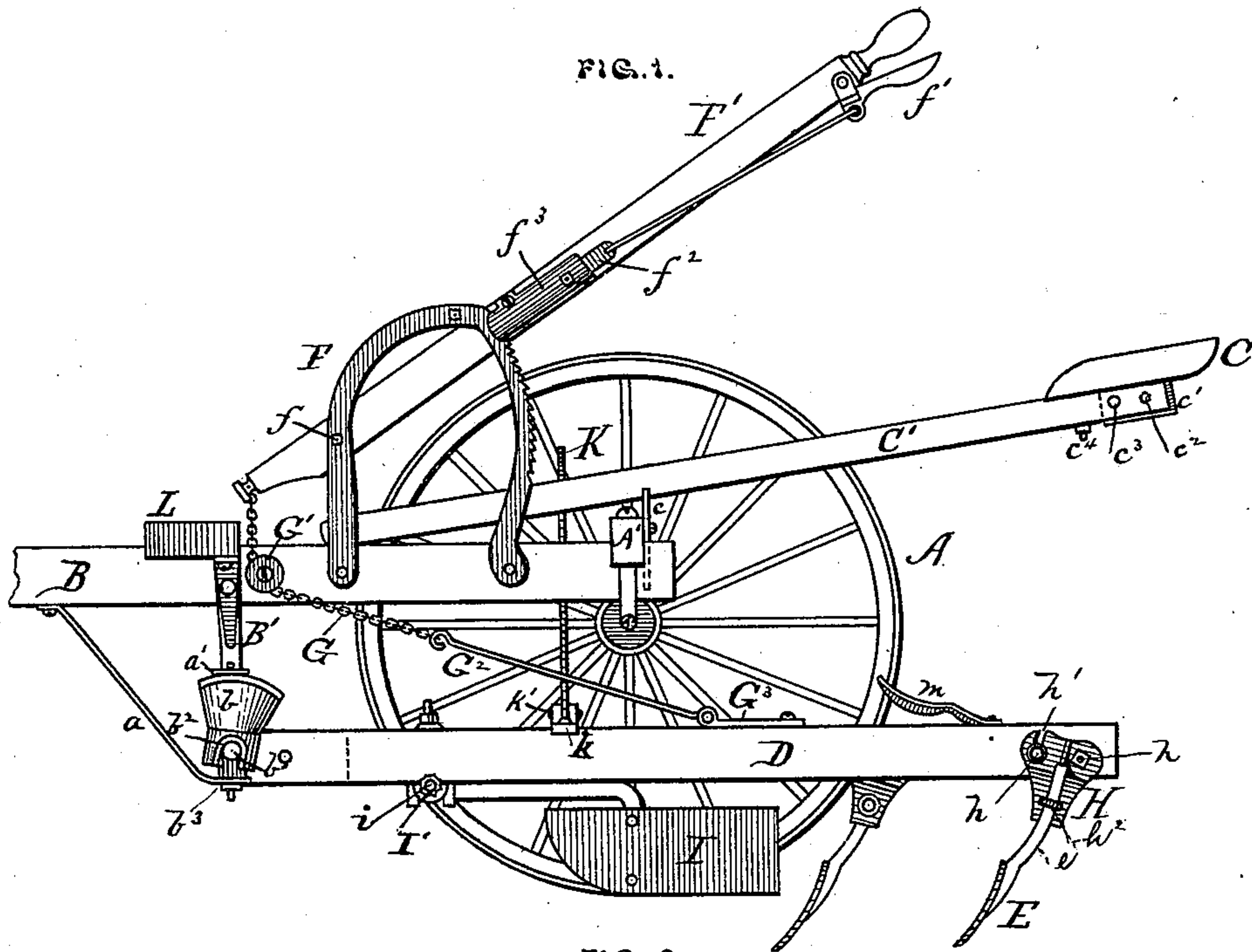


T. M. FLENNIKEN & A. HALL.
Cultivators.

No. 212,546.

Patented Feb. 25, 1879.



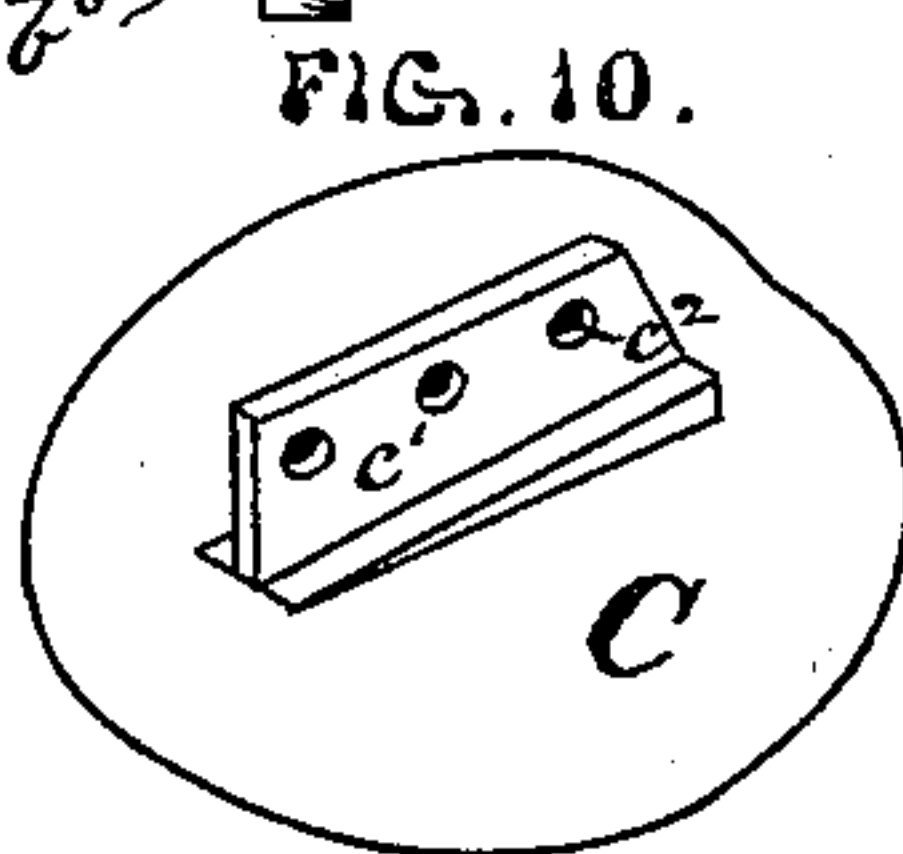
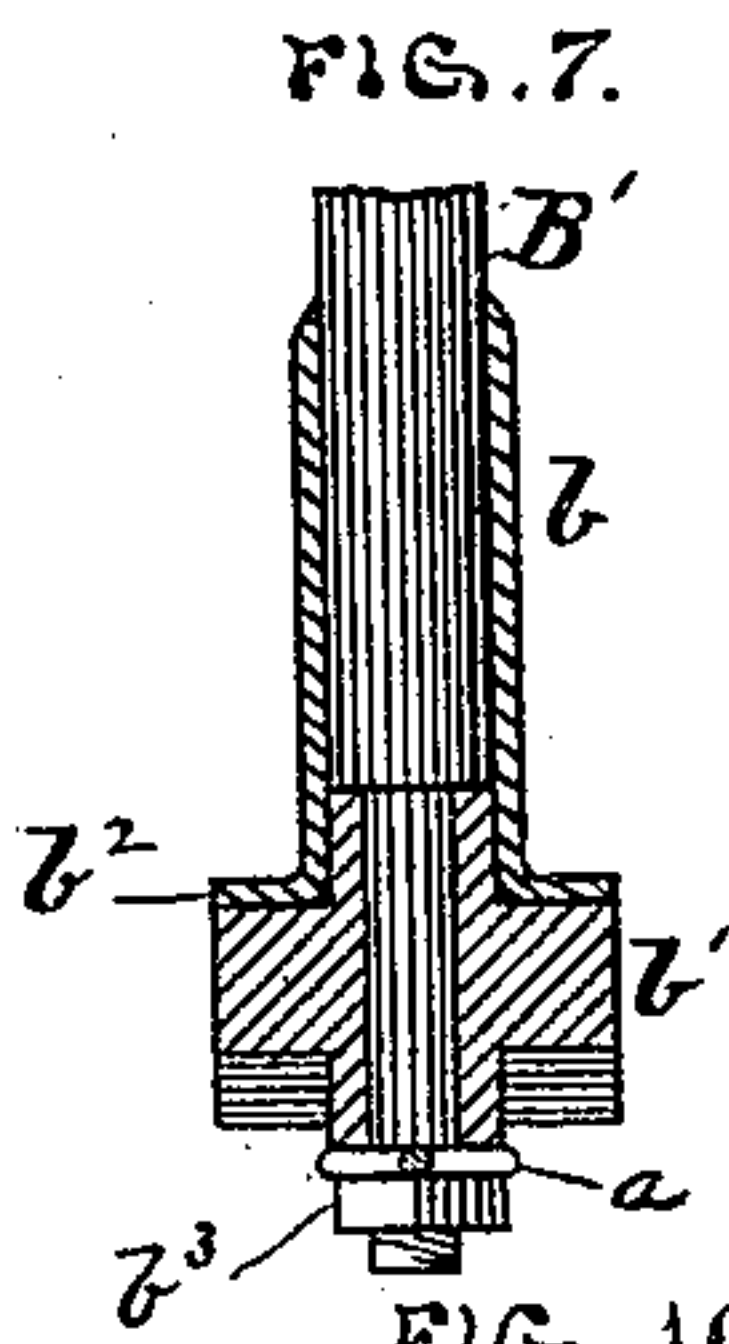
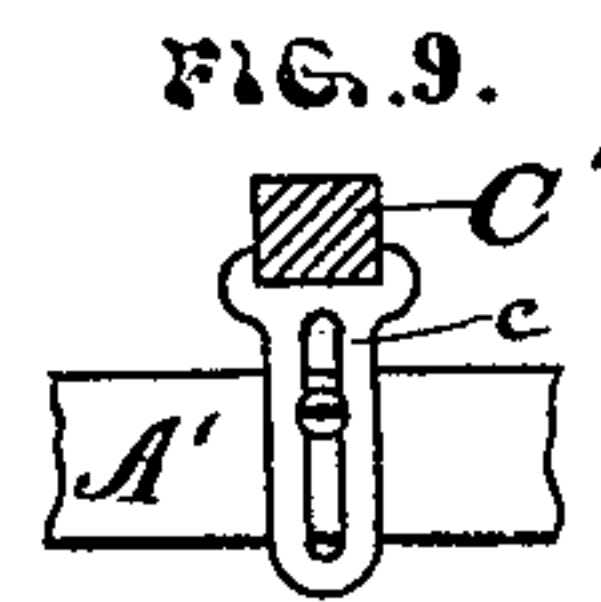
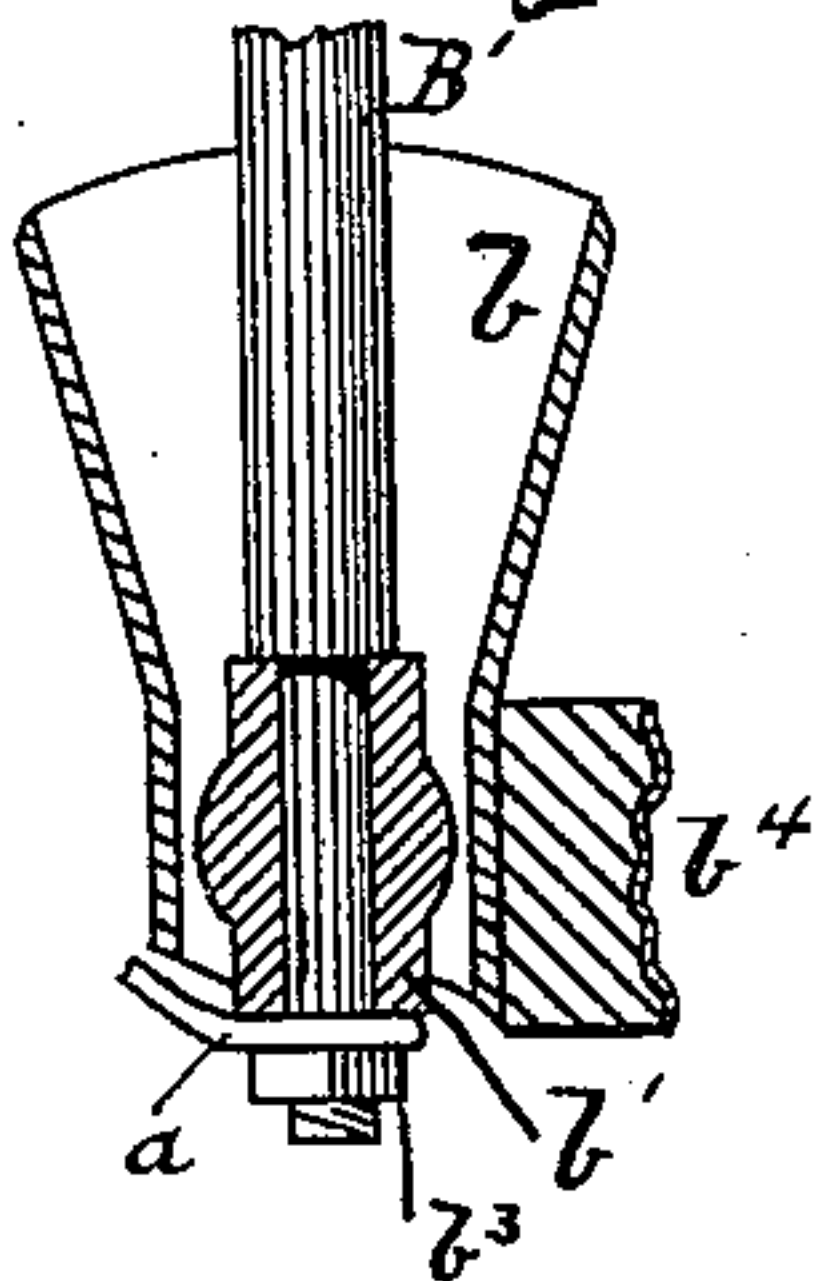
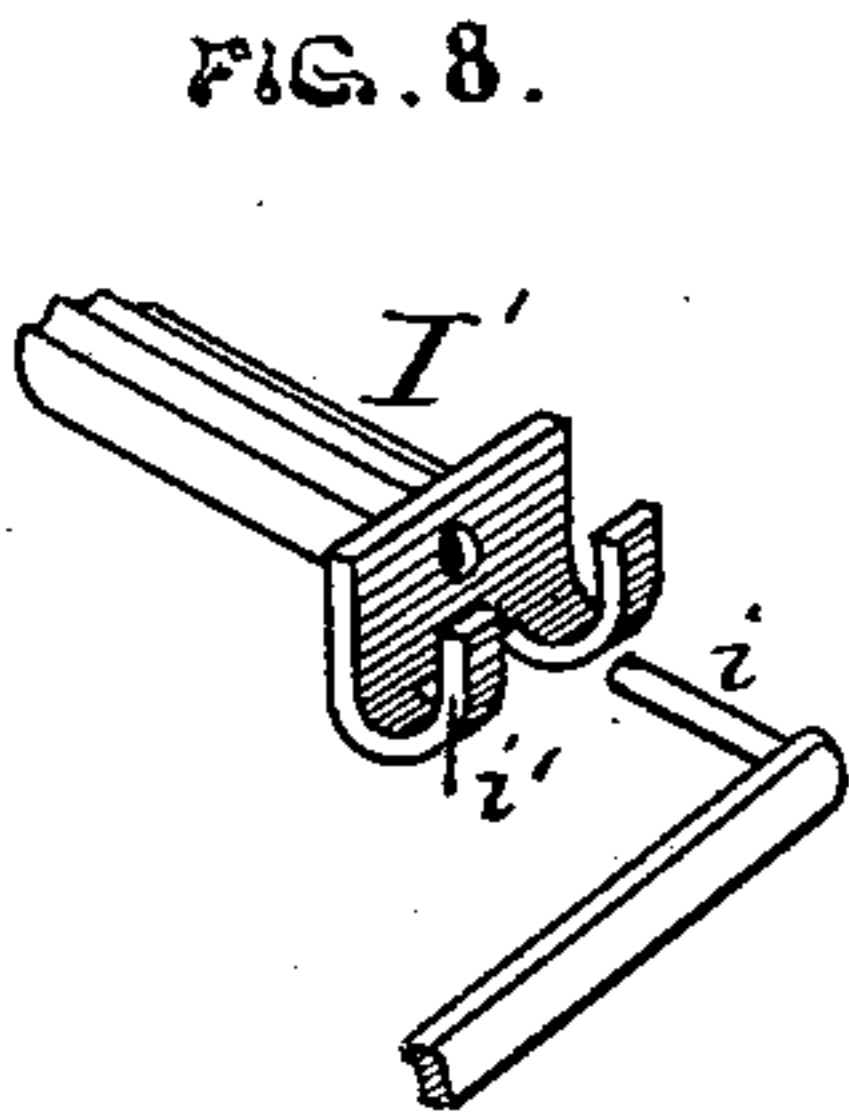
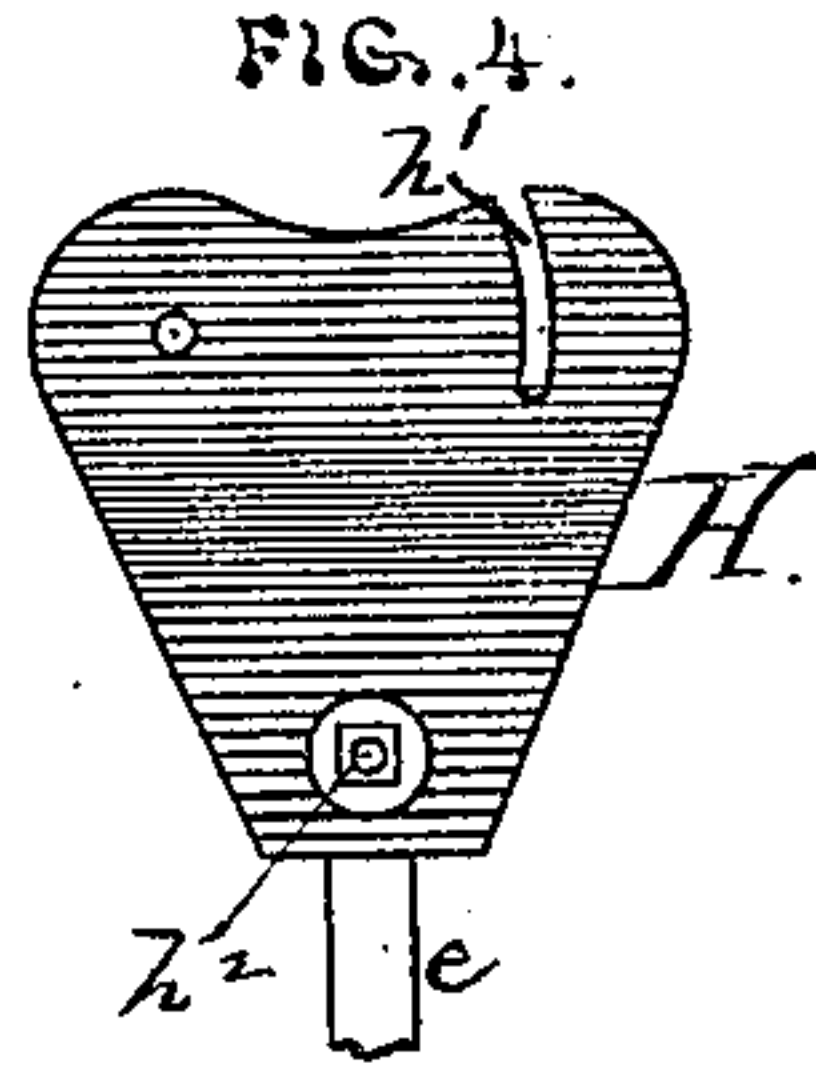
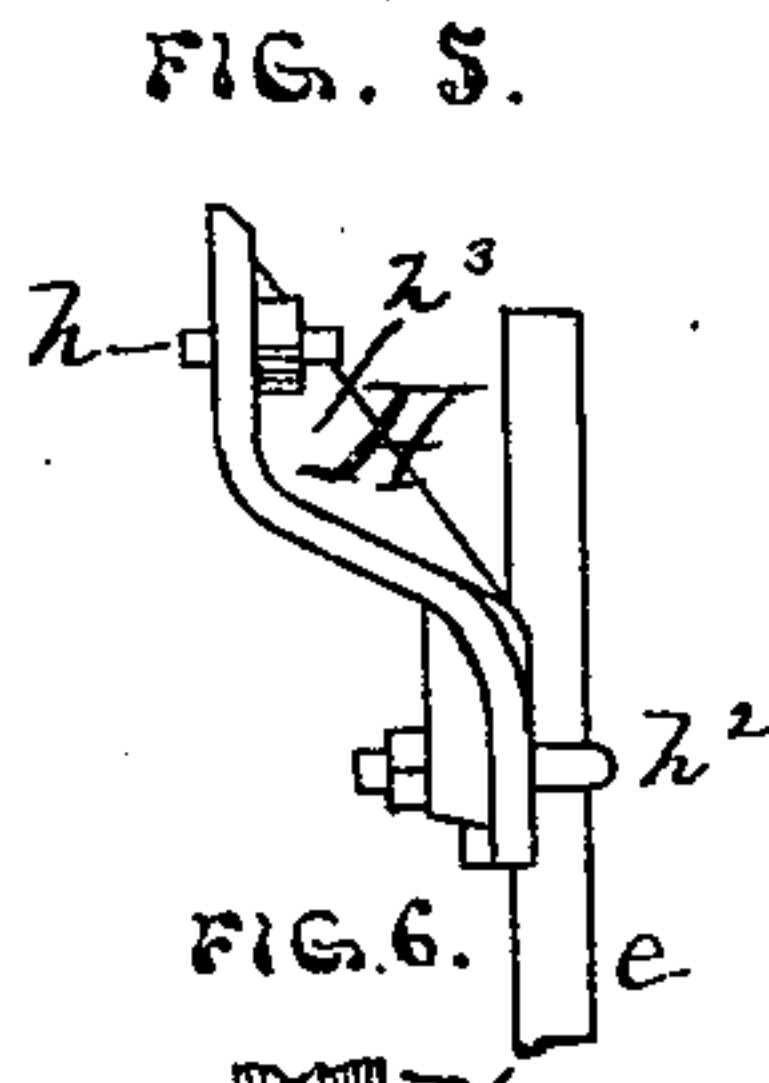
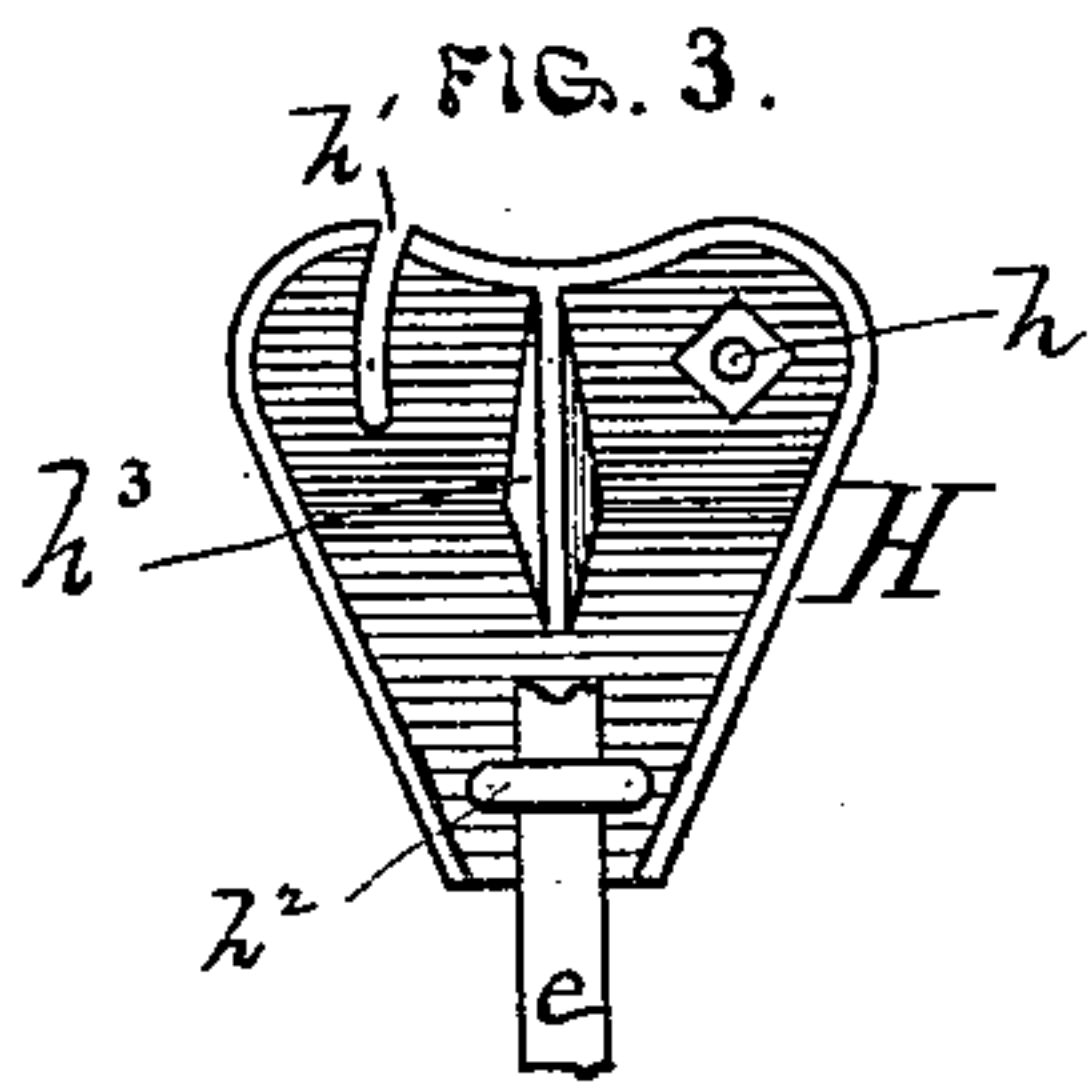
WITNESSES:
Forde R. Smith
Raymond Bliss

INVENTOR:
Thos M. Flenniken
and Asa Hall by
Munday & Evans, attys

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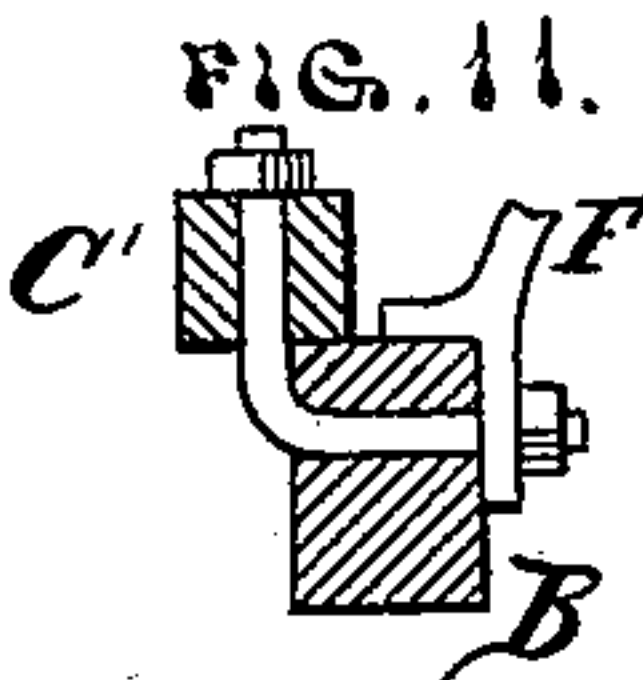
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UNITED STATES PATENT OFFICE.

THEODORE M. FLENNIKEN AND ASA HALL, OF ROCKFORD, ILLINOIS,
ASSIGNORS TO N. C. THOMPSON, OF SAME PLACE.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **212,546**, dated February 25, 1879; application filed April 18, 1878.

To all whom it may concern:

Be it known that we, THEODORE M. FLENNIKEN and ASA HALL, of Rockford, in the county of Winnebago and State of Illinois, have invented certain Improvements in Cultivators, of which the following is a specification:

The nature of this invention will be fully understood from the accompanying drawings and the following description.

In the drawings, Figure 1 is a side view with the near wheel removed, and Fig. 2 a plan view of a cultivator embodying our improvements. The other figures are detail views of different parts of the same.

Like letters indicate like parts in all the figures wherein they are used.

Referring to the drawings, A represents the wheels; B, the forks of the tongue; C, the seat; D, the drag-bars, and E the shovels of the cultivator. A' is the usual elevated axle. F is an arch, one part of which is attached to each side of the tongue B. One side of these arches is formed with ratchet-teeth.

F' represents levers, pivoted at *f*, each to one of the arched ratchets, and provided at their extremity with handles, as shown.

Under each handle is a bell-crank latch, *f*¹, connected by a rod with a spring-actuated pawl, *f*², which is held in a sheath, *f*³, and engages with the ratchet before mentioned.

The forward ends of the handles or levers F' carry chains G, which pass under sheaves G¹, located nearly vertical with the plow-beam point, and from thence to the drag-bars at a point in the neighborhood of the axle.

A rod, G², may be substituted for part of the chain, if desired.

The attachment to the drag-bar is by means of metal pieces G³ and a screw or bolt.

The pieces G³ may be adjustable by means of several openings for the screw, so as to take up or regulate the tension of the chain.

The distance between the sheave and the attachment to the drag-bar is such that all necessary lateral movement to the plows is permitted, and without affecting materially the height of the plows.

The drag-bars are attached to the hangers B' by a device consisting of a flaring-topped sheath, *b*, and a trunnioned holder, *b*¹.

The hanger passes down through both these parts, as clearly shown in Fig. 6, which is a section taken on a line longitudinal of the machine, and in Fig. 7, which is a section at right angles to that in Fig. 6.

The sheath flares at the top in the line of the length of the drag-bar only, and this feature permits the vertical movement of the drag-bar, the lateral movement being allowed by the loose fitting of the parts upon the hanger.

The sheath at its lower interior portion conforms to the exterior of the holder, which is let into it, openings being made at the sides for the trunnions, as in Fig. 1, and it thus finds bearings upon such trunnions. Flanges *b*² are added at these bearings to increase the strength and wearing-surface.

When the parts have been slipped upon the hanger the eye of a brace, *a*, is passed over the depending end of the hanger, and a nut, *b*³, then turned up.

A backward extension, *b*⁴, to be let into the end of the drag-bar, is cast upon the sheath.

By this construction a joint is formed having the requisite strength and permitting all required movement by the shovel-carrying beams, which may be put together without special fitting and without bolts.

The shovels are attached to the bars or beams by castings H.

In the side view, as in Fig. 3, which is a front, and in Fig. 4, which is a back view, they are heart-shaped; but in the edge view, as in Fig. 5, the lower half extends outward some distance, as will be clearly understood. They are secured to the drag-bars by bolts *h*, the back one of which acts as a pivot when it is desired to change the inclination of the shovels, adjustment in that regard being allowed by the slot *h*¹, wherein is placed the other bolt *h*. The shovel-standards *e* are held to this casting by eyebolts *h*².

If these castings are to be placed at opposite sides of the bars, they need to be made

in rights and lefts; but in other respects no change is required. A strengthening-rib, h^3 , is preferably employed.

The shields I are attached to the drag-bars by a fastening which requires neither bolts nor special fitting to render it operative. It consists of a casting, I' , perforated longitudinally to receive the pin or pivot i , projecting laterally from the arm of the shield. One or more loops, i' , of U shape, whose points are higher than the opening for the pin i , are employed for two purposes—namely, to prevent the working out of the pin from its socket and to sustain the shield in the vertical position in which it is desired to be placed. It is adjusted in this particular by turning the casting I' so that the bearing of the loop i' shall be in such position as to hold up the shield or allow it to fall to any designated plane. As noticed, the upper surface of I' is corrugated, as is also the recess in the bar to which it is fitted, and wherein it is held by an eyebolt, as shown. This construction prevents its rotation except at times when the bolt is loosened for the purpose of adjustment of the shield. By providing two loops, as shown, this fastening may be used upon either side of the machine.

The spring-bars C' , whereon the seat is mounted, are adjustable as to height by means of slotted bearing-pieces c , secured to the axles by bolts passing through the slots, as clearly shown in Fig. 9.

The bottom of the seat is provided with a depending rib or flange, c^1 , in which are made several openings, c^2 , for the bolt c^3 . The seat is held down by a vertical bolt, c^4 , at its front; but it may be adjusted backward or forward by changing the bolt c^3 to that one of the openings c^2 which will bring the seat to the desired position. The flange sets down between the converging beveled ends of the spring-bars C' , and the bolt c^3 secures the three parts firmly together.

The bars C' are secured to the tongue by the same bolt which unites the forward end of the ratchet-arch to the tongue; and to avoid depressing the bars to a level with the bolt-opening in the tongue, we bend the bolt to a right angle, as in Fig. 11.

K is a metal arch uniting the two drag-bars rigidly together. Its feet k are united to it by a hinged joint, k' , and are adjustable upon the bars to permit the shovels to be separated or brought together.

Foot-pieces m may be placed upon the drag-bars within reach of the driver.

Fig. 10 of the drawings is a bottom perspective of the seat. The whiffletree is attached to the front cross-bar L in the usual manner. Lateral braces a' extend from the hangers above the sheaths b to the central portion of the cross-bar L.

The manner of raising and lowering the plows in our improved cultivator is fully apparent, as we believe, without further explanation. The shields may very readily be removed or put in by turning the holder I' a quarter-turn, so as to get the prong of the loop where it will not interfere with a lateral movement of the shield.

What we claim is—

1. The combination, with the drag-bar and hanger, of the flaring-topped sheath b and the sleeve or holder b' , the sheath inclosing the sleeve and being supported by trunnions on the latter, and both encircling the hanger and held thereon by a suitable device, substantially as set forth.

2. The combination, with the shield, of a hound-holder piece provided with means for supporting the shield in any horizontal plane, and held to the bar or other supporting part of the frame by a device which permits the holder to be turned for the insertion or removal or adjustment of the shield.

3. The shield-holder having a longitudinal opening to receive the projecting pin upon the shield and a U loop at one side of said opening, said loop serving to sustain the shield and to retain the pin in the opening, substantially as set forth.

THEODORE M. FLENNIKEN.
ASA HALL.

Witnesses.

EDW. S. EVARTS,
JOHN W. MUNDAY.