(No Model.)

J. S. HIND.

COMBINED HARROW AND CULTIVATOR.

No. 407.206. Patented July 16, 1889.

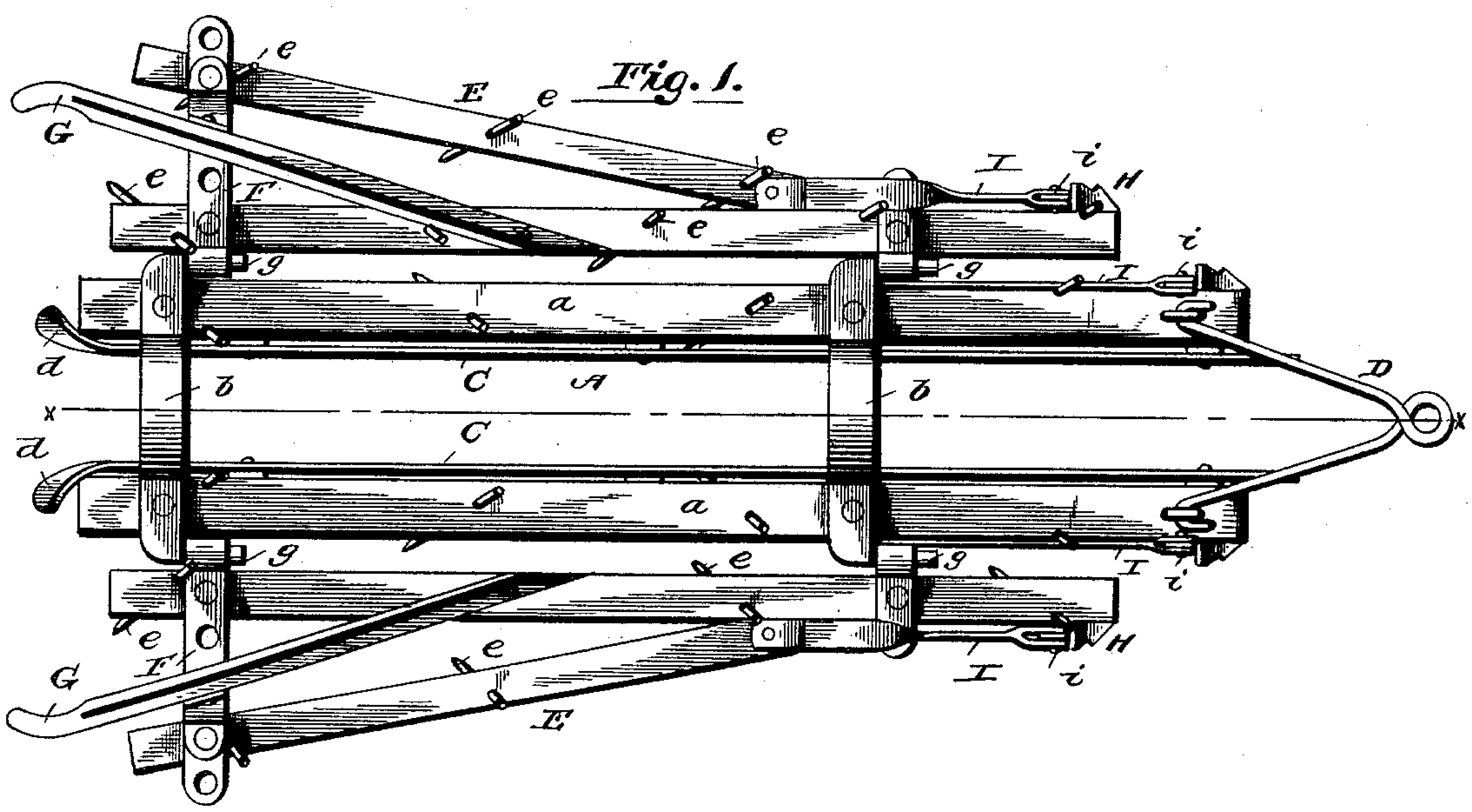

Fig. 1.

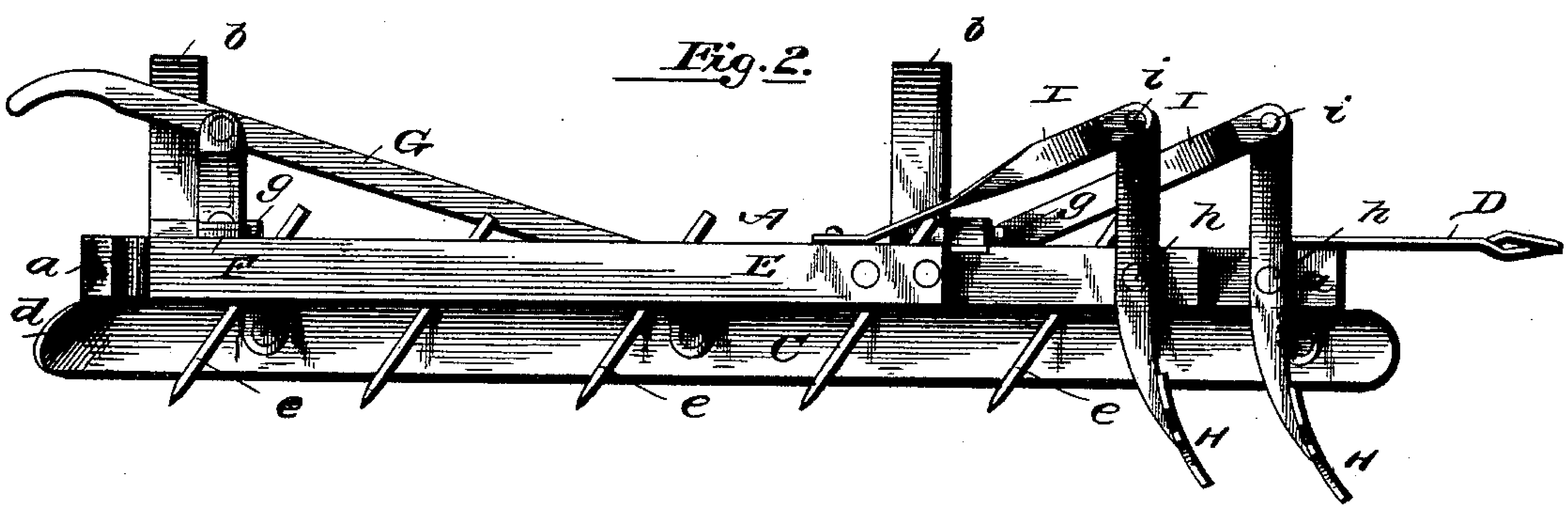

Fig. 2.

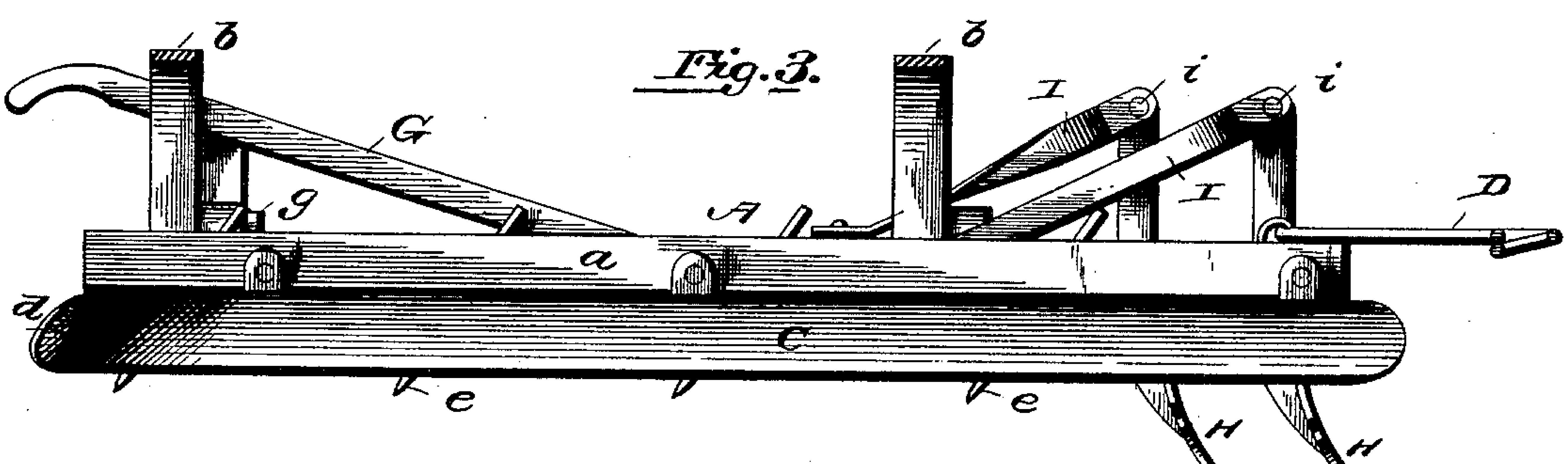

Fig. 3.

Witnesses:

[signature]

[signature]

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UNITED STATES PATENT OFFICE.

JOHN SAMUEL HIND, OF OAKLAND, IOWA.

COMBINED HARROW AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 407,206, dated July 16, 1889.

Application filed March 9, 1889. Serial No. 302,662. (No model.)

To all whom it may concern:

Be it known that I, JOHN SAMUEL HIND, a citizen of the United States, residing at Oakland, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in a Combined Harrow and Cultivator; and I do 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.

This invention relates to an improvement in combined harrows and cultivators, and is designed more especially for cultivating listed corn.

The novelty will be fully understood from the following description and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of my improved device in a position ready for use. Fig. 2 is a longitudinal elevation of the same, and Fig. 3 is a longitudinal sectional view taken on the line *x x* of Fig. 1.

Referring by letter to the said drawings, A indicates the main cultivator-frame, which is composed of two longitudinal beams *a*, arranged parallel at an interval, as shown. These beams are connected by vertically-looped or arch-shaped connections *b*. These connections are of a peculiar construction, having a sufficient upward bend to pass over the tops of listed corn, which is received between the two main beams *a* of the harrow-frame, and terminate at their ends, which extend beyond the outer side of the said beams, in angular portions *g*, which serve as pintles for the hinged harrow-sections.

C indicates two similar shields, which may be formed from metal or other suitable material. These shields are arranged lengthwise on the inner sides of the beams *a*, respectively, and are designed to protect the corn from the action of the harrows or clods: and said shields are bent or curved laterally at their rear ends, as shown at *d*, so that the earth thrown against them by the harrow-teeth will be pushed away from the listed corn as the machine advances. The beams *a* are suitably provided with harrow-teeth, as shown, and a clevis D is secured to the forward ends of the beams for the attachment of the draft.

E indicates the harrows, there being one employed on each side of the cultivator-frame. These harrow-sections are shown as composed of a long and short beam, the short beam being secured obliquely to the forward portion of the long beam, and the beams are respectively provided with harrow-teeth *e*. These harrow-sections are furthermore provided on the inner side of the longer beam with hinged straps F, there being one arranged near the front and rear ends, respectively. These straps F have an eye at their inner ends, and are designed to receive a pintle *g* of the arched brackets *b*. By this construction it will be seen that these harrow-sections, which are each provided with a handle G, may be turned upwardly and brought out of operation when desired, or they may be slipped off of the pintles and removed when it is desirable to use the cultivator alone. These harrow-sections by being hinged to the cultivator-frame are adapted to accommodate themselves to the unevenness of the ground.

H indicates a cultivator, there being one employed on each harrow-section and one on the forward end of each cultivator-beam, so as to work upon the earth in advance of the harrows. These plows have their standards or arms pivoted at a point *h*, so as to have their upper ends extend above the main frame, and the said upper ends are connected by means of a break-pin *i*, with a rearwardly oblique arm I, which has its opposite ends secured to the harrow and cultivator beams. By this means it will be seen that should the plows encounter an obstruction which might result injurious to any of the parts, the break-pin *i* will be destroyed and the plows allowed to swing freely upon their pivots, so as to pass the obstruction.

Having described my invention, what I claim is—

1. The cultivator-frame composed of the two parallel beams, the arched brackets connecting the same and terminating in pintles, as shown, in combination with the harrow-sections hinged to the said brackets on opposite sides of the cultivator-frame, substantially as specified.

2. The combination, with the cultivator-frame, of the arched brackets, the fenders secured to the longitudinal beams of the frame

on the inner sides thereof, and the outer harrow-sections removably hinged to the pintles of the said brackets, substantially as specified.

3. The combined harrow and cultivator described, consisting, essentially, of the two longitudinal beams, the arched brackets securing the same to form a passage for listed corn, the fenders secured to the inner sides of the longitudinal beams, the lateral harrow-sections hinged to the brackets, and the cultivator and harrow sections carrying, respectively, a pivoted plow provided with a break-pin, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN SAMUEL HIND.

Witnesses:
GEO. BRANCH,
J. W. RHODES.