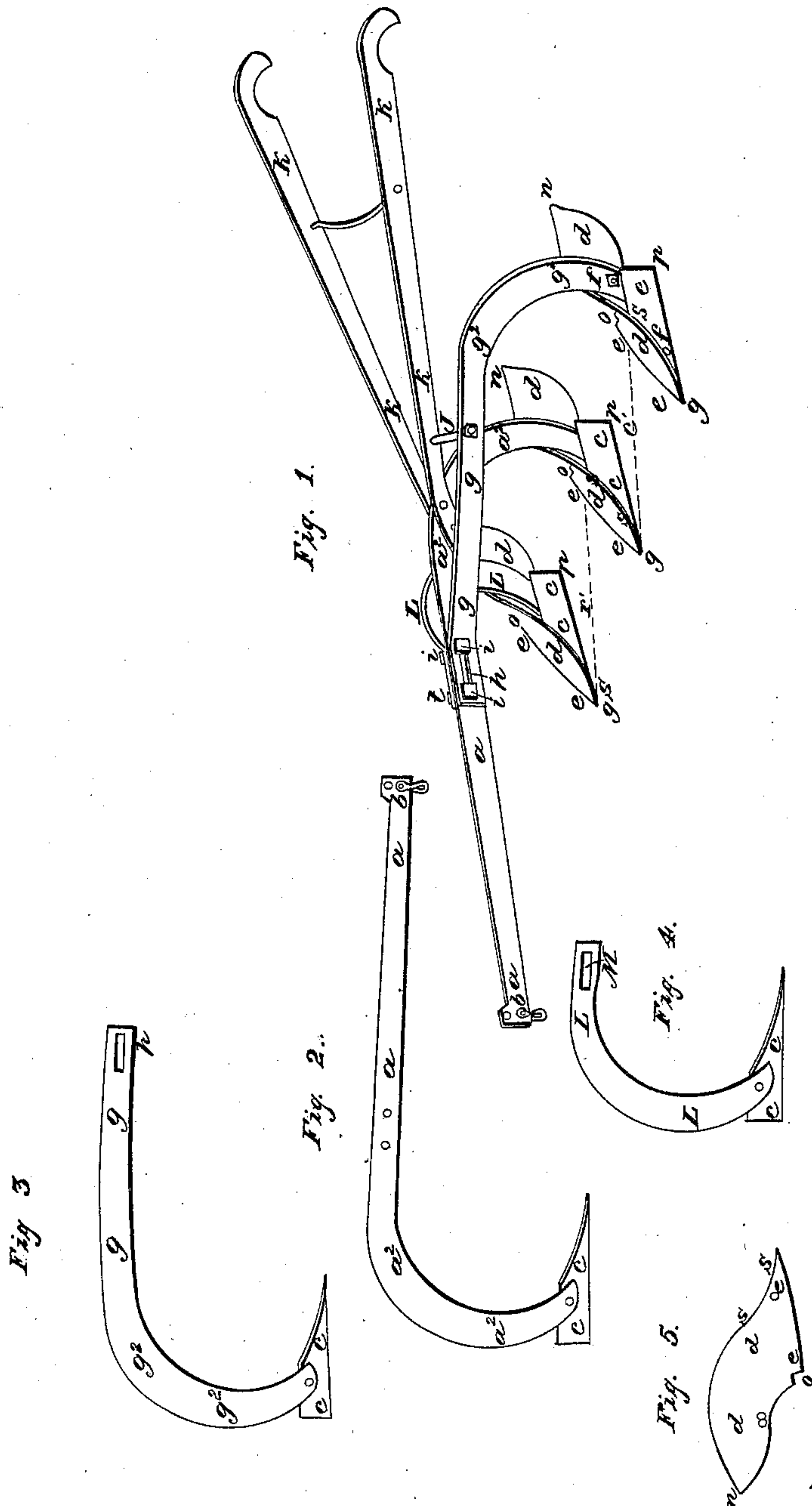


E. JULIER.

Plow.

No. 27,450.

Patented Mar. 13, 1860.



WITNESSES:

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EDWARD JULIER, OF BEVERLY, OHIO.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 27,450, dated March 13, 1860.

To all whom it may concern:

Be it known that I, EDWARD JULIER, of Beverly, in the county of Washington and State of Ohio, have invented and made certain new and useful Improvements in Plows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the plow. Fig. 2 represents the center or main beam with landside. Fig. 3 is the larger detachable beam with landside attached. Fig. 4 is the smaller detachable beam with landside attached. Fig. 5 is the mold-board detached.

The nature of my improvements consists in the arrangement of a triple or gang plow composed of a central main or draft beam with slotted laterally-attached secondary beams, each of said beams having connected thereto a landside of wrought metal and a mold board formed of a thin wrought plate, so shaped as to constitute in one individual piece the share, mold-board, and wing of plow, the said several parts being so combined and arranged at such an angle relative to each other as that the heel or butt of the rear or hindmost share will overcut the toe or point of the advance share, and whereby greatly improved results in plowing and cultivating corn are brought about, as will be hereinafter more fully set forth.

In Fig. 1, $a a a^2 a^2$ indicate the central main or draft beam, formed of wrought metal from two to three inches wide and half-inch thick, gradually wider at the curved or stock part a^2 . The hitching end of the beam is formed, as ordinary plow-beams, with clevis and hooking-places b . To the butt-end of the stock part is attached a wrought-metal landside, $c c$, formed of thin plate metal half-inch thick and about four inches high.

The mold-board $d d$ is formed of thin steel-plate metal, and its lower line, $e e$, is beveled or formed with a sharp edge. The mold-board $d d$ is of one single plate, the sharp edge $e e$ forming the share. The mold-board is attached to the stock part and landside by suitable bolts and nuts, $f f$, Fig. 1. At $g g$ is an adjustable detachable beam, the curved or stock part similar in form to the main beam, as indicated at $g^2 g^2$. This beam has a slot formed in its upper

end, as at h , Figs. 1 and 3, by which slot it is connected by bolts $i i i i$ to the main beam, and by means of the stay connecting rod or bar J this beam is connected to one of the helves $k k k k$, which are also of thin wrought metal. This detachable adjustable beam is bowed or bent outwardly sufficiently to throw it off from the main draft-beam the required distance.

At $L L$, Figs. 1 and 4, is indicated the smaller or right-hand-side detachable adjustable stock, formed also with a slot, M , by which it is attached to the main beam. Each of the detachable adjustable stocks $g g^2 L$ have mold-boards and landsides connected thereto.

By reference to the drawings it will be perceived that the mold-board and share constitute one and the same individual piece of metal, and said mold-board is not over eight inches from the tip of the wing n to the share-edge $e e$, and the width or distance across from the point o to the heel of the landside P should not be over six inches. Thus each will cut six inches of furrow in width and turn up about eight inches of soil in depth.

In the construction and operation of my improved triple-share plow the mold-boards d and landsides $c c$ are so arranged and adjusted relative to each other as that the butt-end or part o of each succeeding share shall overcut or extend to the right of the cut of the point Q of each preceding share about an inch, as indicated by the lines of dots $r r$, so that no blank or unturned soil occurs between each share, and thus the whole width or extent of upturned soil made by the three shares will be about sixteen inches.

The object sought after in my mode of arranging and form of constructing share-plows is to diminish the unwieldy size and cumbrous weight of plows, to greatly lessen the draft and diminish the resistance of the soil, and thereby enable one person and one animal to do more work in half the time and with half the labor usually required in the employment of large bar-share plows requiring two or more animals to work them.

Through my mode of dividing the draft of the beam and distributing the resistance of the soil by employing three small shares much less power is required to force the plows through the soil, a greater amount of soil is upturned

and more thoroughly pulverized, and a greater width of soil is plowed over, and all surface growth and sod thoroughly turned under.

From the peculiar manner of arranging the shares of my plow at the proper angles relative to each other, from twenty to twenty-two inches of furrow or soil can be upturned in the advancing of the plow, whereas in the use of the common bar-share and subsoil-plows much less soil can be turned up.

In soil where there is much tendency to adhesiveness it has been found exceedingly troublesome to use cast-metal mold-boards, from the fact that it is difficult to keep the face of the mold-board from taking or clogging, no matter how bright the surface of the cast metal may be; but in the employment of wrought-steel ground mold-boards no such difficulty occurs, the wrought metal mold-boards being less porous.

In soil abounding with fibrous rooty growth my triple-share plow will most effectually cut through the soil and the rooty substances because of the relative bearing of the cutting-edges *e e* and *s s* of the share and mold-board.

I am not aware that any kind of duplicate plows other than the common shovel-plow has been used in the cultivation of corn or other growth in rows, and consequently it is believed that in the use of my improvements many advantages ensue, from the fact that it is only necessary to pass up one side and down the other between each row of growth, thus doing in two operations what ordinarily requires four operations. Besides, in using my plow in standing growth, every portion of soil is thoroughly turned up and all weeds and sod turned under, while the soil is well broken and laid against the standing growth, which cannot be the case in the use of shovel and bar-share plows as ordinarily operated.

Owing to the adjustability of the stocks *g g*² *L L* through means of the longitudinal slots *M*, if desired, the share and mold-boards *d e* can be brought more or less forward or carried more or less back relative to each other, or be adjusted so as to cut less deep than the center or middle share; or, when required, the plow can be used as a single or double share plow.

The whole weight of the larger size of my improved plow does not exceed fifty pounds. Consequently the animal hitched to the plow has comparatively a small amount of weight to pull.

My plow has also been found equally as serviceable in preparing soil for grain as for cultivating standing growth, and in regions of country where grain is deposited on the surface and plowed in actual practical test has shown that in ordinary good friable land no harrowing or reducing the soil is required, for the peculiar construction and arrangement of the mold-boards of my plow entirely supersede the necessity of harrowing over the soil, it being well broken and turned over with great regularity.

When the share becomes blunt or dull the mold-board is detached and the share-edge beat out and sharpened again and attached, ready for use.

I am well aware that share and other plows have been attached together in gangs and arranged at certain angles relative to each other; but in all such cases the shares are so attached as to leave a space or strip of unturned soil, whereby the earth is not thoroughly broken up and turned over, so as to throw all the surface earth beneath.

I am also aware that shovel-plows have no attached edge or share, as is also the case with many cultivators, and consequently such forms or shapes I do not claim.

I claim—

The arrangement of the slotted adjustable laterally-connected compound beam and stock *g g*² *h* and *L L M*, Figs. 1, 3, 4, when combined with the solid wrought-metal compound mold and share *d e n o s*, Fig. 5, and when said combination is so arranged as that the heel or butt-end of one cutting-edge overcuts the point or toe of the advance share, admitting also of being adjustable more or less forward or backward relative to each other, substantially as herein set forth and described.

EDWARD JULIER.

Witnesses:

JOHN S. HOLLINGSHEAD,
JEDH. GITTINGS.