(No Model.)

E. McCHRISTIAN.

HORSE HAY FORK.

No. 348,853. Patented Sept. 7, 1886.

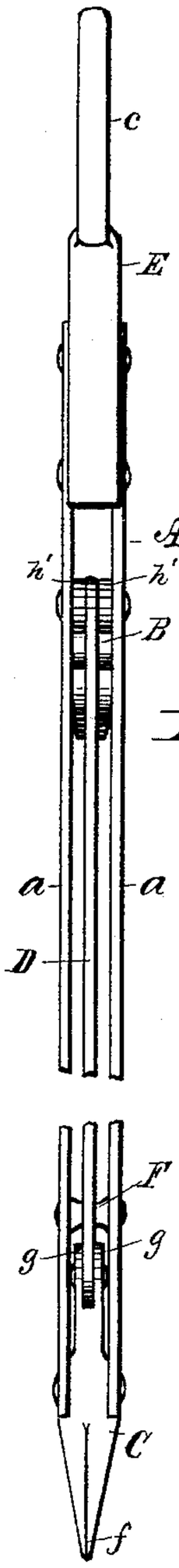

Fig. 2

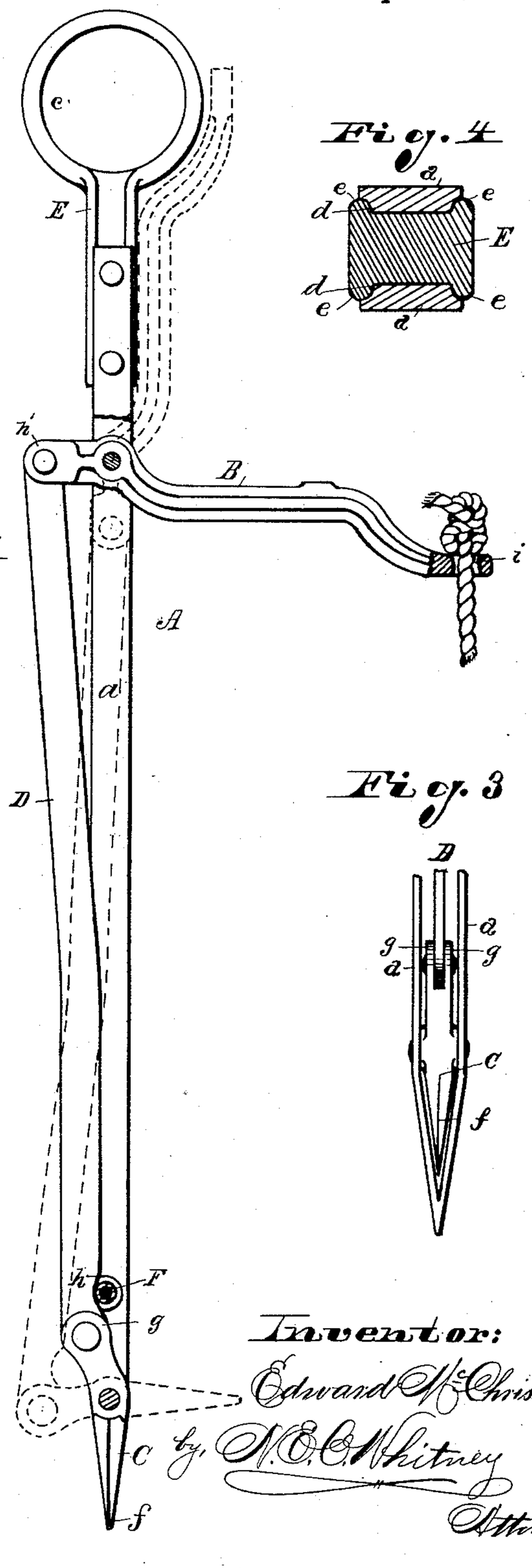

Fig. 1

Fig. 4

Fig. 3

Attest:

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UNITED STATES PATENT OFFICE.

EDWARD McCHRISTIAN, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE SUPERIOR DRILL COMPANY, OF SAME PLACE.

HORSE HAY-FORK.

SPECIFICATION forming part of Letters Patent No. 348,853, dated September 7, 1886.

Application filed May 17, 1886. Serial No. 202,432. (No model.)

To all whom it may concern:

Be it known that I, EDWARD McCHRISTIAN, of the city of Springfield, county of Clark, and State of Ohio, have invented certain new and useful Improvements in Horse Hay-Forks, of which the following is a specification.

This invention relates to hay-forks, and is especially intended as an improvement upon the class known as "harpoon hay-forks," the object of the invention being to provide a "single" harpoon fork which shall be cheap and durable in its construction and effective in its operation.

The invention consists in the certain construction and combination of elements in a single harpoon hay-fork, substantially as described in the specification, and pointed out in the claims.

Figure 1 represents in rear elevation a single-harpoon hay-fork embodying my invention; Fig. 2, a side elevation of the same, a portion of the sheath being broken away to more clearly show the parts, the full lines showing the parts in their normal position and the dotted lines showing their position when operating to lift the hay; Fig. 3, an enlarged cross-sectional detail on dotted lines *x x*, Fig. 2. Fig. 4 shows a portion of a modified form of sheath.

The hay-fork, as shown in the drawings, is comprised, essentially, of a sheath or case, a handle secured to said sheath, a pivoted hay-lifting prong or barb, a pivoted hand or tripping lever, a rod pivoted to and connecting the hand-lever, and a spool or pin upon the inside of the sheath to contact with and throw the connecting-rod forward off its centers during the descent, as hereinafter fully explained.

The sheath A will preferably be constructed of wrought-iron, and is comprised of two flat bars, *a*, of suitable length, arranged with their broad faces adjacent to and parallel with one another, said bars being separated (preferably their entire length, as shown in Figs. 1 and 2) sufficiently to permit the interposition between them of the hand-lever B, hay-prong C, and connecting-bar D. The bars *a* of the sheath are separated at their upper ends by means of the handle E, the lower portion of which is extended between and riveted to the bars *a*, said handle being preferably formed of malleable iron with a ring, *c*, at its upper end, as clearly shown in Fig. 2 of the drawings. The lower end of the handle E is preferably square in cross-section, and is depressed centrally at its two opposite sides, as at *d*, to form slightly-projecting right-angle flanges *e* at each end of the two sides, this depression *d* forming a seat for the bars *a*, the flanges *e* overlapping the edges of the said bars, thus strengthening the connection between the handle and sheath and preventing any possibility of lateral movement.

All the parts of the hay-fork are so arranged relatively to each other that a line drawn centrally and longitudinally through the sheath of the hay-fork would bisect all of said parts, which brings all strains upon the moving parts in a straight line.

Pivoted between the side bars, *a*, of the sheath, at or near the lower end, is the hay-lifting prong C, and pivoted between the bars *a* near their upper end is a hand-lever, B, the said lifting-prong and hand-lever being connected together by a connecting-rod, D, which is pivoted at one end to the prong C and at its opposite end to the lever B. As shown in the drawings, the prong C has its pivotal point near its longitudinal center and is somewhat curved or angular in construction, its two ends and pivotal point not being in the same plane, the object of which is to have the point of connection between it and the connecting-rod somewhat forward of the centers of movement, to obviate resistance due to dead-centers. The prong C is pyramidal pointed at its piercing end, as shown at *f*, and is slotted at its opposite end to form ears *g*, between which ears the connecting-bar is pivoted. This bar D will in practice be slightly bent or curved inward in the direction of its width, as shown in Fig. 2, and will have an offset or inclined portion, *h*, near its lower end, said offset or inclined portion contacting with a spool or pin, F, secured between the bars *a* of the sheath during its descent, to assist in throwing the connecting-bar D off its centers. The hand-lever B, which operates to change the position of the prong C from a vertical to a horizontal position, is pivoted near its rear end between the bars *a*, and will be substantially of the construction illustrated—that is to say, it will be slotted at its

one end to form ears *h'*, between which ears the upper end of the connecting-rod is pivoted, will have an eye, *i*, formed in its forward end, and will be bowed outward, as shown, so as to lie when in its upright position directly in front and in a line central with relation to the handle E, it being preferably of a shape to conform to the contour of said handle.

As shown in Figs. 1 and 2, the bars *a* of the sheath are shown as terminating at their lower ends just below the pivotal point of the prong C, which construction is preferable, the prong itself in this construction acting to pierce the hay during operation. I do not desire to limit myself, however, to this exact construction, as the lower end of the sheath might be formed as illustrated in Fig. 4, the two bars *a* being made longer, tapered to a point at their lower end, bent toward each other, and welded together, this construction of sheath being sometimes desirable, it incasing the prong C.

The operation of the device is obviously apparent and need not be explained.

I claim—

1. A single-harpoon hay-fork comprising the following elements: a sheath having a handle secured to its upper end, a hay-lifting prong or barb pivoted at its lower end, a hand-lever pivoted near its upper end, a curved connecting-bar pivoted at its lower end to one end of the prong and at its upper end to one end of the hand-lever, and a spool or pin secured to the sheath, against which the connecting-bar strikes, substantially as and for the purpose described.

2. The combination, in a horse hay-fork, of a sheath comprised of the two flat bars *a*, separated and arranged parallel to one another, a handle secured to the upper end thereof and having flanges to overlap the edges of said bars *a*, a hand-lever pivoted between said bars, the forward end of which lies in plane central with relation to the sheath, said lever being bowed outward to permit it to lie in close proximity to the handle when in an upright position, as shown, a curved hay-lifting prong pivoted to the lower end of the sheath, a curved connecting-bar pivoted to and connecting said hand-lever and prong, and a spool to contact with said connecting-bar during its descent to assist in throwing it off its centers, all substantially as shown and described.

3. In a hay-fork, the combination, with the sheath A, hand-lever, and pivoted hay-lifting prong, of the inwardly-curved connecting-bar having the offset or inclined portion formed thereon, and the spool or pin adapted to strike said inclined portion and assist in throwing the connecting-bar forward, substantially as described.

In witness whereof I have hereunto set my hand and seal, at Springfield, Ohio, this 23d day of April, A. D. 1886.

EDWARD McCHRISTIAN. [L. S.]

In presence of—
N. E. C. WHITNEY.
P. J. CLEVENGER.