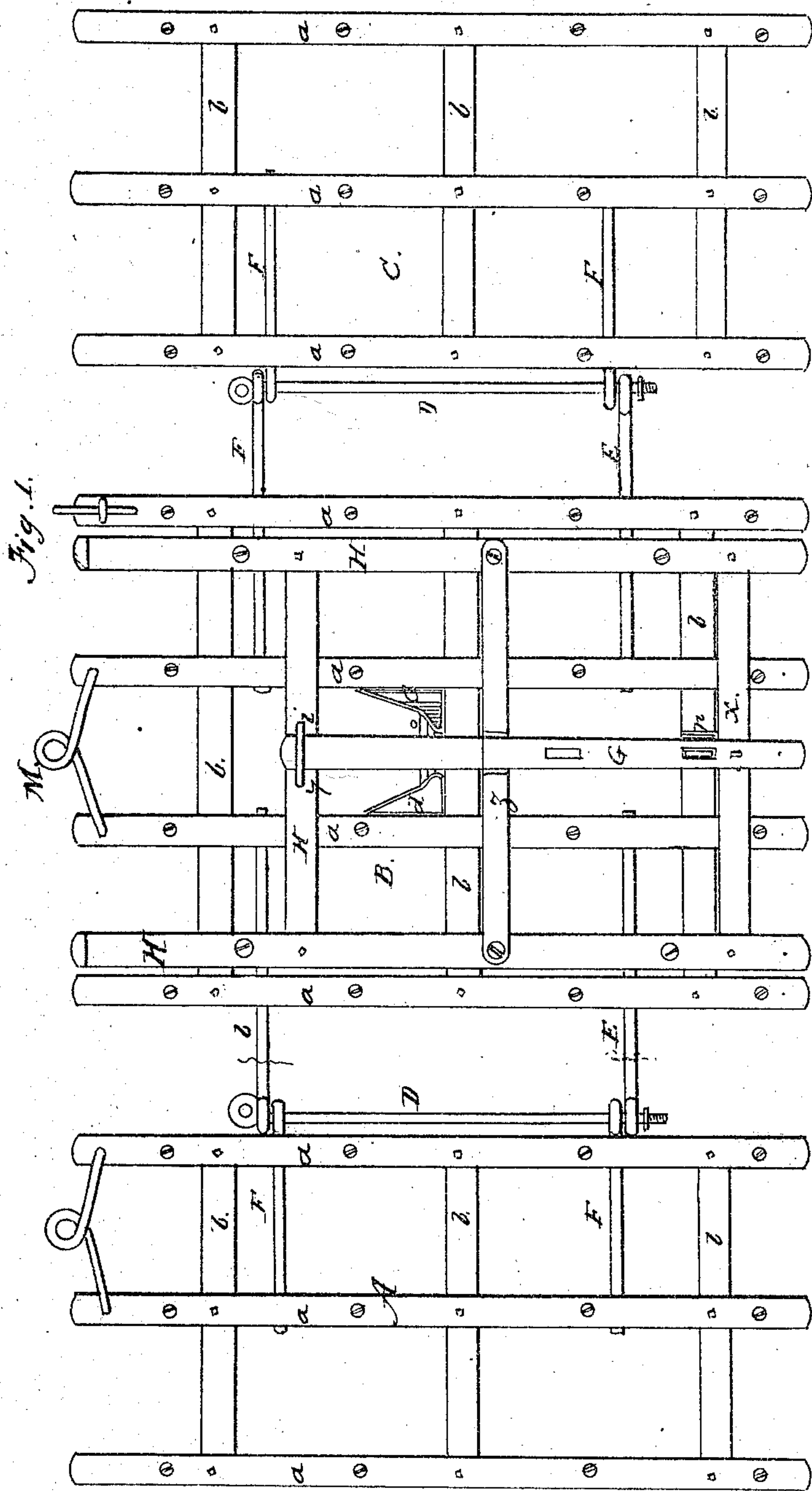


Sheet 1.2 sheets.

Isaac Crum.  
Harrow.

Nº 75.867.

Patented Mar. 24. 1868



Witnessed  
C. S. Barnitz  
H. P. K. Peck.

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by his atty  
H. P. K. Peck

Isaac Crum,  
Harrow

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Fig. 2

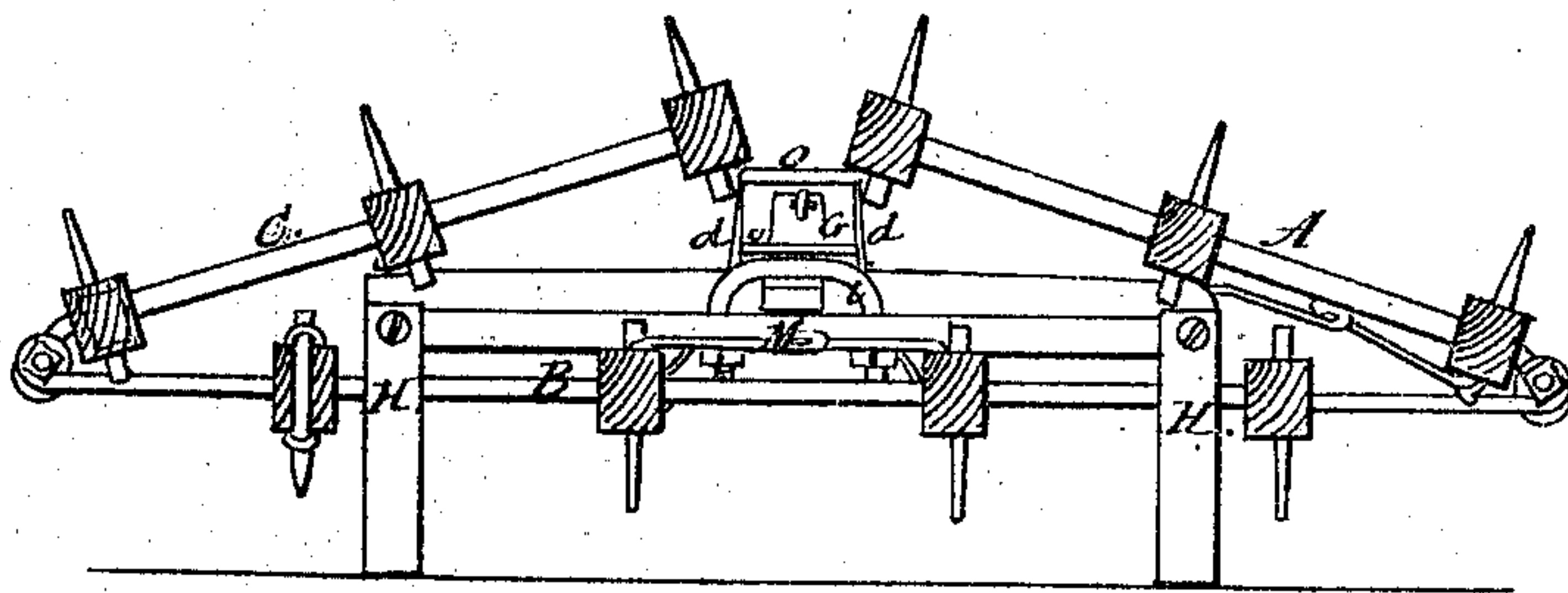
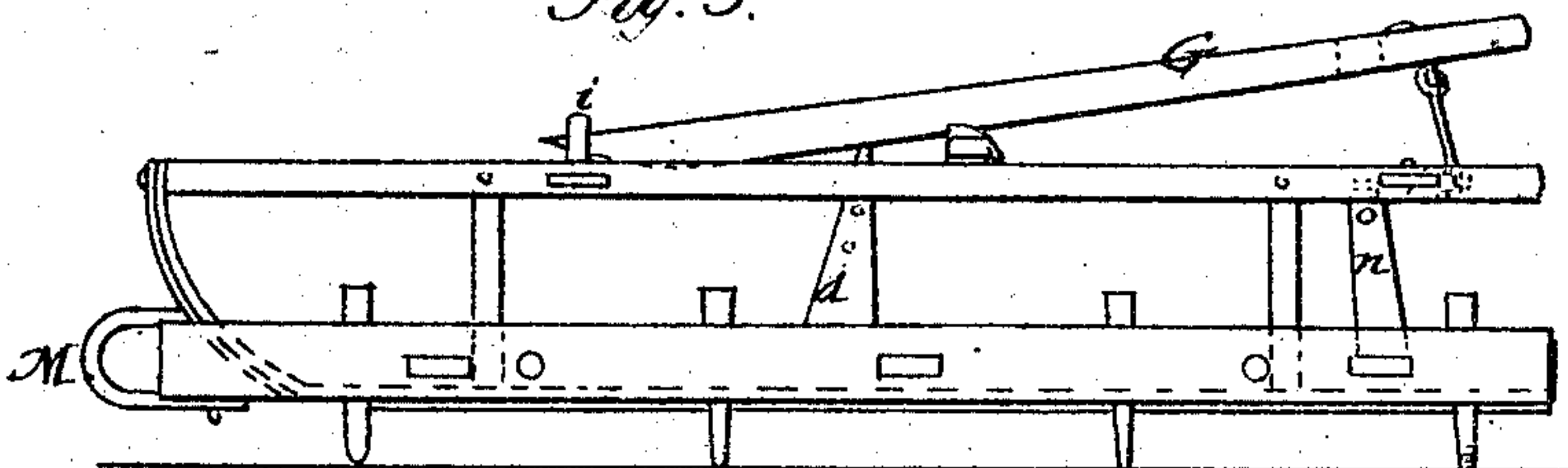


Fig. 3.



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# United States Patent Office.

ISAAC CRUM, OF WEST CHESTER, OHIO.

Letters Patent No. 75,867, dated March 24, 1868.

## IMPROVEMENT IN HARROWS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC CRUM, of West Chester, in Butler county, Ohio, have invented a new and useful Improvement in Harrows; and I do hereby declare that the following is an exact and full description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a top view of my harrow adjusted to be used.

Figure 2 represents a front view of the same in its folded position, and elevated upon its sled.

Figure 3 represents a side view of the central portion or division of the harrow, and the sled with which it is connected.

The object of my invention is to so construct the sectional hinged harrow, in connection with a sled, that the harrow may be easily elevated upon the sled for transportation, as hereinafter fully described.

The three sections A B C are made in the usual form of the rectangular harrow, and are hinged together by eye-bolts and rods D E F, the two latter extending through the rails of the divisions A B C, and the former serving as the hinge-pivot. These hinges are arranged near the divisions A and C, so as to permit these two sections to be folded upon the central division or harrow B. Instead of connecting the rails *a a a* of the several harrows together by the slats *b b b*, which are inserted in mortises, I propose to connect the rails by means of two double-hinged straps or bars of iron, to which the rails *a a a*, &c., will be bolted. By this means the slats *b b b* will be dispensed with, and the hinged bars will also serve in place of the eye-bolts and rods D E F. The sled H is combined with the central division of harrow, as represented in fig. 3, and it may be elevated so that its weight shall rest upon the harrow, and it may be let down upon the ground and the harrow elevated, as represented in fig. 2. For the purpose of elevating and of lowering the harrow, the lever G and double bracket *d d* are provided. The two brackets *d d* are fastened to the central rails of the middle harrow B, and extend upwards, and are connected together by cross-ties *o o*. A metal loop, *i*, is fastened to the front cross-beam of the sled, and a stud, *n*, projects upwards from the rearmost slat of the central harrow, as represented in the drawings. When the harrow is elevated, the lever G is inserted in the position as seen in fig. 2, with its front end within the loop *i*, and the link connected with the rear end of the lever slipped upon a short stud, which projects from the rearmost slat or beam *x* of the sled; and as the lever rests upon the beams *y z* of the sled, and occupies a position beneath the lower cross-tie *o* of the double bracket *d d*, connected with the harrow, it of course will be held up out of contact with the ground. When the sled is elevated above the harrow-teeth, the lever G will occupy the position as represented in fig. 3, and a pin may be inserted above it in the stud *n*.

It will be seen that harrows constructed in accordance with my improvements can be transported from place to place without the aid of any conveyance besides the sled, which constitutes a part of the structure. The difficulties and dangers attending the loading of the harrow upon a wagon are wholly avoided, as it is but the labor of a single person (who may be a youth of merely sufficient ability to drive the team) to load and fold the harrow in position for transportation. The red dotted lines in fig. 1, represent the stretcher-chains to which the harrow in position for transportation. The team will be connected or hitched, to draw the harrow diagonally over the ground to be harrowed. But when the harrow is to be moved from place to place, the team will be hitched to the central metal loop M, and the stretcher may be loaded upon the harrow or sled.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the harrow B with the sled H and the adjusting-mechanism *i, d, G*, or its equivalent, arranged and operating substantially as and for the purpose described.

In testimony whereof, I have hereunto set my hand, this 1st day of October, A. D. 1867.

ISAAC CRUM.

Witnesses:

H. P. K. PECK,

D. H. PECK.