

H. L. Beach.

Horse Rake.

N^o 71841

Patented Dec. 10, 1867.

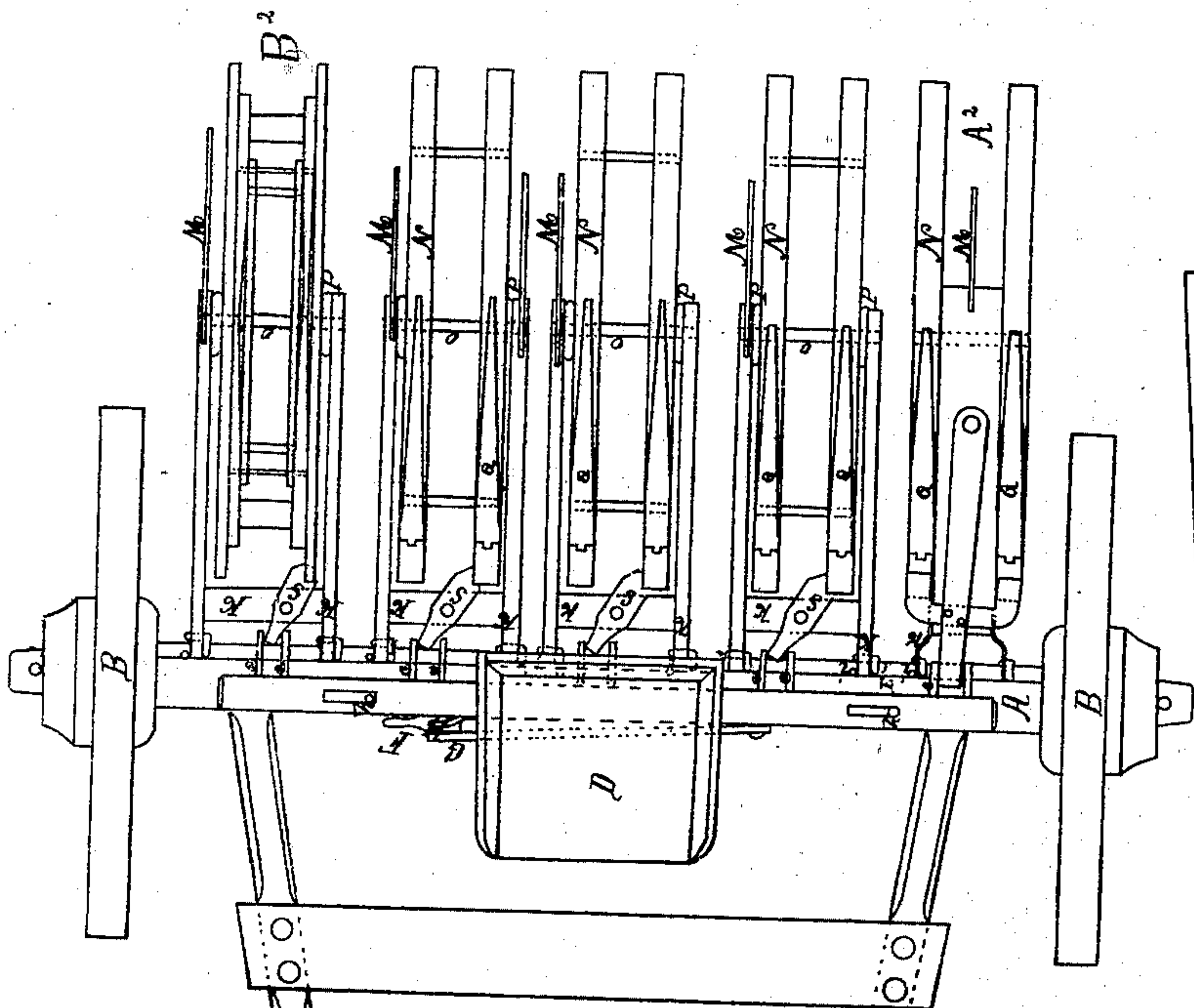


Fig. 1

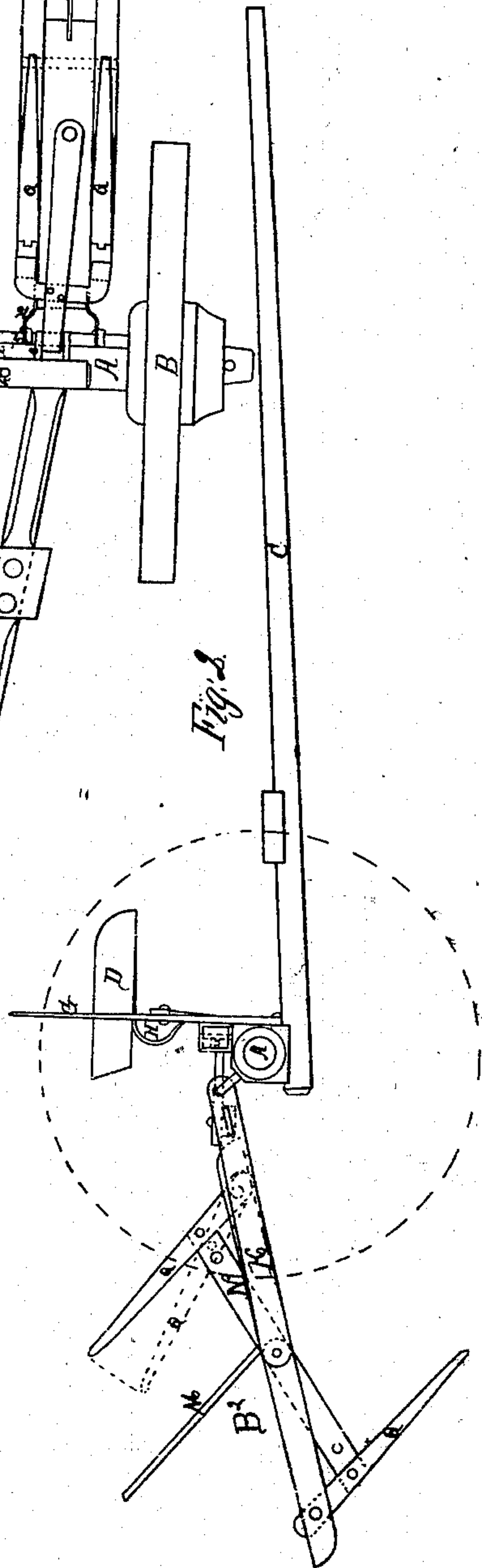


Fig. 2

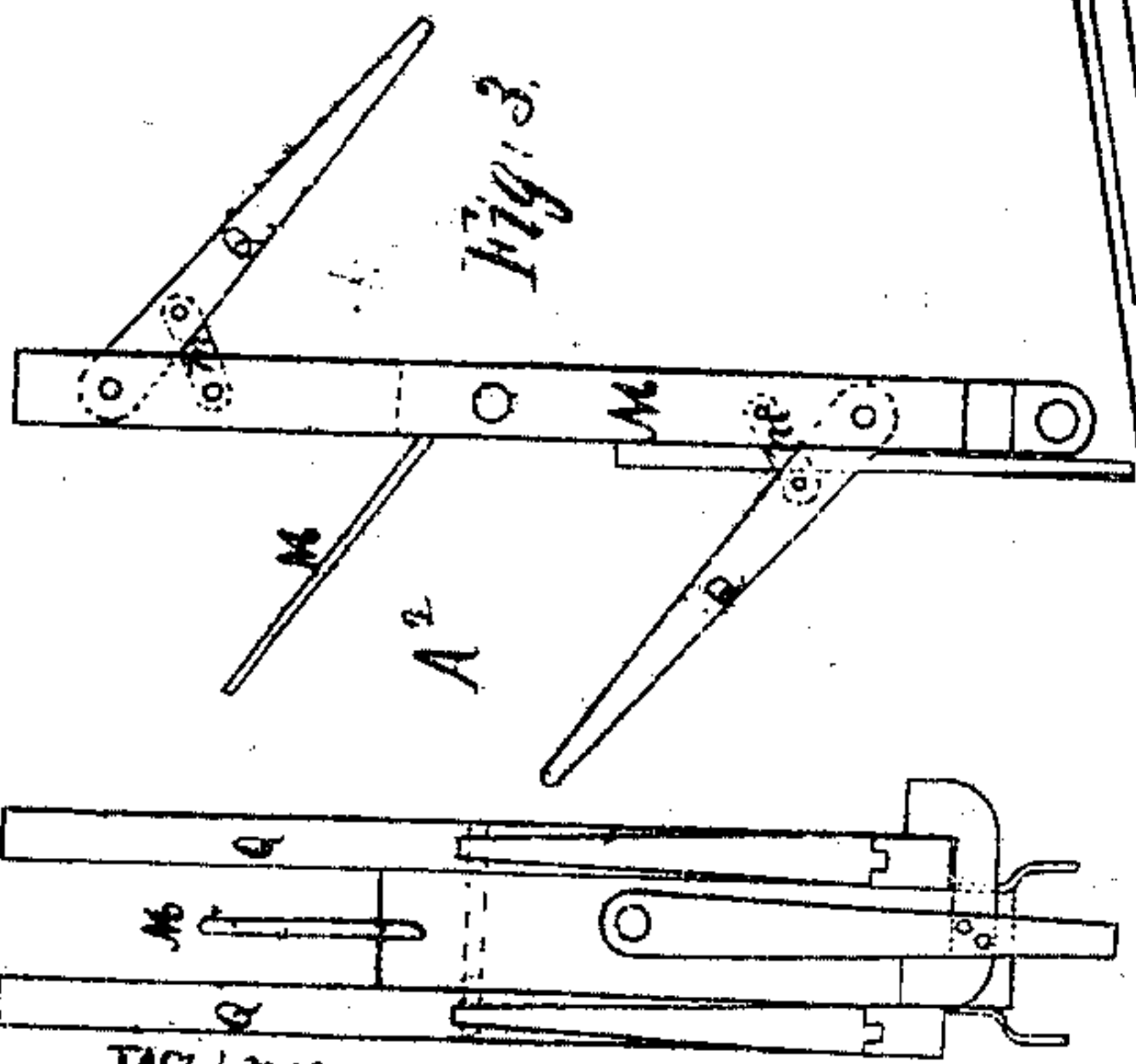


Fig. 3

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HENRY L. BEACH, OF MONTROSE, PENNSYLVANIA, ASSIGNOR TO BEACH
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IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. 71,841, dated December 10, 1867.

To all whom it may concern:

Be it known that I, HENRY L. BEACH, of Montrose, Susquehanna county, Pennsylvania, have invented, made, and applied to use a new and useful Machine for Gathering Hay; and I do declare the following to be a full, clear, and correct description of the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a top view of my improved machine for gathering hay; Fig. 2, a side view of the same. Fig. 3 are views of the teeth and teeth-heads A² detached.

In the drawings like parts of the invention are indicated by the same letters of reference.

The nature of my invention consists in certain improvements in the construction and operation of an improved machine for gathering hay, as more fully hereinafter set forth.

To enable those skilled in the arts to make and use my invention, I will describe the same.

A is an axle for supporting the wheels B, and to which the shafts C are attached. Upon the face of this axle the driver's seat D is secured. E is a sliding bar provided with a series of pins, *c*, and placed in the proper position relatively to the blocks *f* to shift the same, as more fully hereinafter described. This bar E is slotted, as shown, and its slotted portions pass over pins *h*, secured in the upper or top surface of the axle A, to which upper surface the bar E may be held in any convenient manner. Upon the face of this bar E is fastened one end of a rod, F, the other end of which is fastened to an upright lever, G, secured upon the face of the axle A.

H is a spring secured to the face of the axle A and bearing against the side of the lever G. *i i* are a series of hooks inserted in the axle A, upon which the arms K are hung, and *j* is a series of upright pins inserted in the axle A in a proper position to hold the arms upon the hooks *i* and prevent their becoming detached when the machine is in operation.

K is a series of arms for supporting the teeth-heads N. These arms may be joined together by a brace, *k*, as shown in B² and C² upon the drawings; or a single arm may be employed, as designated by A. The arms have their forward ends provided with openings, permitting them to be hung upon the hooks *i*

i. Where the arms are joined together a movable block, *f*, is secured upon the brace *k*, and in this case the cleaners M are supported upon the back ends of the arms K, nearly on a line with the point of pivoting the arms to the teeth-heads.

N are the teeth-heads for supporting the teeth. These teeth-heads are hung upon the rods O, passing through the teeth-heads centrally, and also through the arms. Between the teeth-heads and the arms may be placed the washers P, which may be made so as to revolve with the teeth-heads, or not to revolve with the same, as may be desired. The teeth-heads may be coupled together, as in B² and C², or may be independent of each other, as in A.

Q are the teeth employed to gather the hay or grain, and consist of pointed strips of wood or metal, secured near the ends of the teeth-heads, from which they project angularly.

It will be observed that when placed in position these teeth, secured as shown, project from opposite sides of the teeth-heads, giving to the same the appearance of the letter Z.

The teeth-head is usually slotted to receive one end of the tooth, held to it by a pin, while a brace of metal or wood, *m*, may be used to brace or strengthen the tooth, in which case one end of the brace is inserted in an opening in the tooth, and is held to the same by an iron rivet, and the opposite end of the brace is held to the teeth-head by a wooden pin.

In B² of the drawings another mode of supporting the teeth is shown, in which they are hung upon the rods employed to couple the teeth-heads together, and are held in position by pins passing through the teeth and a secondary frame hung within the teeth-heads upon the rod O. When a single arm is used, (see A² of the drawings,) the teeth-heads are hung upon the outside of this arm and revolve independently of each other.

In the construction of such an arm no sliding block *f* is used, but a rod secured upon the upper surface of the arm is employed, which rod has attached to it a plate of metal or wood, the ends of which project sufficiently far forward to prevent the revolution of the teeth-head and teeth when gathering the hay. To the forward end of this arm are attached side plates provided with openings to admit of the hanging of the arm upon the hooks.

Such being the construction, the operation is as follows: The arms supporting the teeth-heads are hung upon the hooks in the axle, the upright pins serving to keep them in position upon the same. When thus hung one set of teeth rests upon the ground and the other set of teeth is above, the teeth-heads resting upon the blocks *f*, which prevent their revolving. The horse is secured in the shafts C, and the driver occupies the seat D. The horse being started, the wheels pass over the hay to be gathered, and one set of teeth is brought directly underneath the hay, and receives and carries it until a sufficient quantity to form a windrow has been gathered. The driver now grasps the lever G and draws the same toward him. By this movement the bar E, connected as already described, has a lateral movement given to it, and the blocks *f*, operated by the pins *x* upon this bar, are relieved from contact with the teeth-heads, which are now free to revolve. As these teeth-heads revolve they carry with them the teeth and gathered hay, and as the teeth pass the cleaners the latter brush off all the hay from the teeth. As soon as the teeth have passed the blocks *f* the driver releases his hold upon the lever G, and the same, operated by the spring H, is thrown back to its former position, carrying with it the sliding bar, by which the blocks *f* are shifted in position and stop the second set of teeth now brought into the position occupied by the first set when the machine was started. The operation already described in the case of the first set of teeth is repeated in the case of the second set.

The advantages arising from the construction and operation of a machine so described are, that the teeth-heads supporting the teeth are hung centrally to the arms which are attached to the axle, and act independently, allowing the teeth to pass over the surface of the ground, dropping into hollows and rising over obstructions with greater ease and less strain upon the machine than if the teeth-heads and arms were one and the same rigid arm acting direct from the axle.

The machine can be made of any desired size or weight, and no labor on the part of the operator to hold the teeth in the hay is required.

The teeth and teeth-heads, being in the Z shape, step, as it were, over the hay when discharging it, instead of falling upon it and matting it down, thus leaving the hay in a light state for pitching. The teeth are not so easily broken as in machines which have preceded the present invention, as, in the present instance, the teeth-heads are free to move backward, thus in all cases relieving the teeth, while the brace, connected as shown, allows the wooden pin connecting the brace to the tooth-head to be broken before the rivet holding the same to the tooth can be. The washers, placed as shown, prevent any of the hay gathered from winding around or becoming entangled in the journals upon which the teeth-heads revolve, which is of great utility.

The simplicity of the machine renders it capable of being managed by a child.

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

1. I claim the teeth-heads N, constructed and operating substantially as described.
2. In combination with the teeth-heads N, the teeth Q, substantially as described.
3. The arms K and teeth-heads N, combined and operating substantially as set forth.
4. The cleaners M, teeth-heads N, and teeth Q, when combined for the purposes indicated.
5. The blocks *f*, pins *c*, sliding bar E, and lever G, when combined for the purposes set forth.
6. The hooks *i i* and pins *j*, secured in the axle, for the purpose shown.
7. The washers P, combined with the teeth and teeth-heads, substantially as and for the purpose described.

HENRY L. BEACH.

Witnesses:

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ALBERT PALMER.