

(No Model.)

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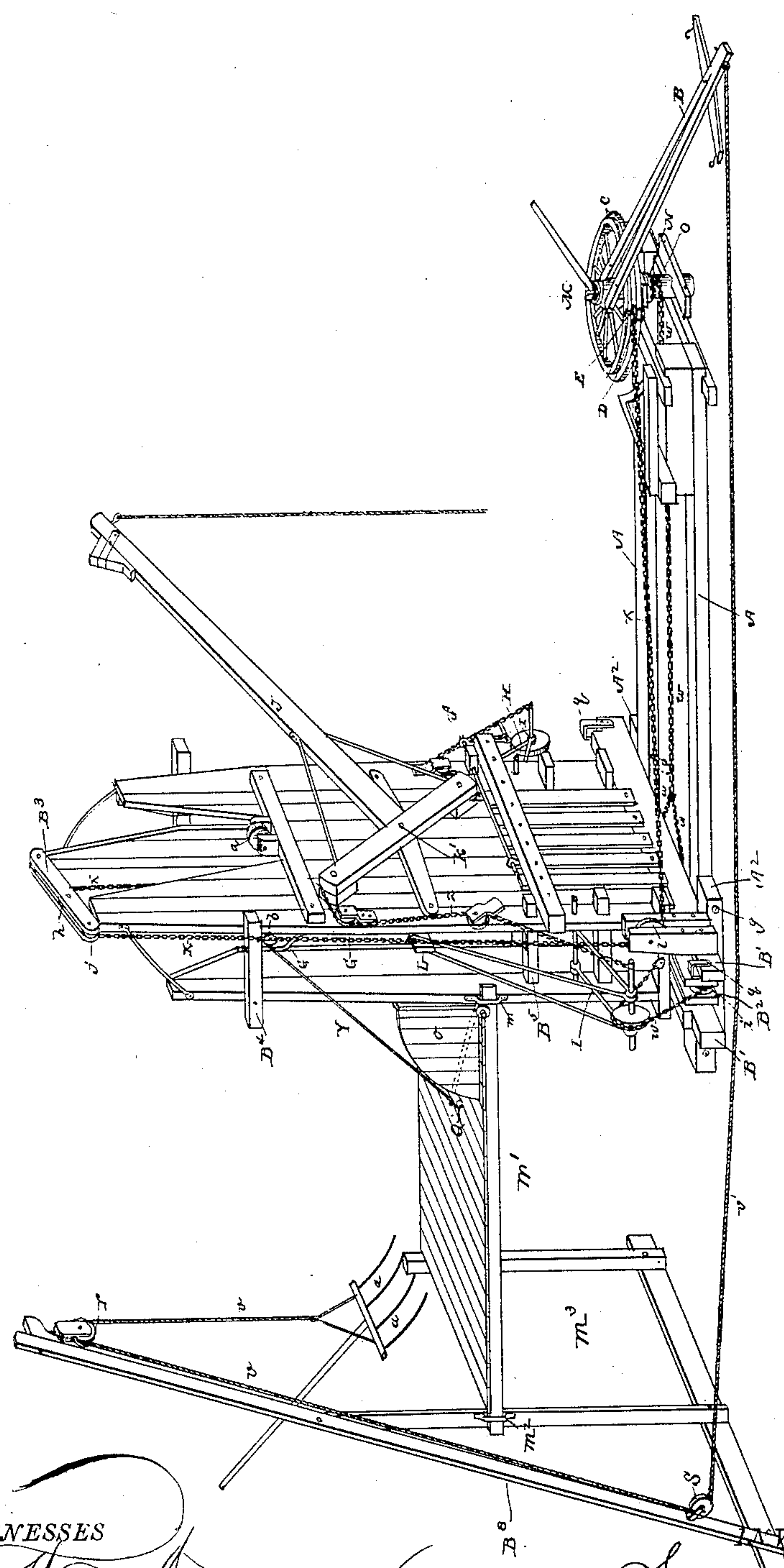
S. H. MILLER.

HAY PRESS.

No. 318,644.

Patented May 26, 1885.

Fig. 1.



WITNESSES

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(No Model.)

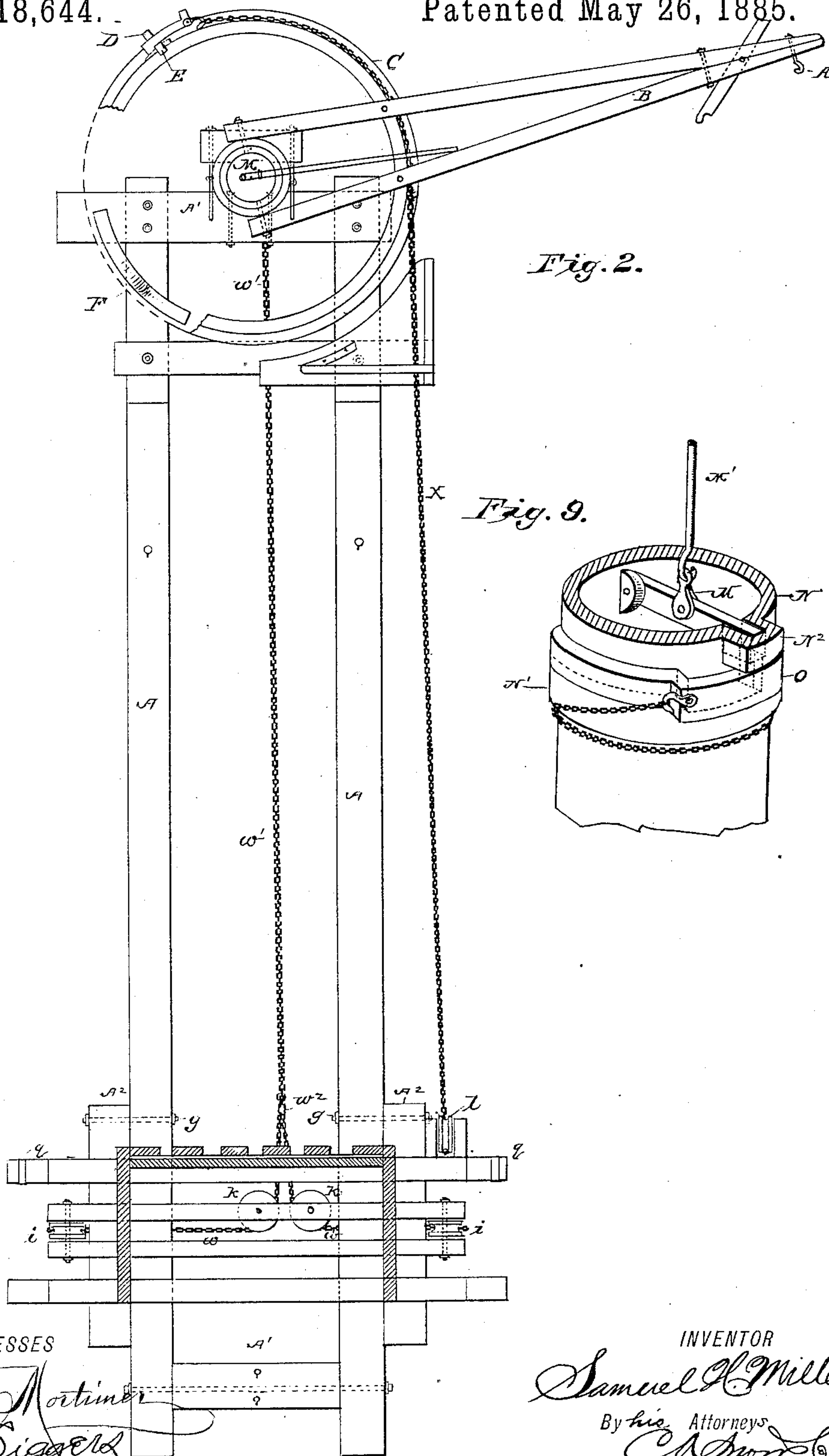
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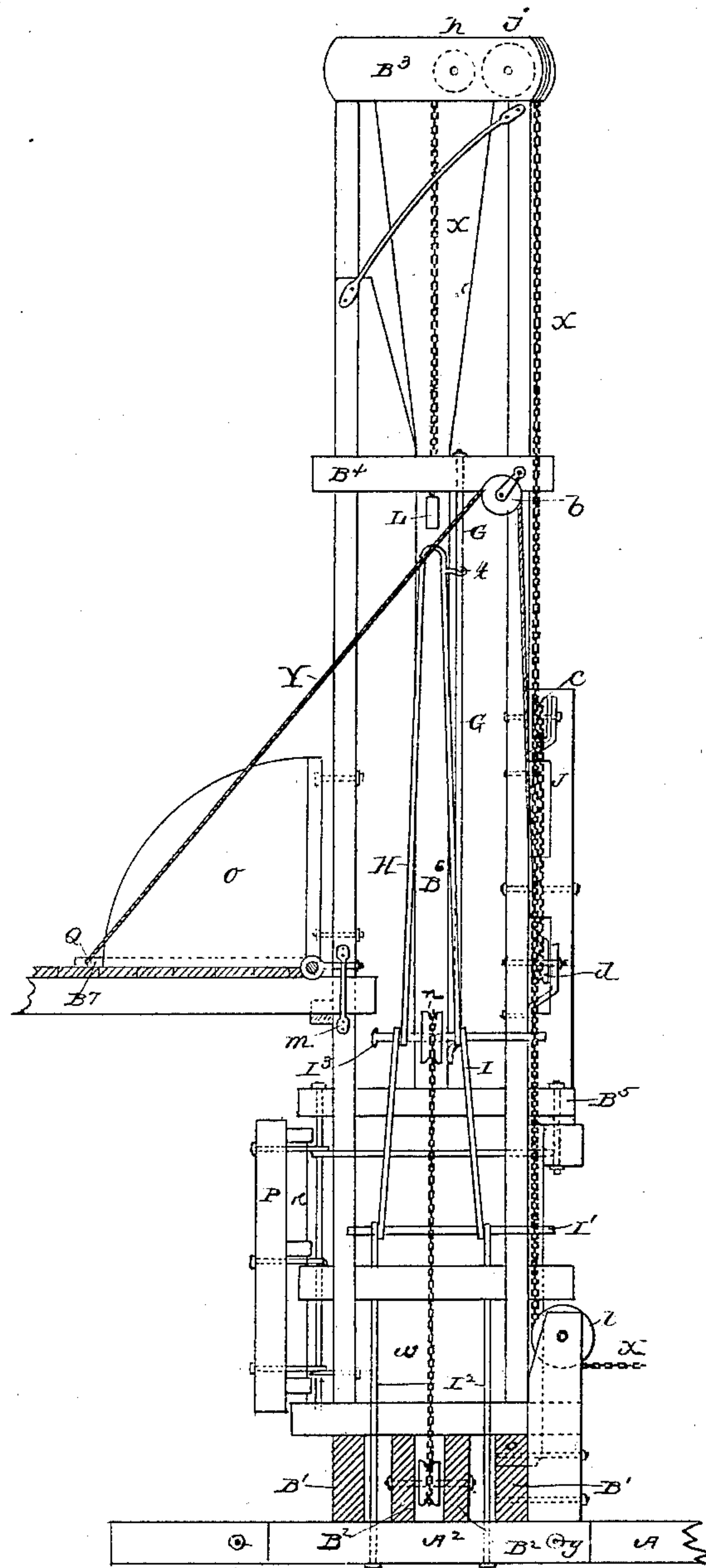
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Fig. 3.



WITNESSES

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(No Model.)

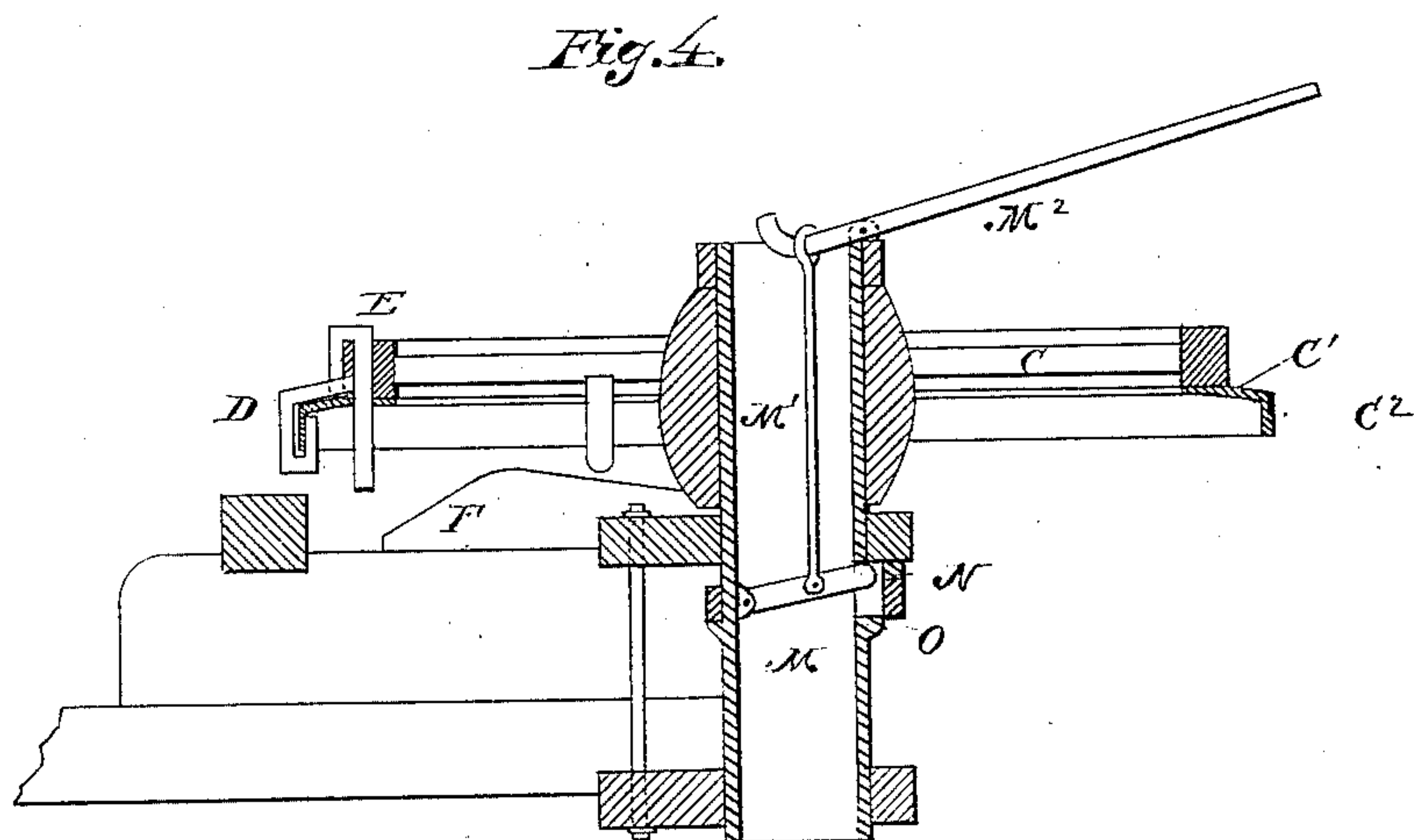
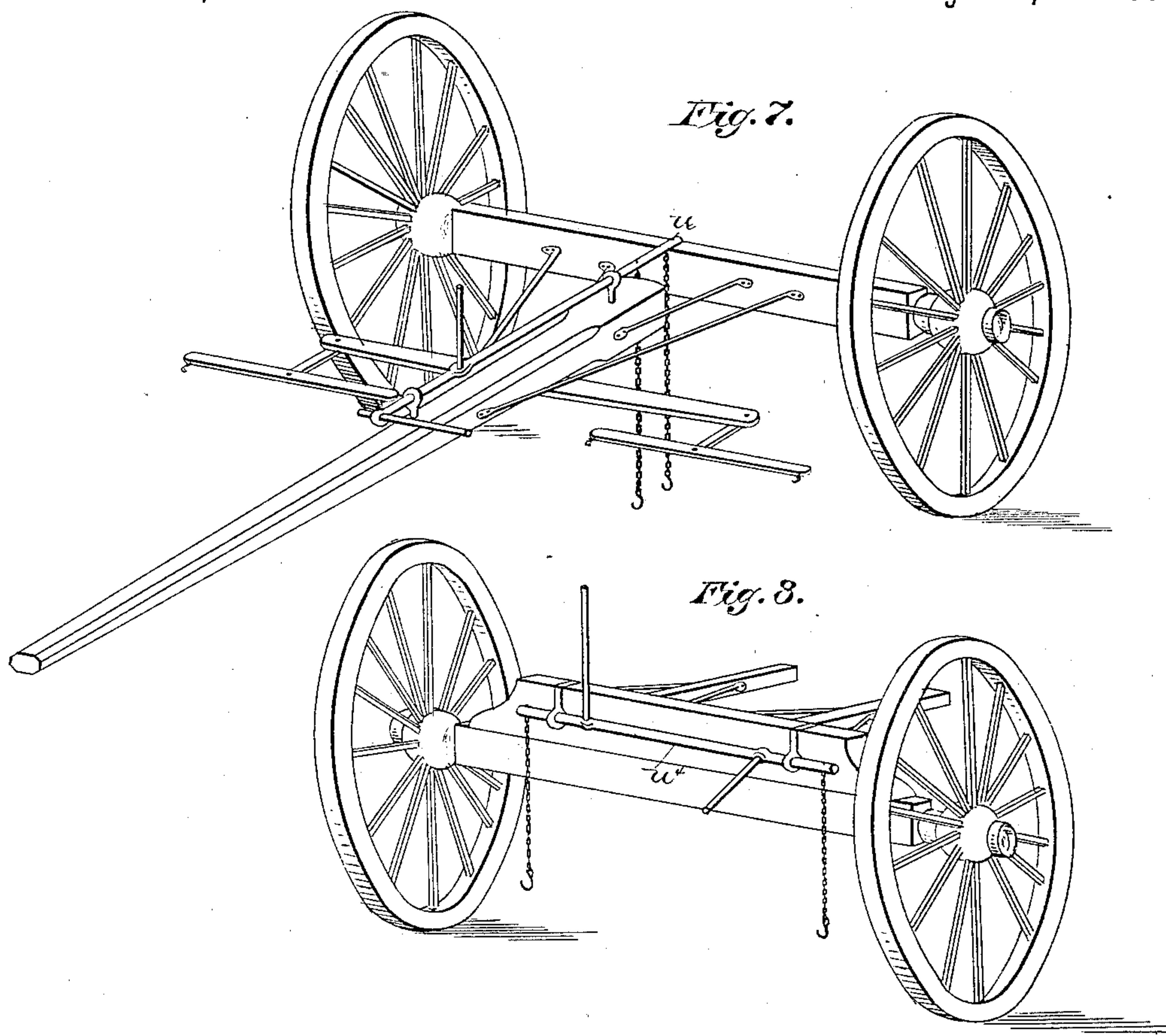
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WITNESSES

W. W. Mortimer.
E. G. Duggers.

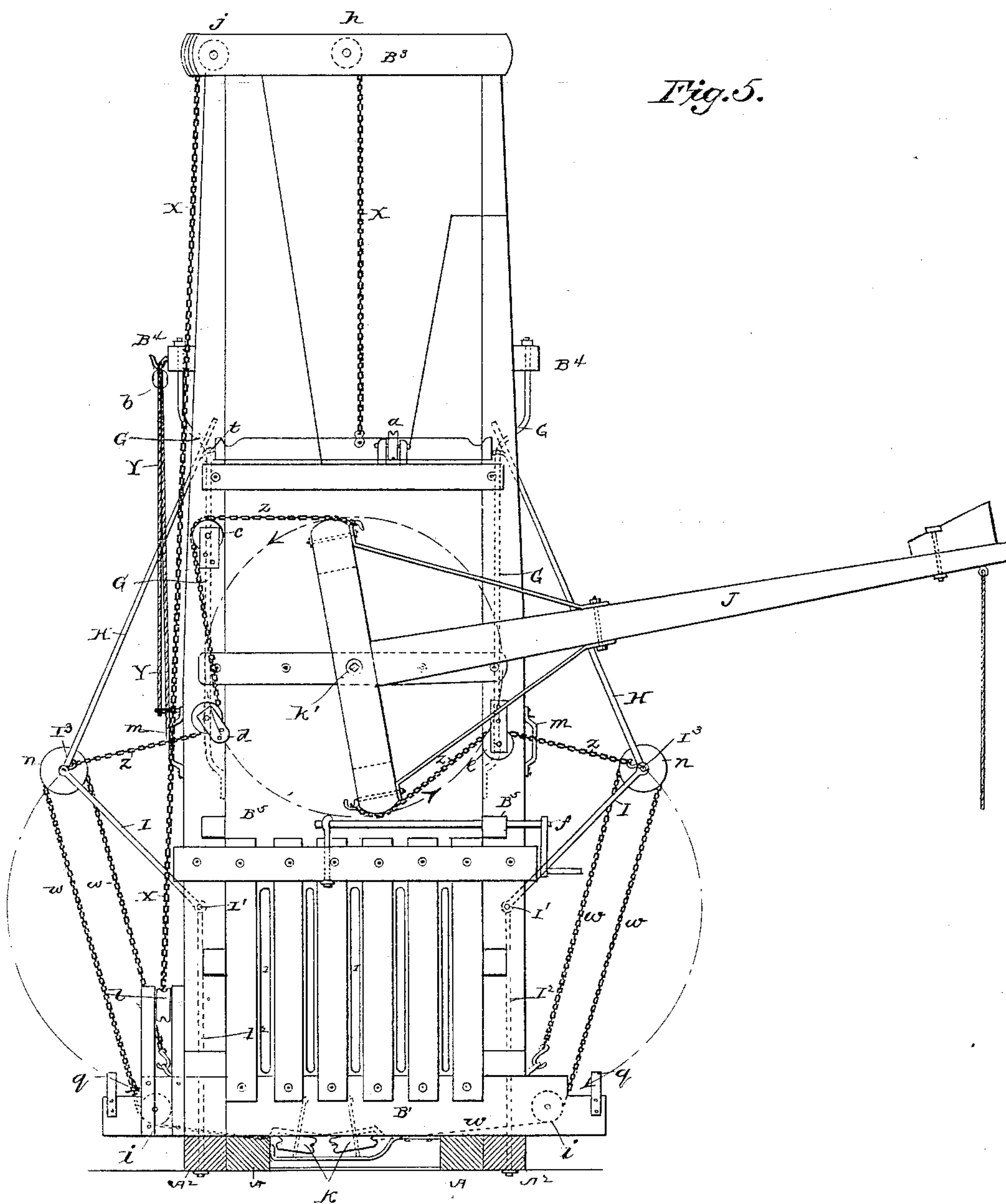
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WITNESSES

W1126825

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6 Sheets—Sheet 6.

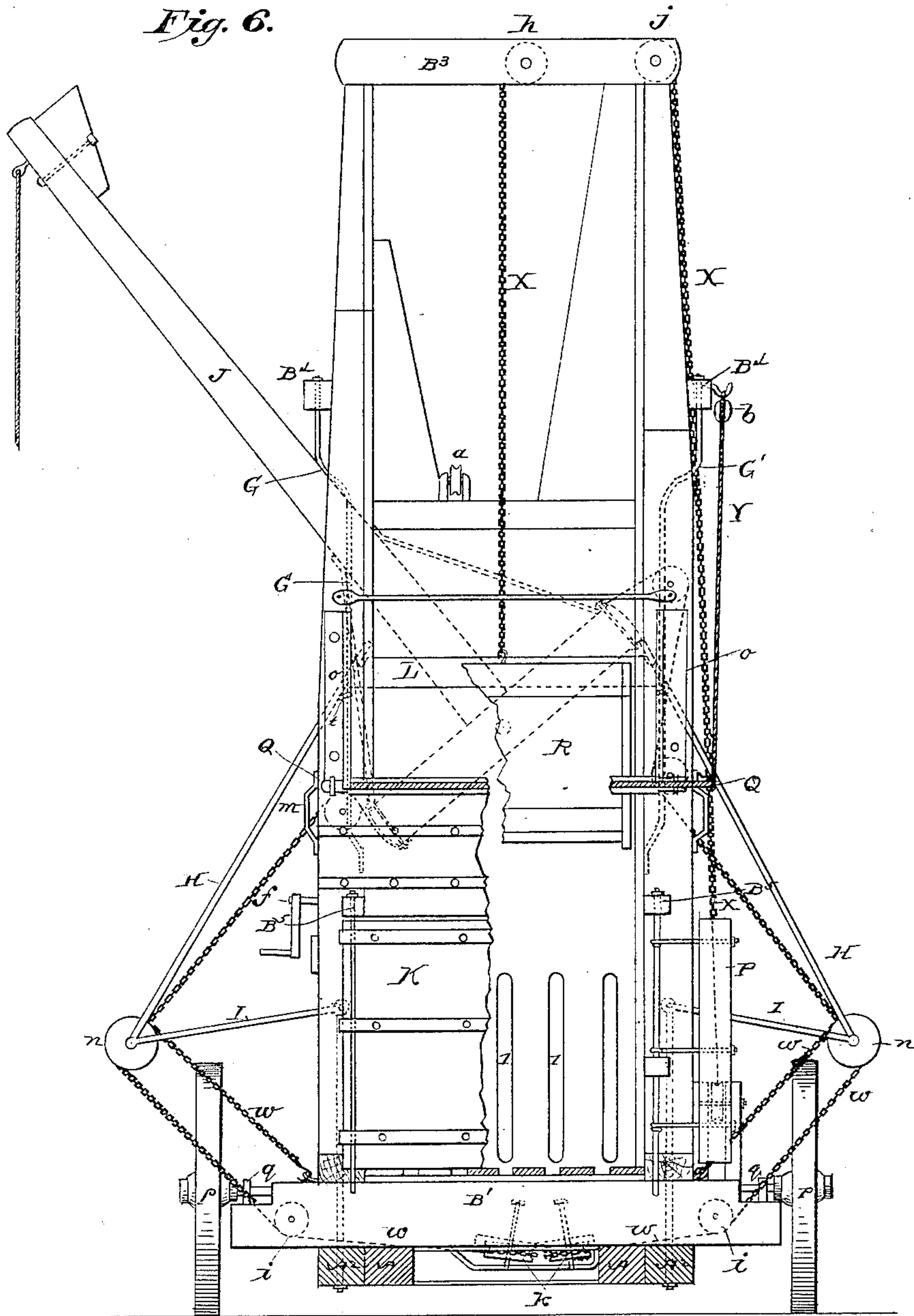
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Fig. 6.



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UNITED STATES PATENT OFFICE.

SAMUEL HOLDEN MILLER, OF SACRAMENTO, CALIFORNIA.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 318,644, dated May 26, 1885.

Application filed January 28, 1885. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. MILLER, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented a new and useful Improvement in Hay-Presses, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in baling-presses; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective of a baling-press that embodies my invention. Fig. 2 is a horizontal section taken through the press on the line *xx* of Fig. 1, the horse-power capstan and wheel for operating the follower being shown in top plan. Fig. 3 is an end elevation of the press. Fig. 4 is a vertical central sectional view of the actuating-wheel and capstan. Fig. 5 is a front elevation of the press. Fig. 6 is a rear elevation of the same, partly broken away so as to disclose the interior construction. Figs. 7 and 8 are detailed perspective views of the transporting-trucks. Fig. 9 is a detailed perspective view of the capstan.

A represents ground-sills, which are connected by suitable tie-beams, *A'*. Near the rear ends of the ground-sills are placed supporting-sills *A''*, which are arranged parallel with the ground-sills on the outer sides thereof, and are connected thereto by the bolts *g*, which serve to hinge the sills *A''* to the ground-sills. Cross-beams *B'* are bolted to the upper sides of the sills *A''* near the ends of said sills, and midway between the beams *B'* are the beams *B''*, which are also bolted to the upper sides of the sills *A''*. The floor of the press-box is laid across these beams, and from the beams *B'* rise the corner posts of the press-box. Two of these posts, on opposite diagonal corners, rise higher than the remaining posts, and across their upper ends extends diagonally a beam, *B'''*, the center of which is in a line with the vertical center of the press-box. The front and rear sides of the press-box are boarded up, and the front side at the lower end is provided with vertical slots to

admit of the insertion of the binding ropes or wires, and the rear side of the press on its lower side has a hinged door, *K*, made of slats that have a space left between them opposite to the slots of the opposite side. A hinged latch, *P*, swings around the free end of the hinged door when the door is closed, and securely holds it in place. The ends of the press-box, between the tie-beams *B''* and *B'''*, are provided with vertical central slots, *B''''*. In the rear side of the press, at a suitable distance above the door *K*, is made an opening which is provided with a door, *B''''*, which is hinged horizontally at its lower edge, as shown. To the rear corner-posts of the press are secured the keepers *m*, in which are inserted the inner ends of the horizontal beams *m'*, the rear ends of said beams being secured in keepers *m''*, with which the vertical supporting frame *m'''* is provided. On the beams *m'* is placed a floor or platform that is on a level with the lower side of the door *B''''*, and upon which the door is supported when open. Vertical sides *o*, that are quarter-circular in shape, form end guards for the door. To the outer end of the frame *m'''* is braced an inclined beam, *B''''*, the upper end of which is over the outer end of the platform. A sheave, *r*, is suspended from the inclined beam at its upper end, and a similar sheave, *s*, is secured thereto near the lower end of the beam. A hoisting-rope, *v*, passes over these sheaves, and to its depending end is suspended a hay-fork, *a*, while its outer end is adapted to be secured to the outer end of a sweep that is secured to an operating-wheel and capstan, that will be fully described hereinafter.

R represents a follower or packer, which operates vertically in the press-box, it being provided on its upper side with a central beam, *L*, the extremities of which enter the slots *B''''*. Notches *l'* are made in the upper side of the beam *L* at its outer ends, as shown. The follower *R* is weighted, so that when raised to the upper side of the press-box and released it will descend with great force and pack the hay or other substance in the bottom of the press-box.

In transverse beams, which connect the front ends of the ground-sills, is mounted a

cylindrical drum or capstan, N, which is adapted to rotate, and to the upper end of the capstan is fixed an operating-wheel, C. A sweep, B, which is connected at its rear end to the capstan, and also to the rim of the wheel, extends outwardly therefrom, and is provided with a single-tree, to which to hitch a draft animal. A flange, N', is formed on the capstan at a suitable distance below the wheel, and on this flange is placed a collar, O, which is adapted to slip loosely around the capstan, and which is provided with an extended notched projection, O'. A similar notched projection, N², extends from the capstan and bears upon the upper edge of the sliding collar. A latch, M, is hinged at one end to the inner side of the capstan, extends across said capstan, and enters the notch N² on the opposite side thereof. A lever, M², is pivoted to the upper side of the hub of the wheel, and its inner end is connected by a rod, M', to the latch. By lowering the latch into the notch O' the collar is made fast to the capstan, and is caused to rotate therewith. An incline, F, is secured on the front ends of the ground-sills beneath one side of the wheel C. This wheel is provided on the lower side of its rim with an extended flange, C', which is bent to form a vertical depending portion, C². A shuttle, D, is placed upon the portion C' of the flange, and has an extension, D', which is bent around the lower edge of the portion C² of the flange, and thereby secures the shuttle to the wheel, while it allows the shuttle to freely play back and forth around the rim thereof.

E represents a dog that extends vertically through the rim of the wheel, and which has its upper end bent at right angles and then bent downwardly, so as to enter the space behind the shoulder D' of the shuttle, and thereby cause the shuttle to rotate with the wheel until the incline F is reached, which incline raises the dog and releases the shuttle from the wheel. The direction in which the wheel is rotated is indicated by an arrow in Figs. 1 and 2. Centrally to the upper side of the follower is secured one end of a chain, X, which passes over a sheave, h, that is journaled in the beam B³, from thence over a sheave, j, that is journaled in one end of said beam, thence down along one end of the press-box under a sheave, l, that is journaled near the lower side of the press-box, and from the sheave l to the shuttle D, to which its outer end is secured. When the wheel C is rotated, it will be readily understood that the follower will be raised to the upper end of the press-box until the dog reaches the incline, when it will release the shuttle from the wheel, and the follower will descend with great force upon the hay which has been placed in the press-box through the door or opening B⁷. A cord or rope, Y, is secured to the door B⁷, as at Q, and passes over a sheave, b, which is secured to one of the beams B⁴, and from thence extends downwardly a suitable distance and is secured to the chain X, as shown. By this arrangement

it will be readily understood that the door B⁷ will be closed just before the follower falls, and opened as the follower is being raised.

I' represents transverse bolts that extend across the ends of the press-box near the lower sides thereof, and through the corner posts of said box. These transverse bolts also pass through eyebolts I², which have their lower ends passed through the hinged sills A² and secured by nuts, as shown. Rock-arms I are secured at their lower ends on the bolts I', and through their outer ends pass the pivotal bolts I³, which pivot the bails H to the rock-arms I. Sheaves n are journaled on the bolts I³, and the upper ends of the bails enter the vertical slots B⁶. Rods G extend along the slots B⁶, and have their upper ends curved outwardly, as shown. An arm, t, extends from each of the bails to one side, and have eyes which slide on the rods G, and thereby the bails are prevented from falling into the box in the path of the follower. Chains w are hooked to the lower outer sides of the press-box, as at w', and extend up over the sheaves n down under sheaves i, that are journaled between the outer ends of the beams B², and from thence over the horizontal sheaves k, after which they are united as at w², Fig. 2, and extend to the capstan, being secured to the sliding collar O.

When the hay is being placed in the press, the follower is used as a packer until sufficient hay has been packed to form a bale, when the dog E is taken out from the rim of the wheel so as to leave the shuttle idle, and the collar O is caused to rotate with the capstan by means of the latch and lever previously fully described. As the chain w is wound around the capstan, the bails H are caused to descend in the slots B⁶, and their upper portions catch in the notches l' and cause the follower to compress the bale of hay with great force. When the securing-bands of the bale have been fastened, the collar O is released, the dog replaced in position, and when the wheel C is partly rotated the follower is raised, the door K opened, and the bale removed, after which the operation is proceeded with as before. By attaching the free end of the rope v to the end of the sweep B the hay-fork a will be raised and lowered, and thus greatly facilitate the delivery of the hay from the stack onto the platform.

In order to draw in the rock-arms to their initial position when the follower is being used as a packer, and to keep the upper ends of the bails out of the path of the follower, I employ a weighted lever, J, which has a T-head and is pivoted to the center of the front side of the press-box, as at k'. The ends of the T-head are connected by chains z to the bolts I³, one of said chains passing over a sheave, e, while the other passes over a sheave, c, and under a sheave, d, as shown. If preferred, the weighted lever may be discarded, and simple retractile springs secured to the press-box and to the bolts I³, which will accomplish the same result.

By having the sills A^2 pivoted on the ground-sills, as at g , and by having the press built upon and bolted to the sills A^2 , it follows that the press may be folded or tilted down upon the ground-sills when it is desired to move the press from one point to another. In order to facilitate the operation of tilting the press, I provide it with a winch, f . The front ends of the ground-sills are placed upon a truck that I have illustrated at Fig. 7, and which is provided with a winch, u , to assist in raising the ground-sills, and the rear ends of said sills are placed upon the truck that I have shown at Fig. 8, and which is also provided with a winch, u^1 .

When it is desired to move the press for only a very short distance, I insert spindles into keepers q , that are secured on the upper sides of the ends of one of the beams B' , and on these spindles I mount wheels P , as shown at Fig. 6.

A baling-press thus constructed is exceedingly rapid in its operation, and is very strong and durable, while its cost will not exceed that of most of the baling-presses now in common use.

Having thus described my invention, I claim—

1. The combination of a press-box, a follower that is adapted to travel vertically therein, an elevating-chain for the follower, guiding-sheaves for the chain, a wheel, a shuttle that is adapted to travel loosely around the rim of the wheel, the free end of the chain being attached to the shuttle, and a dog or latch for securing the shuttle to the wheel, and a stop for tripping the dog or latch and releasing the shuttle from the wheel, substantially as described.

2. The combination of the press-box, the follower, the elevating-chain, guiding-sheaves for the chain, the wheel C , having the extended flange C' C^2 , the shuttle that is secured to the flange and is adapted to play around the rim of the wheel and to which the free end of the chain is secured, the dog for securing the shuttle to the wheel, and the incline F , for raising the dog, substantially as described.

3. The combination of the press box, the follower, the rock-arms, bails hinged thereto for engaging with the follower, the capstan having a sliding collar, a chain connecting the rock-arms with said collar, guiding-sheaves for the chain, and a latch for securing the collar to the capstan, substantially as described.

4. The combination of the press-box, the follower, the rock-arms, bails hinged thereto for engaging with the follower, the capstan, a chain connecting the rock-arms therewith, and guiding-rods for the free ends of the bails, substantially as described.

5. The combination of the press-box, the follower, the elevating-chain, guiding-sheaves therefor, a wheel attached to a capstan, a shuttle that is adapted to travel loosely around the wheel, the free end of the elevating-chain being attached to the shuttle, a dog or latch

for securing the shuttle to the wheel, a stop for tripping the dog or latch and releasing the shuttle from the wheel, rock-arms that are pivoted to the press-box, bails hinged thereto for engaging with the follower when the shuttle is loose from the wheel, a collar loose on the capstan, a latch for securing the collar to the capstan, and a chain for connecting the rock-arms to the collar of the capstan, and guiding-sheaves for the chain, substantially as described.

6. The combination of the press-box, a door hinged thereto at its lower side, the follower, the elevating-chain, guiding-sheaves therefor, an operating-wheel for raising and lowering the follower to which the elevating-chain is attached, and a rope connecting the free side of the door with the elevating-chain, and a guiding-sheave for the rope, substantially as described.

7. The combination of the press-box, the follower, the elevating-chain, guiding-sheaves therefor, a wheel attached to a capstan, a shuttle that is adapted to travel loosely around the wheel, the free end of the elevating-chain being attached to the shuttle, a dog or latch for securing the shuttle to the wheel, a stop for tripping the dog or latch and releasing the shuttle from the wheel, rock-arms that are pivoted to the press-box, bails hinged thereto for engaging with the follower when the shuttle is loose from the wheel, a collar loose on the capstan, a latch for securing the collar to the capstan, a chain for connecting the rock-arms to the collar of the capstan, guiding-sheaves therefor, a weighted lever pivoted to one side of the press-box and having extended arms, chains connecting said arms to the rock-arms, and guiding-sheaves for said connecting-chains, substantially as described.

8. The combination of the ground-sills, the press-box hinged thereto, and keepers q , secured to the extended ends of a cross-beam and adapted for the reception of axle-spindles, for the purpose set forth, substantially as described.

9. The combination of the ground-sills, the press-box hinged thereto, and trucks that are provided with winches for raising the press and transporting the same, substantially as described.

10. The combination of the press-box, the follower, the elevating-rope, guiding-sheaves therefor, the elevating-wheel, the hoisting-frame, and the hay-fork suspended by a rope from a pulley on the hoisting-frame, the free end of the rope being secured to the sweep for the elevating-wheel, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

SAMUEL HOLDEN MILLER.

Witnesses:

JOSEPH F. HILL,
JAMES SEADLER.