

(No Model.)

4 Sheets—Sheet 1.

W. H. MOORE.

MACHINE FOR MAKING BED SLATS.

No. 299,832.

Patented June 3, 1884.

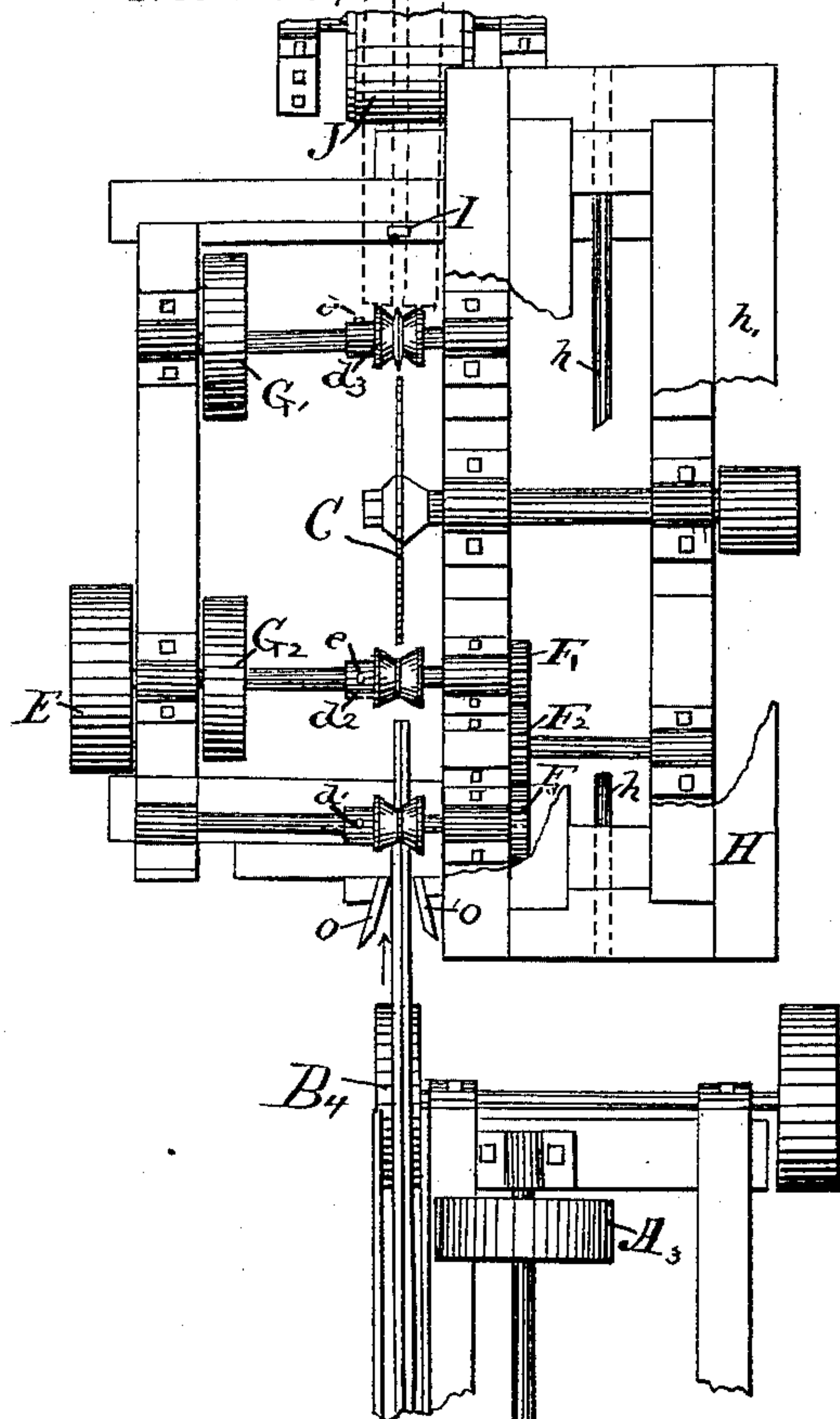
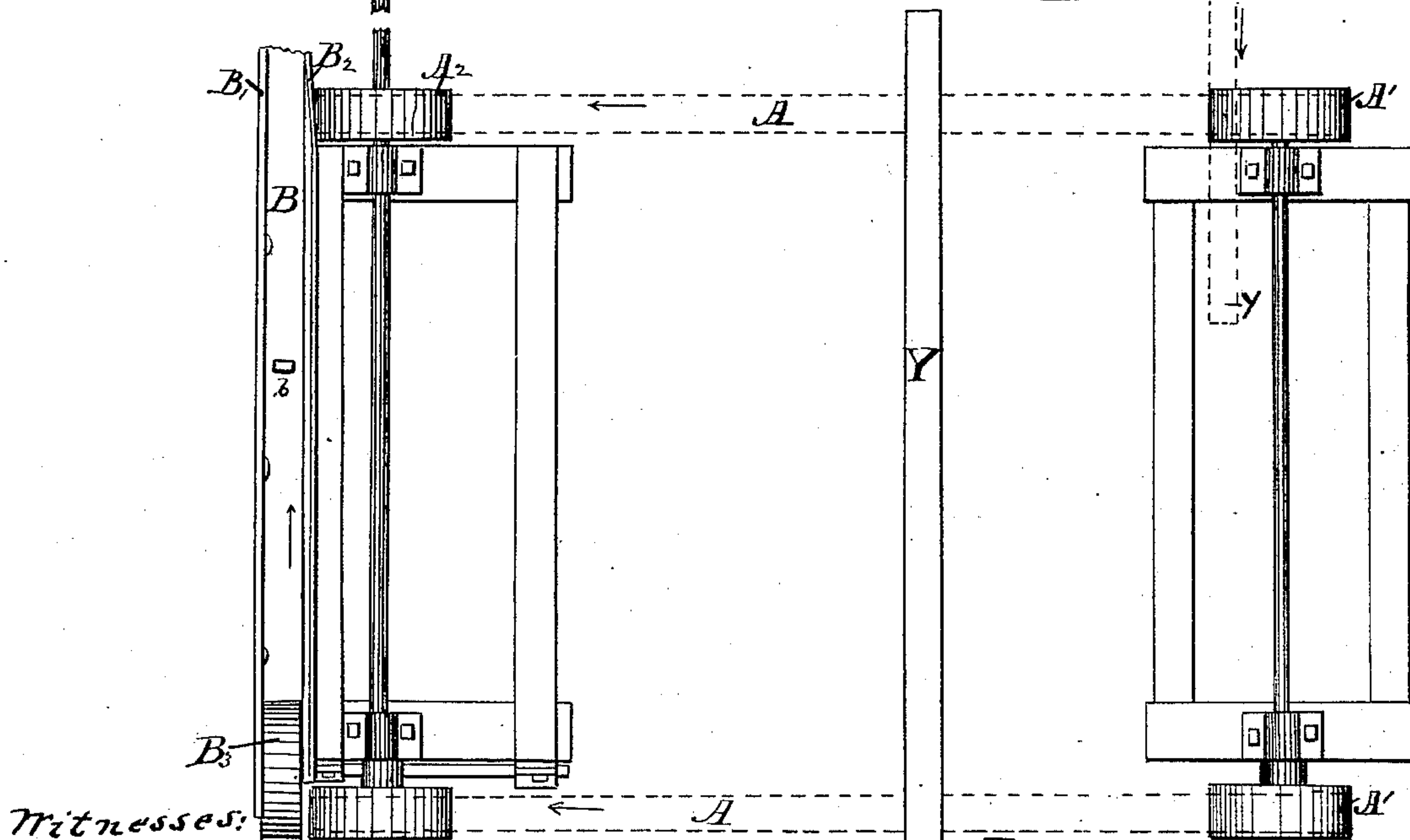
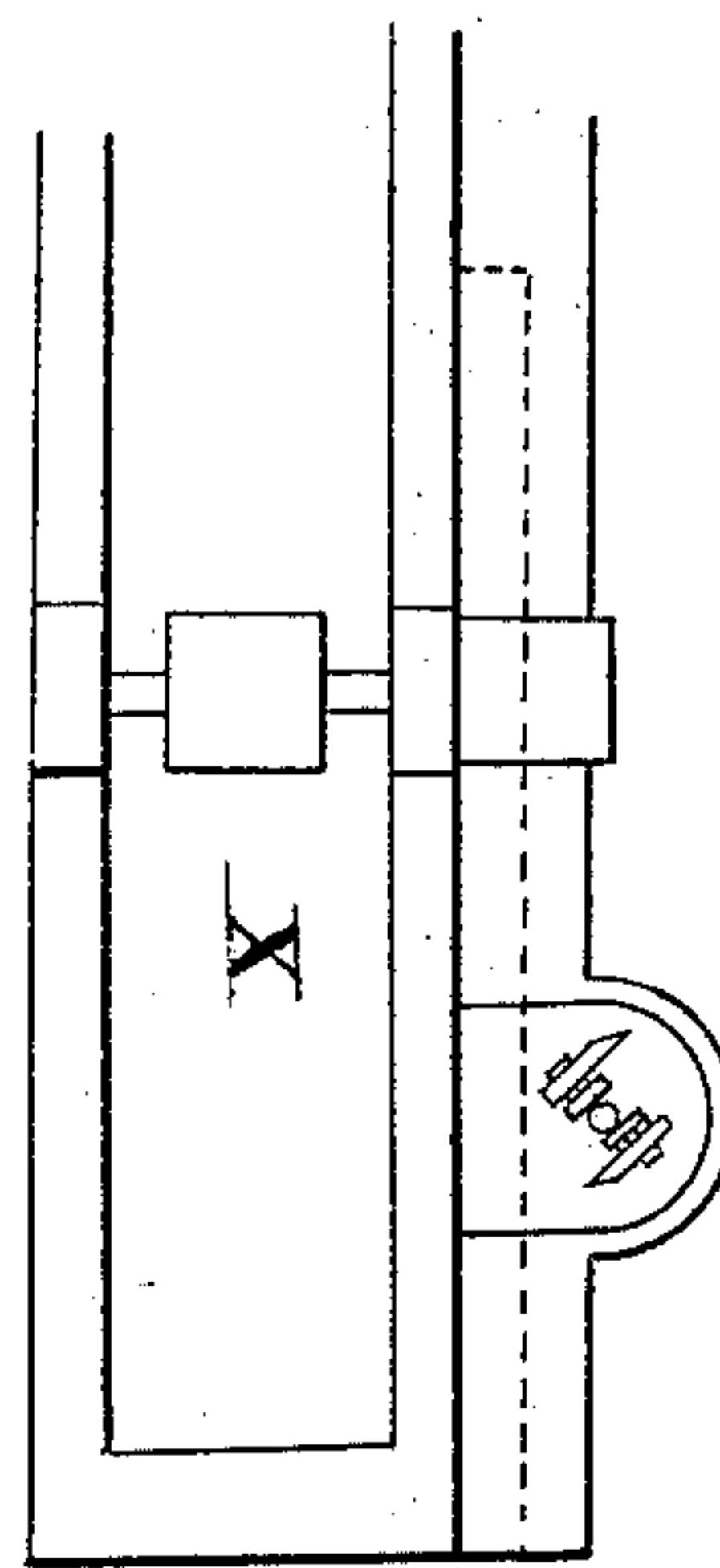


Fig. 1.



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E. W. Roberts
C. B. Shurtluff

Inventor:
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(No Model.)

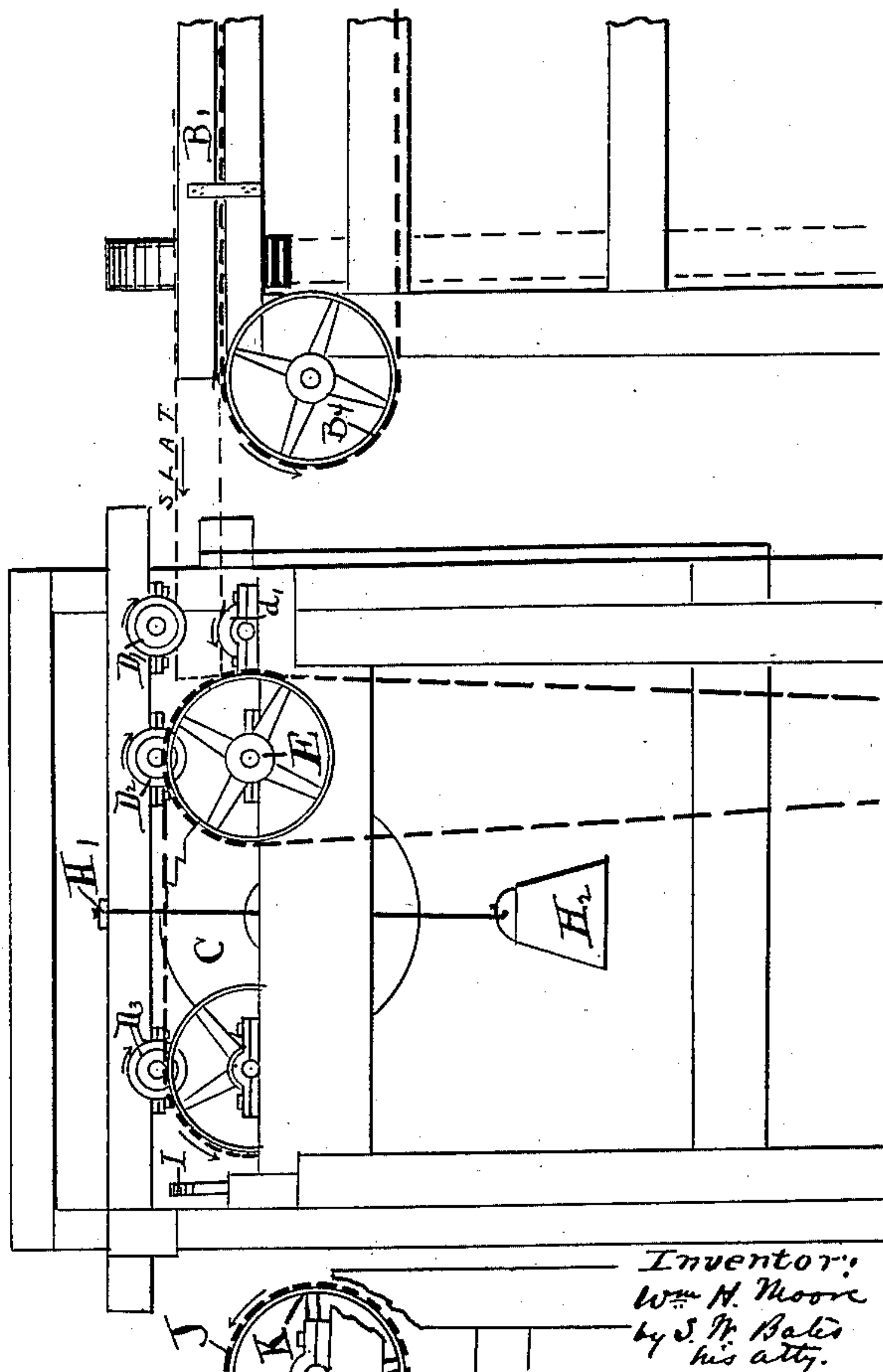
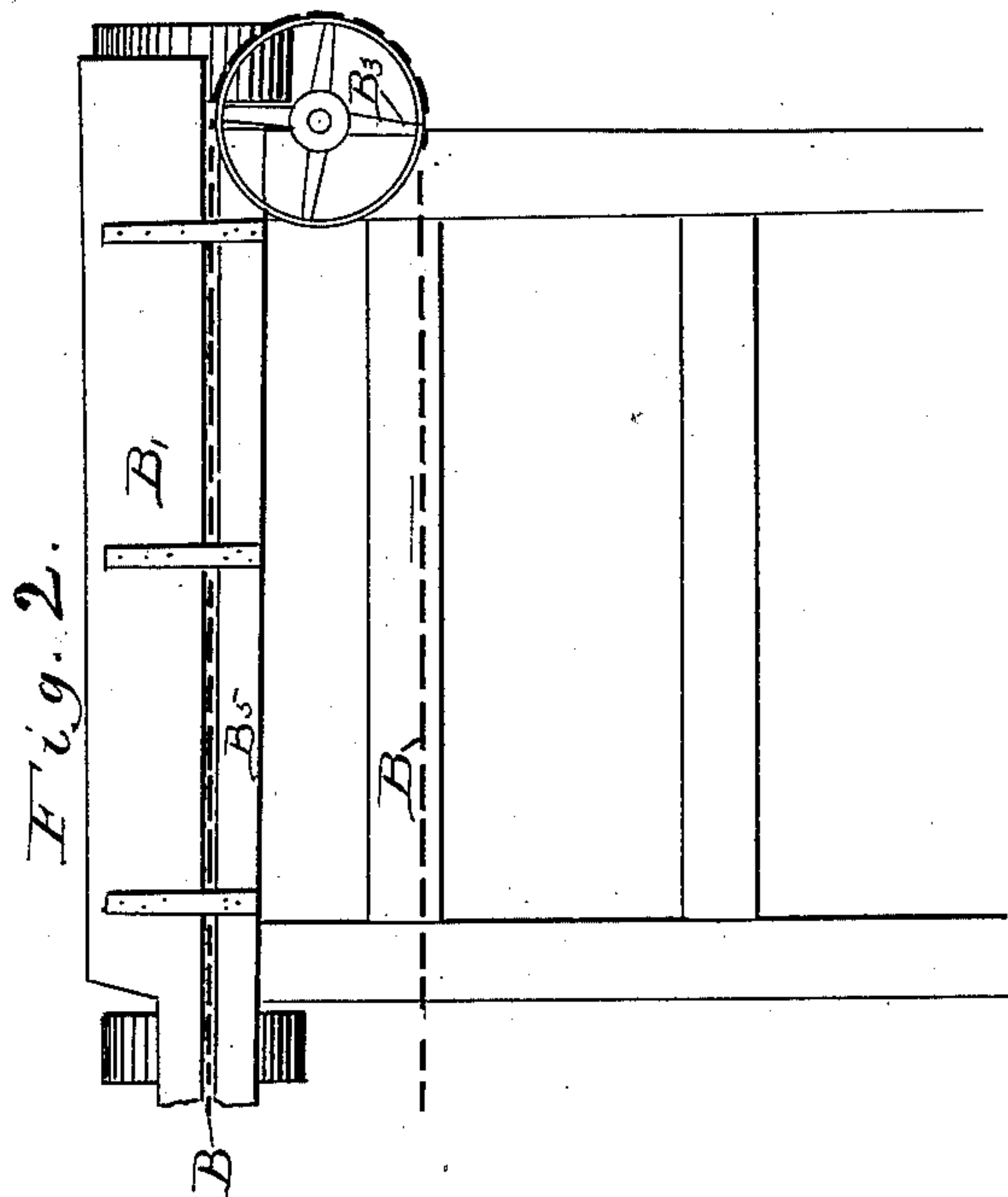
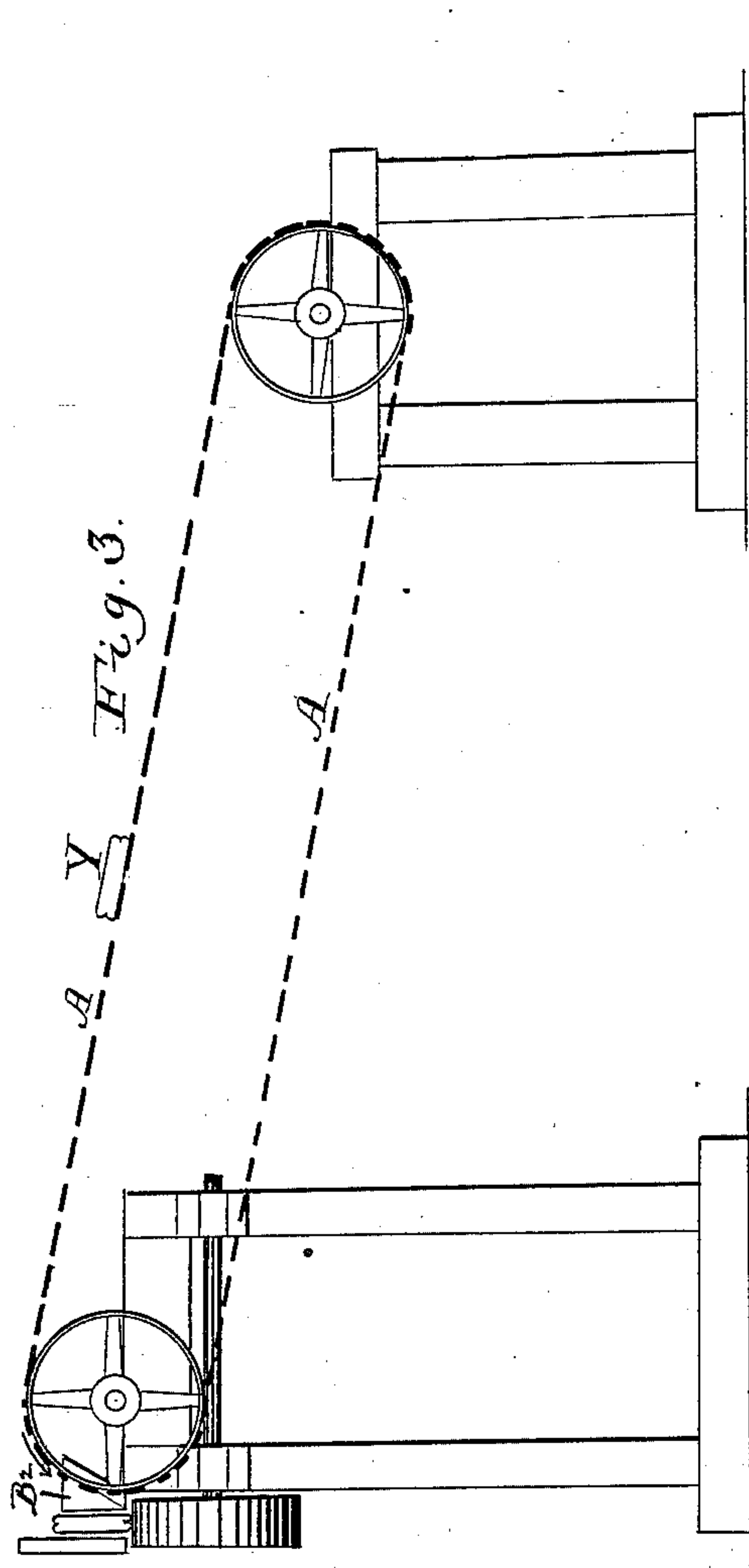
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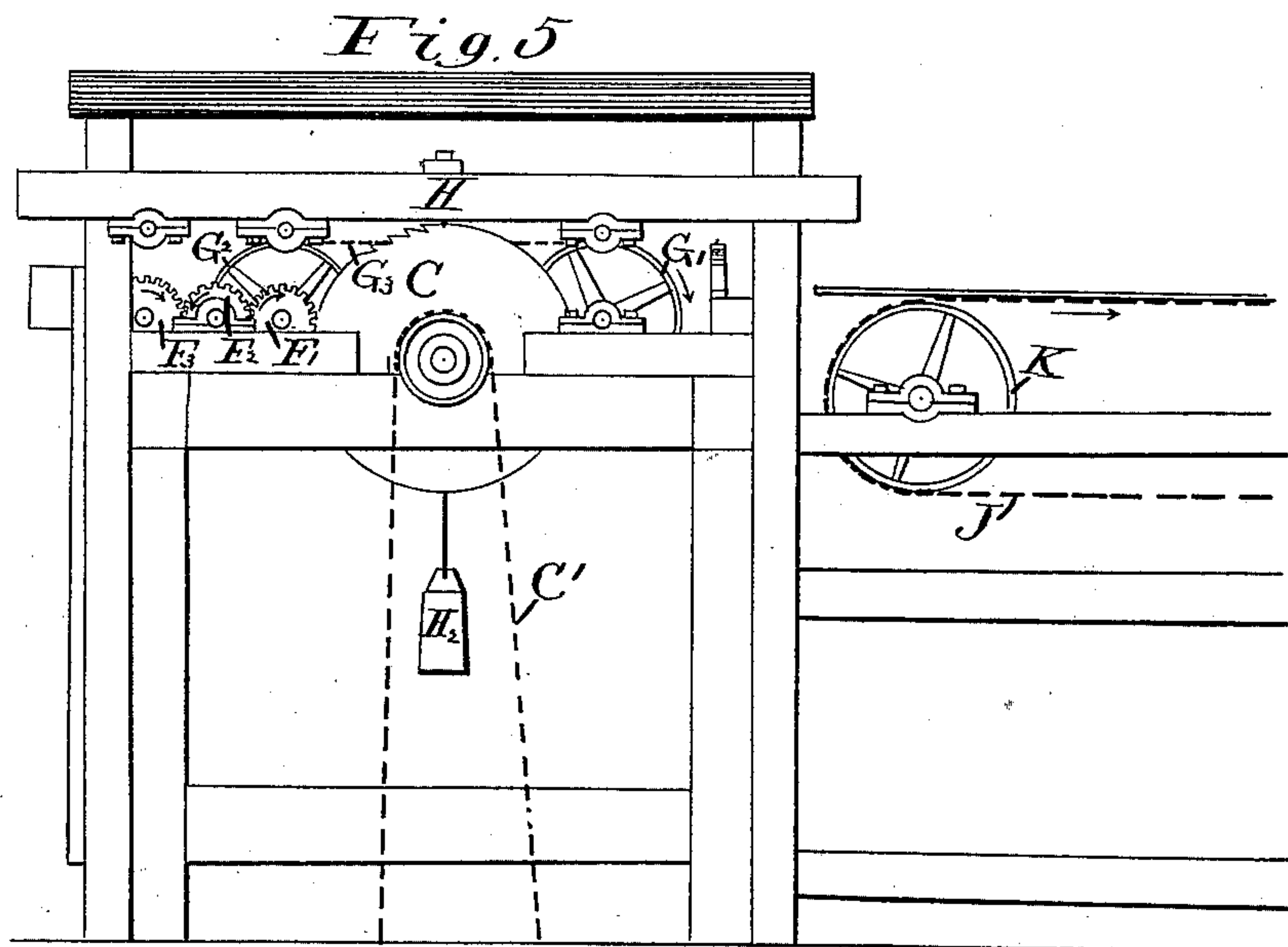
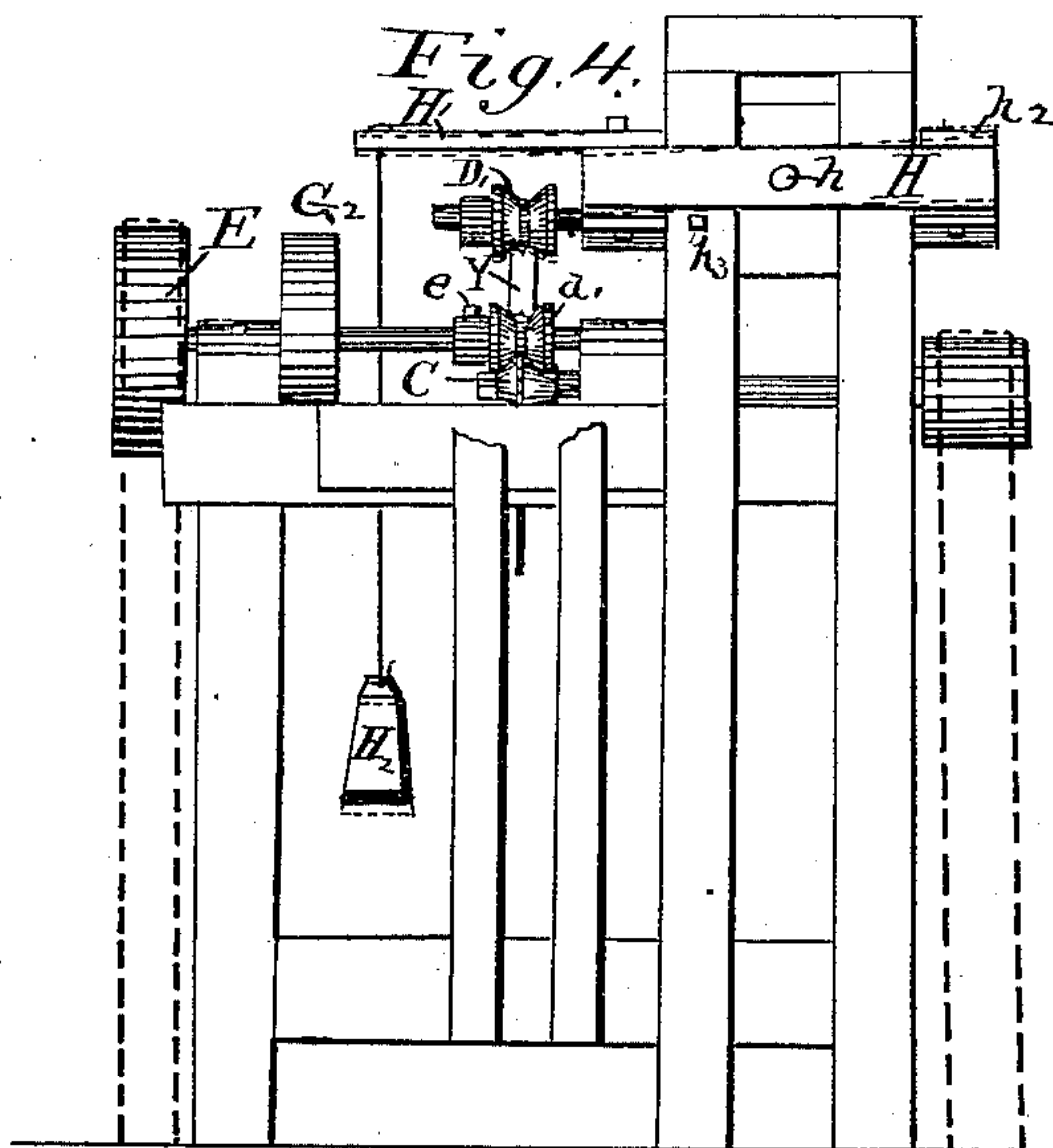
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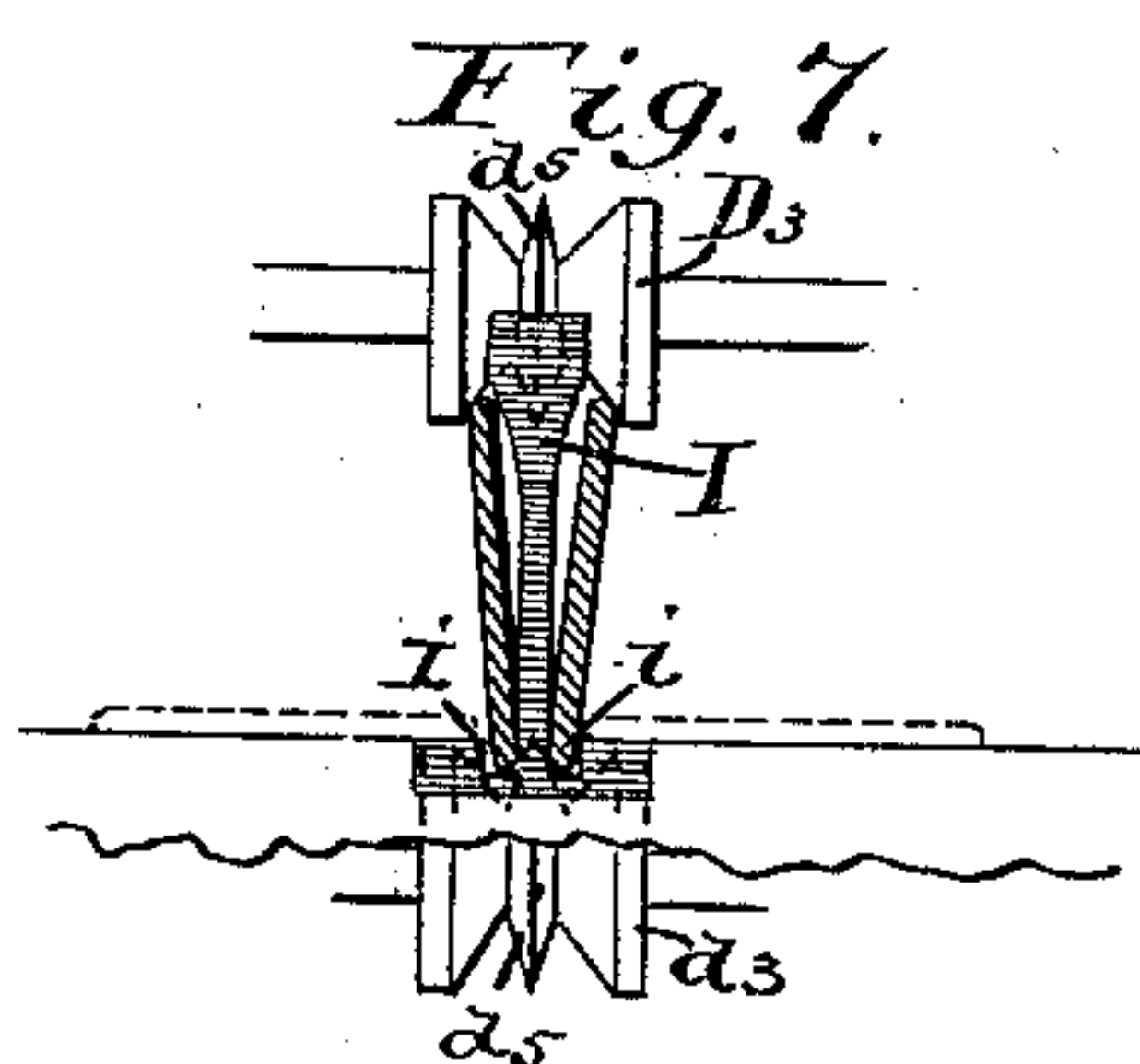
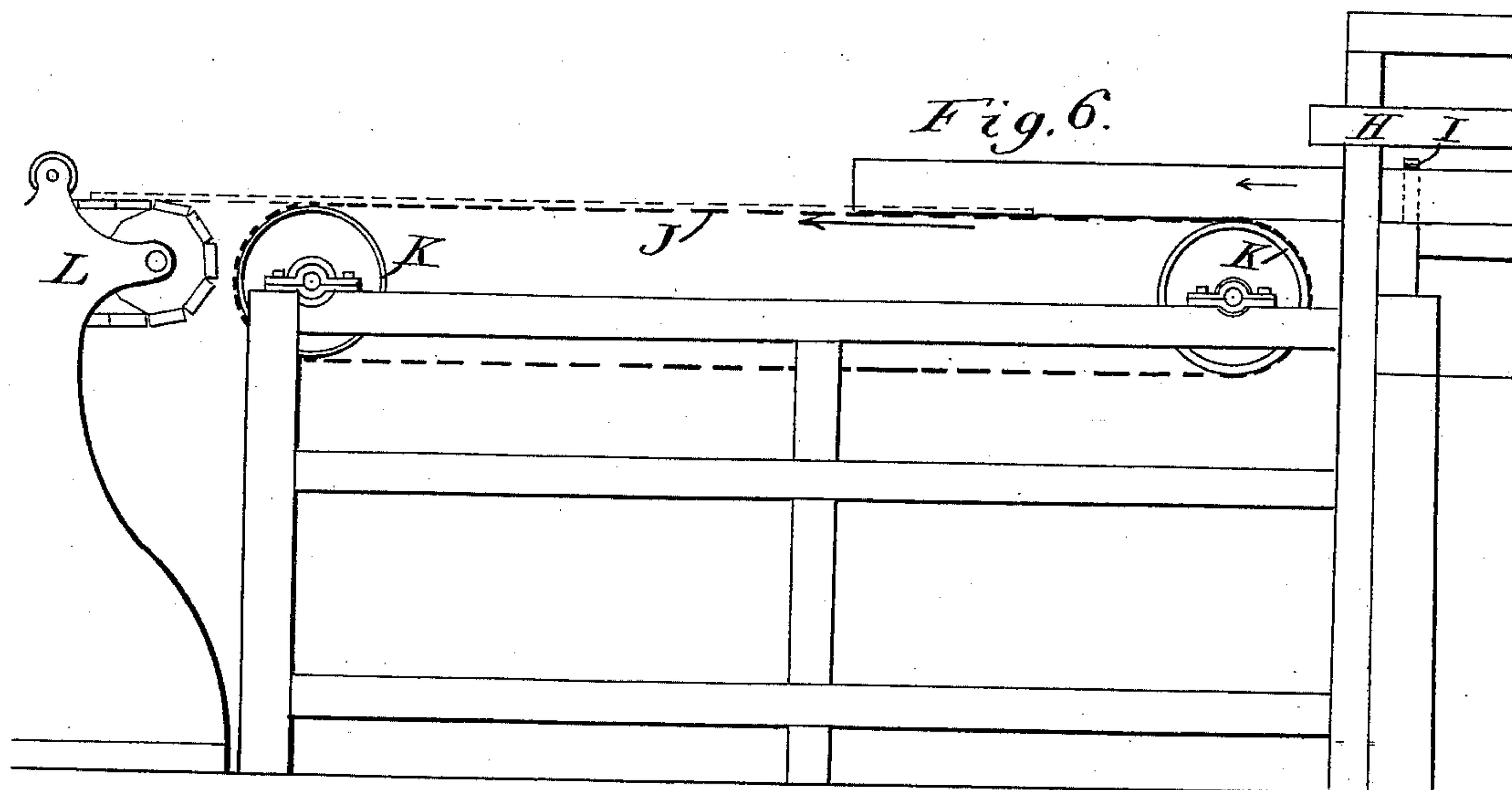
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UNITED STATES PATENT OFFICE.

WILLIAM H. MOORE, OF GARDINER, MAINE.

MACHINE FOR MAKING BED-SLATS.

SPECIFICATION forming part of Letters Patent No. 299,832, dated June 3, 1884.

Application filed February 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MOORE, a citizen of the United States, residing at Gardiner, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Machines for Making Bed-Slats, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the manufacture of bed-slats where a bolt is used having double the thickness of the required slat, which bolt, having been planed on both sides and molded on both edges, is afterward split, thus forming two slats.

The object of my invention is to take the bolt as it comes from the planer and automatically split it into two slats with a splitting-saw, planing off the saw-scarf thus formed, and delivering the slat at the end of the machine planed on both sides and ready for the market. I accomplish this result by the following successive steps, viz: The bolt, as it comes from the planer, falls across two belts, which carry it off at right angles and deposit it on edge in an open trough, the bottom of which is formed by an endless belt. The motion of this belt carries the bolt along to the splitting-machine, through which it is run by means of grooved friction-rolls. The two slats thus formed from the bolt are made to fall, scarf upward, on a broad feed-belt, which feeds them through a cylinder-planer, where the saw-scarf is planed off.

In the drawings, Figure 1 is a general plan. Fig. 2 is a side elevation of splitting-machine with its feed-belt. Fig. 3 is a side elevation of carrying-belts which take the bolt from the first planer. Fig. 4 is a front elevation of splitting-machine, showing belt passing through. Fig. 5 is a side elevation of splitting-machine, with portion of endless belt leading to cylinder-planer. Fig. 6 is an elevation of same endless belt as in Fig. 5, with portion of cylinder-planer. Fig. 7 is a detail of spreader on splitting-machine.

The arrows show direction of the motion.

X is a portion of the planer in which the bolt Y is planed.

A A are two endless belts extending at right

angles to said planer, and so placed that they will receive the bolt as it falls from the machine. The belts A A pass over the pulleys A' A', which are near the planer, and thence over the pulleys A² A², placed on a line with the splitting-machine. The shaft which supports the pulleys A² A² also contains the driving-pulley A³, to which power is applied.

B is an endless belt running horizontally over the pulleys B³ B⁴ and at right angles to the belts A A. The upper part of the belt B is placed at about the same level as the middle of the pulleys A² A², so that there will be a drop from the end of the belts A, where they pass over these pulleys to the surface of the belt B. Belt B is inclosed by two side pieces, B' and B², forming a kind of trough, of which the bottom is the moving belt B, which belt has a motion toward the splitting-machine. A stop or dog, b, is attached to the surface of the belt B. That portion of the side piece B² which comes opposite the belts A A is beveled and canted outward in such a manner as to allow the bolt to slide down over it from the top of the pulleys A² A² to the belt B. The corresponding portion of the side piece B' is made sufficiently high to catch the edges of the bolts as they tip from the top of pulleys A². The belt B runs over the surface of the bed-piece B⁵.

Immediately beyond the end of belt B, and in line with it, is placed the splitting-machine, which I class by itself for convenience of description. This machine consists, principally, of the splitting-saw C and the six grooved feed friction-rolls, d' D' d² D² d³ D³, arranged in pairs, the rolls of each pair being vertically over each other. The lower rolls, d' d² d³, are geared and belted together by the gears F' F² F³, the pulleys G', G², and E, and the belt G³ in such a manner that they all have the same motion which is imparted by the driving-pulley E. The lower rolls are on a level with the top of the endless feed-belt B. The pair of rolls d' D' are each grooved or hollowed out, so that they form between them a recess which is wide in the middle and tapering toward the top and bottom. The rolls d² D² are identical with d' D'. The rolls d³ D³ are of the same shape as d' D', except that they have turned in the cen-

ter of each groove a cutter or separator, d^3 , which partially separates the recess between the rolls into two parts. The feed-rolls are all provided with set-screws c , which clamp them to the shaft and enable them to be adjusted laterally.

Between the rolls d^2 D^2 and d^3 D^3 is the splitting-saw C, driven by the belt C'. The upper rolls, D' D^2 D^3 , are hung by means of loose shafts to a rocking frame, H, which is pivoted to the frame of the machine by the rods h . That side of the frame H which contains the feed-rolls is weighted by means of the weight H^2 attached to the lever H' . When the feed-rolls are not in operation, the force of weight H^2 is supported by the stop h^3 , which is fixed in the side of the machine. The feed-rolls in this case are just far enough apart, so that the bolt as it passes between them will lift the frame from the stop h^3 . Behind the rolls d^3 D^3 and in line with the saw is the guide or spreader I, Fig. 7. This consists of a thin upright piece somewhat higher than the thickness of the slat and widened out at the top. On each side of the base is a groove, i , so placed as to receive the lower edge of the slat as it comes from the saw and the rolls d^3 D^3 . The width of the upper end of the spreader I is somewhat greater than the distance between the grooves i .

From the rear end of the splitting-machine extends the broad endless belt J, running over the pulleys K K, the upper surface of the belt being level with the bed of the splitting-machine. The pulleys K K are driven by belts connected with the other parts of the machinery.

At the end of belt J, and in line with it, is the cylinder-planer L, the bed of which is on a level with the top of belt J.

Having thus described the construction of my machinery, I now proceed to explain its mode of operation. As the bolt Y comes from the planer X, having there been planed on both sides, it falls across the two belts A A, by which it is carried across and deposited on edge on the endless belt B, being there held upright by the side pieces, B' B^2 . The motion of the belt B carries the bolt toward the splitting-machine, when its end, passing between the guides O O, is seized between the rolls d' D' . If, for any reason, the friction of the belt B should fail to feed the bolt into the rolls, the dog b , as it comes around behind the bolt, starts it along and makes the feed sure. As the end of the bolt is drawn between the rolls d' D' by the revolution of the lower roll, the upper roll, carrying with it the frame H, is slightly raised by the bolt which comes under it, so that free passage for the bolt is allowed. During this the weighted frame bears directly upon the feed-rolls and the bolt. From the rolls d' D' the bolt passes through rolls d^2 D^2 , whence it is fed through the saw and split into two slats. As the two slats thus formed come from the saw, they pass through the rolls d^3 D^3 , the separator d^5 spreading them apart, thus relieving the saw from binding. Leav-

ing the rolls d^3 the slats pass, one on each side of the spreader I, their lower edges confined in the grooves i i , while their upper edges, bearing against the top of spreader I, incline outward. When they are relieved from the grasp of the rolls d^3 D^3 they fall apart, saw-scarf upward, on the top of the endless belt J, by which they are fed through the cylinder-planer L, where the saw-scarf is planed off. It is designed to have the speed of the belts A A a trifle faster than that of the planer X, that of the feed-belt B faster than belts A A, and so on through the machine, thus preventing clogging.

The arrangement of parts, as here shown, is made to conform to the conditions at my mill; but it is evident that in many cases where the machines could be placed in a line the endless belts A A might be dispensed with by feeding directly from the planer X to feed-belt B.

Hitherto such bolts as I have described have generally been taken from the first planer and fed by hand through a splitting-saw, and have been placed in the market planed only on one side.

In place of the endless belts B and J here shown, I may make use of a series of feed-rolls, all revolving in the same direction, though I consider the method here shown as preferable.

A variety of means may be used for weighting the upper feed-rolls, D' D^2 D^3 —such, for instance, as placing them in a weighted frame moving in vertical guides; but the method I show is as convenient as any.

By the use of the feed-rolls here shown I am enabled to split with accuracy bolts which are badly warped, as such bolts often are, the peculiar grooving of the rolls holding them always in an upright position.

The spreading effect of the rolls d^3 D^3 prevents the saw from binding, as I have before shown, and enables me to use saws with no set to them, and also saws which have become blistered, and which would otherwise have been useless.

I claim—

1. In a machine for splitting bed-slat bolts, the combination of the feed-belt delivering the bolts from the planer lengthwise to the feed-belt B, having guides on each sides, with the guides O and the rolls d' D' d^2 D^2 d^3 D^3 and saw C, whereby the bolt is delivered to and passed beyond the saw, and the spreader I to separate the split bolt, all substantially as set forth.

2. In a machine, as described, the combination of the endless feed-belt B, which is provided with side guides, B' B^2 , whereby the bolt is delivered lengthwise from said belt, with weighted friction-rolls d' D' d^2 D^2 d^3 D^3 , whereby said bolts are held in position, and the splitting-saw C, all as set forth.

3. The combination, in a machine, as described, of the feed-belt A, which carries the

bolt sidewise from the planer, with the feed-belt B, having side pieces, B' B², and dog b, whereby the bolt is fed lengthwise to the splitting mechanism, all as set forth.

5 4. In a machine, as described, and in combination with the friction-rolls d' D' d² D² and splitting-saw C, the rolls d³ D³, having the separator d⁵, and upright spreader I, having the groove i on each side of its face, whereby the two
10 parts of the sawed bolt are separated and set sawed edge up, all as set forth.

5 5. In a machine, as described, the combination of the rolls d³ D³, having separator d⁵, with the upright spreader I, having grooves i on
15 each side of the base, substantially as described.

6. In a machine, as described, for making bed-slats, the combination of the rolls d³ D³, having separator d⁵, and the upright spreader I, having grooves i on each side of the base,
20 with a belt and planer, whereby the split bolt

is separated and each part, sawed side up, delivered to the planer, to be smoothed, substantially as described.

7. In a machine, as described, for making bed-slats, the combination of the following ele- 25
ments, viz., a belt from the planer to deliver the planed bolt sidewise to the longitudinally-carrying belt, rolls to receive said bolt, which rolls are properly weighted to hold the bolt while it passes the splitting-saw, the saw, and 30
devices for turning the parts of the split bolt sidewise, and a belt to deliver the bolt-pieces, sawed edge up, to a planer, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. MOORE.

Witnesses:

JOSIAH F. PURINTON,
SIMON K. LITTLEFIELD.