

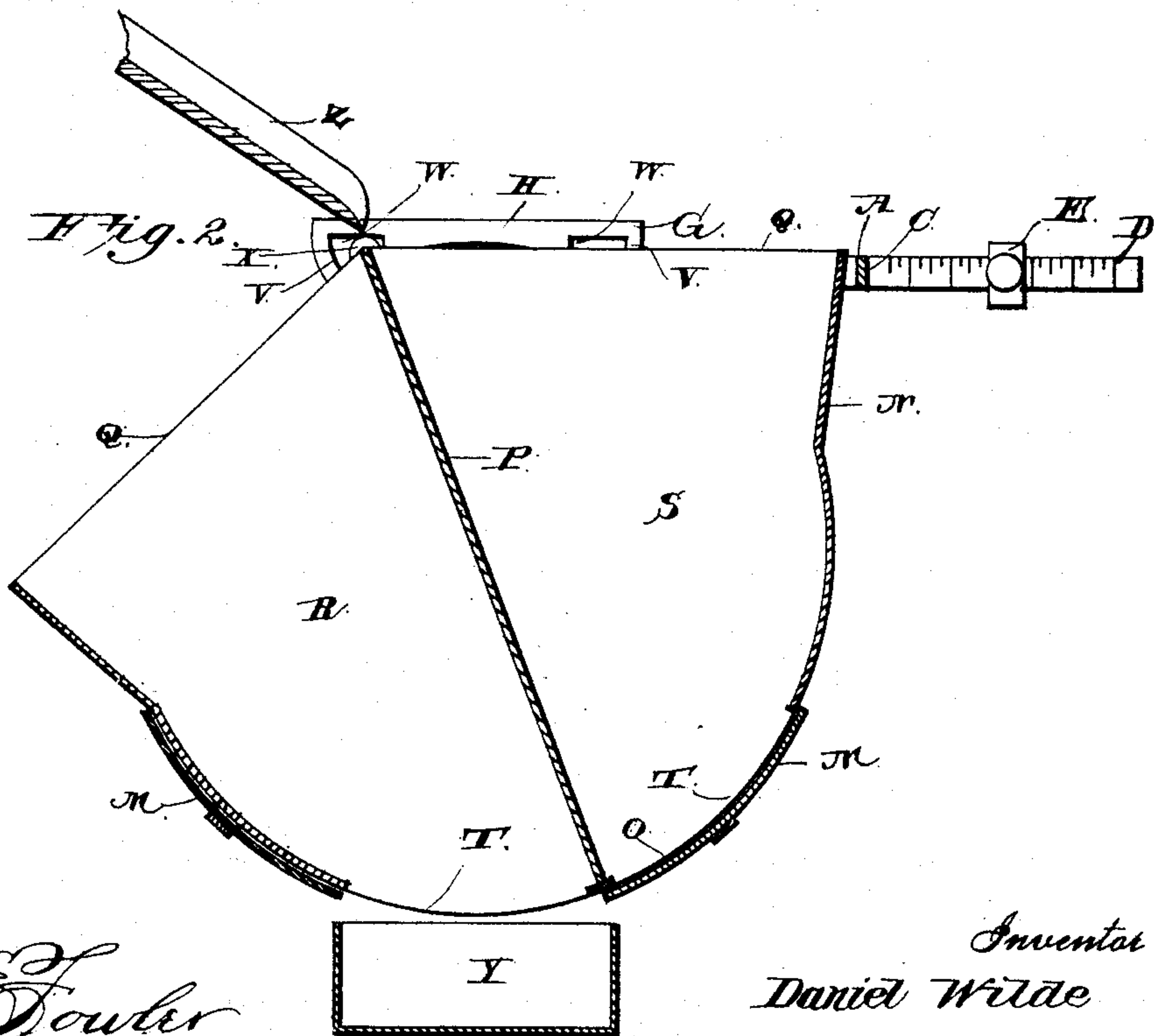
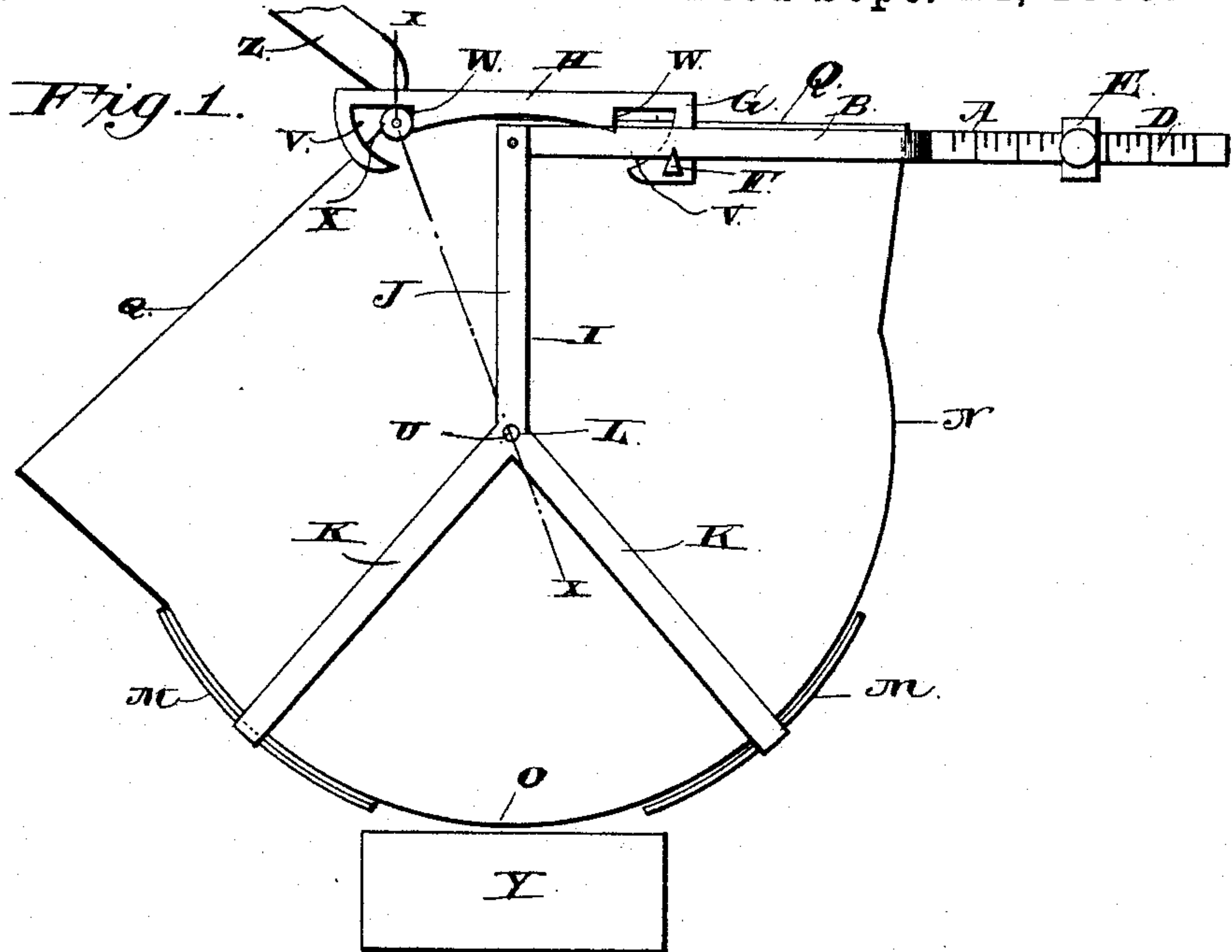
(No Model.)

2 Sheets—Sheet 1.

D. WILDE.
GRAIN WEIGHING MACHINE.

No. 411,514.

Patented Sept. 24, 1889.



Witnesses

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Wm. Bagger

Inventor

Daniel Wilde

By his Attorneys

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Fig. 3.

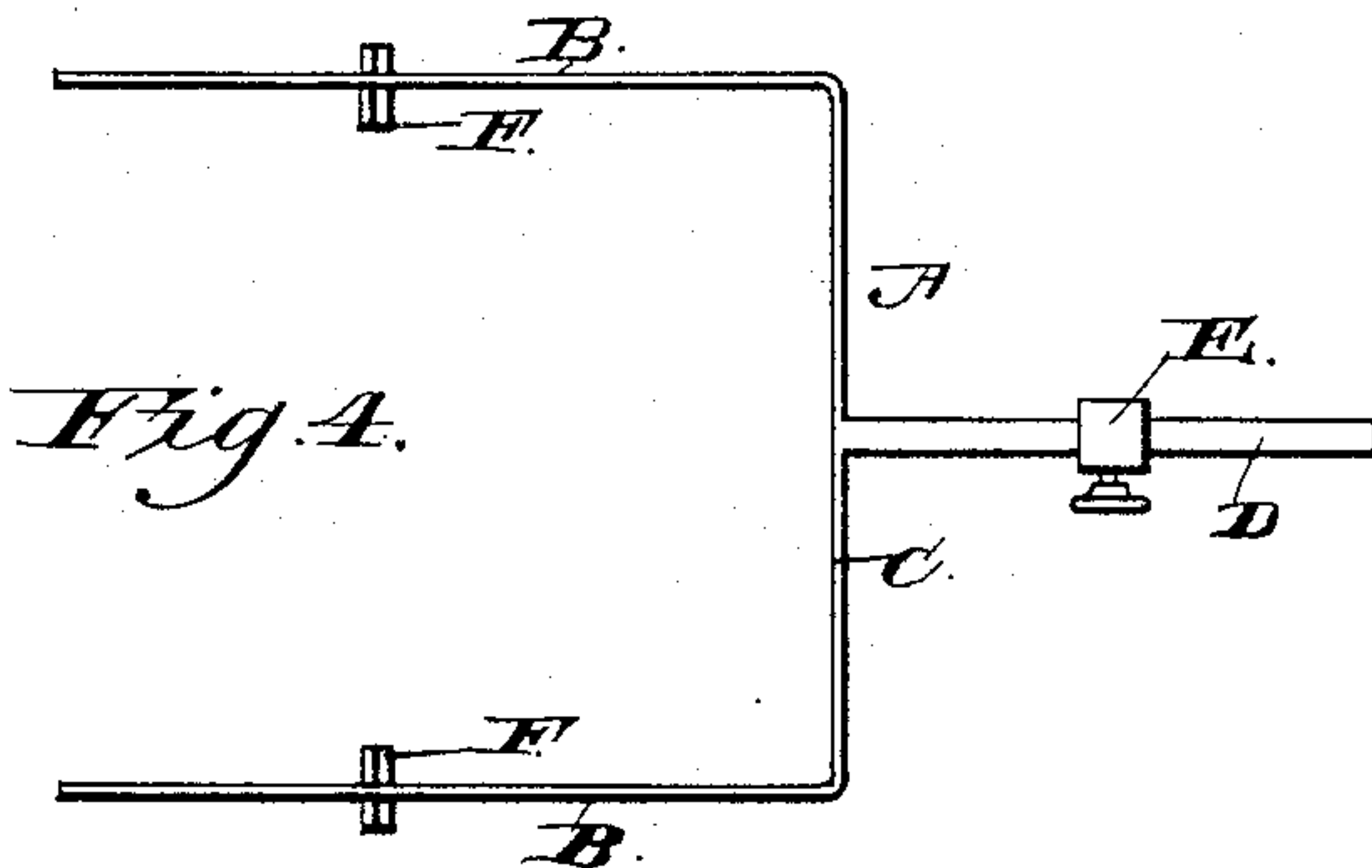
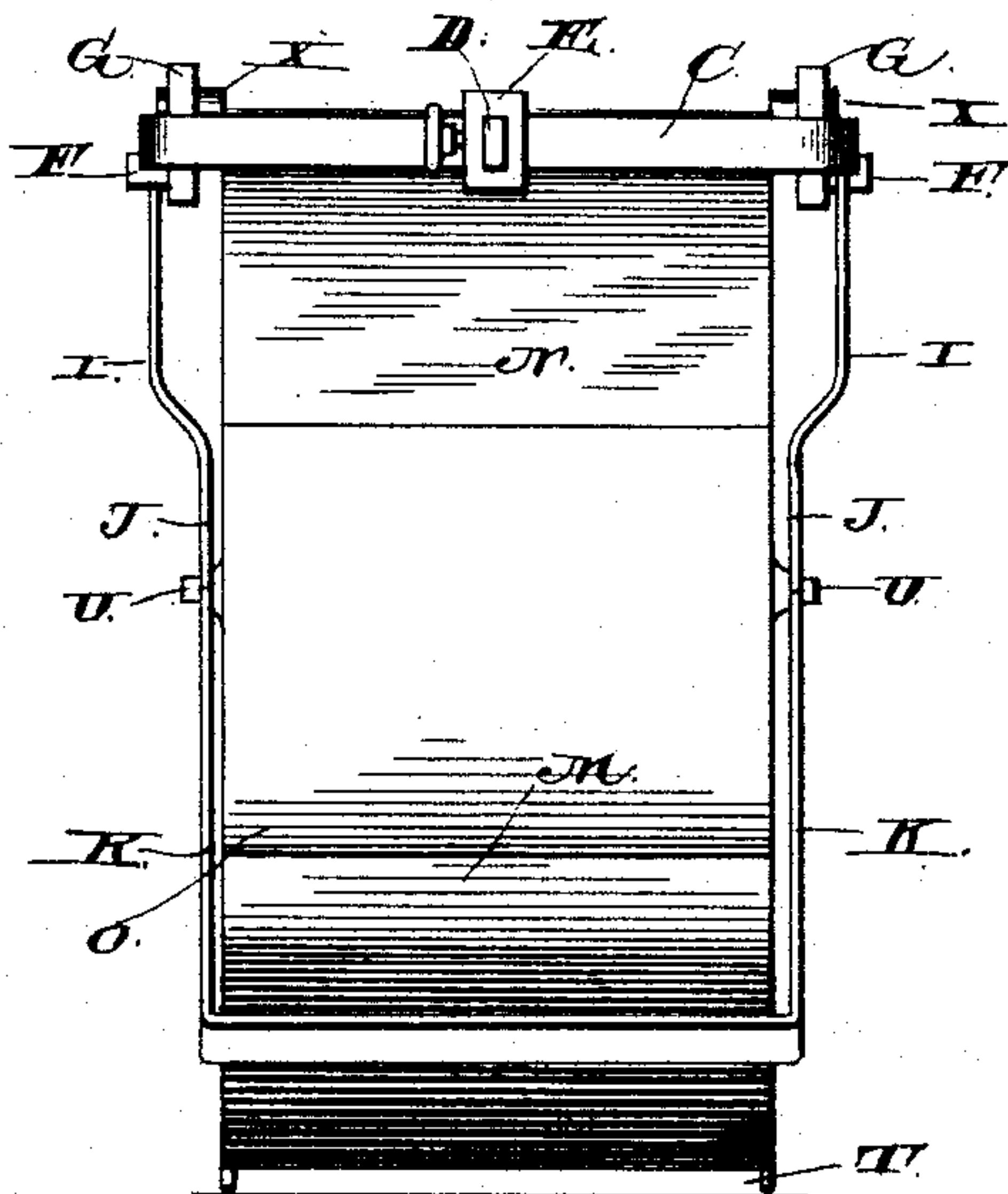
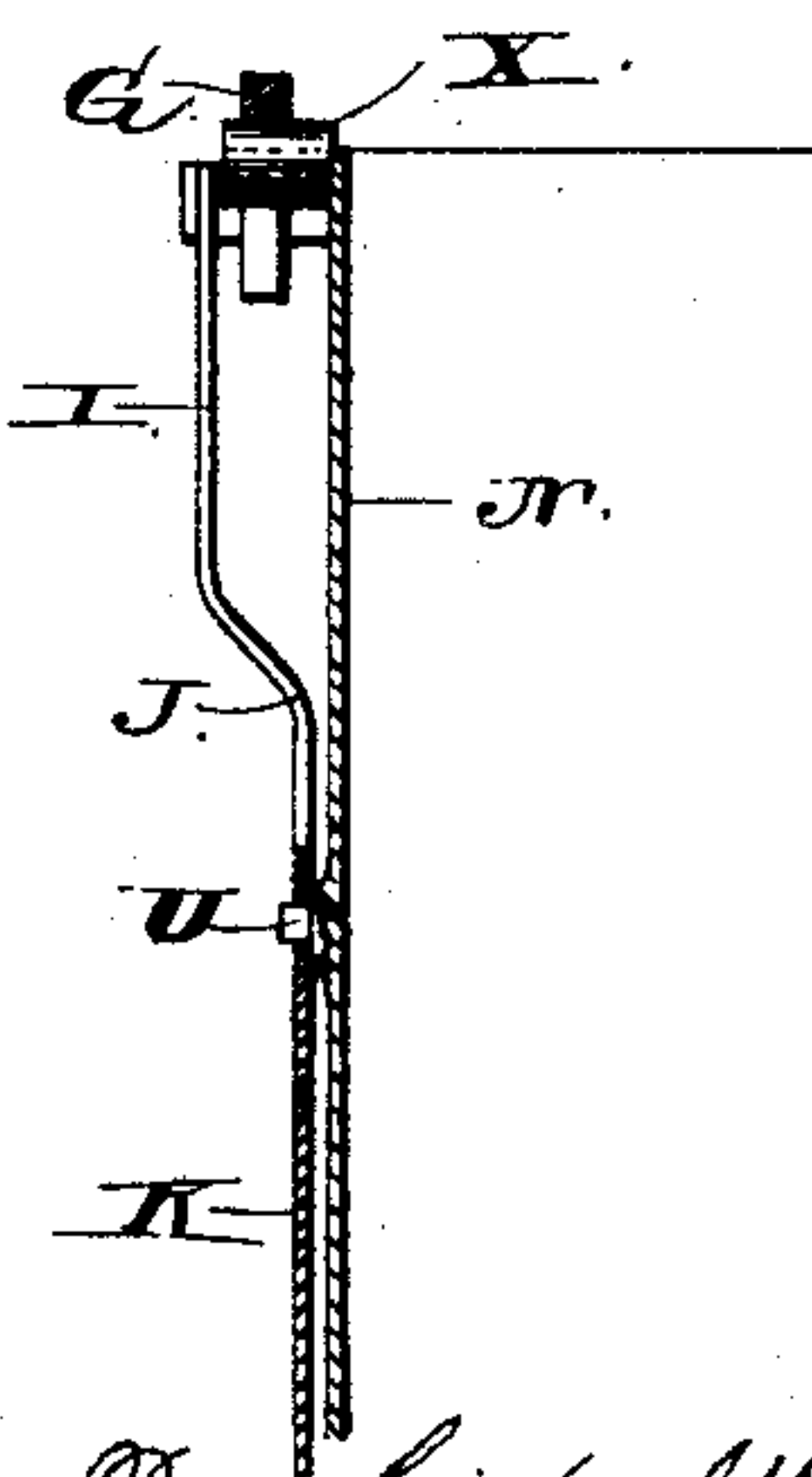


Fig. 5.



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UNITED STATES PATENT OFFICE.

DANIEL WILDE, OF WASHINGTON, IOWA.

GRAIN-WEIGHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 411,514, dated September 24, 1889.

Application filed April 3, 1889. Serial No. 305,856. (No model.)

To all whom it may concern:

Be it known that I, DANIEL WILDE, a citizen of the United States, residing at Washington, in the county of Washington and State of Iowa, have invented a new and useful Grain-Weighing Machine, of which the following is a specification.

This invention relates to grain-meters or apparatus for automatically measuring grain and other articles by weight; and it has for its object to provide a device of this class which shall be simple in construction, inexpensive, and convenient, accurate, and effective in operation, and which may be attached to the grain-board of a thrashing-machine, corn-sheller, or the like, so as to measure or weigh the grain or corn automatically as it leaves the machine.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view of a grain-meter embodying my improvements. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an end view. Fig. 4 is a top view of the scale-beam. Fig. 5 is a vertical transverse sectional view taken on the line $x x$ in Fig. 1.

The same letters refer to the same parts in all the figures.

A designates the scale-beam, which is composed of two parallel bars B B, connected at their front ends by a third bar C, from the center of which extends a bar D, which is also parallel to the bars B B. The bar D carries the adjustable weight E, and the bars B B are provided with knife-edged pivots F F, adapted to rest upon suitable bearing-plates G G, or vice versa. The bearing-plates G G are secured to the outer sides of blocks H H, which will be hereinafter more fully described.

To the inner ends of the bars B B of the scale-beam are pivotally connected the sides of a frame I. Each of the said sides consists of one upper vertical and two lower diverging arms J K K, radiating from a common center L, as clearly shown in the drawings. The lower ends of the arms K K are connected

by transverse segmentally-curved plates M M, which are concentric to the center L and which serve to connect the sides of the said frame.

N designates the scale pan or hopper. This consists of a box having a semicircular or segmental bottom O and provided with a central transverse vertical partition P. The upper edges of the box or hopper are beveled or inclined from the center to the ends, as shown at Q Q, so that when the hopper is tilted to its operative position, as shown in Fig. 1 of the drawings, the top of one of the compartments of the said box or hopper shall be in a horizontal position. The bottom of each of the compartments R and S of the hopper has a transverse slot or opening T adjacent to the transverse partition P. The sides of the box or hopper are provided with laterally-extending pinions U U, whereby the said hopper is pivoted in bearings in the sides of the frame I, which bearings coincide with the centers L of the said sides. The bottom of the hopper is concentric with its pivots, and the said bottom should be nearly, but not quite, in contact with the segmental plates M M. The hopper, it will thus be seen, may be tilted freely upon its pivots, and when it is in operative position, as shown in Figs. 1 and 2, one of the slots T in the bottom of said hopper registers with and is covered by one of the segmental plates M, while the other registers with the space between the said plates.

The blocks H H, to which reference has been made above, and which support the scale-beam, the pivoted frame, and the hopper, are provided at their ends with inwardly-facing hooks V V, and near the inner ends of the said hooks with shoulders or recesses W W. The sides of the hopper are provided at their upper edges with laterally-extending pins or rollers X X, located centrally or at the converging point of the inclined edges Q Q—in other words, at the upper end of the partition P, which divides the hopper into the compartments R and S.

Under the opening between the segmental plates M M may be placed a trough or chute Y, to carry the grain away from the device after it has been weighed. Guide-rods or devices of suitable construction may be used

to guide the pivoted frame vertically and prevent it from being displaced during operation of the device.

In Figs. 1 and 2 of the drawings the device has been shown in position for operation. The weight E having been properly adjusted upon the arm D of the scale-beam, the hopper or box N is tilted in the pivoted frame until the slot T in the bottom of one of its compartments R in the drawings registers with the space between the segmental plates M M, while the slot or opening in the bottom of the other compartment is covered by one of the said segmental plates. When the hopper is in this position, the top of the compartment S is in a level or horizontal position, and the pins or rollers X enter the hooks V at one end of the blocks H H, the weight E overbalancing the weight of the frame I, and the hopper now raises the latter until the pins or rollers X enter the recesses and bear against the shoulders W of the blocks H, thus retaining the device in position for operation. Grain is now fed in a continuous stream into the compartment S of the hopper. When the weight of the grain in the said compartment overbalances that of the weight E, the end of the scale-beam carrying the pivoted frame I and the hopper descends, thus releasing the pins or rollers X from the shoulders W, when the weight of the grain, being only in one side of the hopper, will tilt the latter, throwing the pins or rollers over against the opposite hooks V, which, being curved, as shown, will guide the said pins or rollers into the recesses at that end of the blocks. The opening in the compartment R being now above the space between the plates M M, the contents of said compartment will be instantly discharged, and the hopper, being thus relieved of its weight, is overbalanced by the weight E, thus bringing the pins or rollers X X into contact with the shoulders W W, and thus supporting the hopper again in operative position. The grain now passes into the compartment S of the hopper until its weight in said compartment overbalances the weight E, when the operation is repeated.

The blocks H H may in practice be attached to the frame of a thrashing-machine or corn-sheller below the grain-board, which is indicated in the drawings by letter Z, and from whence the grain or corn will be guided direct into the proper compartment of the box or hopper. One of the blocks H may, when desired, be dispensed with, as well as one of the pins or rollers X, extending laterally from the sides of the box or hopper, in which case some other suitable support will have to be provided for the bearing-plate for one of the arms of the scale-beam. The trough or chute Y, which conveys the grain away from the meter after being weighed, may have a vibrating motion, or it may be equipped with an auger-conveyer or other suitable devices for carrying the grain off, which, however, form no part of the present invention. The meter may also, when de-

sired, be so arranged as to discharge the grain direct into a wagon, car, or vessel.

My improved grain-meter is, as will be seen, very simple in construction, and it will be found effective and reliable, as well as perfectly automatic in operation, for weighing grain, coal, salt, or any articles that may be caused to run in a constant stream from a spout or chute to which the device may be attached. While I have herein described the preferred form of its construction, I would have it understood that I do not desire to limit myself to the precise details of construction herein described, but reserve the privilege of making such changes and modifications as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an automatic weighing-machine, the combination of the supporting-blocks, a bifurcated scale-beam, the two arms at one end of which are mounted pivotally upon said supporting-blocks, a frame mounted pivotally between the outer ends of said arms, a box or hopper pivoted in said frame, and pins or detents upon said box or hopper to engage recesses in the supporting-blocks, substantially as set forth.

2. In an automatic weighing-machine, the combination of a pair of supporting-blocks having recesses near each end, a bifurcated scale-beam mounted upon said supporting-blocks, a frame pivoted between the outer ends of the arms at one end of said bifurcated scale-beam, segmental plates connecting the lower ends of downwardly-diverging arms of the sides of said frame, a box or hopper mounted pivotally in the said frame, said hopper having a central transverse partition, a segmental bottom, and transverse slots in the bottoms of its compartments adjacent to said partitions, and pins or detents extending laterally from the pivoted hopper to engage the recesses at the ends of the supporting-blocks, and thus retain the hopper when it is tilted to a position in which the slot in the bottom of either of its compartments registers with the space between the segmental plates of the hinged frame, substantially as herein described, and for the purpose set forth.

3. The combination of the scale-beam, the frame pivoted at one end of the latter, the box or hopper mounted pivotally in the said frame, centrally-arranged pins or rollers extending laterally from the upper edges of said box or hopper, and the block or blocks supporting the scale-beam and provided at their ends with inwardly-facing curved hooks, and near the inner ends of said hooks with shoulders or recesses to engage the said pins or rollers, substantially as and for the purpose herein set forth.

4. The combination of the blocks having the inwardly-facing curved hooks and the

shoulders or recesses near the inner ends of the said hooks, the bearing-plates extending laterally from the said blocks, the scale-beam provided at one end with two parallel arms 5 having laterally-extending pivots mounted upon said bearing-plates, the adjustable weight upon the outer arm of the scale-beam, the frame pivoted to the opposite ends of the parallel arms of the same, the box or hopper 10 mounted pivotally in the said frame, said hopper having a segmental bottom, a central transverse partition, and transverse slots in the bottoms of its compartments adjacent to said partitions, the segmental plates at the 15 lower end of the pivoted frame, and the laterally-extending pins or rollers at the upper edge of the box or hopper, substantially as and for the purpose herein set forth.

5. The combination of the supporting- 20 blocks, the scale-beam mounted upon said blocks and having an adjustable weight at

one end, the pivoted frame at one end of the scale-beam, the box or hopper mounted pivotally in the said frame, the pins or rollers at the upper edge of the hopper adapted to en- 25 gage the hooks and shoulders or recesses at the ends of the supporting-blocks, segmental plates at the lower end of the pivoted supporting-frame adapted to close, alternately, the slots in the bottoms of the compartments 30 of the oscillating box or hopper, and the trough or chute arranged below the latter between the said segmental plates, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as 35 my own I have hereto affixed my signature in presence of two witnesses.

DANIEL WILDE.

Witnesses:

O. B. GRANT,
BIRD BICKFORD.