

(No Model.)

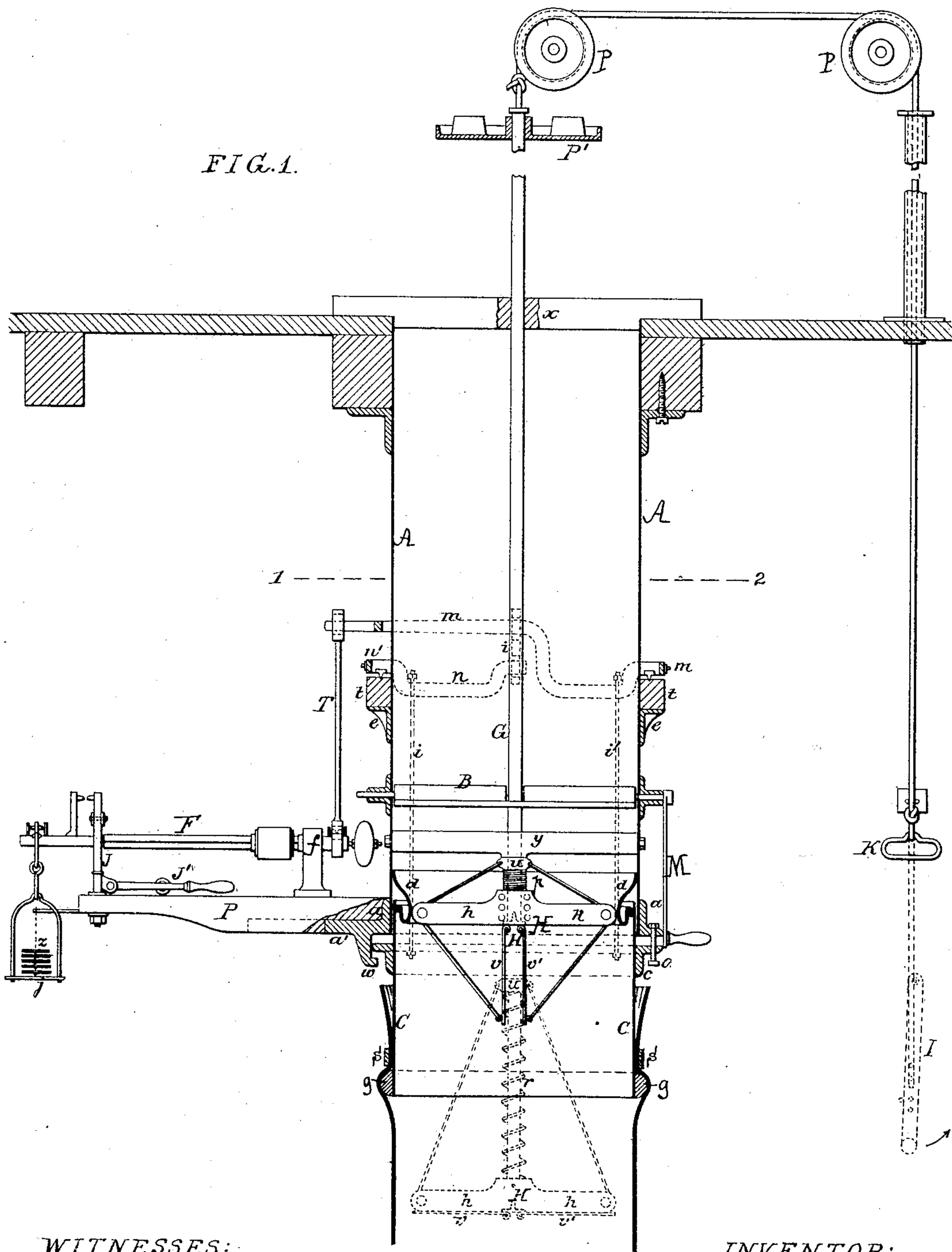
2 Sheets—Sheet 1.

P. & C. CAILLEAUX.

APPARATUS FOR FILLING SACKS AND WEIGHING THE CONTENTS THEREOF.

No. 329,712.

Patented Nov. 3, 1885.



WITNESSES:
John E Parker
Harry Drury

INVENTOR:
Paul Bailleaux
and
Charles Bailleaux
by their Attorneys
Hewson & Sons

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

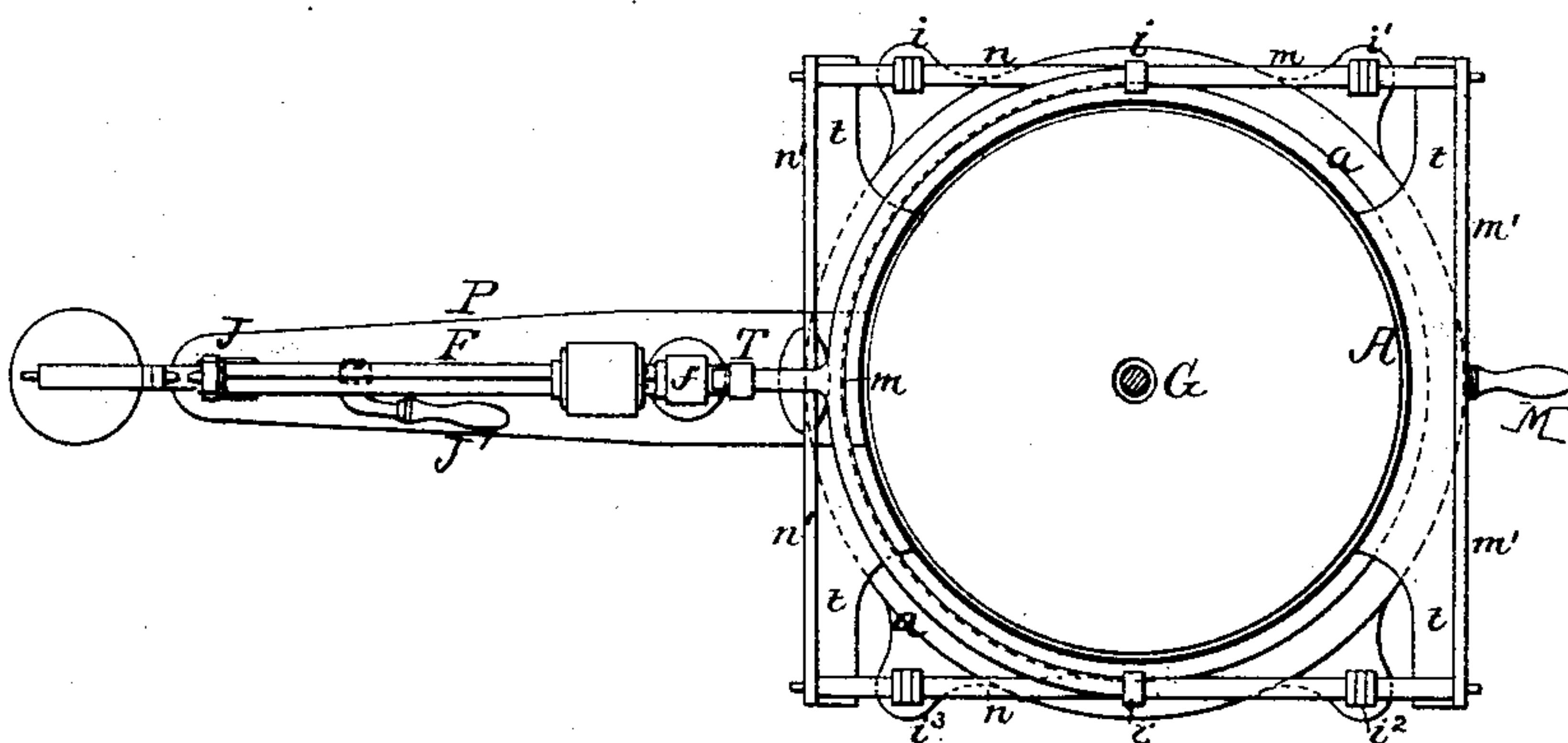


FIG. 4.

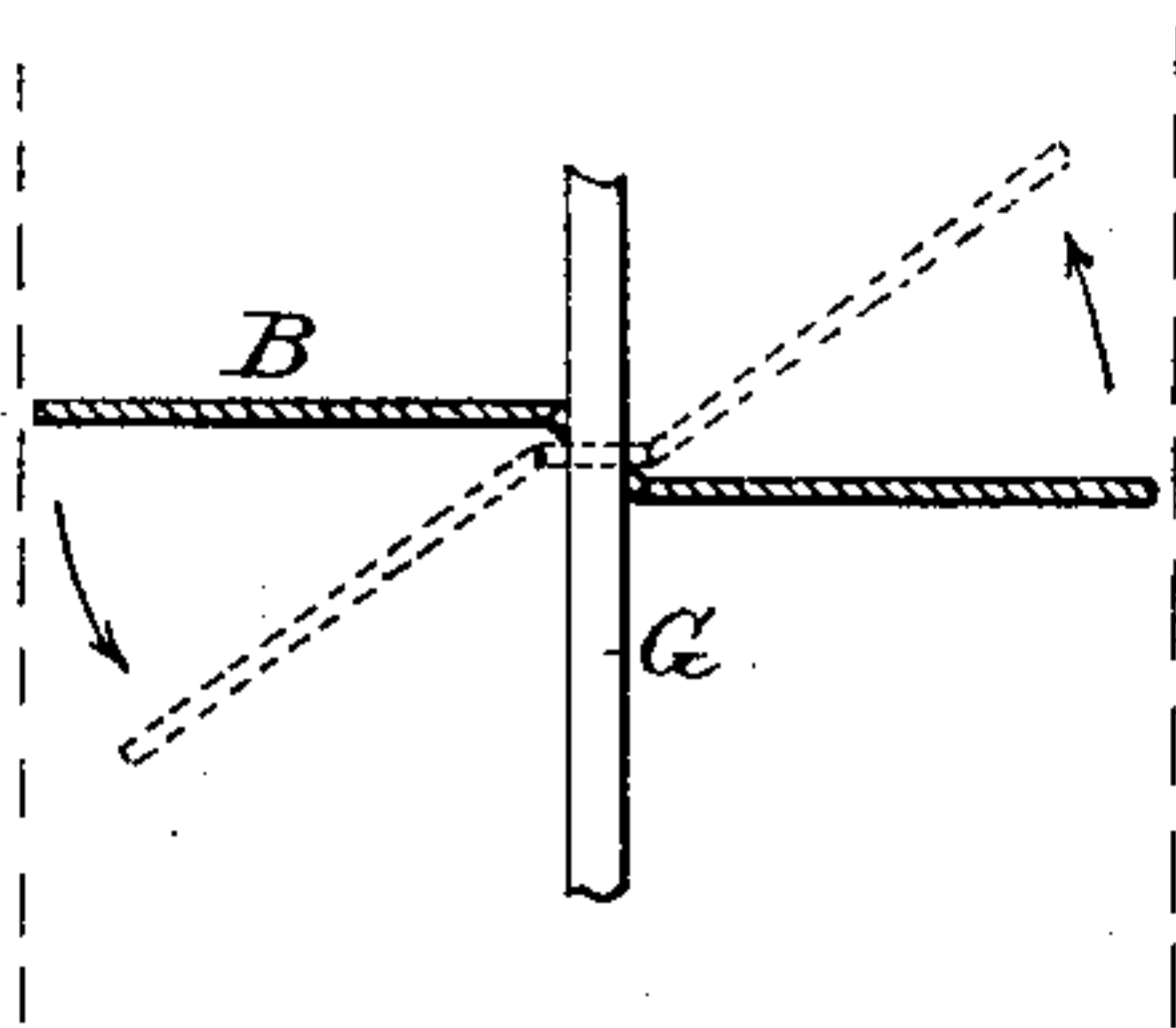
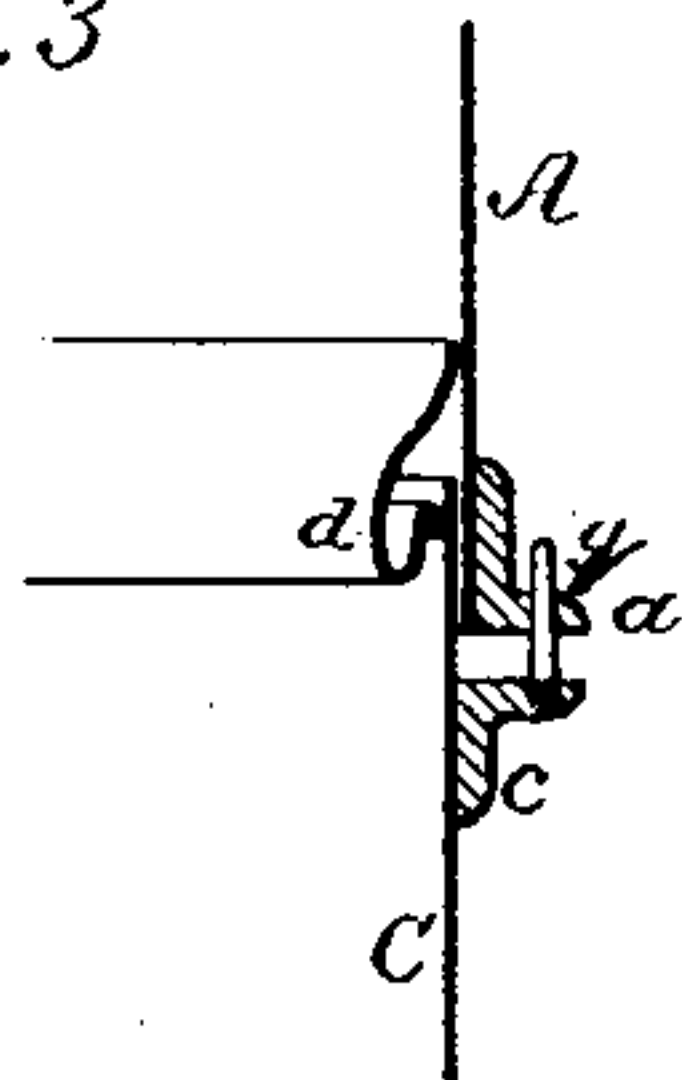


FIG. 3.



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UNITED STATES PATENT OFFICE.

PAUL CAILLEAUX AND CHARLES CAILLEAUX, OF GIRONVILLE, SEINE-ET-OISE, FRANCE.

APPARATUS FOR FILLING SACKS AND WEIGHING THE CONTENTS THEREOF.

SPECIFICATION forming part of Letters Patent No. 329,712, dated November 3, 1885.

Application filed December 22, 1884. Serial No. 150,964. (No model.) Patented in France October 31, 1884, No. 165,122; in Belgium November 4, 1884, No. 66,783; in England November 7, 1884, No. 14,719, and in Germany November 18, 1884, No. 32,143.

To all whom it may concern:

Be it known that we, PAUL CAILLEAUX and CHARLES CAILLEAUX, of the firm Cailleaux Brothers, at Gironville, in the Department of Seine-et-Oise, in the Republic of France, have invented Improvements in Sack Filling and Weighing Machines, (for which I have obtained a French patent, No. 165,122, October 31, 1884; Belgian patent, No. 66,783, November 4, 1884; British patent, No. 14,719, November 7, 1884, and German patent, No. 32,143, November 18, 1884,) of which the following is a specification.

This invention relates to improvements in the apparatus employed in mills, bakeries, granaries, and the like for filling sacks and at the same time weighing the contents thereof; and, like most apparatus used for this purpose, it comprises, first, a tube or cylinder fixed to the floor of the chamber in which are stored the goods to be sacked and weighed; second, a movable tube or cylinder to which the mouth of the sack to be filled is attached, in combination with a weighing-machine, connected or not with the fixed cylinder for indicating the weight of the goods allowed to enter the sack.

The special features of this invention are, first, the suspension of the movable tube or cylinder from four points or levers connected to the scale-beam of a weighing-machine and the method of connecting the said cylinder with the fixed cylinder; second, a peculiar construction of the weighing-machine and manner of attaching it to the fixed cylinder; third, a peculiar construction of rammer for compressing the goods in the sack.

In the accompanying drawings, Figure 1 is a vertical section of our weighing and sacking machine. Fig. 2 is a horizontal section on the line 1 2 of Fig. 1, and Figs. 3 and 4 are detached sectional views of the apparatus.

The sheet-iron or wooden cylinder A is fixed at the top to the floor of the chamber containing the goods, and contains a hinged throttle-valve, B, Figs. 1 and 4, provided with a handle, M, to adjust it to different positions, and serving to retain or allow the goods to pass into the sack. On the lower end of

the cylinder is a ring or flange, *a*, with a projection, *a'*, to which is attached the arm P; on which the scale-beam F has its bearing-point at *f*. Cross-beams *t t*, supported by angle-iron or other brackets *e* on the cylinder, form pivot-bearings for the levers *m* and *n* of the weighing-machine, the levers *m* being connected to the scale-beam F by the rod T. The principal lever *m* is fork-shaped, and embraces the fixed tube or cylinder. It is elbowed or bent downward at the middle, where it passes through a link, *i*, (shown by dotted lines in Fig. 1,) which link connects the lever *m* with the short levers *n n*, the bearing-points of which are opposite those of the principal lever *m* and on the same level. The two short levers are connected by a cross-bar, *n'*, and the arms of the principal lever *m* by a cross-bar, *m'*, Fig. 2, so as to impart to them greater rigidity and to prevent unequal pressure. Four suspending-rods, *i' i' i' i'*, linked to their levers *m* and *n*, near their fulcra, support the movable cylinder C, to which is attached the sack to be filled by a strap, S, and which is provided with a ring, *g*, below the strap to prevent the sack from slipping off. The movable cylinder enters a short distance into the lower mouth of the fixed cylinder, and a flexible band or ring of canvas or other suitable material, *d*, fastened to each cylinder, prevents the goods from escaping between them. The movable cylinder is prevented from turning in the fixed cylinder by fixing to the former a flange, *c*, and passing four bolts, *q*, Fig. 3, through it, said bolts sliding freely in corresponding holes in the flanges *a*, secured to the fixed cylinder; or, if preferred, headed bolts *o* may be employed, as shown in Fig. 1, these headed bolts at the same time serving to sustain the cylinder C when lowered. The ring *a* is also provided with fingers *w*, which may be used in connection with or in place of the headed bolts *o* to sustain the cylinder C when lowered, this depression of the cylinder being brought about by throwing the scale out of action, either by locking down the end of the beam F by a pivoted stop, J, as in ordinary scales, or by raising the pivoted lever J' to lift the beam off its knife-edges at *f*.

At the lower end of the fixed cylinder A is a rammer, H, to compress the goods when sacked and weighed. This rammer is composed of two wings, *v* and *v'*, of semicircular form, hinged at their diameters to a cross-bar, *h*, fixed to the end of the vertical rod G, which passes through the cross-guides *x* and *y*, the latter fixed within the cylinder. This rod is attached to a cord or chain which passes over pulleys P P, traverses an upright tube fixed to the floor, and descends to a point near the mouth of the cylinder, where it terminates in a handle, *k*, or is connected to a pivoted lever, I. A loaded plate, P', is fixed to the upper end of the rod G to give a more forcible action to the rammer. The rod G passes through the center of the valve B, which is bent across the diameter, as shown in Fig. 4, to allow it to open completely. The outer ends of the wings *v v'* are connected by cords or chains passing over the ends of the cross-bar *h* to a collar, *u*, loose on the rod G, this collar being pressed away from the cross-bar *h* into contact with the fixed guide *y* by the helical spring *p*, as shown in Fig. 1. When the rod *g* with its attachments descends, the spring *p* will be allowed to expand, and the wings will then be drawn up by the cords into a horizontal position against the cross-bar *h*, so as to form a piston or plunger, as shown by dotted lines. On the other hand, when the collar *u* is moved toward the cross-bar *h*, the wings *v v'* will fall to the vertical positions shown by full lines.

Having fastened the sack to be filled to the movable cylinder, the said cylinder is fixed steady in the fixed cylinder, and having thrown the scale out of action by the pivoted stop J or lever J', so as to allow the cylinder C to lower, the valve B is opened by turning the handle M, and the grain or other material is allowed to fall into the sack until it is thought a nearly sufficient amount has entered, when the valve is closed again. Then the scale is thrown into action by releasing the stop J or lever J', and the valve B reopened, so as to admit gradually more of the goods until the scale balances, the weight on the beam having been previously adjusted.

As the sudden introduction of goods into the sack would unduly disturb or agitate the weighing-machine, a series of small superposed weights, *z*, are hung by a rod or jack from the arm P, so that when the beam tilts upward one or more of them (according to the extent of the oscillation of the beam) will be lifted off its or their support by a plate, *j*, attached to the scale-beam, and so check to

some extent the vibration or oscillations thereof. When the whole of these weights are lifted by the plate, the weight on the scale-beam must be advanced a corresponding division. When the desired weight is obtained, the valve B is closed and the movable cylinder C is fixed or suspended, as before described, and the rammer H caused to act on and compress the goods to allow the mouth of the sack to be tied up. At each stroke of the rammer the wings *v* and *v'* open automatically, as before described, so as to press on the entire surface of the goods in the sack. The operation is repeated for each sack filled.

We do not limit ourselves to the precise forms and arrangements described. For example, the spindle of the valve B may be placed at right angles to the position shown in the drawings, so that a handle, M, may be placed on each side.

We claim as our invention—

1. The combination of the fixed cylinder of a sack filling and weighing machine with a movable cylinder, C, levers *m* and *n*, and four rods by which said cylinder C is suspended from the levers, and a scale-beam to which the lever *m* is connected.

2. The combination of the fixed and movable cylinders of a sack filling and weighing machine with the forked lever *m* and levers *n*, connected thereto and embracing the fixed cylinder, the forked end of the lever *m* and levers *n* being connected by cross pieces *m' n'*.

3. The combination of the fixed cylinder of a sack filling and weighing machine and the movable cylinder with a weighing-beam, and levers from which the movable cylinder is suspended, devices to throw the weighing-beam out of action, and fingers to sustain the movable cylinder.

4. The combination of the cylinders of a sack filling and weighing machine with a ramming-plunger having hinged wings, substantially as set forth.

5. The combination of the cylinders of a sack filling and weighing machine with a ramming-plunger having hinged wings *v v'*, collar *u*, and connecting cords and springs, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

PAUL CAILLEAUX.
CHARLES CAILLEAUX.

Witnesses:

LÉON FRANCKEN,
ROBT. M. HOOPER.