

No. 781,333.

PATENTED JAN. 31, 1905.

W. EDSON.
LABELING MACHINE.
APPLICATION FILED SEPT. 30, 1904.

4 SHEETS—SHEET 1.

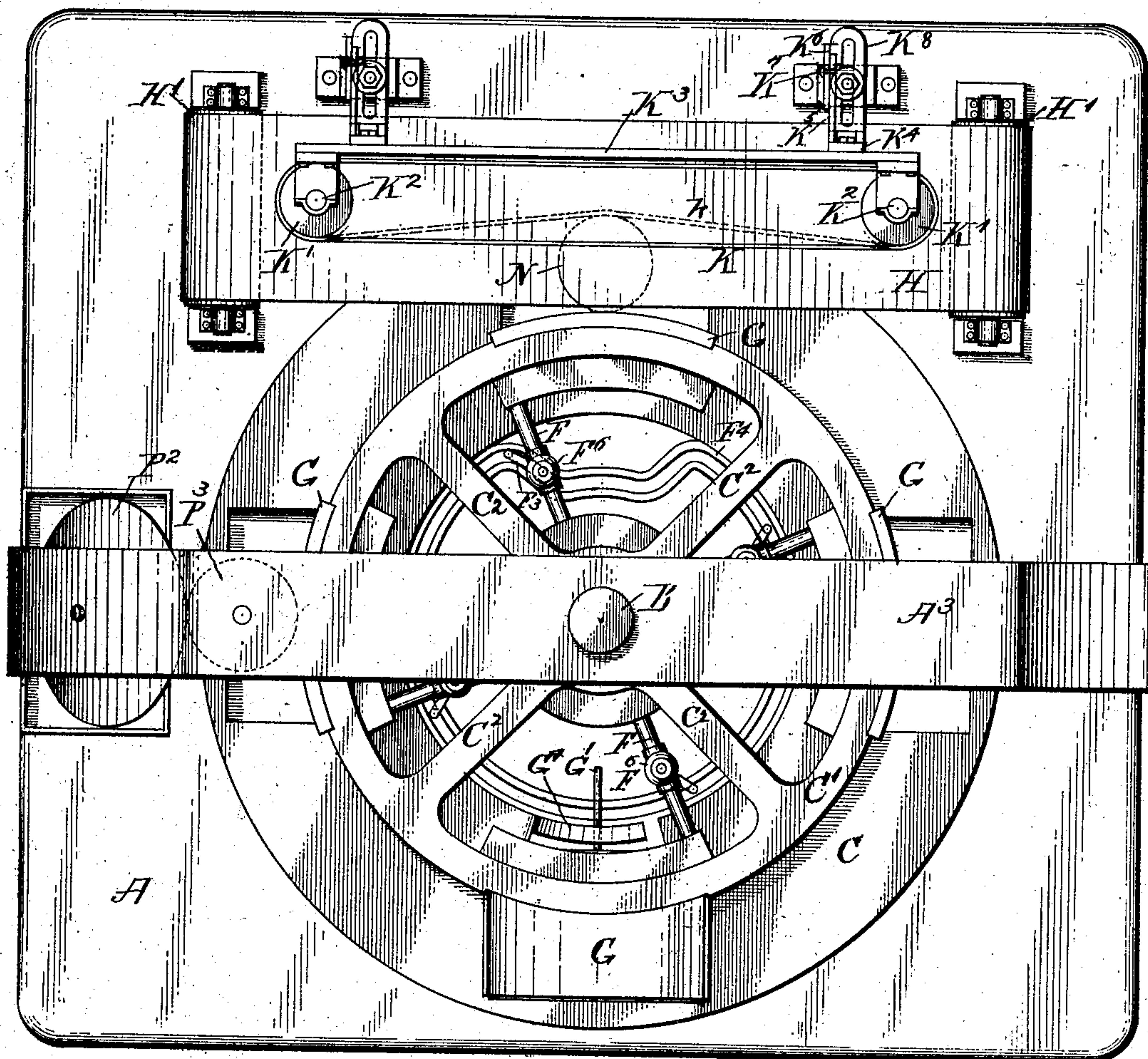


FIG. 1.

WITNESSES=

Frank G. Parker
John Buckler,

INVENTOR=

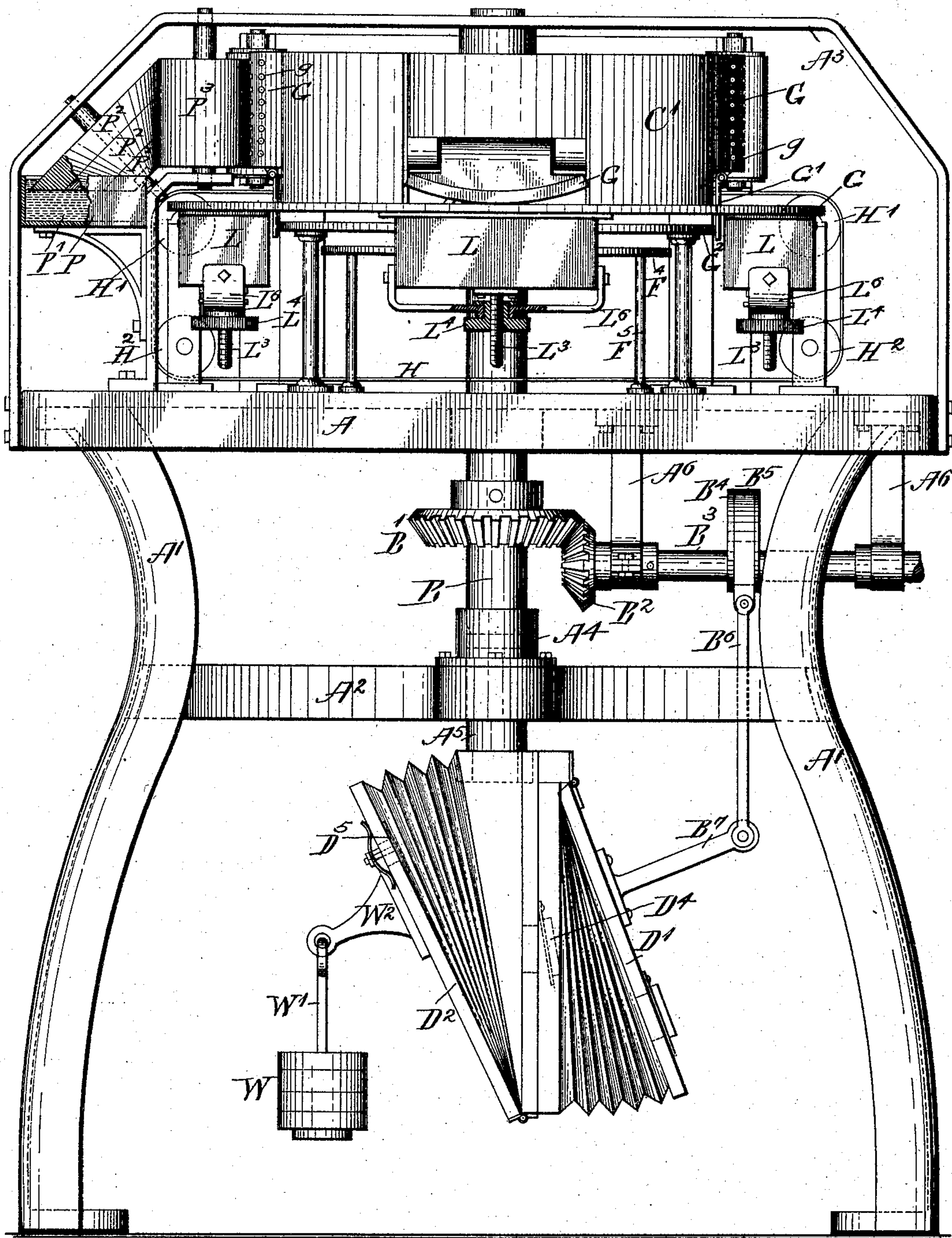
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4 SHEETS—SHEET 2.



WITNESSES:

Frank G. Parker
John Buckler

FIG. 2.

INVENTOR:

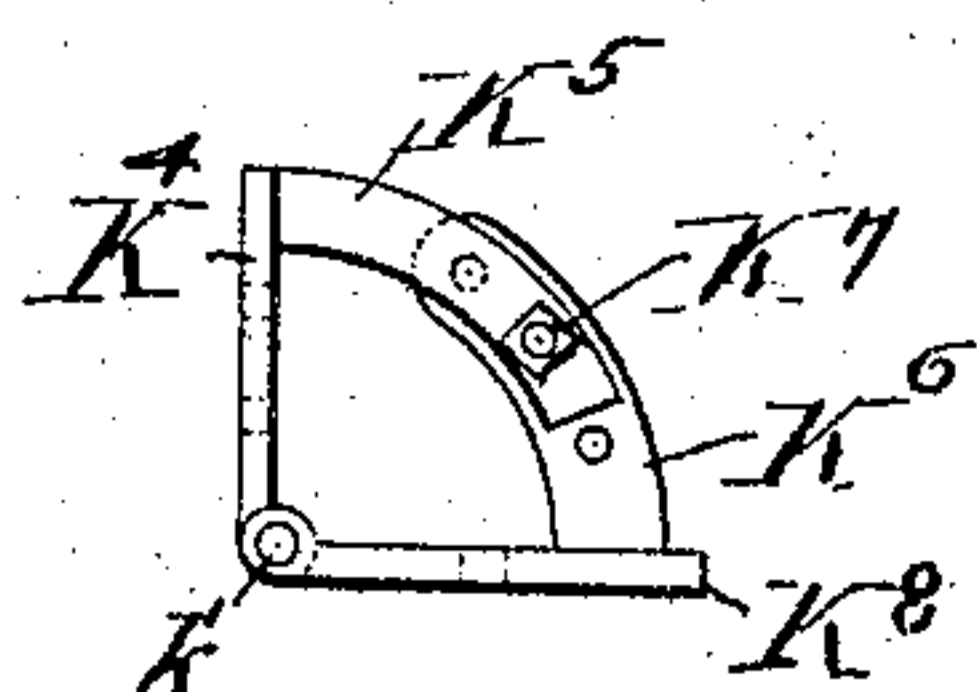
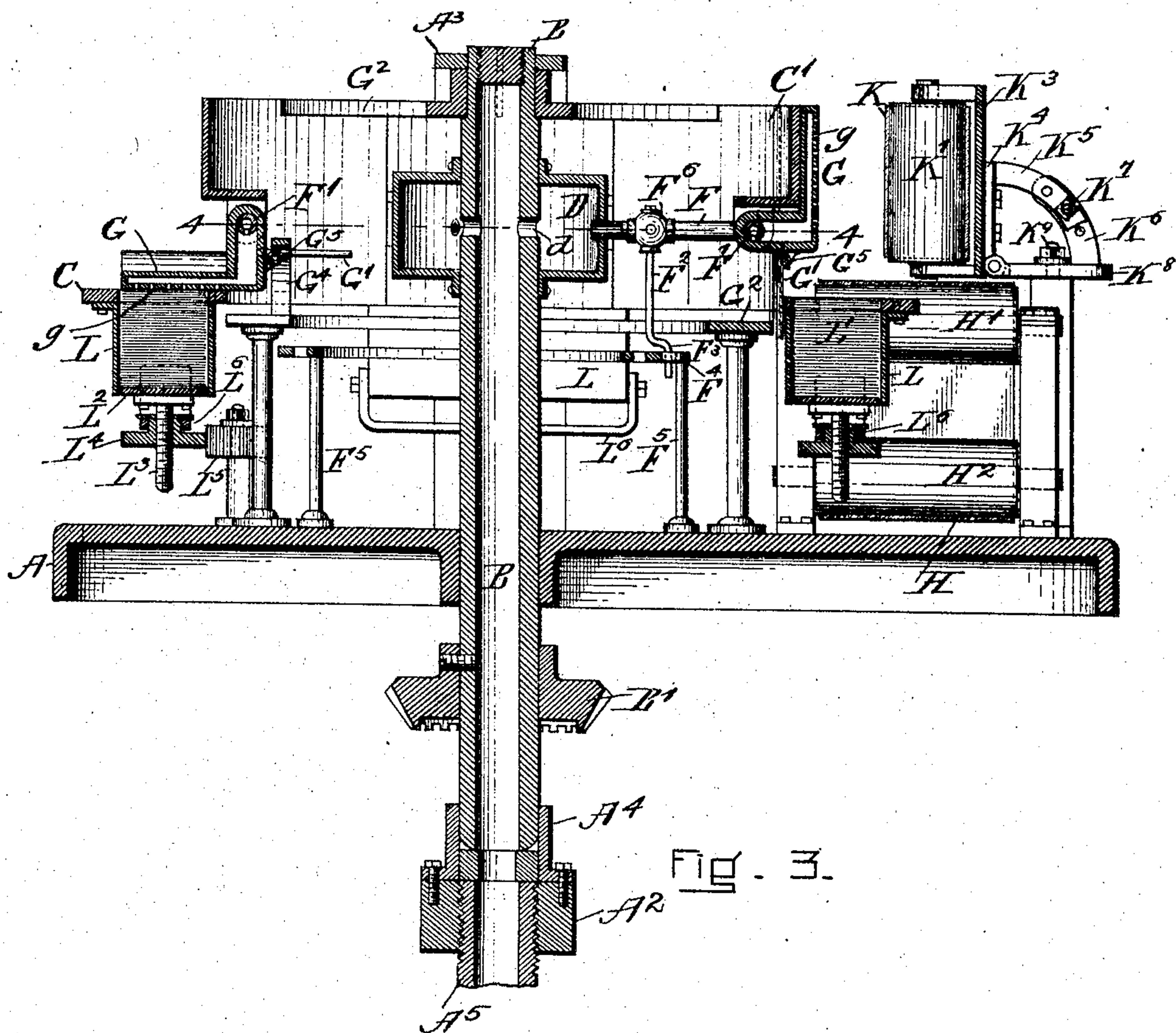
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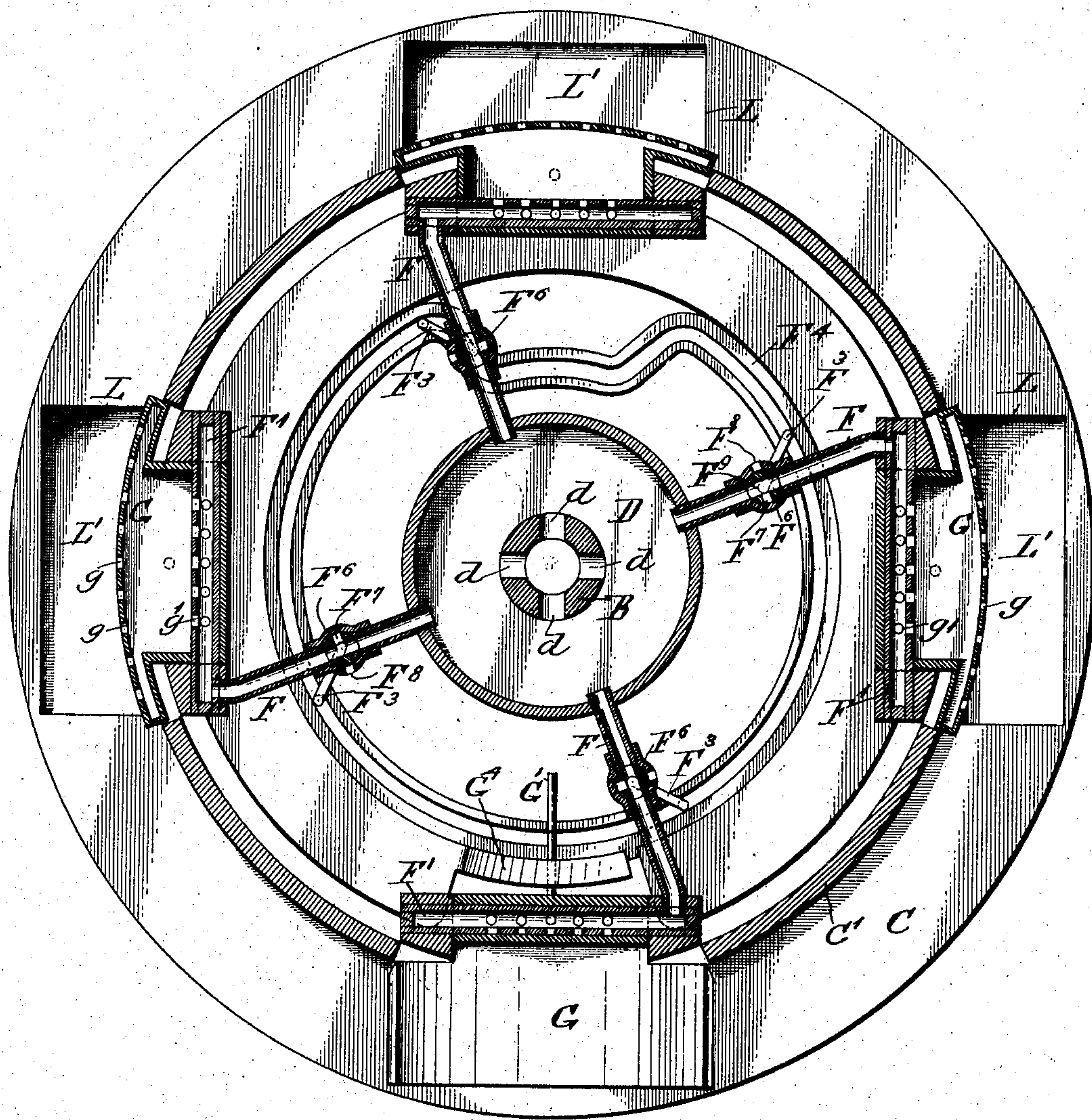


Fig-4-

WITNESSES:
Frank G. Parker
John Buckner

INVENTOR
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UNITED STATES PATENT OFFICE.

WILLIAM EDSON, OF BOSTON, MASSACHUSETTS.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 781,333, dated January 31, 1905.

Application filed September 30, 1904. Serial No. 226,697.

To all whom it may concern:

Be it known that I, WILLIAM EDSON, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Labeling-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to a machine for affixing labels to boxes, bottles, and other articles, the object being to make a machine that will be simple in its construction and rapid in its work. These objects I attain by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a plan of the machine. Fig. 2 is an elevation of the same. Fig. 3 is a cross vertical section showing the principal parts. Fig. 3^A shows details. Fig. 4 is a horizontal section taken on line 4-4 of Fig. 3 and enlarged.

In the drawings, A represents the table, which forms a base for most of the working parts of the machine. This table is supported upon legs A' A'. A brace-frame A² connects the legs A' A' and also forms a support for the step A⁴, by which the lower end of the main shaft B is held in place. (See Figs. 2 and 3.) The upper end of the shaft B is held by the cross-bridge A³. Motion is given to the main shaft B by a counter-shaft B³, Fig. 2, acting through the bevel-gears B² B'. The counter-shaft B³ is supported by hangers A⁶ A⁶.

The leading feature of my machine is the main carrier, to which the important and characteristic devices are attached. This main carrier consists of a drum C' and its horizontal flange C and is connected to the main shaft B by radial arms C² C². The main carrier C' C has attached to it label-conveyers G, which are constructed to swing from a vertical to a horizontal position. For instance, the label-conveyer G at the left of Fig. 3 is in its horizontal position in the act of picking up a label from the label-box L and the one at the right of the same figure is in its vertical position, label not shown. The label-conveyer G is made hollow, as shown in section in Figs. 3 and 4, and has perforation g in its face and swings upon a hollow axle F'. The interior of the label-conveyer is connected by the open-

ings g' to the interior of the pipe F F. The hollow pipes F' F connect interiorly with the vacuum-chamber D, which is mounted upon the hollow shaft B and is connected interiorly with it by the openings d.

The hollow main shaft B is supported in a step A⁴, attached to the cross-brace A² and is interiorly connected with the fixed tube A⁵. (See Figs. 2 and 3.) An air-pumping bellows D' is attached to the fixed tube A⁵ and is operated by an eccentric B⁴ on the counter-shaft B³, acting through the eccentric-strap B⁵, rod B⁶, and arm B⁷. A valve D⁴ connects the pumping-bellows with the interior of the fixed tube A⁵, thus connecting the pumping-bellows with the hollow main shaft B, the vacuum-chamber D, the pipes F', and label-carriers G. To insure an even tension in the vacuum-chamber and tubes, I have attached the bellows D², which has a weight W connected to it by the rod W' and bracket W². To prevent too great a stress in the vacuum-chamber, a relief-valve D⁵ is used.

To relieve the air-pressure on the label held by the conveyer G when it is being applied to the bottle or other article, I place a valve at F⁶, Figs. 3 and 4, which is arranged to cut off or let out the air in the pipe F. This valve is of the "two-way" class and is so arranged that when in the position shown in Fig. 4 a passage of air from the interior of the carrier G to the vacuum-chamber is allowed, and when the valve is turned so that the opening F⁷ in the valve opens into the interior of the pipe F (toward the carrier G) and the passage F⁹ in valve will be turned to the opening F⁸ in the valve-case this will allow of a free passage of air from the outside to the conveyer G, thus relieving the interior of the said conveyer from external pressure and as a consequence free the label that has been held on the conveyer. This freeing of the conveyer from the vacuum takes place at the time that the label is being placed upon the bottle. The valve at F⁶ is operated by the stem F² F³, which is bent so as to form a crank at F³, which is operated by the cam-groove made in the fixed cam-piece F⁴. The said cam-piece F⁴ is held by the posts F⁵.

For each of the label-conveyers G a label-

holding box L is provided, and as the label-boxes move with the label-conveyer G there is no slipping of one label upon another, as the conveyer G lifts the label vertically from its box. The conveyers G are made to turn down from their vertical positions, as shown on the right of Fig. 3, to their horizontal positions, as shown on the left of Fig. 3, by means of the arm G' and the fixed cam-piece G². For instance, so long as the arm G' is held vertically by the edge of the fixed cam-piece the conveyer is held vertically; but as the main carrier-drum C' C rotates it takes the label-conveyers with it, and when the arm G' of the conveyer G reaches the cut-out and bent-up part G⁴ of the fixed cam G² (see Figs. 3 and 4) then the said arm G' is free, and the label-conveyer will fall to its horizontal position and onto a label L' in the label-box L. (See Fig. 3, left-hand side.) As the carrier-drum continues to rotate the arm G' will be forced downward by the part G⁴ of the cam G², thus causing the conveyer and the label that it is picking up to assume vertical positions. Continued rotation of the drum will carry the conveyer and its label to the paste-distributing wheel P³, Fig. 2. As the drum continues to rotate the label-conveyer carries the label to the bottle, (indicated by dotted lines at N.) The arm G' is attached to the label-conveyer G by a joint at G⁵, so as to admit of angular adjustment to admit of applying labels to inclined surfaces.

The labels L' in the label-box L are moved upward to make up for those taken from the top by the means of a moving bottom L², which is mounted upon a screw L³, Fig. 3, upon which a nut L⁴ works. The said nut L⁴ is held in the bail-piece L⁶, so as to be free to rotate, but not to move up or down. Rotation is given to this nut by a fixed friction-piece L⁵, Fig. 3, so arranged that as the nut L⁴ passes it during the rotation of the carrier-drum the nut L⁴ will be made to turn on the screw L³ and force the bottom L² upward.

The endless apron H, Figs. 1 and 2, moves freely on the rollers H' H' and H² H². The belt H may be driven by power transmitted from any convenient source. This endless apron serves as a table and carrier for the bottle or other article, (indicated by the dotted lines N, Fig. 1.) A second belt K, supported by the rollers K' K', turning on shafts K² K², is used to hold the article N, to which the label is being applied in position. While the article N is being acted upon the belt K will yield, as indicated by the dotted lines *h*. The shafts K² K² are held in an adjustable frame K³, which is adjustably supported by the hinged bracket K⁴ K⁸. (See Fig. 3^A.) The parts K⁴ and K⁸ are pivoted together by the pin *h'*, so that the upright K⁴ may be inclined to the angle required by the article that is to be acted upon. The horizontal part K⁸ is adjustably held by a screw-bolt K⁹. The arc-

pieces K⁵ K⁶ are respectively attached to the parts K⁴ K⁸ and are clamped together by a bolt K⁷, each one having a number of holes for the bolt to pass through, thus admitting of an angular adjustment of the part K⁴ and the frame K³.

The pasting device (see Fig. 2) consists of a paste-tank P, filled with paste P', into which the coned drums P² P² P² are partly immersed. As the coned paste-drums rotate they convey the paste to the paste-distributing cylinder P³, which in turn distributes the paste upon the label (not shown) on conveyer G.

In some kinds of labeling the use of the vacuum in the label-takers G may be dispensed with, and the face of the label-takers may be coated with some material (beeswax, for instance) that will cause the labels to adhere temporarily—*i. e.*, long enough for the taker to carry them to the article to which they are to be applied.

I claim—

1. In a labeling-machine: a main carrier consisting of a drum rotating on a vertical axis, and having a horizontal flange constructed to carry a number of label-holding boxes; said label-holding boxes; a number of label-conveyers pivotally attached to the said drum and constructed to operate in conjunction with the said label-holding boxes whereby labels may be lifted from said boxes and held in a vertical position; and means for operating said main carrier and said label-conveyers.

2. In a labeling-machine: a main carrier consisting of a drum rotating on a vertical axis, and having a horizontal flange constructed to carry a number of label-holding boxes; said label-holding boxes; a number of label-conveyers pivotally attached to the said drum and constructed to operate in conjunction with the said label-holding boxes whereby labels may be lifted from said boxes and held in a vertical position; means for operating said mechanisms; a vacuum-chamber interiorly connected with said label-conveyers; means producing and regulating vacuum within said chamber; substantially as and for the purpose set forth.

3. In a labeling-machine: a main carrier consisting of a drum rotating on a vertical axis, and having a horizontal flange constructed to carry a number of label-holding boxes; said label-holding boxes; a number of label-conveyers pivotally attached to the said drum and constructed to operate in conjunction with the said label-holding boxes whereby labels may be lifted from said boxes and held in a vertical position; a label-pasting device consisting of a paste-tank; a coned paste-conveyer drum constructed to carry paste from said tank to a paste-distributing cylinder; said paste-distributing cylinder and means for operating the said mechanisms.

4. In a labeling-machine: a main carrier, consisting of a drum rotating on a vertical

axis, and having a horizontal flange constructed to carry a number of label-holding boxes; and said label-holding boxes, substantially as and for the purpose set forth.

5 5. In a labeling-machine: a main carrier consisting of a drum rotating on a vertical axis, and a horizontal flange attached thereto and having a number of label-holding boxes, the said label-holding boxes each having a
o movable bottom constructed to force the labels upward, whereby the upper labels are

maintained at the height required, and means for operating said movable bottom; substantially as and for the purpose set forth.

In testimony whereof I have signed my name 15
to this specification, in the presence of two subscribing witnesses, on this 21st day of September, A. D. 1904.

WILLIAM EDSON.

Witnesses:

FRANK G. PARKER,
JOHN BUCKLER.