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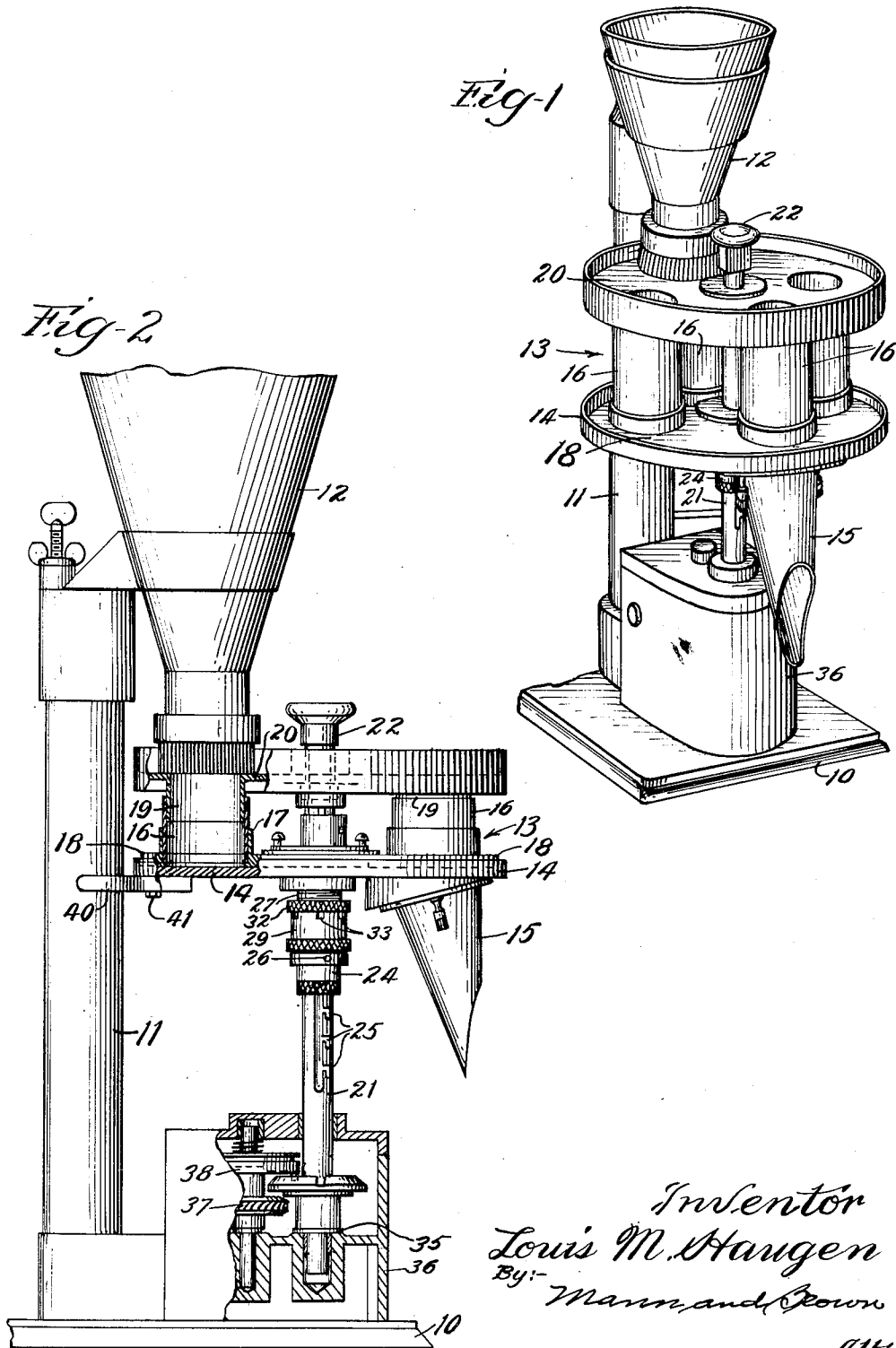
L. M. HAUGEN

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VOLUMETRIC PACKAGE FILLING MACHINE

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2 Sheets-Sheet 1



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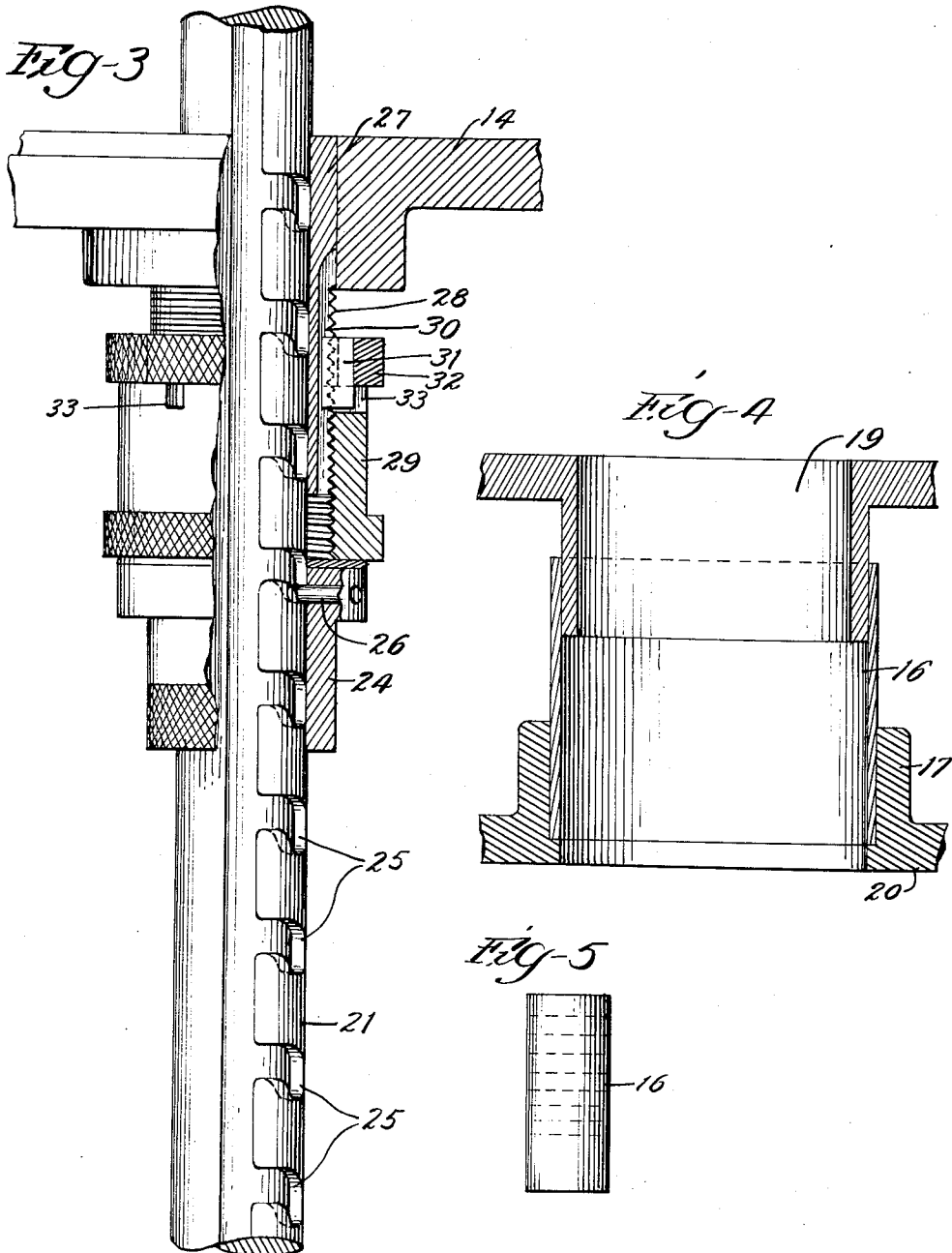
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## UNITED STATES PATENT OFFICE

2,540,259

## VOLUMETRIC PACKAGE FILLING MACHINE

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5 Claims. (Cl. 222—307)

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In volumetric package filling machines, a hopper delivers loose, fluent material to measuring devices rotating in a circuit beneath the hopper and over a table provided with a spout delivering to the bag, jar, or other container.

The amount or volume delivered is determined by the capacity of the measuring cups or sleeves, and variations are made by changing the cups or sleeves, or the extent to which they telescope with the cooperating parts of the measuring devices. This involves vertical adjustment of the table, which has heretofore required laborious and slow running of a threaded collar back and forth on a standard or shaft, such as disclosed in Small No. 897,420, September 1, 1908; Colver No. 1,953,928, April 10, 1934; and Frazier No. 2,144,569, January 17, 1939.

The principal object of this invention is to provide quick and easy adjustment of the table. Generally speaking, this is accomplished by means of a collar having stepped selective connection with the standard or shaft as by bayonet joints for rough adjustment and a bearing sleeve having fine adjustment relative to the table.

In the drawings:

Fig. 1 is a perspective view of a machine embodying the invention;

Fig. 2 is a side elevation, parts being broken away to reveal the interior;

Fig. 3 is an enlarged view of a portion of the standard and the means for making the adjustment;

Fig. 4 is an enlarged vertical section through one of the measuring cups and associated parts; and

Fig. 5 is a front elevation indicating how cups of different capacity may be cut in the cylinder.

In the drawings, 10 is a base having a column 11 supporting a hopper 12, which delivers the fluent material to measuring devices, generally indicated by 13, rotating in a circuit over a stationary table 14 having a spout 15 adapted to deliver to a bag, carton, jar, or the like.

The measuring devices include cylindrical sleeves 16, here shown as 4 in number, telescoping at the bottom with sockets 17 on a bottom plate 18, and at their upper ends with tubular projections 19 on a top plate 20 driven by a standard or shaft 21 to which it is keyed and made fast by a knob 22.

The standard or shaft 21 passes through the table 14 and the bottom plate 18, the latter being forced to rotate with the top plate 20 by the telescoping parts 16, 17, and 19.

In similar prior machines, the table 14 has

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been supported on the standard or shaft 21 by a nut threaded onto the shaft and bearing against the bottom of the table. According to the present invention, the standard or shaft 21 is equipped with a collar 24 having stepped selective connection with the standard or shaft, as by a series of connected bayonet slots 25 on the shaft and a pin 26 on the collar adapted to be received in any one of the bayonet slots for rough adjustment as to the height of the collar.

The table 14 is equipped with a depending nipple 27 (Fig. 3) threaded at 28 to receive a threaded bearing sleeve 29, which actually forms the rotary support for the table on the collar 24.

The nipple 27 is provided with a key slot 30 for a key 31 on a locking ring 32 on top of the nut 29, which latter is provided with slots 33 to receive the lower portion of the key 31.

In order to change measuring cups 16, the sleeve 29, and with it the table, is raised; the collar 24 is rotated to free the bayonet joint, and lowered to another selected position followed by the sleeve 29 and the table 14. The cups 16 are exchanged, and the operation is reversed, or at least the table with the sleeve 29 and the collar 24 are raised and the bayonet joint engaged at the nearest approximate correct height, after which the locking ring 32 is raised to unlock the sleeve 29, and it is rotated to make the fine adjustment.

The standard or shaft 21 is supported by a thrust bearing 35 (Fig. 2) in a housing 36 for gearing 37 including a modified Geneva movement 38 by which the shaft 21 and the measuring devices are driven with a step-by-step movement, allowing one cup to pause underneath the hopper for receiving the proper amount of material, and the opposite cup to have sufficient time to discharge thoroughly. In the present embodiment, with each quarter turn a cup is brought into line with the discharge spout 15, and held there long enough for the contents to drop into the container. The table 14 is held against rotation by a forked arm 40 astride the column 11, and secured to the table by a bolt 41.

I claim:

1. In a volumetric package filling machine, a standard, a supporting table for adjustable measuring elements, means to mount the table on the standard including a collar loose on the standard, stepped means for making the collar fast to the standard, a nipple fast to the table, and a bearing sleeve resting on the collar and adjustable with respect to the nipple.

2. In a volumetric package filling machine, a

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standard, a supporting table for adjustable measuring elements, means to mount the table on the standard including a collar loose on the standard, stepped means for making the collar fast to the standard, a threaded nipple fast to the table, and a bearing sleeve threaded on the nipple and resting on the collar.

3. In a volumetric package filling machine, a standard, a supporting table for adjustable measuring elements, means to mount the table on the standard including a collar loose on the standard, stepped means for making the collar fast to the standard, a threaded nipple fast to the table, a bearing sleeve threaded on the nipple and resting on the collar, and a lock for the sleeve.

4. In a volumetric package filling machine, a standard having a series of bayonet slots, a

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supporting table for adjustable measuring units, a collar loose on the standard with means to selectively engage slots in the standard for rough adjustment, a nipple fast to the table, and a bearing sleeve resting on the collar and having fine adjustment with the nipple.

5. In a volumetric package filling machine, a standard having a series of bayonet slots, a supporting table for adjustable measuring units, a collar loose on the standard with means to selectively engage slots in the standard for rough adjustment, a nipple fast to the table, a bearing sleeve resting on the collar and having fine adjustment with the nipple, and a locking ring keyed to the standard and engaging the sleeve.

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No references cited.