

UNITED STATES PATENT OFFICE

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MEASURING APPARATUS

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This invention relates to apparatus designed primarily for measuring predetermined lengths of sheet material such as tissue paper and the like fed from a roll.

5 It is an object of the invention to provide simple and efficient means under the control of an inserted check or coin whereby the mechanism will be released for actuation, said actuation being permissible until a pre-
10 determined length of material has been fed therefrom at which time the mechanism becomes locked.

A further object is to provide mechanism of this character which is simple, compact,
15 and efficient, the same being especially useful in connection with vending machines used in the sale of strip material.

With the foregoing and other objects in view which will appear as the description
20 proceeds the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the
25 invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

30 In said drawings,

Figure 1 is a section through a housing showing the present improvement in elevation, only a portion of the housing being shown.

35 Figure 2 is a side elevation of the mechanism constituting the present invention, the adjacent portion of the housing being shown in section and a part of the coin or check wheel being broken away.

40 Figure 3 is a section on line 3—3, Figure 1.

Referring to the figures by characters of reference, 1 designates a feed roll which can be mounted in a housing A, any suitable means being provided for rotating this roll.

45 For example, a crank arm 2 can be connected to one end thereof. The other end of the feed roll has a spiral groove 3 formed therein and terminating at each end in an abrupt shoulder 3'. This groove does not extend
50 to the end of the roll but, instead, there is

left a smooth end portion 4 between the end of the roll and the groove. This end portion rests on the periphery of a wheel 5 in which are formed coin receiving pockets 6 and a coin chute, indicated generally at 7,
55 can be provided for directing a coin or check into any one of these pockets. Wheel 5 is adapted to be rotated by means of a knob 8 or any other suitable device provided for that purpose.

A pressure roll 9 is mounted above the roll 1 and has a stud 10 at one end journaled loosely in the wall of the housing A. From the other end of the pressure roll 9 extends a stud 11 engaged by a shoe 12 provided at
60 one end of a rod 13. This rod is provided with guides 14 and has a spring 15 mounted on it whereby the shoe is pressed downwardly against the stud 11 to hold the roller 9 normally pressed against the roll 1.

A partition 16 is arranged in the housing and is provided with a slot 17 into which roll 1 and stud 11 project. All portions of the spiral groove 3 are located between this partition 16 and the adjacent wall of the housing.
70 A bracket 18 extends from the housing and slidable in this bracket and in the housing is a rod 19 on which is arranged a collar 20. A spring 21 is mounted on the rod and bears at one end against the collar and at
75 its other end against bracket 18. A finger 22 is carried by the free end portion of the rod and projects normally into the spiral groove 3.

When a strip of paper or the like is held
80 between the rolls 1 and 9 and it is desired to dispense a length thereof, the roll 1 obviously cannot be rotated for this purpose because the shoulder 3' at the inner end of groove 3 is in engagement with the finger
85 22. Before the sheet material can either be pulled from between the rolls or fed therefrom by means of the crank 2 or the like, it is necessary to insert a coin or check of the proper value in the chute 7 so that it
90 will enter the adjacent pocket 6. Wheel 5 can then be rotated to cause said coin or check to swing to position under the end portion 4 of the roll 1, thereby elevating said roll momentarily. This lifting of the roll
95 100

will be sufficient to disengage the grooved portion 3 thereof from the finger 22 and as the spring 21 is under compression, the finger 22 as soon as released will be shifted from the full line position shown in figure 1 to the dotted line position. Consequently, after the coin has been carried past the roll, said roll will drop back to position by gravity on to the periphery of the wheel 5 and finger 22 will enter the outer end portion of groove 3. Roll 1 can now be rotated either by means of the crank 2 or by pulling on the sheet material gripped thereby. As this material is fed outwardly from the apparatus the roll 1 will rotate and cause the finger 22 to move toward the part 18, at the same time placing spring 21 under increasing compression. This operation will continue until the end shoulder 3' at the inner end of groove 3 comes against finger 22. This will cause further rotation of the roll 1 and an additional supply of sheet material cannot be withdrawn until another coin or check is deposited in the machine at which time the operation will be repeated as described.

What is claimed is:

1. Measuring apparatus including a tiltable feed roll, a pressure roll tiltable therewith, a spiral groove in the feed roll having terminal shoulders, a member projecting into and adapted to be shifted by the grooved portion of the feed roll, said member cooperating with the terminal shoulders for holding the roll against rotation in opposite directions respectively, means for conveying a coin or the like against the roll to disengage the grooved portion thereof from said member, and means for shifting said member from one extreme position to its other extreme position when disengaged from the groove.

2. Apparatus of the class described including a tiltable feed roll having a spiral groove provided with terminal shoulders, a pressure roll tiltable with the feed roll, a member engaged by the grooved portion of the feed roll and shiftable thereby from one shoulder to the other to limit the rotation of the feed roll, means for directing a coin or the like into position for shifting the feed roll thereby to disengage the grooved portion from said member, and means for shifting the disengaged member from one extreme position to its other extreme position when disengaged.

3. Apparatus of the class described including a tiltable feed roll having a spiral groove provided with terminal shoulders, a pressure roll tiltable with the feed roll, a spring controlled member engaging the grooved portion of the feed roll, said grooved portion constituting means for shifting said member from one extreme position to the other against the action of the spring and against one of the shoulders

when the feed roll is rotated in one direction thereby to limit the rotation of the feed roll, and means for tilting the feed roll to disengage it from said member and release it for actuation by the spring back to its normal position relative to the groove.

4. Apparatus of the class described including a tiltable feed roll having a spiral groove provided with terminal shoulders, a pressure roll tiltable with the feed roll, a spring controlled member engaging the grooved portion of the feed roll, said grooved portion constituting means for shifting said member from one extreme position to the other against the action of the spring and against one of the shoulders when the feed roll is rotated in one direction thereby to limit the rotation of the feed roll, means for tilting the feed roll to disengage it from said member and release it for actuation by the spring back to its normal position relative to the groove, said means including a wheel for supporting one end of the feed roll, said wheel having peripheral coin receiving pockets, and means for rotating the wheel to bring a coin into engagement with the roll to tilt said roll.

5. Apparatus of the class described including a tiltable feed roll having a spiral groove provided with terminal shoulders, a member engaged by the grooved portion of the feed roll and shiftable thereby from one shoulder to the other to limit the rotation of the feed roll, means for directing a coin or the like into position for shifting the feed roll thereby to disengage the grooved portion from said member, and means for shifting the disengaged member from one extreme position to its other extreme position when disengaged.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

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