1,058,734

PATENT SPECIFICATION 1,058,734

DRAWINGS ATTACHED.

Date of Application and filing Complete Specification:
Aug. 26, 1964. *No. 35029/64.*

Application made in Germany (No. T24878 X/34l) on Oct. 11, 1963.

Complete Specification Published: Feb. 15, 1967.

Index at Acceptance:—A4 T23.

Int. Cl.:—A 47 f 9/00.

COMPLETE SPECIFICATION.

An Improved Check-Out Device for Self-Service Stores and the like.

I, HARTWIN TACKENBERG, of Hattingen/Ruhr, Bochumer Strasse 78, Germany, of German Nationality, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a check out device for self-service stores and consists substantially of several adjacent withdrawal compartments for goods, which are in communication by means of an endlessly rotating conveyor belt with a feeding point provided at a cash desk. In known forms of construction the conveyor belt is designed to be movable, so that it can be swung in the direction of a particular withdrawal compartment. This necessarily results in a rather large space if the swinging movements of the conveyor belt in the direction of the particular withdrawal compartment are to be carried out successfully. A special swinging path must be created for the conveyor belt, the height of which path must be low to correspond to the withdrawal compartments. This again means relatively high manufacturing costs. Further, the conveyor belt must be provided with an easily movable carriage, so that the belt in the loaded state can be guided in the various directions even by a not very strong person.

In order to remedy these disadvantages, it is known to arrange a rotating conveyor belt in a fixed position. In such a check-out device the outer withdrawal compartments are controlled by the conveyor belt only to a slight degree, so that undisturbed loading of the withdrawal compartments is impossible.

The invention has as its object to improve considerably the state of the art as stated. The essential feature thereof is to be seen in the fact that the conveyor belt extends across the width of the adjacent withdrawal compartments and is arranged so as to be inclined downwards towards the withdrawal compartments about its outer longitudinal side.

The subject of the invention is shown diagrammatically in the drawing in one embodiment.

In the drawings:

Figure 1 shows a check-out device according to the invention in plan view,

Figure 2 shows the subject of Figure 1 in side view,

Figure 3 is a change-giving point in diagrammatic side view, and

Figure 4 is a plan view of the subject of Figure 3.

In the example as illustrated in Figure 1, a check-out device consists of adjacent goods withdrawal compartments 1, 3 and 2. A feeding point 4 for goods, which joins a cash desk 5, is adjacent the compartment 3. It is quite possible to carry out this arrangement of withdrawal compartments 1 to 3, feeding point 4 and cash desk 5 in another suitable manner. The withdrawal compartments 1 to 3 are connected by means of a conveyor belt 6 with the feeding point 4 or the cash desk 5.

According to the invention the conveyor belt 6 extends across the width of the adjacent withdrawal compartments 1 to 3. According to a further feature of the invention the conveyor belt 6 is arranged so as to be inclined downwards towards the withdrawal compartments 1 to 3 about its outer longitudinal side L—L. At the end of a dividing wall 7 between withdrawal compart-

ments 1 and 2 and at the end of a dividing wall 8 between compartments 2 and 3 there is located a pivot-mounted slide 9. Moreover the withdrawal compartments 2 and 3 are, by the swinging out of the guide slides 9, effectively lengthened by the width of the conveyor belt 6. The guide slides are retained in their end positions by permanent magnets not shown in the drawings.

According to the invention the angle of inclination of the conveyor belt 6 to the withdrawal compartments 1, 2, 3 as well as the angle of deflection of the guide slides 9 are so designed that they correspond to the angle of slide of the goods. As a result of this, when a guide slide 9 is swung out it allows the goods arriving on the conveyor belt 6 to slide into the withdrawal compartment selected, owing to the angle of inclination of the conveyor belt 6. If all the guide slides 9 are swung in to lie along the edge of the belt the conveying path of the belt is free to extend as far as the outermost withdrawal compartment. Here the outermost guiding wall 10 of the withdrawal compartment 1 allows the goods to slide into the said compartment.

The arrangement of the conveyor belt 6 transversely to the withdrawal compartments 1, 2, 3 means a considerable saving in space at one check-out point. The inclined position of the belt towards the withdrawal compartments, about the outer longitudinal side, as well as the swinging guide slides facilitates the switching of the goods from the conveyor belt to the various withdrawal compartments. The operator needs only to swing an unloaded guide slide in or out.

As shown more particularly in Figures 2 to 4, there is located above the conveyor belt 6 a part 11 of the cash desk for the giving of change. It is still within the scope of the invention to arrange the part 11 for the giving of change above the withdrawal compartments. A change withdrawal container 12 is associated with each goods withdrawal compartment 1 to 3. Between the change withdrawal points 12 and the part 11 is disposed an adjustable device which, as shown in Figure 4, may be designed as a chute 13. This chute-shaped adjustable device is pivot-mounted at one end on the cash desk part 11. When the other end is pivoted into one of the withdrawal points 12, the money in question drops out of the part 11 via the chute 13 into the withdrawal container 12.

It has proved advantageous to couple the swinging movements of the guide slides 9 with the swinging movements of the adjustable chute 13. The result of this is that when one of the guide slides 9 is swung out, the adjustable chute 13 is automatically set to the change withdrawal container 12 of the corresponding goods withdrawal compartment selected by that guide slide 9. The controlling of the swinging movements of the adjustable chute by the swinging movements of the guide slides 9 may be carried out electrically or mechanically. It is also still within the scope of the invention to carry out this control by hydraulic or pneumatic means.

WHAT I CLAIM IS:—

1. A check-out device for self-service stores consisting of several adjacent withdrawal compartments for goods, which are in communication by means of an endlessly rotating conveyor belt with a feeding point provided at a cash desk, wherein the conveyor belt extends across the width of the adjacent withdrawal compartments.

2. A check-out device as claimed in Claim 1, wherein the conveyor belt extending across the width of the adjacent withdrawal compartments is arranged so as to be inclined downwards towards the withdrawal compartments about its outer longitudinal side.

3. A check-out device as claimed in Claims 1 or 2, wherein at least one guide slide, arranged to swing out over the width of the conveyor belt is retained in its end position by permanent magnets.

4. A check-out device as claimed in Claim 3, wherein the angle of inclination of the conveyor belt and the angle of deflection of the guide slides correspond to the angle of slide of the goods.

5. A check-out device as claimed in any of claims 1 to 4, wherein a change withdrawal container is associated with each goods withdrawal compartment and all the said containers are connected with a change giving part of a cash desk by an adjustable device, such as a chute.

6. A check-out device for self-service stores, substantially as hereinbefore described and illustrated in the accompanying drawings.

MARKS & CLERK,
Chartered Patent Agents,
Agents for the Applicants.

Abingdon: Printed for Her Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1967.
Published at The Patent Office, 25 Southampton Buildings, London, W.C.2,
from which copies may be obtained.

Fig.1

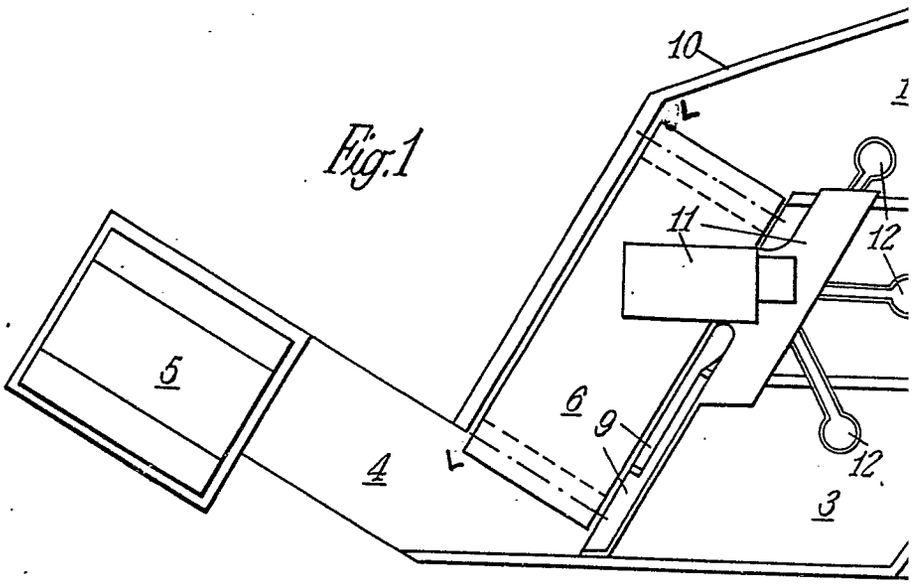
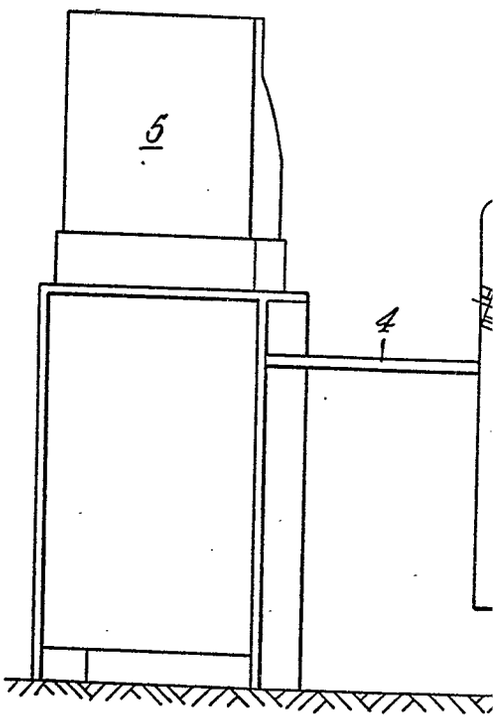


Fig.2



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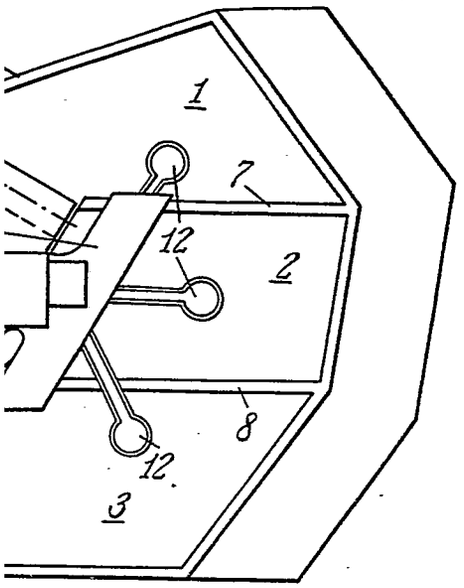


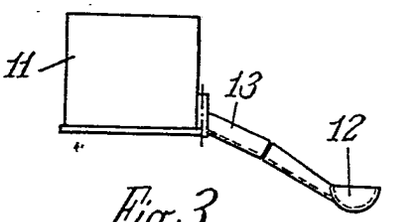


Fig.3

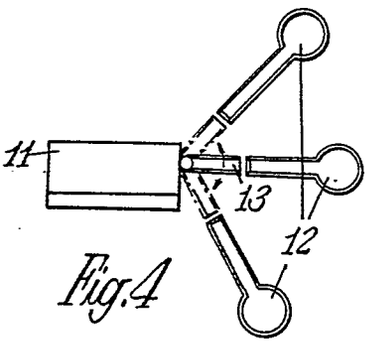
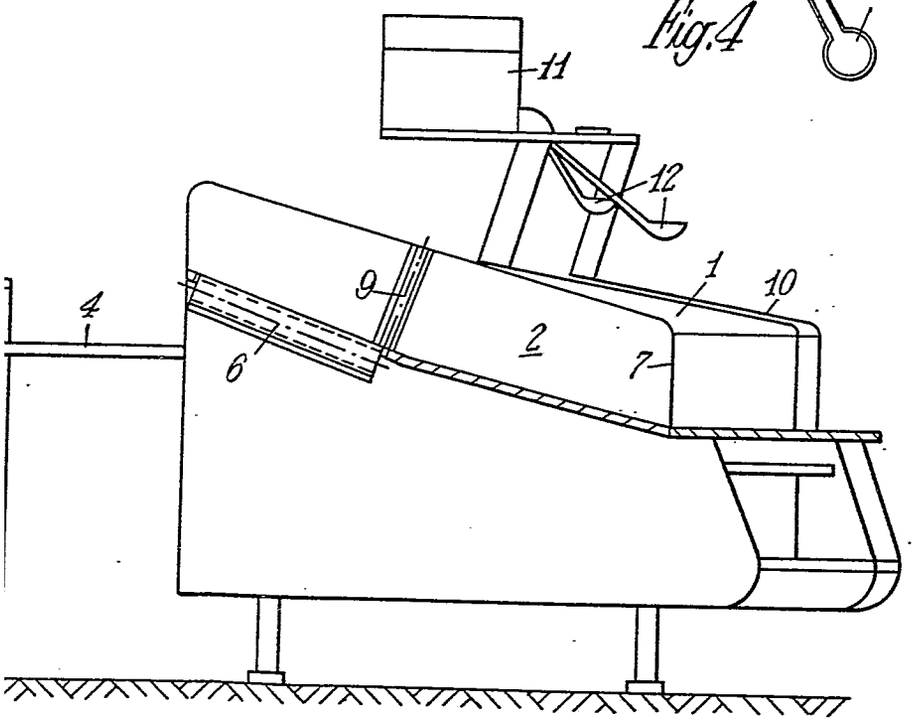


Fig.4



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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

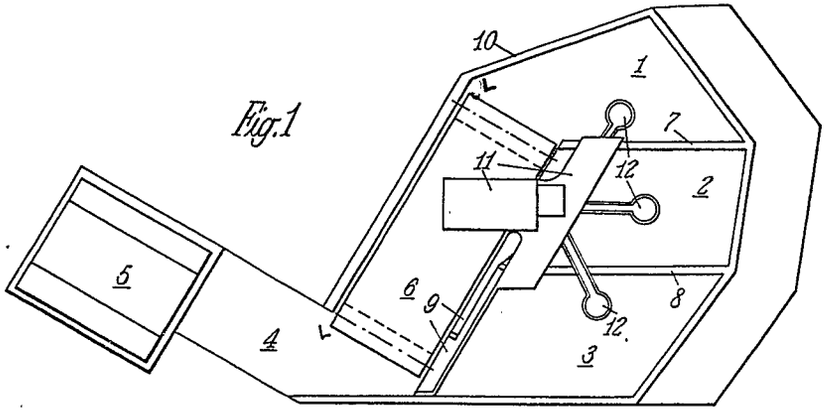

Fig.1

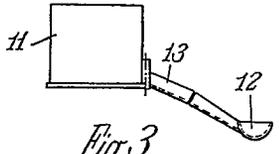

Fig.3

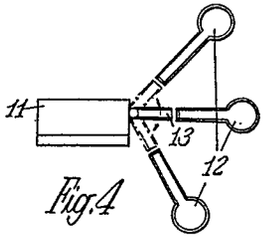

Fig.4

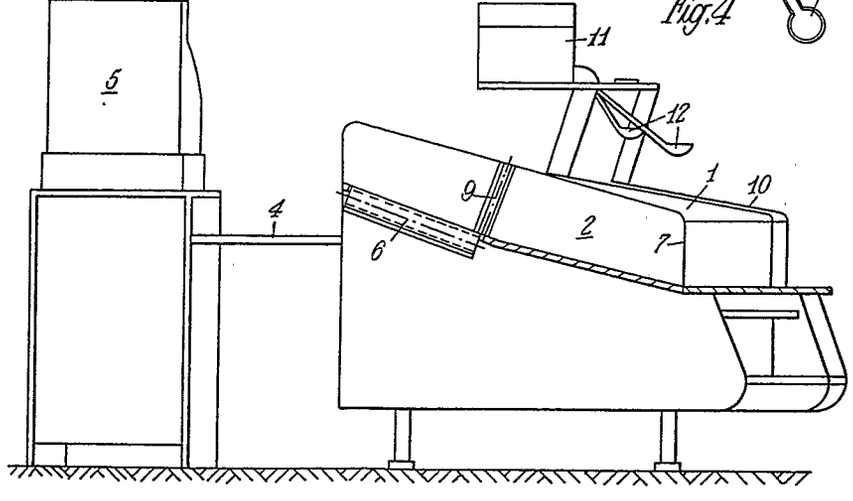

Fig.2