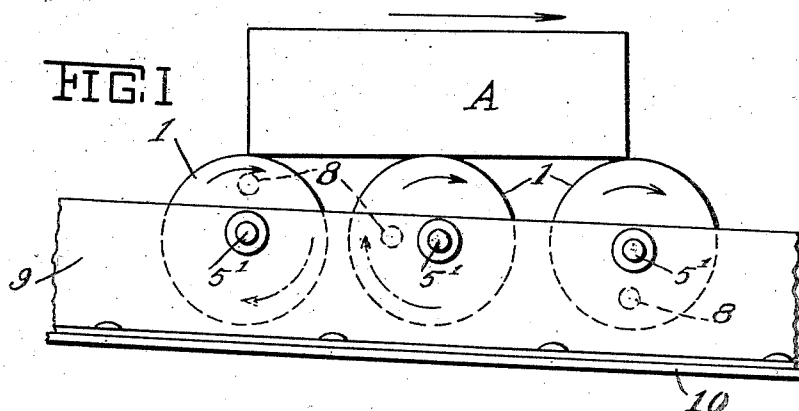
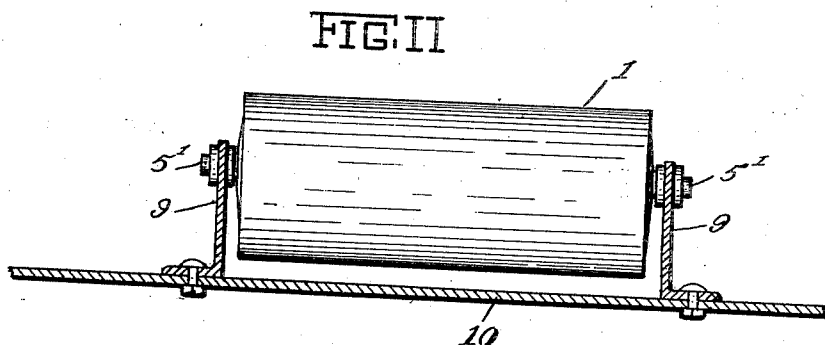
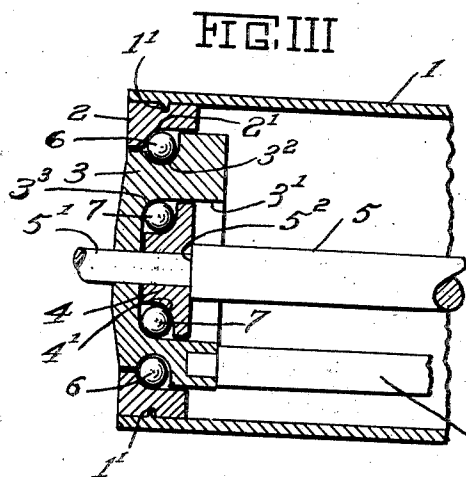
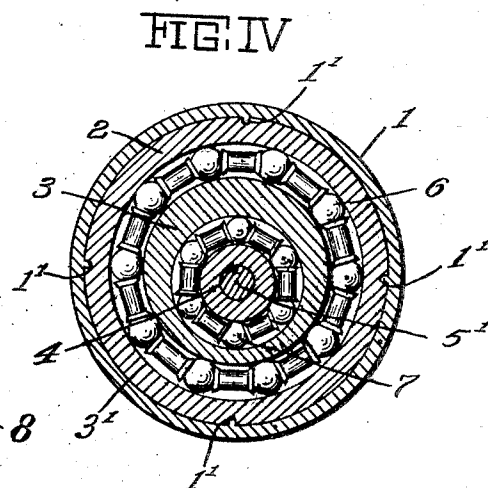
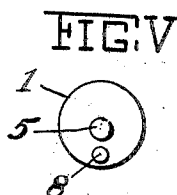
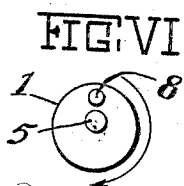


1,366,966.

G. H. SPEAR.
 ROLLER CONVEYER.
 APPLICATION FILED NOV. 1, 1919.

Patented Feb. 1, 1921.



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GEORGE H. SPEAR, OF NORTH READING, MASSACHUSETTS.

ROLLER CONVEYER.

1,366,966.

Specification of Letters Patent.

Patented Feb. 1, 1921.

Application filed November 1, 1919. Serial No. 334,938.

To all whom it may concern:

Be it known that I, GEORGE H. SPEAR, a citizen of the United States, residing at North Reading, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Roller Conveyers, of which the following is a specification.

This invention relates to roller-ways of the general type adapted to facilitate the transference of boxes, packages or other bodies.

These ways usually comprise a series of adjacent rollers along which the article may be propelled with a minimum of friction.

To this end, these ways have been provided with highly refined anti-friction bearings and other devices in the effort not only to permit articles to be speeded along the way in the shortest possible time but with the least possible effort.

In the rapid handling of articles along such way, much depends on the velocity given at the start. Where articles however are coming in quick succession or where the attendant is otherwise employed, it is frequently difficult to give the proper initial start, and furthermore under certain circumstances, it is not advisable to start articles too rapidly in view of their liability to overtake and collide with those preceding.

In my present invention, I have contemplated a conveyer-way in which by special roller system I am able to convey articles with a minimum initial impulse and at the same time secure a high degree of uniformity in their travel along the way. It will be readily seen that this not only saves labor in starting the article but by the diminution of the initial velocity and the maintenance of uniformity in course of travel, I avoid to a very considerable degree liability of jamming and collision along the way. I am thus able to maintain a uniform standard transference at a maximum standard rate. As illustrative of my invention I have shown in the accompanying drawings a form of way which I find highly efficient under the variety of working conditions.

Throughout the specification and drawings like reference characters are employed to indicate corresponding parts, and in the drawings:

Figure I is a side elevation of a chute-way,

Fig. II a transverse section showing a roll in elevation,

Fig. III a longitudinal sectional detail of such roll,

Fig. IV a transverse sectional detail, and

Fig. V and Fig. VI diagrammatic representations illustrating the principles involved.

I have indicated at 1 a plurality of rollers mounted in channel-ways 9 on a base 10. Each roller is mounted on a shaft 5 having a shouldered and projected end bearing 5¹ which finds bearing in the lateral flanges 9. Within the roller-shell 1 I mount a bearing-bushing 2, interlocked at 1¹ in shell 1. The bearing 3 channeled with a race-way to contain the ball 6 and coöperating with the inner face of the bushing 2, is carried on the reduced end 5¹ of the shaft 5. The bearing of the member 3 on the shaft 5¹ is eccentric as appears in Figs. III and IV, and also in the diagrams Figs. V and VI. The member 3 is further eccentrically chambered as indicated at 3¹ and within this on the shaft 5 is a concentric bearing member 4, having a race-way formed on its face and co-operating with the inner portion of the chamber 3¹ to receive balls 7.

At the lower portion of the member 3 is a cross-rod 8 coöperating with the corresponding members in the opposite ends of the shaft. The cross-rod 8 also constitutes a counter-weight tending to maintain the member 3 in its eccentricity above the shaft 5 and preferably slightly beyond center, in the direction in which the article A is to travel.

When such an article A as a box, package or the like, is placed upon the rolls and given the slightest initial start, those rolls disposed beneath the body have a tendency to turn in the direction in which the body is intended to move. This tends to cause the article to advance slightly. In such movement its forward end is slightly elevated and its rear end slightly depressed, as the following rolls turn with their eccentricity below center. The effect of this is the sustaining or even an apparent augmentation of the transferring movement, the article traveling as it were on the crest of successive rolls whose resultant movement combine in an apparent progressive undulation.

In practice it is found that articles may be started with the slightest initial impetus; in fact the mere placing of an article of any appreciable weight in such a manner as to

disturb the stability of the roller eccentricity provides an initial movement which is sustained along a very considerable length of the roller-way.

5 Various modifications may obviously be made in the detail structure of the rollers, the refinement of bearings and the like, all without departing from the spirit of my invention if within the limits of the appended
10 claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A conveyer way comprising a plurality of eccentrically mounted rollers, and gravity
15 means for normally maintaining said rollers eccentrically above center.

2. A conveyer way comprising a plurality of eccentrically mounted rollers, and gravity
20 said rollers with their eccentricity above their major axes past the vertical center in the direction of desired movement.

3. A conveyer way comprising a plurality of eccentrically mounted rollers, and gravity
25 means for normally maintaining said rollers with their major axes of eccentricity above their axes of rotation in the direction of desired movement.

4. In a device of the class described, a
30 plurality of eccentric rollers each comprising an outer shell, an outwardly concentric

bearing disposed therein, said bearing having an inwardly eccentric bearing, and a shaft within said inwardly eccentric bearing, and a counterweight on said bearing member disposed to maintain it with its eccentricity above center. 35

5. In a device of the class described, a plurality of eccentric rollers each comprising an outer shell, an outwardly concentric
40 bearing disposed therein and having an antifriction bearing therewith, said bearing having an inwardly eccentric bearing, and a shaft within said inwardly eccentric bearing and having an antifriction bearing there- 45 with, and a counterweight on said bearing member disposed to maintain it with its eccentricity above center.

6. In a device of the class described, a plurality of eccentric rollers each comprising an outer shell, an eccentric bearing disposed therein, a shaft within said inwardly eccentric bearing, said shell being poised
50 so as to remain with its eccentricity above center.

In testimony whereof I affix my signature
in presence of two witnesses. 55

GEORGE H. SPEAR.

Witnesses:

VICTORIA LOWDEN,
MARION F. WEISS.