

957,015.

Patented May 3, 1910.

Fig. 1.

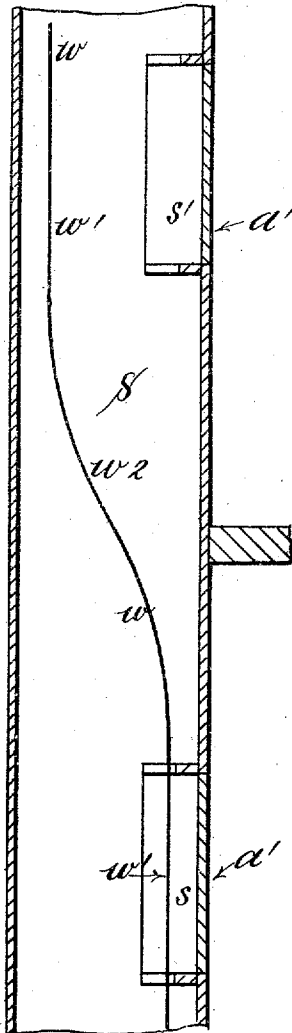


Fig. 2.

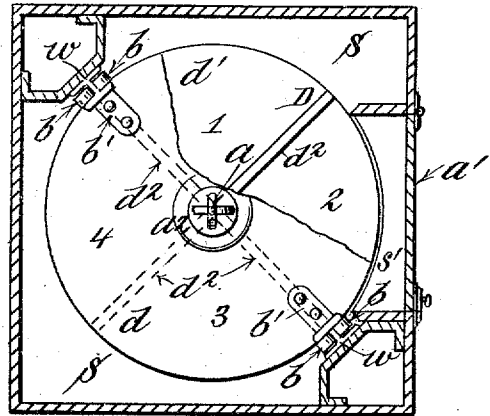


Fig. 3.

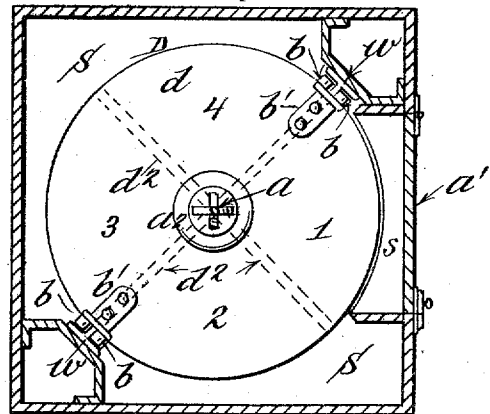
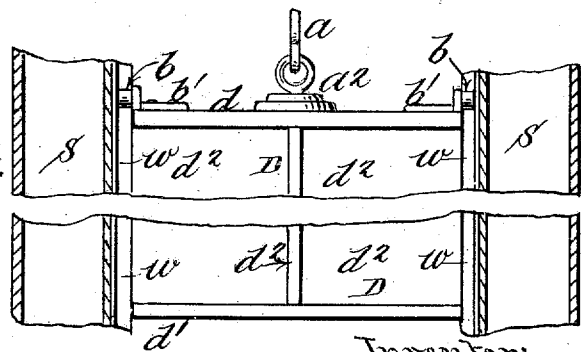


Fig. 4.



Witnesses:
D. Gardner.
[Signature]

Inventor:
William B. Updegraff
By [Signature]

UNITED STATES PATENT OFFICE.

WILLIAM B. UPDEGRAFF, OF NEW YORK, N. Y.

DUMB-WAITER.

957,015.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed March 7, 1910. Serial No. 547,782.

To all whom it may concern:

Be it known that I, WILLIAM B. UPDEGRAFF, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Dumb-Waiters, of which the following is a specification.

My improvements relate to the class of elevators known as dumb waiters used in apartment houses for the service and convenience of tenants on the several floors. A shaft for one of these dumb waiters is usually arranged in common for tenants whose apartments correspond in arrangement and vertical alinement, so that the shaft openings to the several apartments are all on one side of the shaft. Furthermore, the dumb waiter has ordinarily one or more compartments or shelves common to all tenants abutting the shaft. As a consequence confusion, inconvenience and annoyance are apt to result by reason of inadvertence, accident or mistake on the part of tenants or servants, and there is lack of desirable privacy.

The main object of my invention is to obviate this difficulty, and it consists essentially in the use of a rotatable dumb waiter sub-divided into separate compartments, in conjunction with means for raising and lowering said dumb waiter and for turning it in transit on its vertical axis between shaft openings in such manner as to present successively the several compartments in the dumb waiter each to their respective shaft openings, substantially as hereinafter described and claimed specifically.

In the accompanying drawings, Figure 1, is a diagram representing a vertical section of a portion of a dumb waiter shaft and indicating by line the curvature, between shaft openings, of one of the guide ways; Fig. 2, is a horizontal section of a shaft at one of the openings thereof; Fig. 3, a like view taken on line with a shaft opening either above or below that shown in Fig. 2; Fig. 4, is an elevation of the upper and lower portions of the dumb waiter, the middle portion being broken away.

I herein for convenience of illustration and description, confine myself to the practical application of my invention to a dumb waiter formed with four compartments although I do not limit myself in this respect, nor to the particular form and con-

struction of parts shown since it is obvious that the essential principle involved may be adapted to a dumb waiter having a greater or less number of compartments and serving a greater or less number of shaft openings.

The dumb waiter D is preferably though not necessarily cylindrical in configuration; that is to say it may consist of upper and lower disks d, d' , united by radial partitions d^2 , dividing the dumb waiter into quadrangular segmental compartments 1, 2, 3 and 4.

S, represents a vertical shaft in which the dumb waiter D, travels, being raised or lowered therein, by any suitable means, as by the suspender a , in the ordinary manner. s, s' , are shaft openings upon adjoining floors of the building which may be closed as usual by suitable doors a', a' . The suspender a , may be attached to the dumb waiter by a swivel a^2 , if desired, although this is not material, since the dumb waiter makes only a single rotation on its vertical axis back and forth, if raised or lowered to the full extent.

The axial position of the dumb waiter within the shaft is controlled by one or more, preferably two guide ways w, w . One would effect the lateral rotation of the dumb waiter, but the use of two opposed guide ways w, w , is desirable in order to maintain the centralization and alinement of the dumb waiter, which is provided with suitable contacts b, b , for engagement with the ways w, w . The contacts b, b , may be rollers mounted on brackets b' , as shown in the drawings, or any other mechanical expedient may be employed for the purpose of maintaining engagement with the guide ways w, w .

The peculiarity of the guide ways w, w , is that between adjoining shaft openings s, s' , they are each curved spirally for a portion of a convolution equivalent to the partial turn to be given the dumb waiter between prescribed shaft openings. Thus by way of illustration in the drawings, the dumb waiter having four compartments to serve four shaft openings, the partial spiral convolution of each guide way w , between adjoining shaft openings s, s' , will be equivalent to one fourth of a circle. For instance, in Fig. 3, compartment 1, is shown as opposite shaft opening s , whereas, in Fig. 2, compartment 2 is shown as opposite shaft opening s' , the dumb waiter D, having been rotated on its vertical axis one quarter of a circle between the two shaft openings s and

s' , by the partial spiral convolutions of the ways w, w . These two views show the relative positions of the guide ways w, w , adjacent to the shaft openings s, s' , and this relation of parts would be duplicated for the compartments 3 and 4 when brought opposite to their respective shaft openings.

I prefer to make the ways w, w , straight and vertical adjacent to the shaft openings, as indicated at w', w' , Fig. 1, the spiral curves or sections w^2 , being intermediate between these straight sections and the shaft openings. This prevents the rotation of the dumb waiter on its axis while passing a shaft opening and insures a proper alinement with relation to said opening.

It is to be understood that in the basement or supply and discharge apartment, the compartments in the dumb waiter are accessible for purposes of loading or unloading. It is also obvious that the dumb waiter may be provided with one or more unpartitioned compartments or shelves, accessible at all openings for general use, as for the accommodation of bulky articles, or those over which no special care or protection is necessary.

In the drawings the compartments of the dumb waiter are shown as quadrangular spaces formed by vertical partitions by way of illustrating the principle involved, but it is obvious that horizontal partitions may be substituted, affording a series of compartments extending the full width of the dumb waiter if preferred. In either case the same relation of the compartments to shaft openings may be attained with like result and without departing from the spirit and intent of my invention.

What I claim as my invention and desire to secure by Letters Patent is,

1. The combination of a dumb waiter capable of rotation on its vertical axis, and divided into a plurality of compartments, means for raising and lowering said dumb

waiter, a shaft in which the dumb waiter travels formed with a plurality of openings, and a guide way in said shaft engaging and controlling said dumb waiter, said guide way being formed between adjacent shaft openings, with portions constituting partial convolutions of a spiral whereby the several compartments in the dumb waiter are respectively brought into coincidence with their particular shaft openings.

2. The combination of a dumb waiter capable of rotation on its vertical axis, and divided into a plurality of compartments, means for raising and lowering said dumb waiter, a shaft in which the dumb waiter travels formed with a plurality of openings, guide ways in said shaft engaging and controlling said dumb waiter, each of said guide ways being formed, between adjacent shaft openings, with portions constituting partial convolutions of a spiral whereby the several compartments in the dumb waiter are respectively brought into coincidence with their particular shaft openings.

3. The combination of a dumb waiter capable of rotation on its vertical axis, and divided into a plurality of compartments, means for raising and lowering said dumb waiter, a shaft in which the dumb waiter travels formed with a plurality of openings, guide ways in said shaft engaging and controlling said dumb waiter, said guide ways being formed with vertical portions adjacent to the shaft openings and being also formed between said vertical portions and adjacent shaft openings, with portions constituting partial convolutions of a spiral, whereby the several compartments in the dumb waiter are respectively brought into coincidence and alinement with their particular shaft openings.

WILLIAM B. UPDEGRAFF.

Witnesses:

GEO. WM. MIATT,
D. W. GARDNER.