(No Model.)

A. W. STEVENS.

ROTARY TRAY, &c.

No. 327,032. Patented Sept. 29, 1885.

Fig. 1.

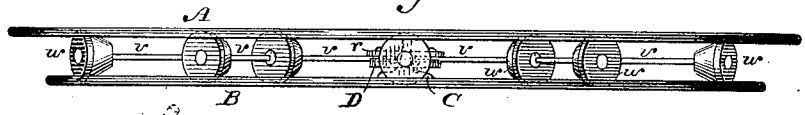


Fig. 4.

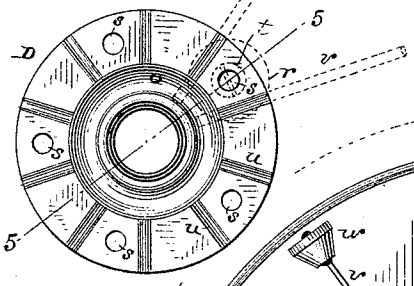


Fig. 5.

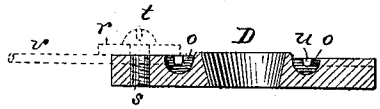


Fig. 2.

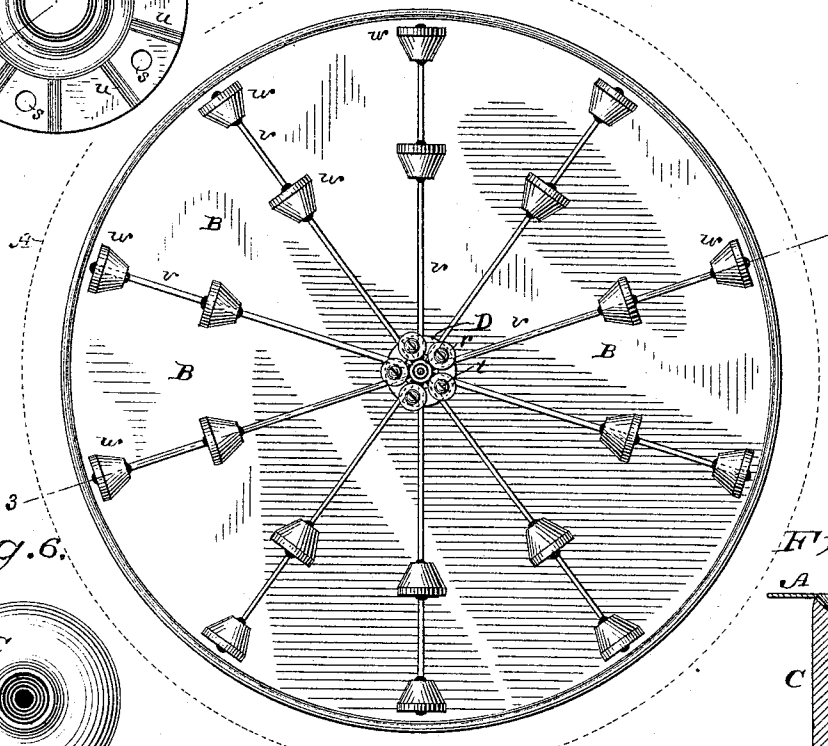


Fig. 6.

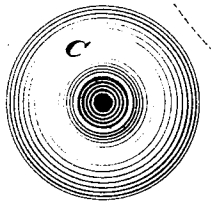


Fig. 7.

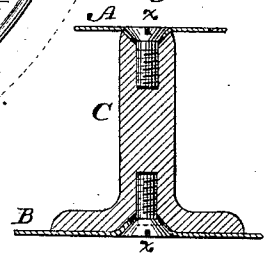


Fig. 3.

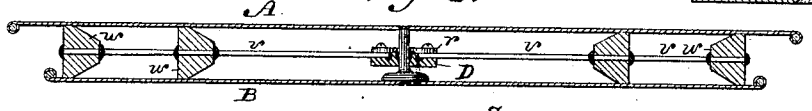
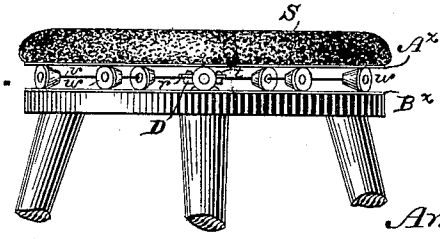


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

AMASA W. STEVENS, OF EAST BROOKFIELD, MASSACHUSETTS.

ROTARY TRAY, &c.

SPECIFICATION forming part of Letters Patent No. 327,032, dated September 29, 1885.

Application filed October 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, AMASA W. STEVENS, a citizen of the United States, residing at East Brookfield, in the State of Massachusetts, have invented a new and useful Improvement in Turn-Tables for Rotary Trays, &c., of which the following is a specification.

This invention relates, primarily, to improvements in the construction and mode of operation of anti-friction supports or turn-tables for rotary waiters or trays, as heretofore proposed for use upon dining-tables to facilitate moving different articles to within the reach of a person sitting at one point, or into such proximity to each sitter as may be possible.

The present invention consists, first, in a novel combination and arrangement of parts whereby I produce a very simple and substantially frictionless and noiseless turn-table for rotary trays for general use, adapted also for rotary seats for stools and chairs and other rotary objects for which such a support may be desirable. It consists, further, in a turn-table of the aforesaid construction embodied in a peculiar manner in a rotary tray having its top or tray proper and its base of sheet metal. It consists, finally, in a peculiar combination of parts whereby the radial stud shafts or arms upon which the anti-friction wheels of said turn-table rotate are held in pairs in an effective way with great simplicity.

A sheet of drawings accompanies this specification as part thereof. Figure 1 of these drawings is an edge view of a rotary tray embodying my turn-table. Fig. 2 is a plan view of all that portion of the same below its top or the tray proper. Fig. 3 represents a vertical section on the line 3 3, Fig. 2, with parts behind the plane of section omitted. Figs. 4 and 5 are respectively a top view and a vertical section of the revolving hub, hereinafter referred to, on a larger scale. Figs. 6 and 7 are respectively a top view and a vertical section of the central pivot on said larger scale; and Fig. 8 is an elevation of the upper part of a stool having its rotary seat supported by a similar turn-table, illustrating other uses of the latter.

Like letters of reference indicate corresponding parts in the several figures.

In a rotary tray, as illustrated by Figs. 1 to 7, inclusive, I prefer to form the upper and lower bearing surfaces of the turn-table by two circular disks, A B, of sheet metal, (light sheet-iron, for example,) wired at their edges, as shown in Figs. 1, 2, and 3, to stiffen them and keep them true. The upper of these disks being the tray proper or the rotary top, and the lower disk the base of the article as used upon a table or other horizontal support, in the manner hereinbefore set forth.

A central pivot, C, (shown in detail in Figs. 6 and 7,) serves, together with a pair of countersunk screws, *x*, to unite the disks A B, so that the upper disk, A, shall be supported at its center and free to rotate, and the latter is furthermore supported at numerous points, near its perimeter, so as to rotate freely and noiselessly by means of anti-friction rollers or wheels *w* interposed between the two disks. These wheels are located as to radial distance from the center and distance apart in one or more circles by means of radial stud shafts or arms *v*, preferably of stiff wire, furnished with pairs of collars, between which the respective wheels are confined, except as to rotation, said arms being united by a central annular hub, D, (shown in detail in Figs. 4 and 5,) which revolves around said pivot C, and has the inner ends of said arms clamped thereto so that they project rigidly equidistant from each other. The arms *v* are held in radial grooves *u* in the top of the hub D by means of vertical screws *t*, one-half as many as the arms in number, fitted to screw-holes *s* in the hub, and provided with washers *r*, each of sufficient diameter to overlay the inner ends of two adjacent arms. The arms are thus readily secured and tightened, while said radial grooves *u* insure their proper alignment and distribution. An annular groove, *o*, in the top of the hub may coact with bends at the inner extremities of the arm-wires to preclude their radial displacement; but this is not necessary in a rotary tray, owing to the slowness of its motion.

The wheels *w* are preferably made of wood, saturated with a suitable lubricant, and "japanned" to render their exterior smooth and non-adhesive, and they are preferably made of the peculiar shape represented in the draw-

ings, so as to have broad bearings on the arms *v*, and at the same time narrow treads to preclude binding or friction at their peripheries. They are, moreover, preferably arranged in two circular series, as shown, and in practice I omit the inner wheels on alternate arms as unnecessary in table-trays; but these details are not considered essential parts of my present invention.

Supported at its center by said pivot C, and at numerous points between its center and perimeter on anti-friction wheels, which are free to rotate and also to revolve, as are those above described, the upper disk, A, though it be of sheet metal, rotates freely, and is adapted to sustain even heavy and unevenly-distributed articles, and to provide for moving them by simply turning the upper disk or tray from one point to another, or from one side of the pivot to another, so as to facilitate reaching them or to bring them nearer to any given point, and a rotary tray thus constructed may be used with great advantage, not only upon dining-tables, as heretofore proposed, but for supporting flower-pots at windows, for holding the work and tools of watch-makers and other artisans, and for various other useful purposes.

The turn-table, in substance, may also be embodied in other articles in which a horizontal rotary part is or may be used, such as stools, chairs, and like articles of furniture, as illustrated by a stool in Fig. 8. This stool has a rotary seat, S, the bottom of which and a parallel flat base top beneath the same are provided with flat metallic disks A^x B^x, corresponding as to main function with the aforesaid disks A B, the same being united at the center and the upper disk supported at numerous points between its center and perimeter by anti-friction wheels, the latter mounted and united in the same manner as those hereinbefore described, and shown in Figs. 1 to 7, inclusive. The same or substantially the same turn-table may in like manner be embodied in other articles by those skilled in the art without additional suggestion.

I am aware that it is not broadly new to combine a rotary top disk with a stationary base-disk, a central pivot and anti-friction wheels for supporting the top disk, nor to mount such wheels on radial arms carried by an annular revolving hub. I therefore disclaim these features of my turn-table, broadly considered.

Having thus described my said improvement in turn-tables for rotary trays, &c., I claim as my invention and desire to patent under this specification—

1. An improved turn-table for rotary trays and other articles composed of flat horizontal disks, a vertical pivot with a pair of screws uniting said disk and supporting the top disk at its center, an annular hub adapted to revolve freely around said pivot, radial arms carried by said hub and provided with collars, and anti-friction wheels mounted between said collars on said arms for supporting said top disk at numerous points near its perimeter, substantially as herein specified.

2. The combination, in a turn-table for rotary trays, of a pair of flat sheet-metal disks having wired edges, and forming, respectively, the rotary top and the base of the tray, a vertical pivot with a pair of screws, uniting said disk and supporting the top disk at its center, an annular hub adapted to revolve freely around said pivot, radial arms carried by said hub and provided with collars, and anti-friction wheels mounted between said collars on said arms for supporting said top disk at numerous points near its perimeter, substantially as herein specified.

3. The combination, in a turn-table for rotary trays and other articles, substantially as herein specified, of a revolving hub constructed with radial grooves fitted to radial arms, vertical screws between successive pairs of said grooves, and washers for said screws, each adapted to overlay the inner ends of two of said arms for aligning, distributing, and rigidly uniting the said arms in the manner set forth.

AMASA W. STEVENS.

Witnesses:
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ELI FORBES.