Nov. 8, 1938. H. STUVE 2,135,606

MECHANICAL WHIRLWIND TOY

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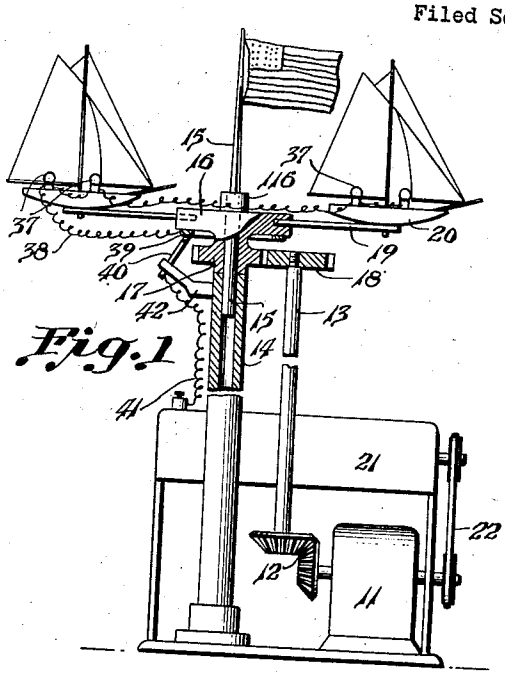


Fig. 1

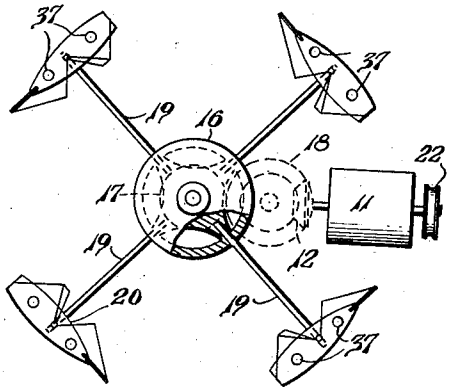


Fig. 2

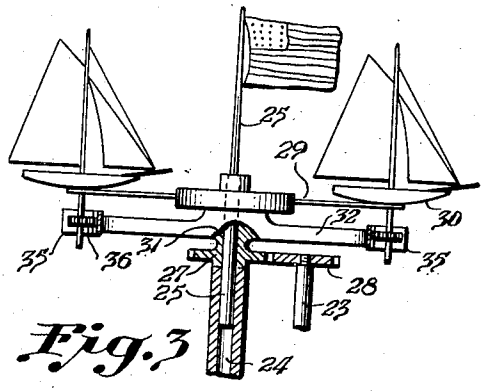


Fig. 3

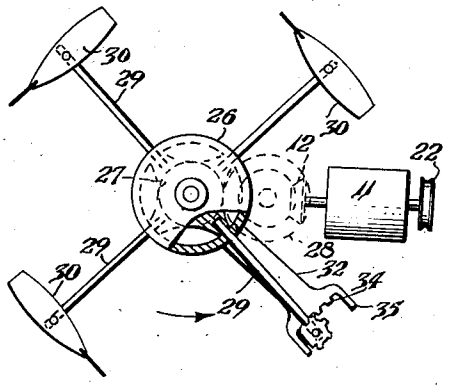


Fig. 4

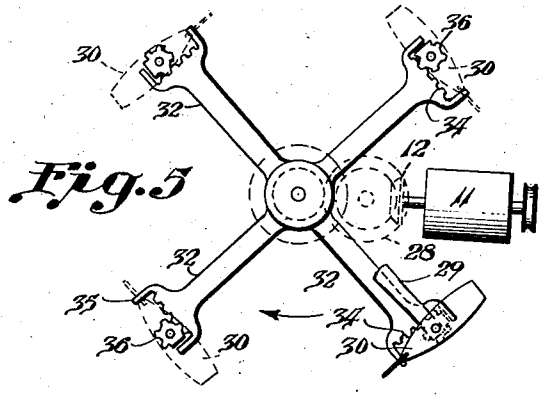


Fig. 5

Inventor:

Henry Stuve

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MECHANICAL WHIRLWIND TOY

Henry Stuve, Brooklyn, N. Y.

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3 Claims. (Cl. 272—31)

The subject of the invention is a small device of the carousel- or roundabout-type, which can be used either as a toy, or as an advertising carrier in show windows of a store, or for both said purposes at the same time. It consists essentially of a driving mechanism such as an electric motor or a clockwork, arranged at a lower plane, and of a driven ensemble of parts, arranged at a higher horizontal plane and comprising a disk, a number of radially extending arms and small articles such as toy-ships, toy-airplanes or the like at the ends of the arms. When the driving mechanism is set to work, then the articles at the ends of the arms will move along on a horizontal circular way, so that the whole device will be a moving toy to please children. But the device may be used just as well for business purposes as an advertising means, because any movement of articles in a show-window always attracts the attention of the public. When using the device as an advertising means, the sails of the circling ships or the wings of the moving airplanes can further be made to carry inscriptions or pictures of the particular goods to be advertised. It is further an essential feature of the invention, to make my new and improved device in certain cases still more efficient, by making it reversible. This can be done either by making only the driving mechanism reversible, to change its direction of movement automatically after a certain time, or, in a more elaborate construction of the device, at the movement reversal of the driving mechanism likewise the circling ships, airplanes or other articles are likewise turned round their vertical axis, so as to make the appearance or the illusion more perfect.

The drawing shows two embodiments of my above characterized invention, whereby in the illustrated devices ships are shown as the articles at the ends of the circling arms;

Figures 1 and 2 are an elevation and a top-plan view of a more simple device, adapted to go round in one direction only;

Figure 3 is an elevation of a more elaborate device, insofar, as the ships (or other articles) at the ends of the radial arms are adapted to be turned round the vertical axis, to make their movements more realistic;

Figure 4 is a top plan view on Figure 3;

Figure 5 is a top plan view on the reversal mechanism for the ships (or other toy-articles) at the ends of the arms, set for reversed circling movement.

Referring now more in particular to the drawing in the first illustrated device an electric motor 11, by the means of the conical gearing 12, drives a vertical shaft 13. At the side of this shaft stands fixed the vertical hollow post 14, into the upper end of which the stem 15 of a flag or some other emblem is inserted, being fixed at a certain height by a collar-ring 16 which rests on certain other constructional parts still to be described. The lower part of the flag-stem passes loosely through a big horizontal disk or block 16, which at its lower side is continuous with a toothed wheel 17 which meshes with another wheel 18 fixed at the upper end of the shaft 13. The circular block 16 has at its periphery four holes, into which the four arms 19 are inserted so as to extend radially to the four sides, in a horizontal plane. Four little sailing-vessels 20 are mounted on the ends of the four arms 19, by fixing the masts of these vessels into holes drilled vertically into the ends of the arms 19. If the motor 11 is started, then its rotative motion is transmitted, through the gearing 12, the shaft 13 and the gearing 18, 17, to the block 16, and consequently the four ships 20 will move carousel-like in a roundabout way round the flag 16. If the motor 11 is reversible and fitted or cooperating with an automatically acting reversal time switch, then the disk or block 16 with the arms 19 and the ships 20 will move alternatingly first in one and then in the other direction.

In the construction shown in the Figures 1 and 2 the circular block 16 with the ship-carrying arms 19 is supposed to rotate always in the same direction. However, in order to attract more attention, small electric bulbs 37 are provided on the little ships 20. Electric current is fed to the bulbs by a conduit 38, coming from a contact ring 39, which is in an insulated manner mounted on the lower surface of the circular block 16. The contact ring 39 receives the current from the contact brush 40 at the end of the wire 41, said brush being held by an arm 42, extending from the upper end of the post 14. All the bulbs 39 on the different ships may be connected in series, the details of such wiring not being shown for the sake of greater clearness of the illustration, and as being a most simple matter within the skill of general public. In order to increase the attractiveness of the device, I provide further in certain cases a music box 21, which advantageously will be arranged above or at the side of the driving motor 11, and is operated by the latter by the pulley- and rope-transmission 22.

The embodiment of the invention, shown in the Figures 3 to 5 is in its essentials similar to that of the first example; at the side of the motor-driven

vertical shaft 23 stands the tubular post 24, into the top end of which the stem of a flag 25 is inserted and positioned by the collar-ring 226. The lower part of the flag-stem passes loosely through the horizontal disk or block 26, which disk, at the ends of the radial arms 29, holds the toy sailing vessels 30 (or other suitable articles, as mentioned above). Underneath the block 26 and its arms 29 is the ship-turning mechanism, which consists of a hub-like central part 31, radial arms 32 and rim-segments 33. The hub 31, which carries the block 26 loosely, so as to allow a sliding displacement, and which in similar way surrounds likewise the flagstem 25 only loosely, is at its lower side continuous with the toothwheel 27, which latter meshes with another toothwheel 28, fixed at the upper end of the shaft 23. The rim-segments 33 are provided with peripheric tooth-gearing 34, extending only on the short length of the segments, and ending into higher border-ledges 35 at the two lateral ends of each segment. The masts of the toy-vessels 30 (or the vertical axes of the other articles replacing them) pass loosely through the ends of the arms 29 holding them, and at their lower ends are fixed little pinions 36, which latter have their teeth however extending only over three quarters of their circumference, leaving the last quarter of the circumference without gearing. If in this construction the motor of the driving mechanism is started, then the power transmission through the shaft 23 and the gearing 27, 28 drives first only the hub 31 with the arms 32 and the rim-segments 33; the upper block 26 with the arms 29 and the ships 30 is held back temporarily by the friction of the stationary flag-pole and by the resistance of the ship-sails in the air. The teeth of the rim-segments 33 revolve the pinions 36 and with them the toy-vessels 30, until the one border-ledge 35 of the segment-gearing strikes against the pinion 36. Thereafter the further circling movement of the rim-segments 33 takes with them the pinions and consequently the whole upper ensemble of the block 26, the arms 29 and the ships 30, the ships are circling on a circular way, as in the first example. Figure 4 shows the relative positions of one arm 32 and its coordinate pinion 36 with the arm 29, set for anticlockwork circling movement. Naturally all four arms 29 of the construction of the Figure 4 are pushed by other driving arms 32 and pinions 36 of the same construction, but the Figure 4 shows, for the sake of greater lucidity, only one set of such cooperating arms 29, 32. When the motor or driving mechanism is reversed, then first the upper ensemble 26, 29 with the ships stops circling, so long until the returning rim-segments 33 strike with their other border ledges 35 against the pinions 36. But by this first revolution of the rim-segments on the pinions 36 the latter are turned round their axes, and with them the ships 30 make a half revolution round their masts. Figure 5 shows the new relative positions of the arms 32, 29 and of the pinions 36 with the ships 30 after this movement of devolution between the segments 33 and the pinions 36; thereafter further return movement of the hub 31 with the arms 32 and the rim-segments 33 takes the upper ensemble with them on the further return circling movement, this time in the clockwise direction, as indicated in the Figure 5 until a new reversal of the driving mechanism re-establishes again circling movement in the first direction.

As it had been said in the beginning, the invention is not limited to the illustrated and above described embodiments, but may be varied in the details of construction, to suit other modified purposes.

I claim:

1. A device of the kind described, comprising in combination: a driving mechanism at a lower plane; a vertical rotatable shaft driven by the said mechanism; a stationary vertical post at the side of the shaft; a horizontally rotatable block held on top of the post; a gearing transmitting the rotation of the shaft to the said block; arms extending radially from the block; horizontal wheelrim-like segments at the ends of the arms; teeth at the outer periphery of the segments and border-ledges at the two ends of each segment-toothing; another horizontal disk-like block rotatably fixed on top of the first said rotatable block; arms extending radially from the second said upper block; small toys such as sailing vessels or toy airplanes fixed at the ends of the last said arms, so as to be turnable round vertical axes of these toys; and pinions fixed at the lower ends of the toy-axes, the said pinions meshing with the teeth of the before said segments.

2. A toy-like advertising device of the kind described, comprising in combination: a driving mechanism arranged at a lower plane and including a rotatable vertical shaft; a vertical tubular post standing stationary at the side of the said shaft; a horizontal block rested rotatable round its axis on the top of the post, the upper part of which block has the form of a hub with radially extending arms, whereas the lower part of said block has the form of a pinion; means such as a flagpole extending through the centre of the said rotatable block and reaching into the stationary tubular post for centering the block coaxially with the post; a pinion at the upper end of the rotatable vertical shaft and meshing with the pinion part of the beforesaid block; and different advertising toys carried by the outer ends of the beforesaid radial arms.

3. A toy-like advertising device of the kind described, comprising in combination: a driving mechanism arranged at a lower plane and including a rotatable vertical shaft; a music-box connected with and operated by the driving mechanism; a vertical stationary post at the side of the rotatable shaft; a horizontal block rested rotatable round its axis on the top of the post, the upper part of which block has the form of a hub with radially extending arms, whereas the lower part of said block has the form of a pinion; means for centering the rotatable block coaxially with the post; a pinion at the upper end of the rotatable vertical shaft and meshing with the pinion part of the beforesaid block; and different advertising toys carried by the outer ends of the beforesaid radial arms.

HENRY STUVE.