

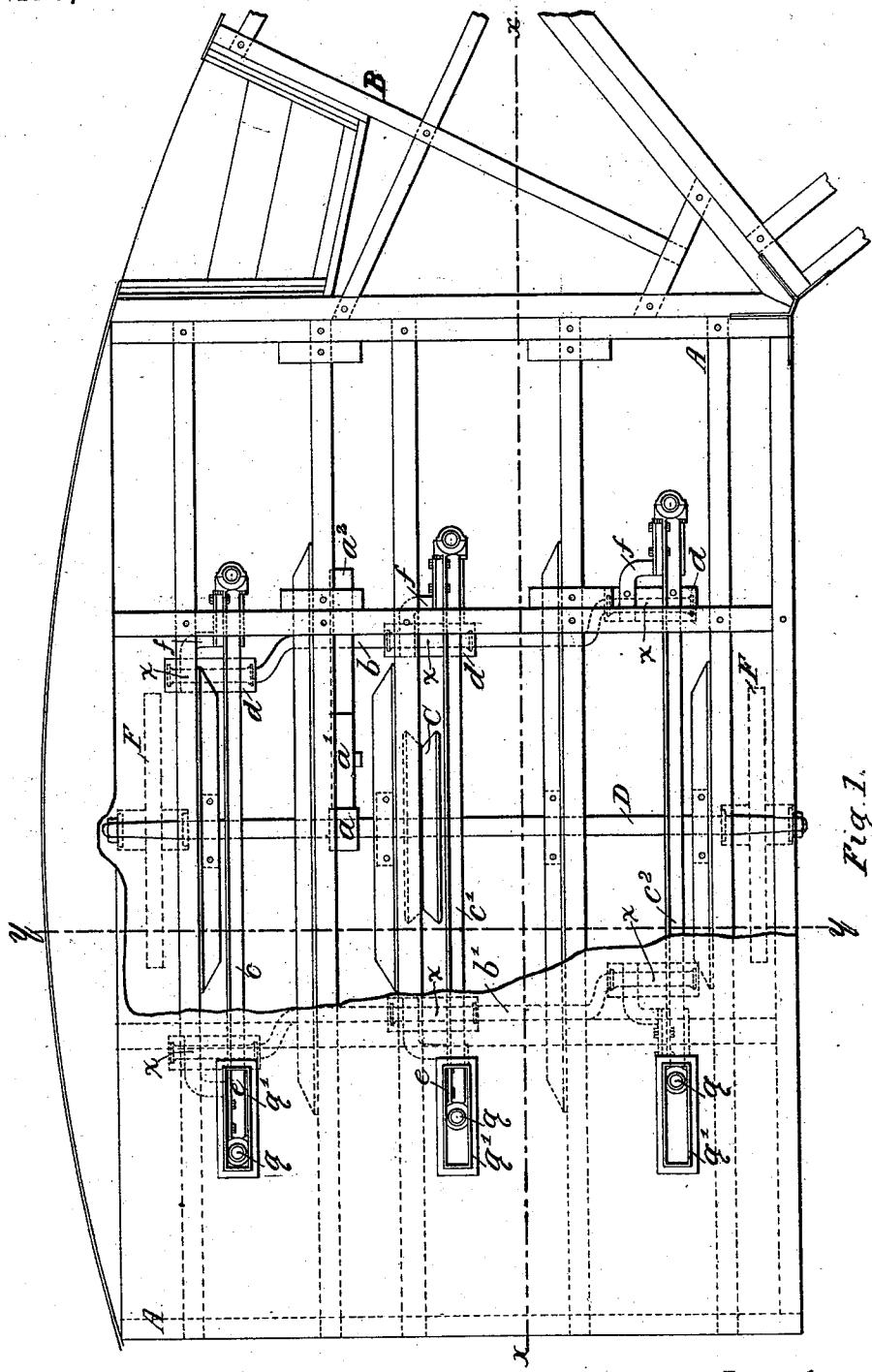
(No Model.)

3 Sheets—Sheet 1.

F. W. ALLCHIN.
MERRY-GO-ROUND, &c

No. 418,833.

Patented Jan. 7, 1890.



Inventor:

Frank William Allchin

By his Attorneys,

Arthur G. Fraser Geo.

Witnesses:

J. A. Gossweil

L. K. Fraser.

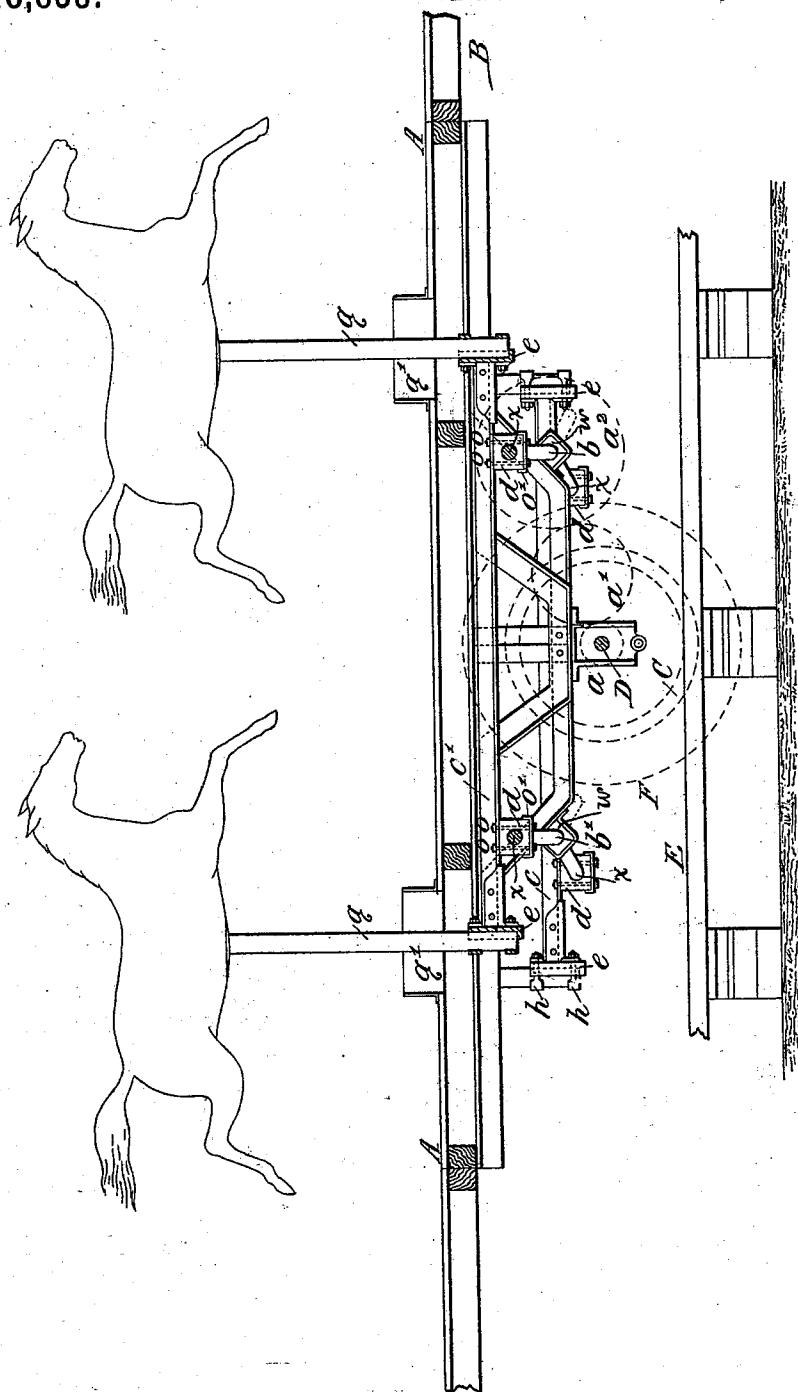
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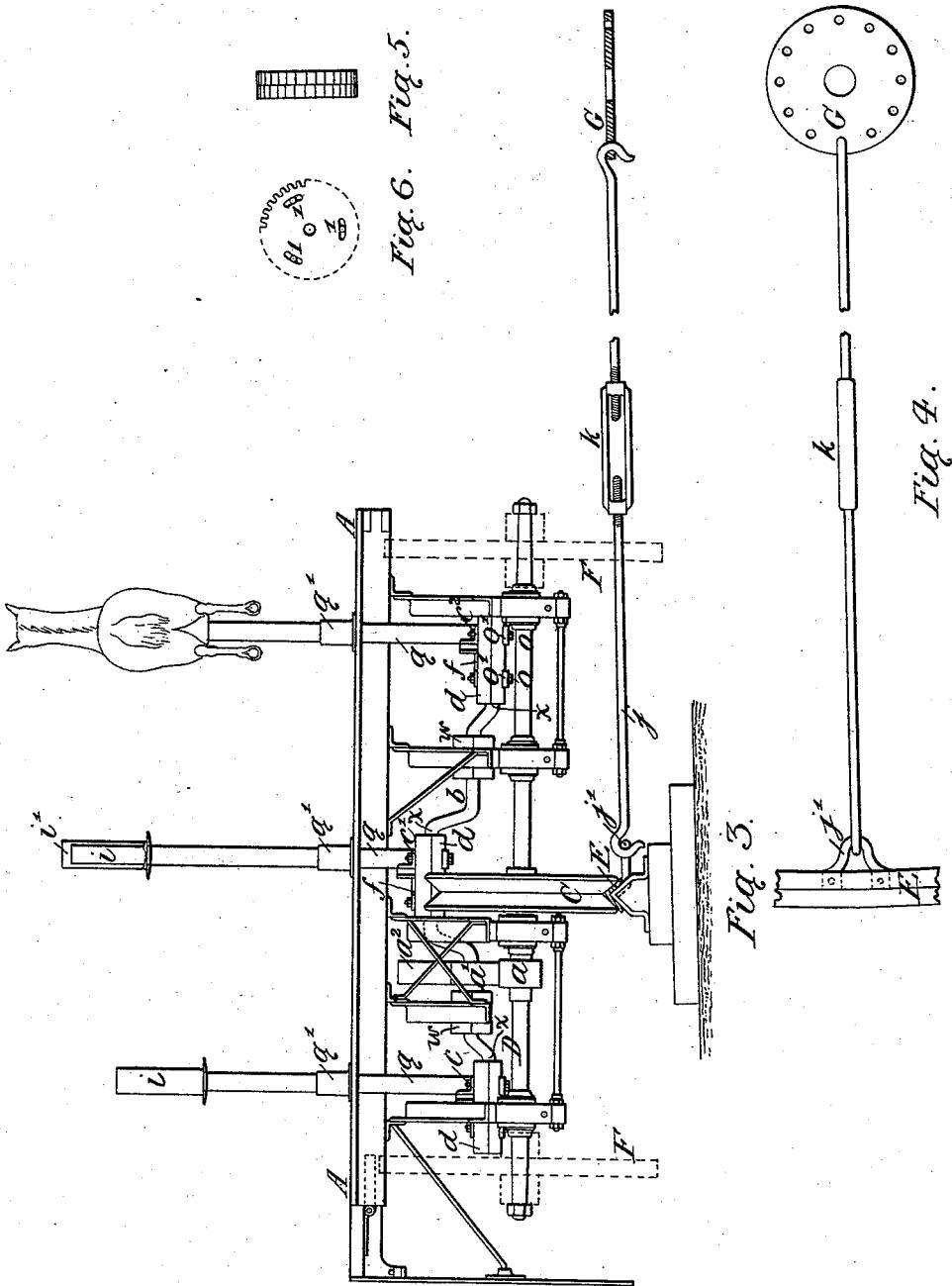
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Inventor:

Frank William Allchin.

By his Attorneys,

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Witnesses:
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UNITED STATES PATENT OFFICE.

FRANK WILLIAM ALLCHIN, OF NORTHAMPTON, COUNTY OF NORTHAMPTON,
ENGLAND.

MERRY-GO-ROUND, &c.

SPECIFICATION forming part of Letters Patent No. 418,833, dated January 7, 1890.

Application filed November 8, 1888. Serial No. 290,381. (No model.) Patented in England April 12, 1888, No. 5,450; in France October 27, 1888, No. 193,665; in Spain January 19, 1889, No. 8,773; in South Australia February 16, 1889, No. 1,241; in Victoria, February 18, 1889, No. 6,539; in New South Wales February 18, 1889, No. 1,247; in Queensland February 20, 1889, No. 710; in Tasmania February 23, 1889, No. 661/10; in Belgium March 19, 1889, No. 85,450, and in Canada April 11, 1889, No. 31,100.

To all whom it may concern:

Be it known that I, FRANK WILLIAM ALLCHIN, engineer a subject of the Queen of Great Britain, residing at Northampton, England, have invented certain new and useful Improvements in or Relating to Roundabouts or Merry-Go-Rounds and other Riding Toys, of which the following is a specification.

This invention is the subject-matter of Letters Patent in the following countries, to wit: Great Britain, April 12, 1888, No. 5,450; France, October 27, 1888, No. 193,665; Spain, January 19, 1889, No. 8,773; South Australia, February 16, 1889, No. 1,241; Victoria, February 18, 1889, No. 6,539; New South Wales, February 18, 1889, No. 1,247; Queensland, February 20, 1889, No. 710; Tasmania, February 13, 1889, No. 661/10; Belgium, March 19, 1889, No. 85,450, and in Canada April 11, 1889, No. 31,100.

This invention consists of special means by which the horses (boats, or corresponding parts for carrying riders) of roundabouts or merry-go-rounds and other riding toys are operated from below in a manner causing them to perform circular movements in vertical or approximately vertical planes, in addition to their forward movement around the central axis of a roundabout or with a truck or trolley upon which they are mounted and drawn about from place to place. According to these means pairs of cranked shafts are carried in suitable bearings fixed to the revolving framings or platforms of roundabouts or to the framings of trucks or trolleys over which the horses (boats or corresponding parts for carrying riders) are placed and with which they travel. The cranked shafts of each pair are mounted to be parallel with one another, and each crank, respectively, of one shaft of a pair is coupled with the corresponding crank of the other shaft of such pair by a coupling rod or frame, which supports one, two, or more, horses (boats, or corresponding parts aforesaid.) It is preferred (at any rate in the case of a roundabout) to form three cranks or more in each crank-shaft, and to employ, consequently, three or

more coupling rods or frames for each pair of crank-shafts. One of the crank-shafts of each pair forms, also, the axle of one of the wheels upon which the revolving frame or platform is carried, or of a pair of the wheels upon which a truck or trolley is drawn, in which cases such shaft is driven by the rolling of the wheel or wheels as the frame or platform is driven round or the truck or trolley drawn along; or, such shaft may be driven by gearing from the axle of the wheel or wheels aforesaid, and in either case the other crank-shaft of each pair may be driven through the medium of the coupling-rods. By this arrangement a rotary movement in vertical planes (or in planes somewhat out of the vertical, if the shafts are set, as they may be, somewhat inclined) in general imitation of the galloping of a horse (or of the up and down movement of a boat) is imparted to the horses without the inconvenience of a vertical rod passing down through the back of each horse, as in the case of other arrangements which have been adopted for the purpose in connection with a roundabout.

This invention will be clearly understood on reference to the drawings herewith, of which—

Figure 1 is a plan of one main division of a revolving platform of a roundabout, with the gearing and apparatus shown applied thereto according to this invention for carrying and operating a set of three horses. Fig. 2 is a section taken on line $x-x$ of Fig. 1; and Fig. 3 is a section taken on line $y-y$ of Fig. 1. Figs. 4, 5, and 6 are details of construction.

The same letters of reference indicate corresponding parts throughout the views.

It will be seen that the main division of the platform is made up of a straight-ended segment A A and of a V-d part B. The chief object of this construction is that upon the removal of the V-d making-up pieces B around the platform the segments A A may each be used as a separate trolley with its set of horses mounted thereon and be drawn about from place to place at fairs and such like enter-

tainments while riders are seated upon the horses which have the same galloping movement imparted to them when the segment is being drawn about, as described, as when it is driven around as part of the platform of a roundabout. When the apparatus is being used with a roundabout, a grooved wheel C, fixed upon the main axle D of a segment A A, runs upon a circular rail E, (correspondingly shaped in section,) and thus supports the weight of its own segment of the platform and of the half of each V-d part B adjoining such segment, and also during the rotation of the platform causes the revolution of the axle D. Motion is conveyed from the axle D through the spur-pinion a and spur-wheels a' a² to a crank-shaft b, mounted transversely of the segment A A in bearings w w, carried by and underneath the framing of the segment. This crank-shaft is provided with three cranks x x, spaced equally around the circle of the revolution of the cranks and a corresponding crank-shaft b' is similarly mounted in position to be parallel with the crank-shaft b. The opposite cranks of each crank-shaft are connected together, respectively, by longitudinal bars or rods c c' c², by means of bearing-blocks d, passed around the crank-pins and fixed to the bars or rods, and thus as the crank-shaft b is driven round in the manner described the bars c c' c² are themselves operated therefrom as connecting-rods and cause the corresponding rotation of the crank-shaft b', the rods being maintained in a constant condition of parallelism with one another by the cranks. At each end of each horizontal bar c c' c² is fixed a block e, and in each block is carried a vertical rod or tube g by means of clips h h, which pass around such bars or tubes and are bolted to the blocks e. The blocks on the ends of the bar c' are shown in section by Fig. 2. Loose sockets i are fitted onto the tops of the tubes g, and these sockets i are themselves let into the bodies of the horses which are to be supported upon the tubes, and thus the horses, together with the sockets, may be readily lifted off from and on to the ends of the tubes, as desired. It is preferred to place a rubber pad i' or other spring in the inner end of each socket, in order to take off or reduce any jar which would otherwise be felt by the riders. It will be readily seen that the bars c c' c², and consequently, also, the horses which they carry, follow the movements of their respective cranks, and thus partake of the desired movement above described in addition to their forward movement around the central axis of the roundabout, or together with the truck or trolley, as the case may be. The bearing-blocks d may be of wood—such as *lignum-vitæ*—divided longitudinally, so as to be readily placed around the crank-pins. These bearings are preferably of considerable length, as shown, to prevent any tendency of the tubes reeling sidewise, and

the one end of each block may be carried by a bracket f, bolted to the connecting-bar c, c', or c², as the case may be. The two parts of each bearing-block are held together and to the connecting bar and bracket by which they are carried by means of bolts o, passing up through the blocks and through binding-straps o' on their lower sides. Guards g' are placed around the slotted openings through the floor of the platform or truck within which the vertical rods g move, so as to prevent accident. It is preferred to put the segments of the platform together so that they incline somewhat inward, so as to lessen the effect of the centrifugal force.

In order to reduce as much as possible the slackness or looseness of the driving-gear a a', the wheel a' is formed in halves flat-wise, as shown by detached edge view, Fig. 5, and the halves are bolted together by bolts passing through slotted holes 1, as shown by detached side view, Fig. 6, and the wheel is caused to gear as a good fit with the teeth of the wheels a and a² by setting the teeth of one half of the wheel a' sufficiently out of line with the teeth of the other half to insure such fit—that is, in effect to give the teeth of the wheel a' the necessary thickness for such purpose.

When the apparatus is used with a roundabout, the road-wheels F, (shown by broken lines,) or the inner of such wheels, are removed and the circular rail E is laid upon suitable sleepers or packings and is kept in its proper central position by means of tie-rods j, hooked at one end into loops j', riveted to the under side of the circular rail, and at their other ends into a central ring or plate G. A plan of one of these rods, with its connections, is shown by Fig. 4. Each rod may be tightened up by a device k, such as is ordinarily employed for analogous purposes, and which is screwed, respectively, upon right and left handed threads formed on the inner ends of divided parts of the rod.

When it is desired that a segment A A be used as an independent truck or trolley, it is of course fitted with shafts by which to draw it along, and when it is desired that a galloping movement shall in such case be imparted to the horses (or a corresponding movement be imparted to the boats or corresponding parts aforesaid) one of the road-wheels F is threaded or otherwise fixed upon the axle and thereby causes the rotation of the axle as the segment is drawn along. If it is simply desired to move the segment from place to place without conveying riders, both the road-wheels may be mounted to turn loosely upon the axle. The platform of the roundabout may of course be driven in any manner in which such platforms are now rotated, or in any convenient manner.

It may sometimes be convenient to mount a boat or body on a pair of coupling-rods, in which case the cranks of each shaft to which such pair of rods is connected are set to throw

together, or such cranks may be formed wide, so as to admit of the connection of a pair of rods therewith. In case, however, only one such boat or body is mounted on each truck 5 or segment it will be advisable to drive the secondary crank-shaft by the aid of gearing from the first crank-shaft, or from the axle of the wheel or wheels on which the segment or truck runs, so as to avoid any chance of 10 sticking on center.

The construction of the segmental sections of the platform shown herein constitutes no part of the present invention, since such construction is specifically claimed in an application for Letters Patent of the United States, 15 filed by Frank W. Allchin and Robert Smith, April 19, 1889, Serial No. 307,760.

Having fully described my invention, what I desire to claim, and secure by Letters Patent, 20 is—

1. A traveling platform, the supporting wheel or wheels thereof, an axle journaled beneath said platform and driven by said supporting wheel or wheels, two cranked shafts 25 journaled beneath said platform on opposite sides of said axle by which they are rotated, in combination with connecting-rods connecting the cranks on one shaft with the corresponding cranks on the other shaft, vertical

posts secured to said connecting-rods and extending above said platform, and devices for carrying riders carried by said posts above said platform, substantially as set forth. 30

2. A traveling platform, the supporting-wheel or wheels thereof, an axle journaled beneath said platform and driven by said supporting wheel or wheels, two cranked shafts journaled beneath said platform on opposite sides of said axle by which they are rotated, in combination with connecting-rods connecting the cranks on one shaft with the corresponding cranks on the other shaft, vertical posts secured to said connecting-rods and extending through slots in said platform above the platform, sleeves inclosing the upper ends 40 of said posts, elastic cushions interposed between said posts and sleeves, and devices for carrying riders carried by said sleeves, substantially as set forth. 45

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses. 50

FRANK WILLIAM ALLCHIN.

Witnesses:

JOHN DAVID DOUGLAS,
JOSEPH HENRY NOLAN,
Clerks to Messrs. Andrew & Smith, Notaries,
Northampton.