G. H. CRAMER.

SEAT ACTUATING MECHANISM FOR CAROUSELS.

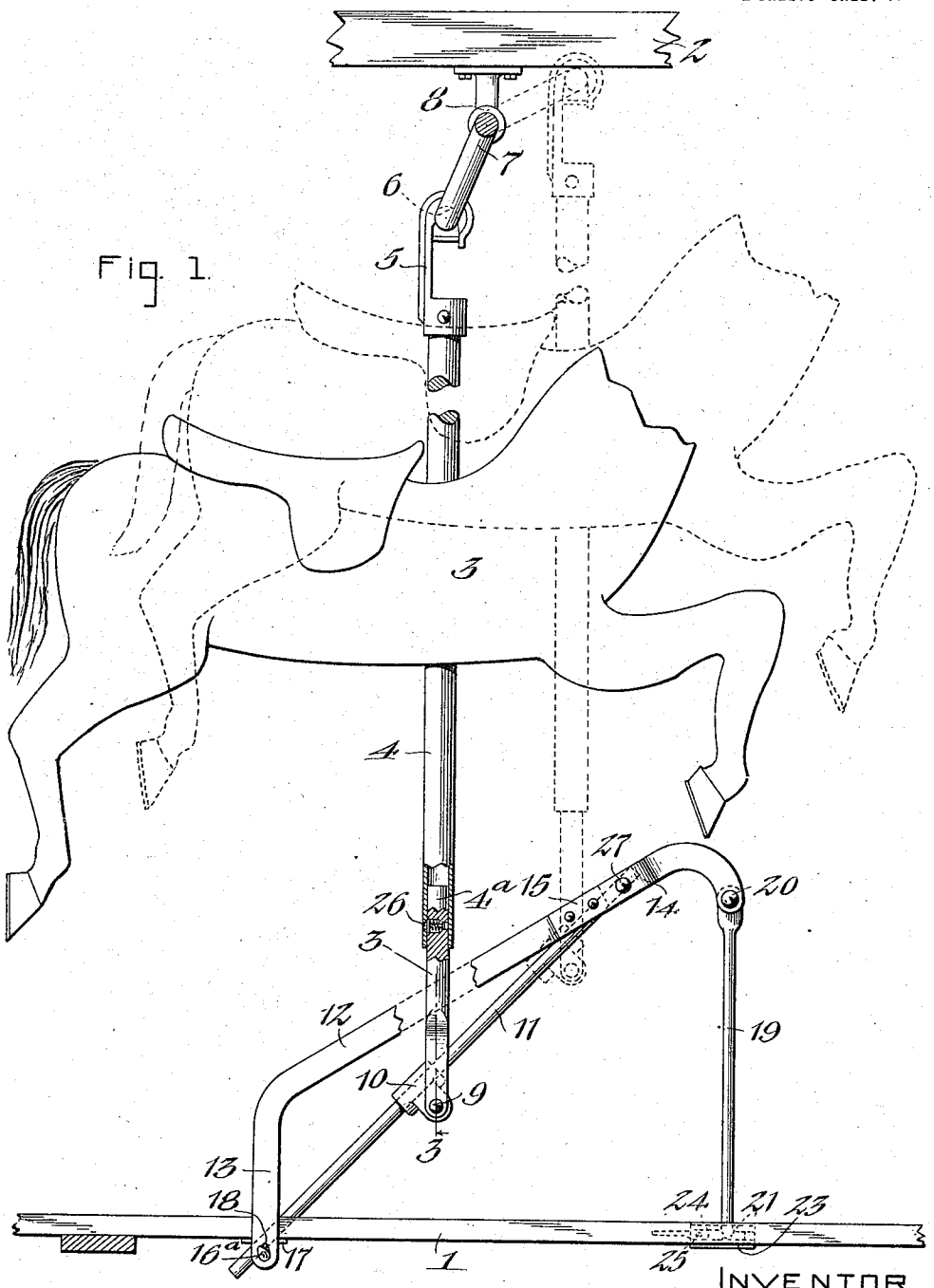
APPLICATION FILED NOV. 13, 1916.

1,230,998.

Patented June 26, 1917.

2 SHEETS—SHEET 1.

Fig. 1.



INVENTOR

George H. Cramer,

BY Geyer Dyer

ATTORNEYS.

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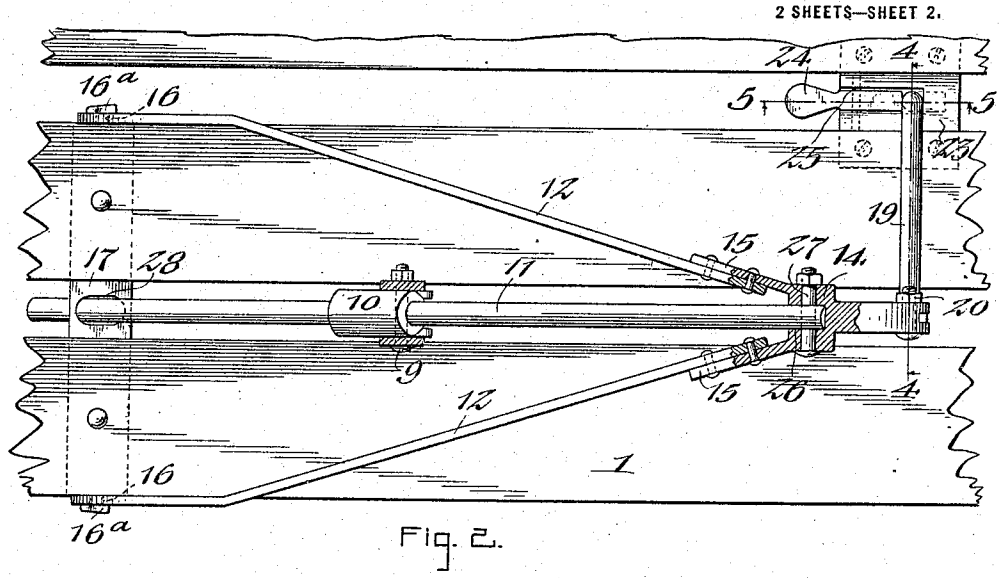

Fig. 2.

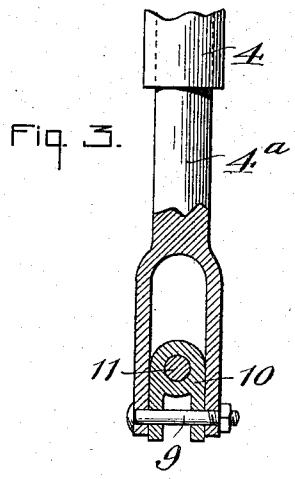

Fig. 3.

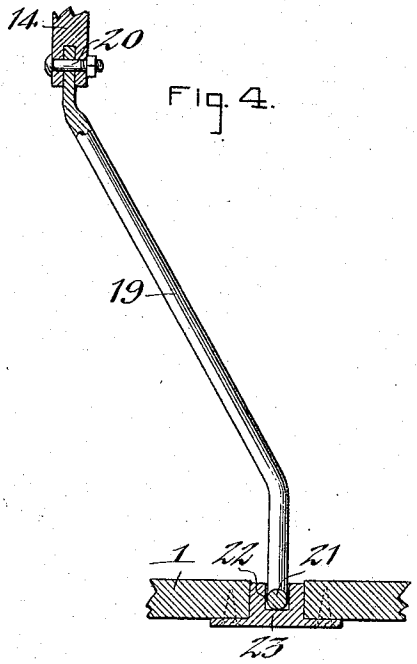

Fig. 4.

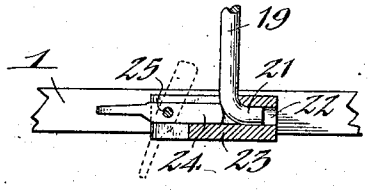

Fig. 5.

INVENTOR

George H. Cramer,

BY George Popp

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE H. CRAMER, OF NORTH TONAWANDA, NEW YORK, ASSIGNOR TO HERSCHELL-SPILLMAN COMPANY, OF NORTH TONAWANDA, NEW YORK, A CORPORATION OF NEW YORK.

SEAT-ACTUATING MECHANISM FOR CAROUSELS.

1,230,998. Specification of Letters Patent. Patented June 26, 1917.

Application filed November 13, 1916. Serial No. 131,009.

To all whom it may concern:

Be it known that I, GEORGE H. CRAMER, a citizen of the United States, residing at North Tonawanda, in the county of Niagara and State of New York, have invented new and useful Improvements in Seat-Actuating Mechanism for Carousels, of which the following is a specification.

This invention relates to the mechanism for actuating the seats of carousels or merry-go-rounds and particularly for imparting a forward and backward as well as a vertical motion to the figures of horses and other animals.

One of its objects is the provision of an improved actuating mechanism by which the forward and backward movement of the figures is augmented in order to render their motion more realistic and amusing, without however increasing their vertical motion to such an extent that they can not be conveniently mounted when in their highest position.

Another object is to improve the construction of the so-called "spider" or frame at the lower end of the seat-carrying rod, with a view of folding or knocking it down more conveniently and facilitating transportation of the machine.

In the accompanying drawings:

Figure 1 is a fragmentary sectional elevation of a carousel embodying the invention. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a vertical section on line 3—3, Fig. 1. Fig. 4 is a transverse section on line 4—4, Fig. 2. Fig. 5 is a vertical longitudinal section on line 5—5, Fig. 2.

Similar characters of reference indicate corresponding parts throughout the several views.

1 indicates a fragment of the usual rotary platform of the carousel and 2 a fragment of the customary rotary sweep-frame arranged above the platform. These parts may be supported by any suitable means and driven by any appropriate mechanism.

3 indicates one of the reciprocating seats which, in the construction shown, consists of the figure of a horse rigidly secured to the customary carrier or suspension rod 4. This rod is provided at its upper end with a hook or hanger 5 of any suitable construction which is detachably connected to the wrist-pin 6 of a horizontal crank shaft 7. This shaft is arranged radially or transversely of the sweep-frame 2 in the customary manner and supported in bearings 8 secured to said frame. Rotary motion is imparted to this crank-shaft by any suitable means, producing the usual up-and-down motion of the seat-figure.

At its lower end the suspension rod 4 is pivoted by a transverse bolt 9 to a sleeve or slide 10 mounted on a stationary inclined guide or rod 11 arranged below the figure and supported by the platform 1 and a normally stationary frame 12 mounted on the platform 1. This guide-rod extends lengthwise of the figure and is preferably arranged at an angle of about 45°, as shown. By this construction and arrangement, the suspension rod 4 and the figure carried by it are not only reciprocated vertically in the usual manner, but are at the same time caused to move forward and backward to a considerably greater extent than heretofore, producing a marked plunging or galloping motion which enhances the pleasure of riding on a carousel. It will be noted that as the lower end of the suspension rod 4 is slidably engaged with the stationary inclined guide rod 11, it is compelled by the latter to move forwardly upon the upward stroke of the crank 6 and to move rearwardly upon the downward stroke of the crank. With the guide shown in the drawings, this forward and backward motion of the lower portion of the suspension rod and the figure is substantially as great as the backward and forward motion of the upper end of the rod produced by the crank shaft, with the result that while the forward and backward stroke of the figure is unusually large, its vertical stroke is confined within the proper limits to permit easy mounting of the figure from the platform even when in its highest position.

Very satisfactory results have been obtained with a six inch crank and a guide-rod at an angle of approximately 45° and of sufficient length to permit the slide 10 to move freely to either extremity of its stroke. This angle and these dimensions may however be changed without departing from the scope of my invention, as defined in the appended claims.

The supporting means of the guide-rod 11 may be of any suitable construction, but, in the preferred embodiment shown in the

drawings, the frame 12 is so constructed and arranged that in transporting the machine, it may be knocked down or detached from the platform, if desired. For this purpose, the frame comprises a pair of inclined, forwardly-converging side bars, the lower rear portions 13 of which are substantially vertical. Their front ends are connected by a head 14 having rearwardly extending straps 15 to which the side bars are riveted or otherwise secured. The lower ends of said bars are mounted on transverse studs or pivots 16 arranged at opposite ends of a cross piece 17 rigidly secured to the underside of the platform 1, these studs being provided at their outer ends with oblong heads 16^a. The side bars 13 are provided with correspondingly-shaped openings 18 for receiving the headed studs, the openings breaking register with the heads in the normal position of the frame 12, as shown in the drawings. Upon swinging said frame rearwardly far enough to bring said openings into register with the headed studs, its lower ends can be spread out of engagement with the studs to detach the frame from the platform, or, if desired, the frame may be left in engagement with the studs and folded backwardly and downwardly with its head resting upon the platform, for compact shipment.

The front end of the frame 12 is rigidly supported by a brace or post 19 secured at its upper end to the forked front end of the head 14 by a transverse bolt 20. The lower end of said brace is bent forwardly to form a lip 21 which fits into the rear end of a horizontal socket 22 formed in a plate 23 secured to the platform. The lip is normally held in said socket by a suitable locking device 24 which preferably consists of a vertically-swinging latch pivoted at 25 to said plate. Upon swinging this latch into its horizontal position, as best shown by full lines in Fig. 5, the lipped lower end of the brace 19 is locked in the socket 22, while upon swinging the latch into the dotted position shown in said figure, it clears the brace and allows it to be withdrawn from the socket.

The guide-rod 11 is seated at its upper end in a socket 26 formed in the head 14, being fastened therein by a transverse bolt 27. The lower end of said guide-rod passes through an oblong opening 28 which is elongated lengthwise of the rod, as shown in Fig. 2. By this construction, the lower end of the rod is held from displacement in the normal position of the frame 12, but is free to slide and swivel in said opening in reversing the frame and folding it to its knocked-down position.

To facilitate the dismemberment and assemblage of the parts, the seat-carrying rod 4 is preferably formed of two telescopic sections, the upper or main section terminating near the upper side of the frame 12, while the lower section 4^a fits into said main section and is normally interlocked therewith by a spring-catch 26 or any other suitable fastening. Upon depressing the head of this catch, the two parts of the suspension-rod are disconnected, permitting the rod with the figure to be detached from the crank shaft, and after detaching the brace 19 from the platform, the frame 12 together with the guide-rod 11, the brace and the rod section 4^a may be folded backwardly against the platform or detached therefrom, as hereinbefore described.

The frame 12 is subjected to considerable outward strain by the centrifugal force of the seat and its occupant, and in order to enable the front end of the frame to withstand such strain, the brace 19 is inclined inwardly from the head of the frame, as shown in Fig. 2, producing a stronger construction than would be obtained by employing a vertical brace.

As best shown in Fig. 2, the lower portion of the suspension-rod is located between the side-bars of the frame 12. These side members thus serve also as dress-guards which keep ladies' skirts away from the lubricant, guide-rod 11 and slide 10, preventing soiling of the same.

I claim as my invention:

1. In a seat actuating mechanism for carousels, the combination of a seat-carrier, means for reciprocating said carrier vertically, an inclined guide, and means connecting the carrier with said guide to move the same forward and backward.

2. In a seat actuating mechanism for carousels, the combination of a seat-carrier, means connected with one end of the carrier to reciprocate the same vertically, an inclined guide, and means connecting the opposite end of said carrier with said guide to move the same forward and backward.

3. In a seat actuating mechanism for carousels, the combination of a horizontal crank shaft, an upright seat-carrier having its upper end connected with the crank of said shaft, a stationary inclined guide arranged below said crank-shaft, and a slide mounted on said guide and connected with the lower end of the seat carrier.

4. In a seat actuating mechanism for carousels, the combination with the platform and the sweep frame above the same, of a crank shaft mounted on the sweep, a stationary inclined guide mounted on the platform below said crank shaft, and a suspension-rod carrying a seat and having its upper end connected with said crank-shaft and its lower end slidably connected with said guide.

5. In a seat actuating mechanism for carousels, the combination of the platform, a

reversible frame pivoted at one end to said platform, a support for the other end of said frame detachably connected to the platform, an inclined guide mounted on said frame, a seat-carrier slidably connected with said guide, and means for vertically reciprocating said seat-carrier.

6. In a seat actuating mechanism for carousels, the combination of the platform, a reversible frame pivoted at one end to said platform, a support for the other end of said frame detachably connected to the platform, the platform having an opening adjacent to the pivoted end of said frame, an inclined guide-rod having its upper end attached to said frame and its lower end loosely arranged in said platform-opening, a seat-carrier slidably connected with said guide-rod, and means for vertically reciprocating said seat-carrier.

7. In a seat actuating mechanism for carousels, the combination of the platform, a reversible frame pivoted at one end to said platform and having its other end detachably connected therewith, an inclined guide-rod mounted on said frame and reversible therewith, a suspension-rod carrying a seat and comprising separable upper and lower sections, the lower section being slidably connected with said guide-rod, and means for vertically reciprocating said suspension-rod.

8. In a seat actuating mechanism for carousels, the combination of the platform, a reversible frame pivoted at one end to said platform and having its other end detachably connected therewith, an inclined guide-rod mounted on said frame and reversible therewith, a slide traveling on said rod, a seat-carrying rod comprising separable upper and lower sections, the lower section being connected to said slide, means for interlocking said sections, and means for vertically reciprocating said seat-carrying rod.

9. In a seat actuating mechanism for carousels, the combination of the platform, a reversible frame pivoted at one end to the platform, a brace pivoted to the other end of said frame, means for detachably securing the lower end of said brace to the platform, an inclined guide-rod mounted on said frame and reversible therewith, a slide traveling on said guide rod, a suspension-rod carrying a seat and having a separable lower section connected to said slide, and means for vertically reciprocating said suspension-rod.

10. In a seat actuating mechanism for carousels, the combination of the platform, a reversible frame pivoted at one end to the platform, a brace pivoted to the other end of said frame and provided at its lower end with a lip, a socket mounted on the platform and arranged to receive said lip, a latch for locking the lipped end of the brace in said socket, an inclined guide-rod mounted in said frame and reversible therewith, a seat-carrying rod having its lower end slidably connected with said guide-rod, and means for vertically reciprocating said suspension-rod.

11. In a seat actuating mechanism for carousels, the combination of the platform, a frame mounted thereon and including a pair of side bars, an inclined guide-rod mounted on said frame between said side-bars, whereby the latter form garment-guards, a seat-carrier mounted to slide on said guide-rod, and means for vertically reciprocating said seat-carrier.

GEORGE H. CRAMER.