

T. W. BOWEN.  
SWING.

No. 437,014.

Patented Sept. 23, 1890.

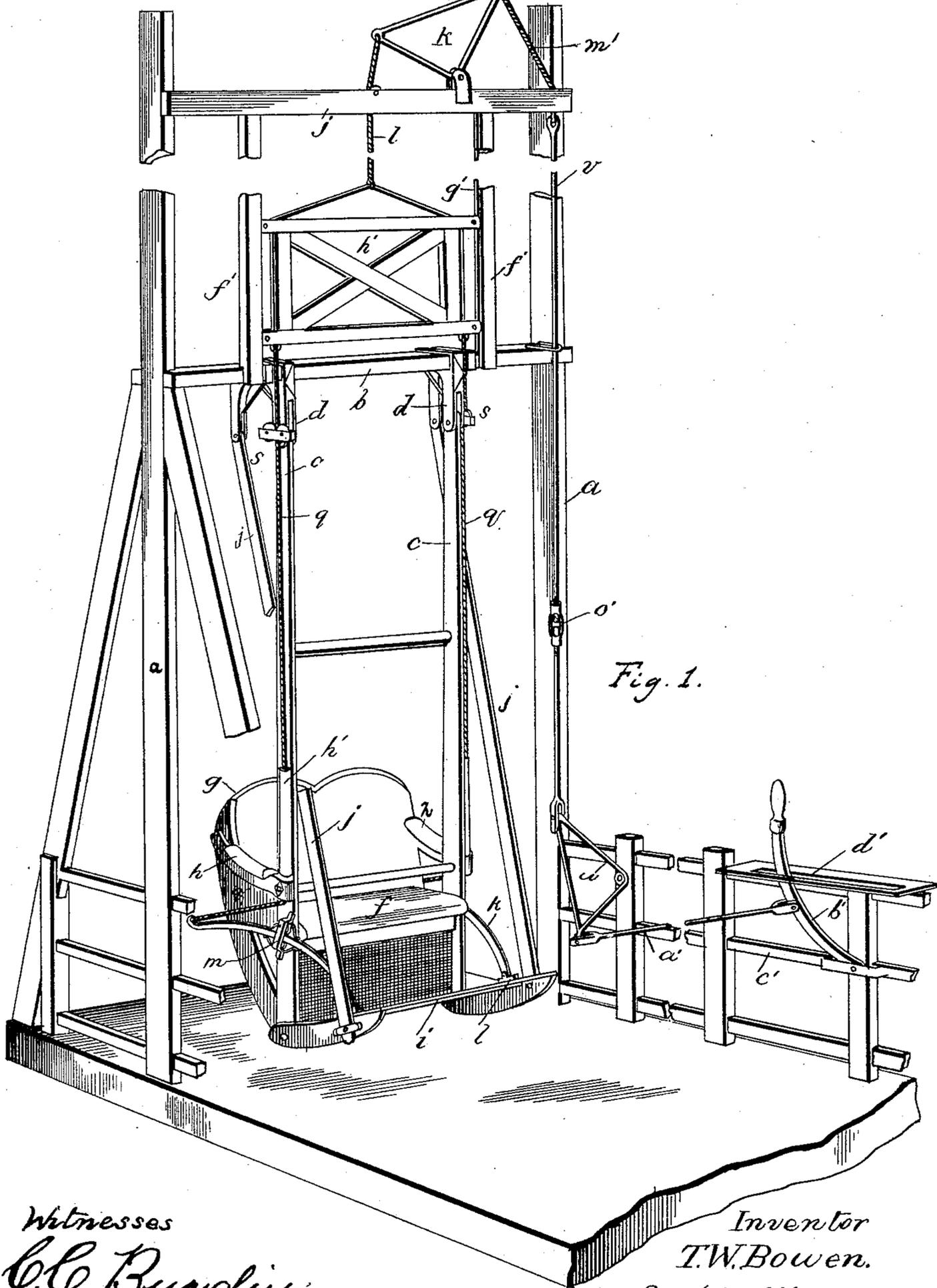


Fig. 1.

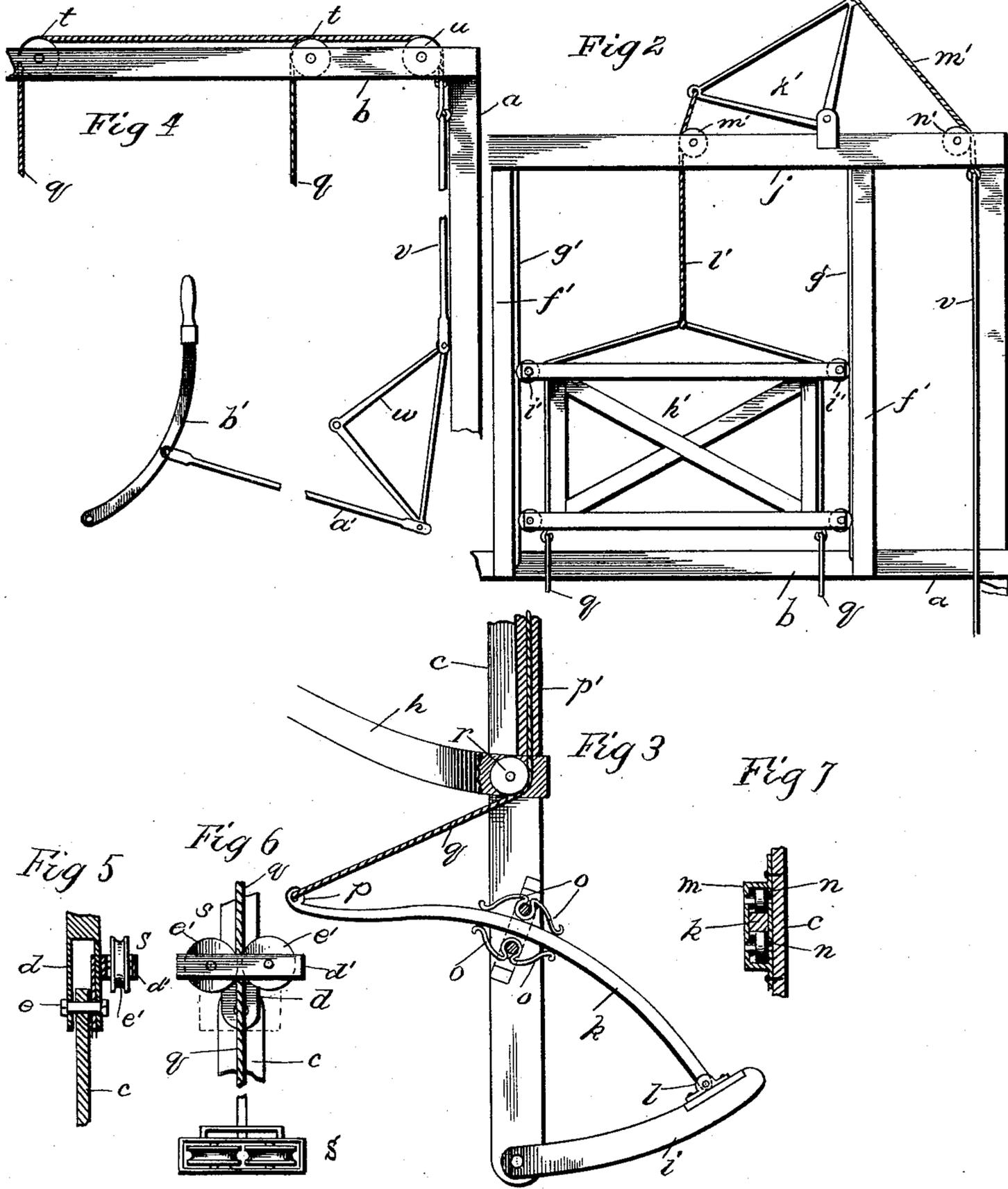
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# UNITED STATES PATENT OFFICE.

THOMAS W. BOWEN, OF PHILADELPHIA, PENNSYLVANIA.

## SWING.

SPECIFICATION forming part of Letters Patent No. 437,014, dated September 23, 1890.

Application filed December 28, 1887. Serial No. 259,270. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS W. BOWEN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Swings and Attachments Therefor, (for which swings I have obtained a patent in the United States, No. 345,950, and bearing date July 20, 1886,) of which the following is a specification.

This invention relates to certain improvements in swings. These swings are generally set up at places of popular resort and rented to persons to use for a certain period of time; but great difficulty is sometimes experienced by the proprietor in inducing or compelling persons renting to give up the swing when their time has expired, by reason of the fact that the proprietor, having no control over the swing, cannot stop the same when in full motion without great danger to himself.

In view of these facts the object of this invention is to provide means whereby the swing is placed under the full control of the attendant, whether it be idle or in motion, and by which the swing can be started, kept in motion, or stopped by an attendant independent of the occupant and with great ease and rapidity, and which is sure and reliable in action and simple, cheap, and durable in construction. These objects are accomplished by and my invention consists in certain novel features of construction and in combinations of parts, more particularly and fully pointed out hereinafter.

Referring to the accompanying drawings, Figure 1 is a perspective of a swing provided with the present invention. Fig. 2 is a detail elevation of the upper portion of the swing-frame and the sliding frame therein. Fig. 3 is a detail elevation showing a pressure-bar of the foot-rest. Fig. 4 is a detail showing a modification whereby the sliding frame is dispensed with. Figs. 5, 6, and 7 are details.

In the drawings the reference-letter *a* indicates the frame or support for the swing having the main supporting cross-beam *b*, from which the swing is suspended, and to which the upper ends of the two main hangers or rods *c c* are pivoted by means of the brackets *d* and pivot-bolts *e*. The seat or body *f* of the swing is carried by and rigidly secured to

the lower portions of said hangers, and is provided with the back *g* and arm-rests *h* and the foot-rest *i*, pivoted or hinged to the body of the seat to allow vertical swing of its outer portion. The free end of this foot-rest is upheld by the links *j j*, pivoted at their lower ends to the foot-rest and extending diagonally upward and pivoted to the swing-frame in rear of the pivotal points of the main rods or hangers of the swing. Hence it will be readily seen without further explanation that downward pressure on the foot-rest will tend to throw the entire swing rearwardly and upwardly, by reason of the arrangement and location of the foot-rest and links, and that as the swing works back and forth the links *F* raise and lower the free end of the foot-rest.

A pair of curved pressure-bars *k k* are at their lower ends hinged to opposite sides of the free end of the foot-rest, as shown at *l*, and from thence extend upwardly and rearwardly across the outer sides of the main hangers, to which they are loosely confined by means of open straps *m*, in each of which two rollers *n n* are journaled, and between each pair of rollers *n* one of said bars *k* works. Said straps *m* are also provided with double springs *o o*, bearing upon opposite edges of said bars *k*, allowing the bars to freely and noiselessly work back and forth. These springs at their centers are made thin with a central hole to receive the pivots of the rollers and act as washers for said rollers to take up space between the strap and roller. The rear and free ends of said rods or bars *k* are provided with the clevises *p*, to which the operating-ropes or flexible connections *q q* are secured. These connections are located on opposite sides of the swing and extend forwardly from the rear ends of the pressure-bars of the foot-rest to the pulleys *r r*, secured to the main hangers of the swing, preferably at the points of junction between said hangers and the arm-rests of the swing-body. From these pulleys the operating-connections extend up the outer sides of the main hangers through the double sheave-blocks *s s*, secured to the brackets *d*, to and through the main cross-beam of the swing-frame, and then in the construction of Fig. 4 the operating-connections extend laterally from pulleys *t t*, mounted in said cross-beam, along said beam,

and then downwardly over pulley *u* to and secured to the upper end of a vertically-movable connection *v*, at its lower end secured to one arm of bell-crank lever *w*, mounted at the lower end of one of the swing-frame uprights and having its opposite arm connected by connection *a'* with an operating-lever *b'* between its pivotal point and handle, said lever being pivoted to the frame-work *c'* at a point of most convenient location for the attendant. This operating-lever can be provided with a guide or stop yoke *d'* to limit its swing.

The double sheave-blocks *s* are secured to the supporting-brackets of the swing, substantially in the line with the pivotal points of the swing-hangers to allow the operating-connections to work freely through the same and to hold said connections always at the center of the swing-hangers. Each sheave-block *s* consists of strap *d'* and the two pulleys *e'*.

In Fig. 1 a construction for a large, heavy, or double swing is shown. In this construction the swing-frame is extended upwardly and provided with a pair of vertical posts *f' f'*, provided on their adjoining edges with the vertical tracks or ways *g'*. A vertical slide-frame or cross-head *h'* extends and reciprocates vertically between these posts and at its ends is provided with pulleys *i'*, confined and adapted to run on said ways. Instead of employing pulleys *t* and *u*, the operating-connections extend up from the sheave-blocks *s* and are rigidly secured to the lower side of the slide-frame. On the cross-beam *j'* of the swing-frame above the slide-frame a bell-crank lever *k'* is mounted and has one arm connected with the top of the slide-frame by connection *l'*, working over pulley *m'* in cross-beam *j'*, so that when the lever is rocked said slide-frame is reciprocated. The other arm of said bell-crank lever is connected to the said connection *v* by flexible connection *m'*, passing over pulley *n'*. The connection *v* is provided with a swivel *o'*, by which the tension can be regulated.

The operating-connections at the lower portions of the main hangers of the swing are inclosed by and pass loosely through the hand-pieces *p'*, secured to said hangers, and which prevent the hands of the occupant interfering with said connections.

It should be observed that the slide-frame is allowed sufficient movement to operate the pressure-bars to depress the foot-rest the required amount.

From the foregoing description and the drawings it is clearly evident that when the operating-lever is thrown to its limit of movement toward the swing the operating-connections are loose and all parts of the attachment are at rest and the swing can be operated independent of the attachment; but when the operating-lever is drawn in the opposite direction the operating-connections are drawn taut, thereby applying longitudinal

pressure to the ends of the curved pressure-bars, tending to force down the foot-rest, and hence throw the swing rearwardly, as if a person in the swing were pressing on the foot-rest, and if the lever is held in this position the swing will be stopped and held stationary by the attendant independent of the occupant of the swing. The swing can be started by drawing back the lever and then reciprocating the same so that pressure will be applied to the foot-rest as the swing is starting to swing backward. By reason of these facts this attachment can be termed an "independent swing brake and starter." In starting and propelling or operating the swing this attachment intermittently applies downward pressure upon the foot-rest exactly as a person in a swing does by intermittently throwing his weight forward upon the foot-rest. When the connections are operated to stop the swing, the ropes *q q* lock the bars *k k*, and hence lock or hold the foot-rest rigid and prevent its vertical swing, thereby holding the swing stationary at almost any point. This attachment can be operated by a motor or other means than the direct power of an attendant.

It is evident that various changes might be made in the form and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to confine myself to the exact construction herein set forth.

What I claim is—

1. The combination, with a swing, of holding and operating mechanism, substantially as described, independent of the swing, and flexible connections between said mechanism and the swing, arranged so that the swing can operate independent of said connections and mechanism and the mechanism can be operated to stop the swing and start the same, substantially as set forth.

2. The combination, with a swing, of a lever at the attendant's stand, and flexible connections from the lever to the swing, arranged so that the swing can operate independent of the lever and the lever can be operated to start and to hold the swing, substantially as described.

3. The combination, with a swing and the pivoted foot-rest therefor, having supporting-links, of the operating mechanism at the attendant's stand, and connections from said mechanism to the foot-rest, provided with means so that said mechanism can exert pressure on the foot-rest to start the swing or can hold the rest rigid and stop the swing.

4. The combination, with a swing having a hinged foot-rest and links connected with the same, of operating means and connections from said foot-rest to said means to lock said rest and thereby stop the swing or to exert pressure on the rest to start the swing.

5. The combination of the swing, a hinged foot-rest therefor, the swing-links supporting the outer end of said rest, pressure-bars for

said rest, operating means, and connections from said means to said bars, for the purpose set forth.

6. The combination of the swing, a foot-rest hinged thereto, the swing-links connected to said rest, pressure and holding bars hinged to said rest, and flexible connections secured to said bars to operate the same, said connections extending to operating means located at the attendant's position, for the purpose set forth.

7. The combination of the main hangers of a swing, a seat carried thereby, a foot-rest hinged thereto, swing-links pivoted at their upper ends in rear of said hangers and at their lower ends secured to said rest, pressure-bars secured to said rest, operating means independent of the swing, and flexible connections from said bars to the operating means, substantially as described.

8. The combination of the swing, a foot-rest hinged thereto, curved pressure-rods hinged to and extending rearwardly from said rest, pulleys and springs secured to the swing-body, between which said rods loosely pass and by which they are held in position, and the flexible operating-connections secured to the ends of said bars and by which they are operated to press down on the foot-rest, substantially as described.

9. The combination of a swing, a foot-rest hinged thereto and having its free end upheld by swinging links, with an operating-lever located independent of the swing at the attendant's position, and flexible connections from said lever to the rest to hold the rest and to exert downward pressure on the same when the lever is operated and allow the swing free independent movement when the lever is at rest, as set forth.

10. The combination of the swing-supporting frame, the swing suspended in said frame, a foot-rest hinged to the swing and provided

with rearwardly - extending pressure - bars loosely confined to the swing-body, flexible operating-connections secured to the ends of said bars and extending up the swing-hangers to said frame, a vertically-sliding frame to which said connections are secured, and a rocking-lever connected with said sliding frame and with independent operating means to operate the same, substantially as described.

11. A supporting-frame having a cross-bar, a swing having a hinged foot-rest, with swing-links therefor, supporting-brackets secured to the cross-beam and to which the swing hangers are pivoted, double sheave-blocks located on said brackets, the flexible operating-connections connected with said foot-rest and extending up the swing-hangers through said sheave-blocks, and operating means to which said connections are connected, substantially as described.

12. The combination of the swing-body, the hinged foot-rest therefor, having the swing-links, and the rearwardly - extending bars loosely confined to said body, the flexible operating-connections secured to said bars, extending up the swing-hangers, and hand-guards on the hangers through which said connections pass, substantially as described.

13. The combination, with a swing and the frame from which it is suspended, of operating and holding mechanism at the attendant's stand, and flexible connections from said mechanism extending therefrom to the frame and down the suspending links to the body of the swing, and pulleys over which said connections pass, for the purposes set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

THOMAS W. BOWEN.

Witnesses:

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JOHN G. GOETTELMAHNN.