(No Model.) 3 Sheets—Sheet 1.

W. A. CALDWELL.

SWING.

No. 389,834. Patented Sept. 18, 1888.

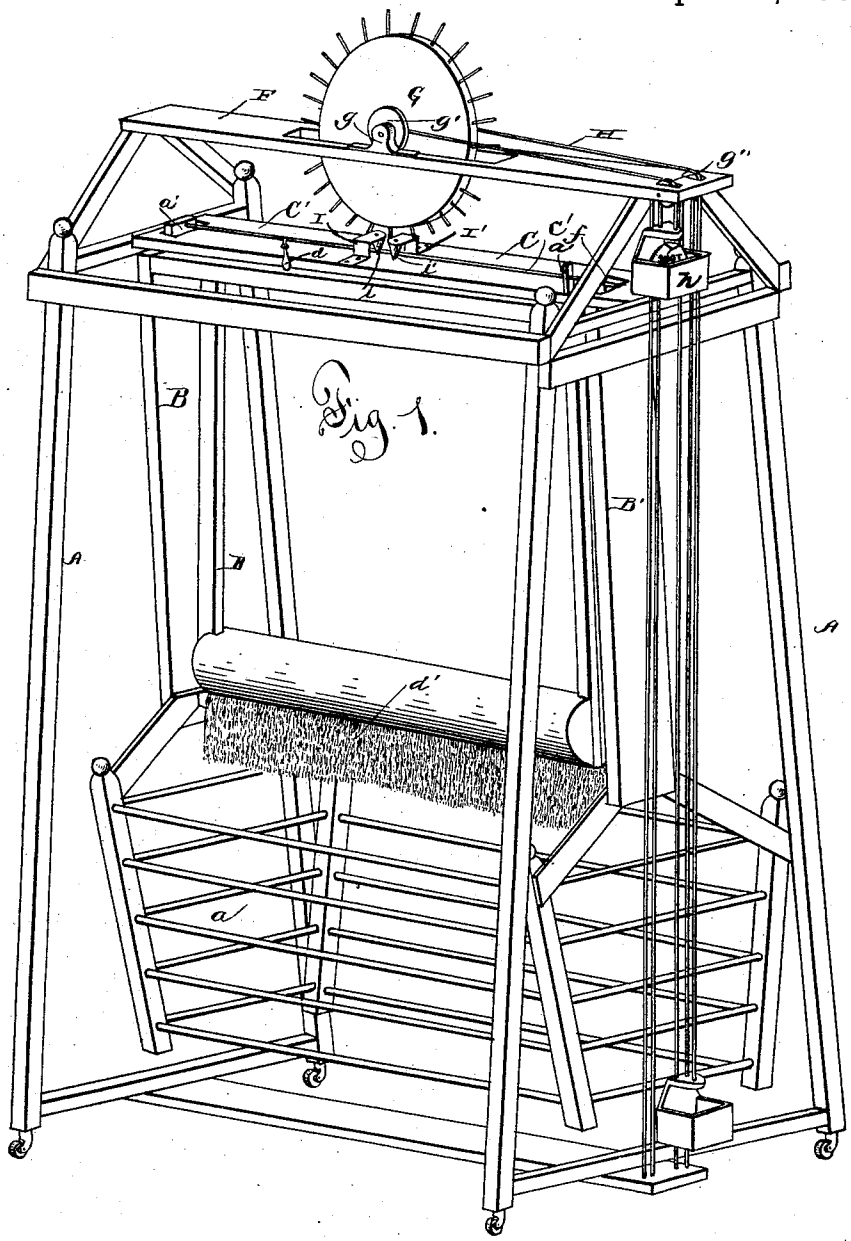


Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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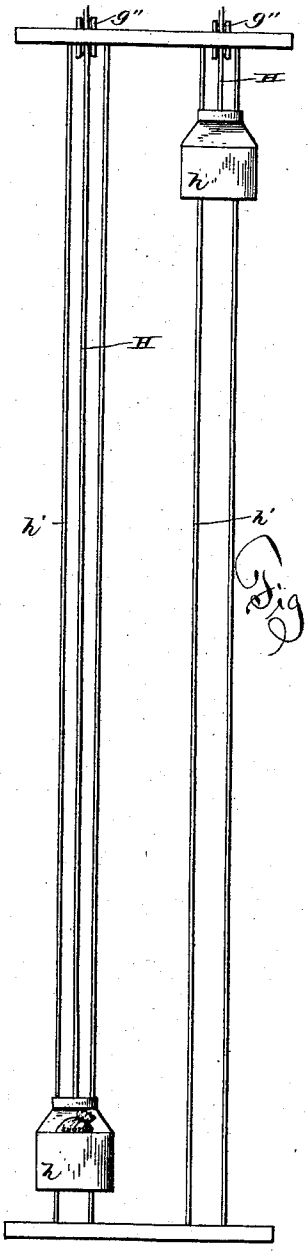


Fig. 2.

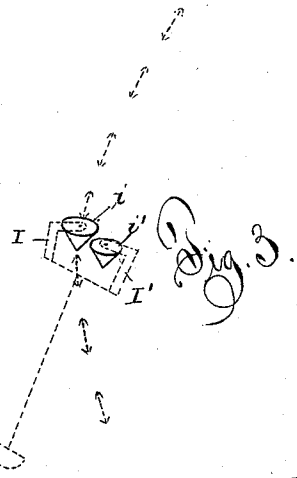


Fig. 3.

Fig. 4.

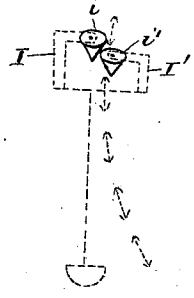


Fig. 5.

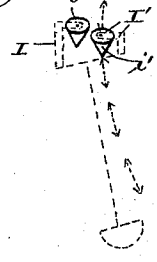
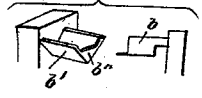


Fig. 6.



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(No Model.) 3 Sheets—Sheet 3.

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SWING.

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Fig. 7.

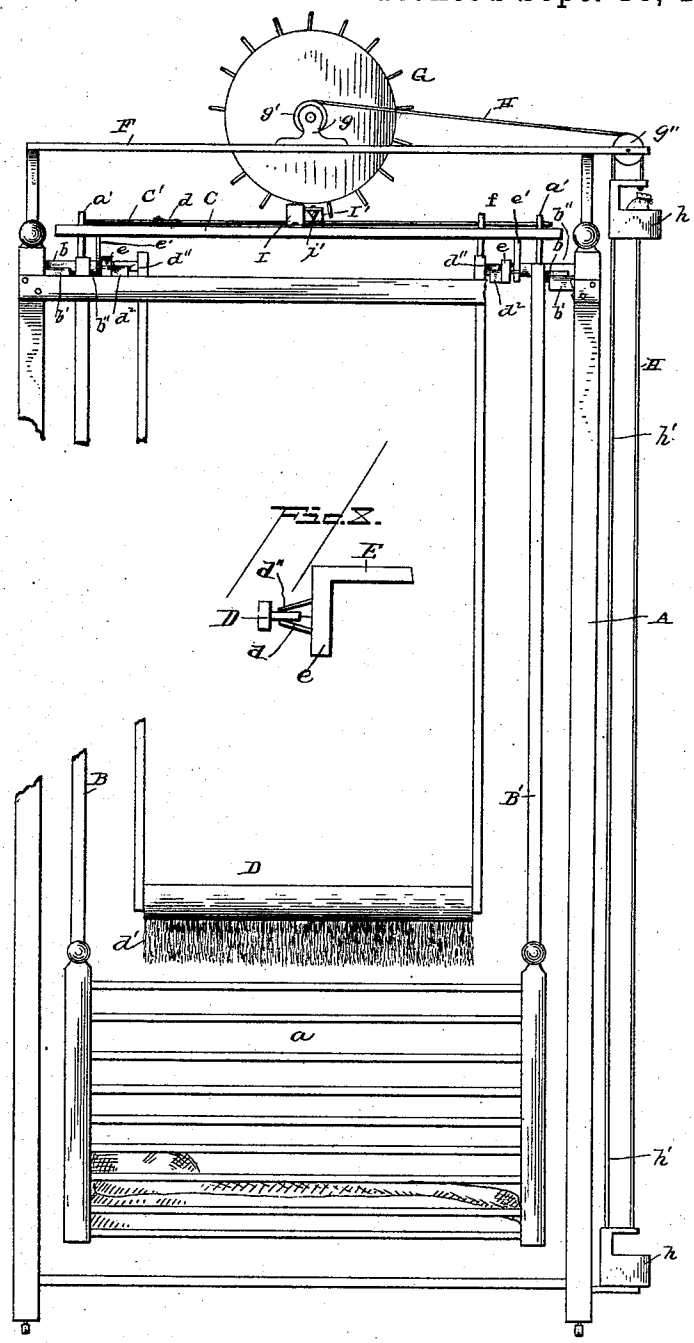


Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM A. CALDWELL, OF WICHITA, KANSAS.

SWING.

SPECIFICATION forming part of Letters Patent No. 389,834, dated September 18, 1888.

Application filed July 13, 1887. Serial No. 244,164. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CALDWELL, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Swings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to certain new and useful improvements in swings; and it consists in the detailed construction, combination, and arrangement of the parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my invention. Fig. 2 is a side view thereof. Figs. 3, 4, 5, and 6 are details. Fig. 7 is a front elevation of my invention, and Fig. 8 is an enlarged detail view.

The object of this invention is to provide means for automatically operating a swing and a fly-brush.

In carrying out my invention I provide a frame, A, of any suitable construction, but preferably of four uprights or posts, connected at their ends by cross-bars, as shown, and each of said posts has secured thereto casters or rollers for conveniently moving the frame from place to place.

B B′ are the parallel side bars of the swing-frame, to the lower ends of which is secured the cradle or seat *a*, wherein the child or person is placed or seated, and the upper ends of these side bars are provided with knife-like bearing-arms *b*, the outer ends of which have grooves or recesses formed therein, and are designed to rest in and be supported by journal cups or bearings *b′*, of approximately V shape. These journal cups or bearings *b′* are secured to the inner sides of upper cross-bars of the frame A, and have a small connecting-piece, *b″*, formed integral with the lower convergent walls thereof. The grooved portions of the bearing-arms *b* are designed to fit over the connecting-pieces *b″*, and the inner ends of said arms bear on the bottom of the cups, which latter are provided with oil or other lubricant, which is prevented from dripping therefrom by means of the connecting-pieces *b″*. The side bars, B B′, are provided at their upper ends each with a bolt-like extension, *a′*, which projects through a slot formed in an upper connecting rocking bar, C, and is secured therein by means of a common rod, C′, passed through an aperture of said extension, said rod being moved by means of a short hand-lever, *d*, connected thereto and fulcrumed on the edge of the rocking board C. (See Fig. 1.)

D is a fly-brush frame, to the lower ends of the side bars of which is secured an ordinary fly-brush, *d′*, and the upper ends of these side bars are also provided with knife-like arms *d″*, bearing in journal-cups d^2, similar to those before described, said cups d^2 being secured to or formed with the sides of forward extensions, *e*, of right-angular rods or shafts E, secured at their other ends to the frame A.

The rocking bar C has short downwardly-projecting ears or plates *e′*, which are pivotally secured at their lower ends to the right-angular extensions *e* of the rods or shafts E, whereby said bar C is free to move in the desired direction.

It will be seen that the frame D hangs within the swinging frame. The side bar of the frame D, adjoining the bar B′ of the swinging frame, is also provided with a bolt-like extension, *f*, extending through a slot formed in the rocking bar C, and is also secured by the rod C′, passing through an aperture formed therein.

To the upper end of the frame A are secured brace-bars supporting a cross-bar, F, through an aperture in the center of which revolves a toothed wheel, G, the shaft of which is supported by short posts *g g*, secured to said cross-bar on either side of the aperture or opening thereof. This shaft of the wheel G is passed through short cylinders or drums *g′*, rigid at their inner ends with said wheel and provided with flanged outer ends, as shown.

H H are two cords or wires wound around the cylinders or drums *g′* in opposite directions, and are passed over pulleys *g″*, secured in recesses in one end of the cross-bar F, and have secured to their outer ends small buckets *h h*, through apertures in the rear portions of which are passed guide wires or rods *h′ h′*, to guide said buckets in their ascent and descent. It will thus be seen that when the cord or wire of one bucket is winding on its cylinder or drum the other cord or wire is unwinding.

At about the center of the cross-bar C are secured two opposite right-angular plates, I I', the former being slightly higher than the latter, and through apertures in the inner ends of these right-angular plates are passed suitable pins or bolts for securing cams *i i'*, of approximately inverted-cone shape, as shown in Figs. 3, 4, and 5. One of these cams is always designed to be in contact with the teeth of the wheel, so as to impart motion to the rocking board C and through that to the swing and fly-brush frames.

The operation is as follows: A bag of shot or other weighty article is placed in the bucket *h* at or near the top of the frame. The cord thereof, being wound around its cylinder or drum *g'*, will, in the descent of the weighted bucket, begin to unwind, and at the same time winding on the other cylinder or drum the other cord or wire. On starting, the rocking bar and cams will be in the position indicated in Fig. 4, and upon pulling the swing into the position indicated in dotted lines, Fig. 3, and starting the revolution of the wheel G, the teeth thereof will strike against the cam *i*, turning the same on its pivot, and pass between the cams, while the next tooth of said wheel strikes against the cam *i'*, as shown in Fig. 3. Gravitation will carry the swing back from the position shown in Fig. 3 to that of Fig. 4, its motion being accelerated by the pressure of the tooth upon the cam *i'* as it revolves, and the tooth rolls off between said cams, while the next tooth strikes the cam *i*, as shown in Fig. 4, and the momentum of the swing carries the same to the position shown by dotted lines, Fig. 5. Gravitation will again carry the swing back to the position shown in Fig. 4, and the momentum will force the same to the position of Fig. 3, the teeth of the wheel G acting in a similar manner on the cams *i i'*. It will be understood, of course, that by reason of the connection between the swing and brush frames and the rocking bar said frames are caused to move to and fro until the weight-bucket has reached the full extent of its downward movement, after which the bag of shot or other weight is removed from said lowered bucket and placed in that now at the top of the frame A, when the movement of the wheel G and cams *i i'* will merely be reversed; but the result of maintaining the motion of swing (or brush) will remain the same. This operation can be continued as long as may be desired, and it will be seen that the swing is automatic and requires no physical exertion.

I claim as my invention—

1. In a swing, the combination, with the supporting-frame, of the swinging and brush frames located within said former frame, the knife-like bearing-arms secured to the side bars of said swinging and brush frames, the V-shaped cups or bearings attached to the supporting-frame, the rocking bar located above the upper ends of said swinging and brush frames, the toothed wheel secured in a cross-bar of said supporting-frame for imparting motion to said rocking bar, the cams secured to said rocking bar, and the weighted cords or wires connected to said wheel, substantially as shown and described.

2. The combination, with the supporting-frame, of the swinging and brush frames located within said former frame and having bolt-like ends, the rocking bar disposed above said swinging and brush frames and having apertures through which said bolt-like ends project, the rod projected through said bolt-like ends, the lever connected to said rod, the cams secured in plates attached to said rocking bar, the toothed wheel located above said cams and engaging therewith, and the cords or wires connected to said wheel and having weights secured at their free ends, substantially as shown and described.

3. The combination, with the supporting-frame and the swinging and brush frames journaled therein, of the rocking bar disposed above said latter frames, which have extended ends connected to said rocking bar, the inverted-cone-shaped cams, the overhanging plates secured to said rocking bar and supporting said cams, the toothed wheel disposed above said cams, the weighted buckets, and the operating cords or wires connected to said buckets and to the shaft of said wheel, substantially as shown and described.

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

WILLIAM A. CALDWELL.

Witnesses:
J. S. FORSYTH,
WM. TUDERS.