(No Model.)

3 Sheets—Sheet 1.

F. W. G. BOETTCHER.

DISPLAY APPARATUS.

No. 569,950. Patented Oct. 20, 1896.

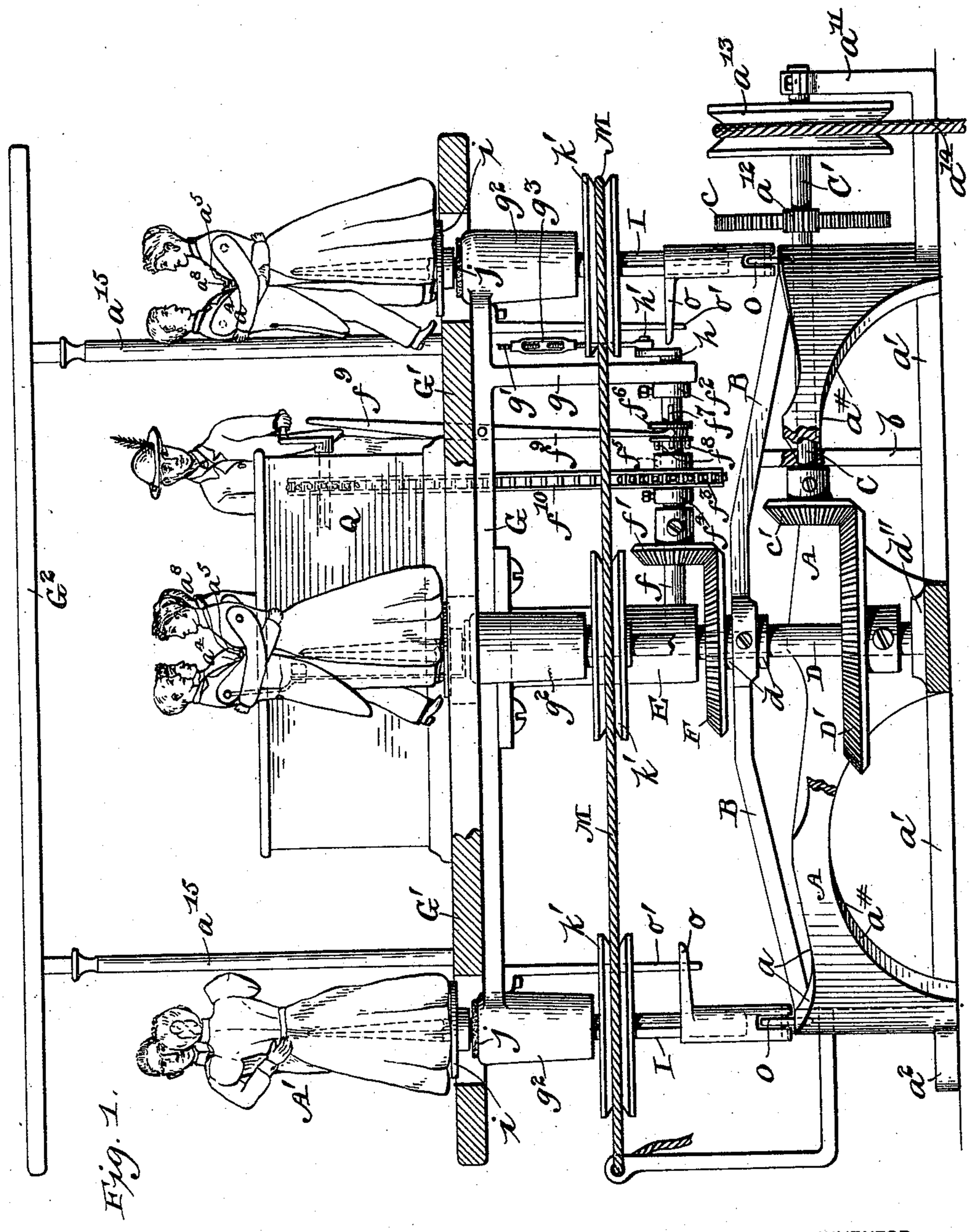

Fig. 1.

WITNESSES

Geverance.

W. Harry Mingle.

INVENTOR

Friedrich W. G. Boettcher

by his Attorneys

Mason, Fenwick and Lawrence

(No Model.) 3 Sheets—Sheet 2.

F. W. G. BOETTCHER.

DISPLAY APPARATUS.

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Fig. 1a.

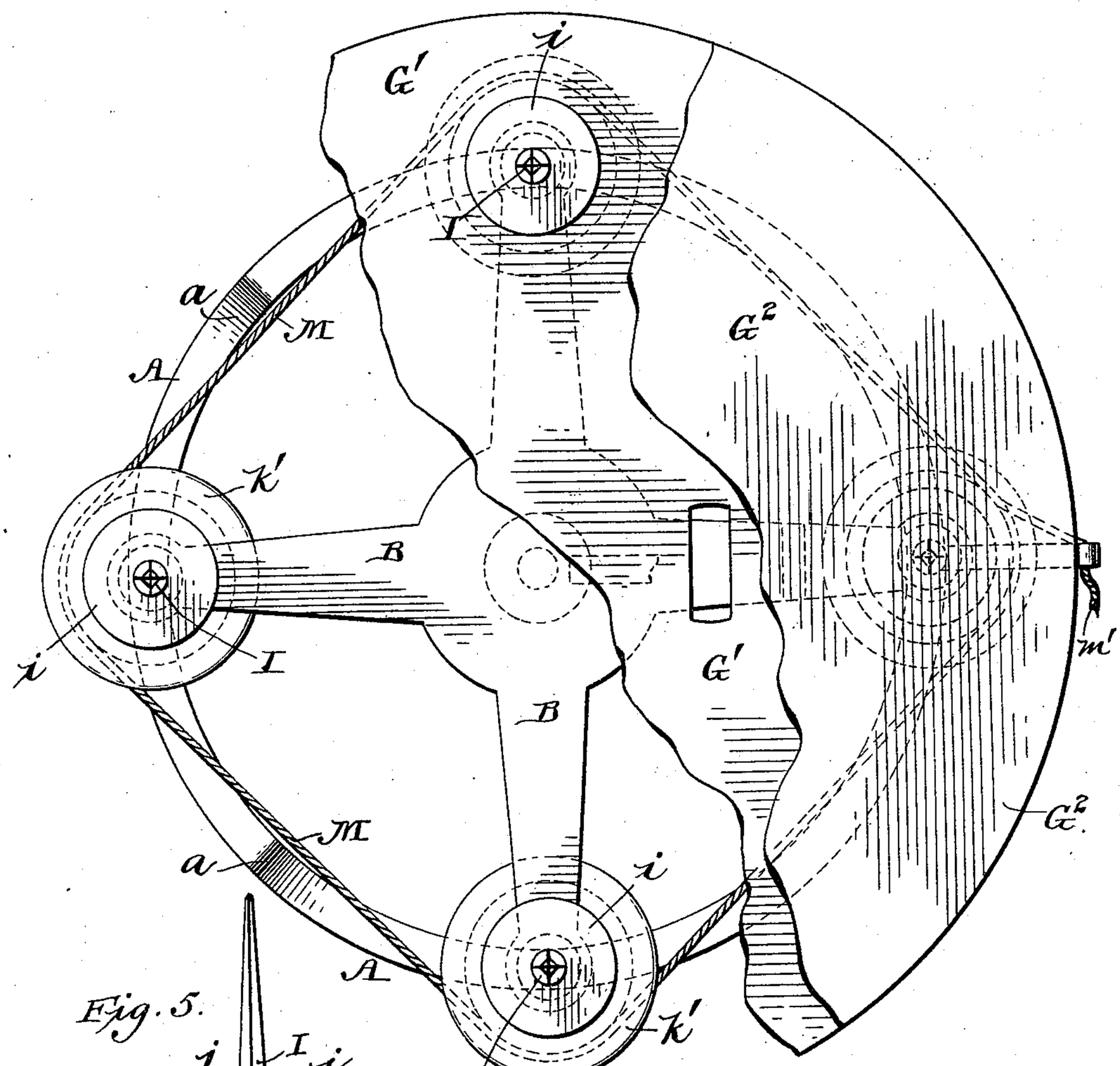


Fig. 5.

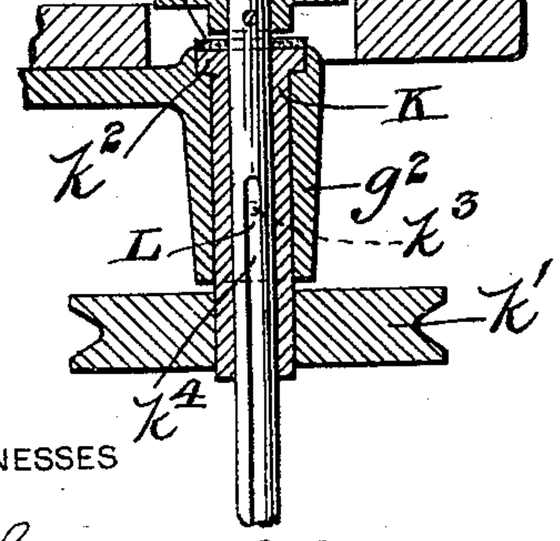
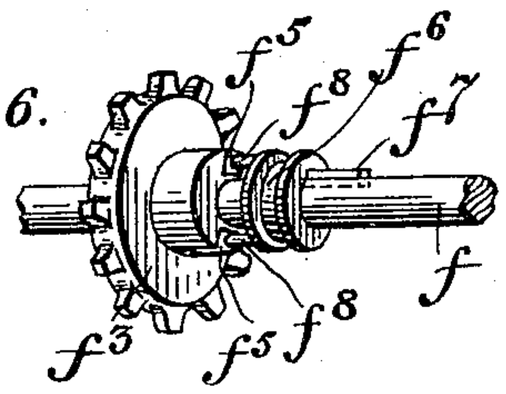


Fig. 6.



WITNESSES

Severance.

W. Harry Muzzy

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(No Model.) 3 Sheets—Sheet 3.

F. W. G. BOETTCHER.

DISPLAY APPARATUS.

No. 569,950. Patented Oct. 20, 1896.

Fig. 2.

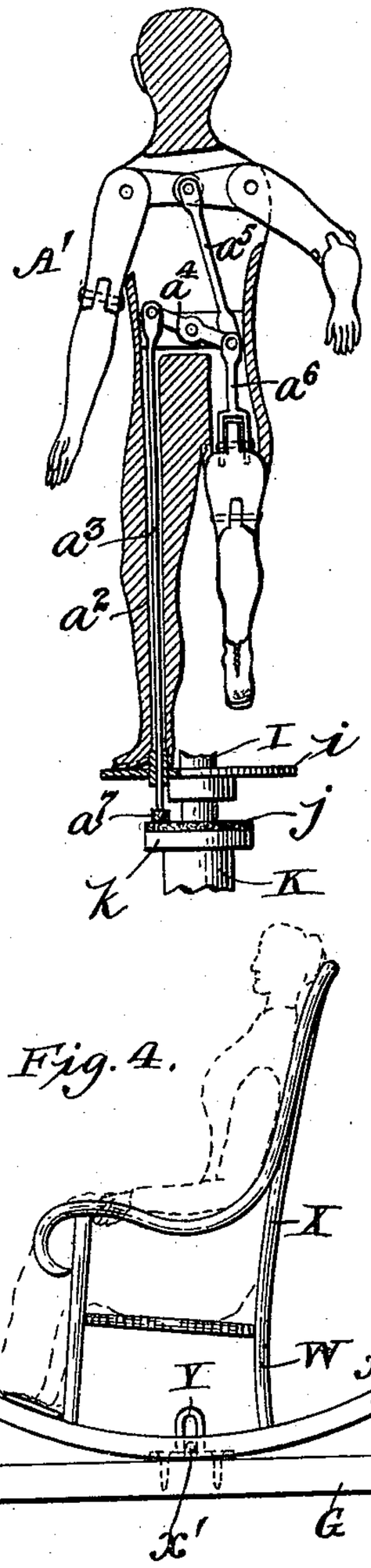

Fig. 3.

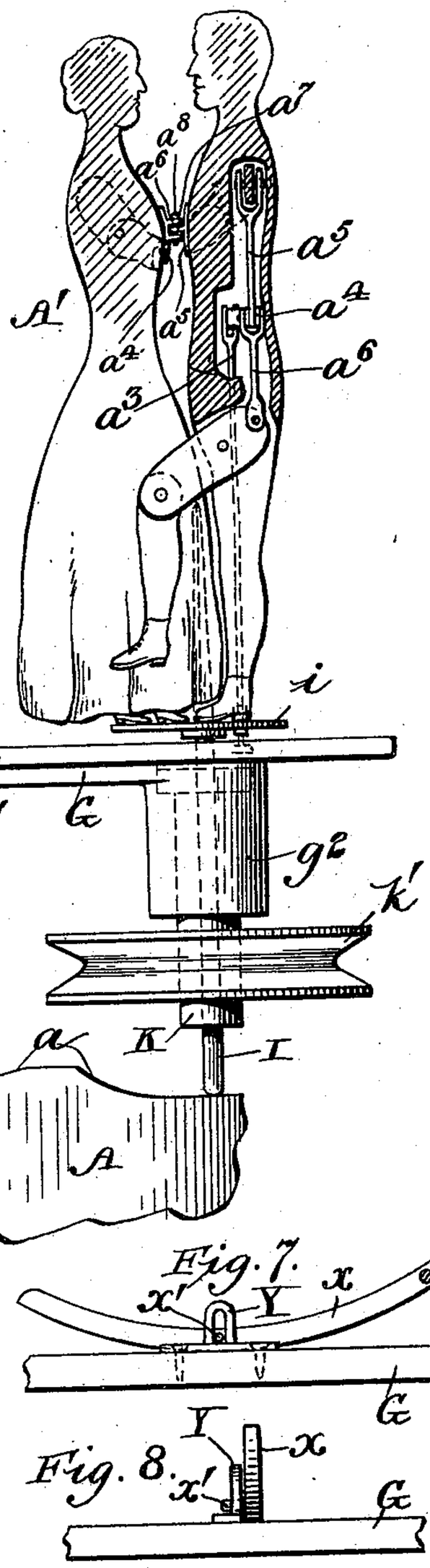

Fig. 4.

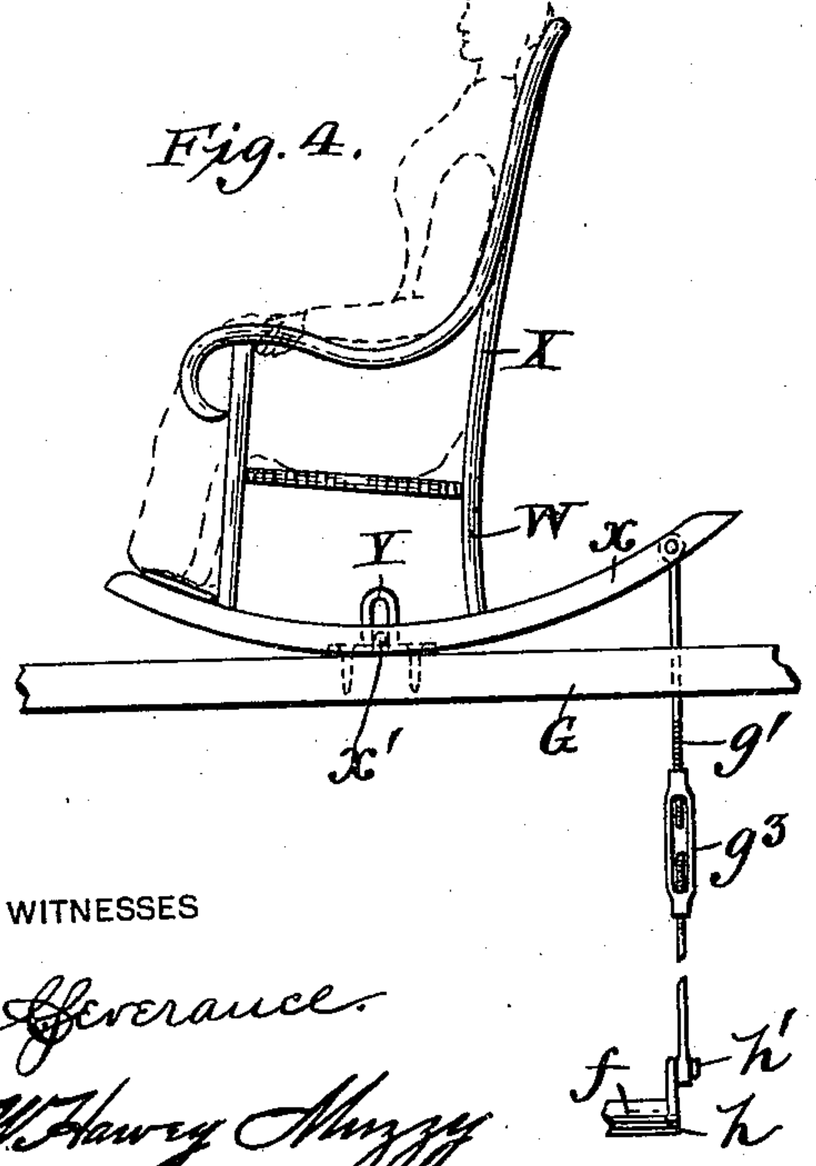

Fig. 7.

Fig. 8.

WITNESSES

Severance.

W. Harvey Mingey

INVENTOR

Friedrich W. G. Boettcher
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UNITED STATES PATENT OFFICE.

FRIEDRICH W. G. BOETTCHER, OF DULUTH, MINNESOTA.

DISPLAY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 569,950, dated October 20, 1896.

Application filed February 14, 1896. Serial No. 579,208. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH W. G. BOETTCHER, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Display Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in revolving display-stands especially designed for advertising purposes, and is an improvement on my Letters Patent No. 546,912, granted September 24, 1895.

The invention consists of the combination of a movable platform, means for revolving the same, dancing-dolls mounted on said platform and having movable arms and legs and devices for operating said arms and legs upon the movement of the platform.

It also consists of the combination of a movable platform, doll-carrying spindles loosely mounted in said platform and adapted to be reciprocated up and down upon the revolution of the same, dolls mounted on said spindles and having movable arms and legs, and means for moving said arms and legs as the platform revolves.

It also consists of certain other novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a central vertical section of the devices embodying my invention, the same being shown partly in side elevation. Fig. 1ª represents a top plan view of the same. Fig. 2 represents a detail central vertical section through one of my dolls and its support, showing the means for operating the arms and legs. Fig. 3 represents a central vertical section through a pair of my dancing dolls, taken at right angles to the section of Fig. 2. Fig. 4 represents a detail side elevation of the rocking device, showing the pitman for operating the same. Fig. 5 represents a detail central vertical section through one of the doll-supporting spindles and its mountings. Fig. 6 represents a detail perspective view of the clutch and its shaft. Fig. 7 represents a detail side elevation of a portion of the platform, a rocker, and its mountings; and Fig. 8 represents an end elevation of the same.

A in the drawings represents an iron base-ring having a scalloped upper edge *a* and provided across its bottom with a strip *a'* and with apertured lugs for securing said base-ring to the floor of the show-window or other place where it is to be mounted. The ring is suitably cut away, as at *a**, so as to lighten it and save the metal and consequently lessen the cost of construction. This base portion is also provided across the top with an arch or truss B, having an arm *b* extending downward and joining the strip *a'*. A shaft C is journaled in the base and said arm *b* and carries a large gear-wheel *c* and bevel-gear *c'*. A vertical shaft D is journaled in a sleeve *d*, formed in the truss B, and has its lower end supported by a socketed block *d''*, mounted on the cross-strip *a'*. The shaft D carries a standard E, which supports the revolving display-platform frame G, said revolution being caused by a bevel-gear D' on said shaft D, meshing with the bevel-gear *c'* of the horizontal shaft C. The sleeve *d* has secured thereon a horizontal bevel-gear F, which projects above the truss B, the shaft D passing loosely through the same.

In the standard E is journaled the end of a horizontal shaft *f*, the opposite end of said shaft being journaled in a suitable hanger *g* of the frame G. Said shaft is provided with an adjustable bevel-gear *f'*, that meshes with the stationary bevel-gear F. Said shaft has a collar f^2 adjustably applied thereto on the inner side of its hanger *g* to prevent longitudinal movement thereof. The outer end of said shaft *f* is provided with a disk *h*, carrying an adjustable crank-pin *h'* for imparting movement to the rocking device, which is to be movably mounted directly above it on the platform proper, G', by means of a pitman *g'*, provided with an adjusting turnbuckle g^3. The shaft *f* is also provided with a sprocket-wheel f^3, which is loose thereon. This wheel is held from longitudinal movement on said shaft in one direction by a collar f^4, rigidly set on said shaft by a suitable set-screw. The hub of sprocket-wheel is provided with two recesses f^5 f^5 and forms one member of a

clutch. The other member of said clutch comprises a grooved sleeve f^6, free to slide longitudinally on said shaft, but revolving therewith because of its connection with said shaft by a longitudinal feather f^7. This sleeve is provided on its inner face with two laterally-projecting pins f^8 f^8, that are adapted to engage the recesses f^5 f^5 when the clutch is in its operative position. The sleeve f^6 is moved on said shaft to cause said engagement by a lever f^9, which is pivoted in the frame G. The lower end of the lever works in the groove in the sleeve f^6, while the upper end projects above the platform G', where it may be readily grasped and thrown backward and forward to operate the clutch. This is the preferred form of clutch, but any other suitable clutch may be employed. The sprocket-wheel f^3 is connected with the music-box Q on the platform by a sprocket-chain f^{10}, so that said music-box is operated by the revolution of the shaft f and thus stops when the clutch is thrown off, although the platform continues to revolve as long as shaft D revolves.

The frame G is provided with a plurality of vertical sleeves g^2, and the platform G' above said sleeves is apertured to permit the passage of the spindles I. The spindles are each provided with a disk or platform i, upon which the dolls or figures A' rest and are fastened, the spindle extending above said platform and also assisting in supporting the dolls in their upright position. These platforms are adapted to rest on rubber washers j, which are in turn supported by sleeves K, mounted in said sleeves g^2. These sleeves K are provided with pulley-wheels k' and annular extensions k^2, the latter resting in annular recesses in said sleeves g^2, and thereby supporting said sleeves K and pulleys k', carried thereby. The spindles I revolve with the sleeves K, but are allowed vertical movement therein by means of a slot-and-groove connection L, as shown in the drawings, in which the pin k^3 is shown as attached to the spindle and working in a vertical slot k^4 in the sleeve K. The lower ends of the spindles rest upon the scalloped upper edge of the base-ring A, so that when the platform revolves a vertical movement is imparted to the dolls or figures.

A cord M is passed around the four pulleys (see Fig. 1[a]) and the two ends secured together, so as to form an endless belt or cord, but leaving a small portion m of one end of the cord free. This free portion is attached to an arm m', rigidly secured to the base, and the said endless cord or belt is thus held stationary, and when the platform is revolved through its gearing the friction between the said cord and the moving pulley-wheels carried with the platform will cause said pulleys to revolve and thus revolve the spindles upon which they are mounted, and at the same time the spindles, by engaging the scalloped edge of the base, will rise and fall in the said sleeves by which they are carried, the rubber disks or buffers preventing any noise or shock when the spindles reach their lower positions.

The dolls all have their arms jointed so as to be capable of movement, and one doll in each pair has one leg also jointed. The heel of the foot of the rigid leg of the doll having the movable leg is provided with a tube a^2, through which an operating-rod a^3 extends. This rod is connected at its upper end to a lever a^4, pivoted within the body of the doll. Links a^5 a^6 respectively connect said lever a^4 with the arms and legs, whereby they are raised when the said rod a^3 is forced upward by the descent of the spindle and doll. The lower end of the rod a^3 extends below the disk i and is provided with a rubber tip a^7, that engages the rubber washer j when the spindle descends and thus causes the movements of the limbs of the dolls. When the spindles ascend, the weight of the arms and legs carry the rod a^3 back to its normal position. The arms are jointed at the elbows and the legs at the knees, and the hands of each pair of dolls are connected so that as the arms of one doll move the others will move with them and a very good imitation of the movements of the arms and legs in dancing will follow. Each pair of dolls is connected by suitable links. These links, as shown in the drawings, consist of plates a^4 and a^5, respectively. The plates are secured to their respective dolls and are provided with apertured lugs a^6 a^7, respectively. These lugs are secured together by a pin a^8, passing therethrough.

It is sometimes desirable to employ rollers O, loosely mounted on the lower ends of the spindles and resting on the upper edge a of the ring A. An extension-arm o of the caster-mounting engages and is guided by a pendent guiding-rod o', mounted on the under side of the platform G, and the caster is thus always kept in a line with its curved annular track a. The curvature of the base A causes the casters, and consequently the spindles and dolls carried thereby, to rise and fall with a sweeping or gliding motion very similar to the waltz movement. A power-shaft C' is suitably journaled in a projection a'' of said base and said base-ring and is provided with a spin-wheel a^{12}, meshing with the wheel c. This shaft is also provided with a belt-wheel a^{13}, connected by a belt a^{14} with the source of power, preferably an electric motor. By my peculiar arrangement of reducing-gearing the great speed of the motor can be maintained while the devices will only be operated at a normal speed.

The rocking device W, a doll's chair in the present case, is intended to take the place of the dancing-dolls, and when the same is to be applied one pair of dolls is removed with their carrying-spindle and the chair inserted in its stead. The rockers x x of the chair X are each provided with a laterally-projecting pin x'. The pins are guided in yokes Y, suit-

ably attached to the platform on each side of said chair, so as to be capable of vertical movement therein. The pitman g' is connected to one of the rockers of the chair, so that the latter is rocked as said pitman reciprocates. The platform G′ may be provided with a display-table P. The music-box Q is provided with a crank-handle q, which is preferably grasped by an automaton, so that it will appear that said figure is operating said music-box.

The dolls or figures may be made life-size for advertising purposes, or they may be made small for toys. In the former case the figures may be dressed in clothing that it is desired to advertise and other articles placed upon the revolving platform, so as to be brought successively into view as said platform revolves.

I have also shown standard a^{15} erected on the platform G′ and an auxiliary platform G^2 for displaying goods supported by said standards.

Other figures with moving parts may be substituted for the dolls, if so desired.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a display apparatus, the combination of a revoluble platform, doll-carrying spindles loosely mounted in said platform and adapted to be reciprocated up and down upon the revolution of the same, dolls mounted on said spindles and having movable arms and legs, levers connecting said arms and legs, and a rod connected to said levers of each doll and adapted to be reciprocated vertically by the vertical movement of the doll as the platform revolves, the construction being such that the arms and one leg move up simultaneously so that the dolls appear to be dancing a waltz or other movement, substantially as described.

2. In a display apparatus, the combination of a revoluble platform, vertically-movable spindles loosely mounted in said platform, pulley-wheels on said spindles, a belt for revolving said wheels, dolls mounted on said spindles and having movable arms and legs, and a rod connected to said levers of each doll and adapted to be reciprocated vertically by the vertical movement of the doll upon the revolution of the platform, the construction being such that the arms and one leg move up simultaneously so that the dolls appear to be dancing a waltz or other movement, substantially as described.

3. In a display apparatus, the combination with a movable platform, means for revolving the same, removable dancing-dolls mounted on said platform, apertured lugs on said dolls and pins for connecting the dolls in pairs, substantially as described.

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

FRIEDRICH W. G. BOETTCHER.

Witnesses:
EDWARD T. FENWICK,
LUTHER L. APPLE.