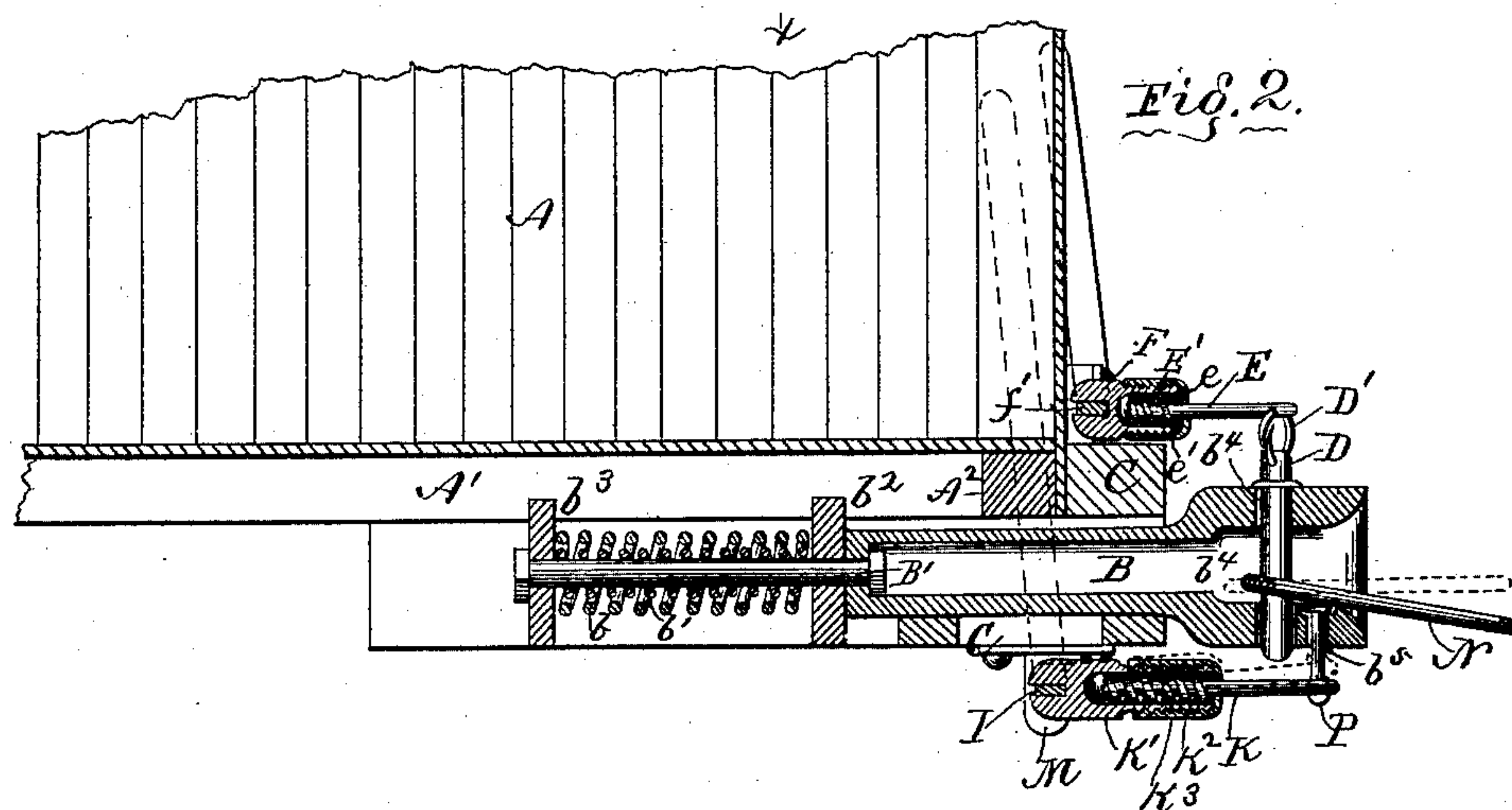
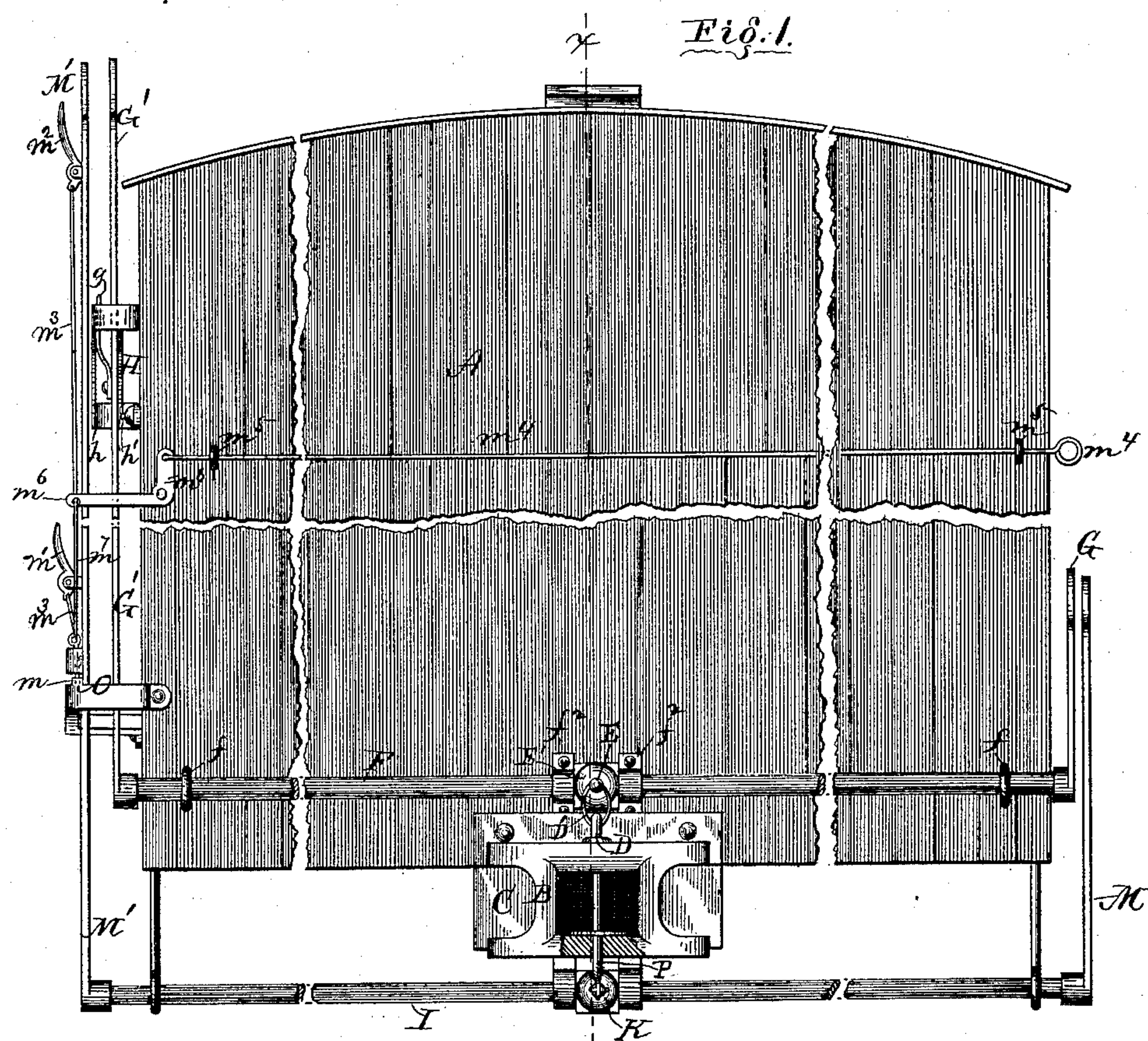


2 Sheets—Sheet 1.

No. 338,297.

Patented Mar. 23, 1886.



Witnesses:  
E. R. Richards.  
J. C. Charles.

Inventor:  
Wm Powell,  
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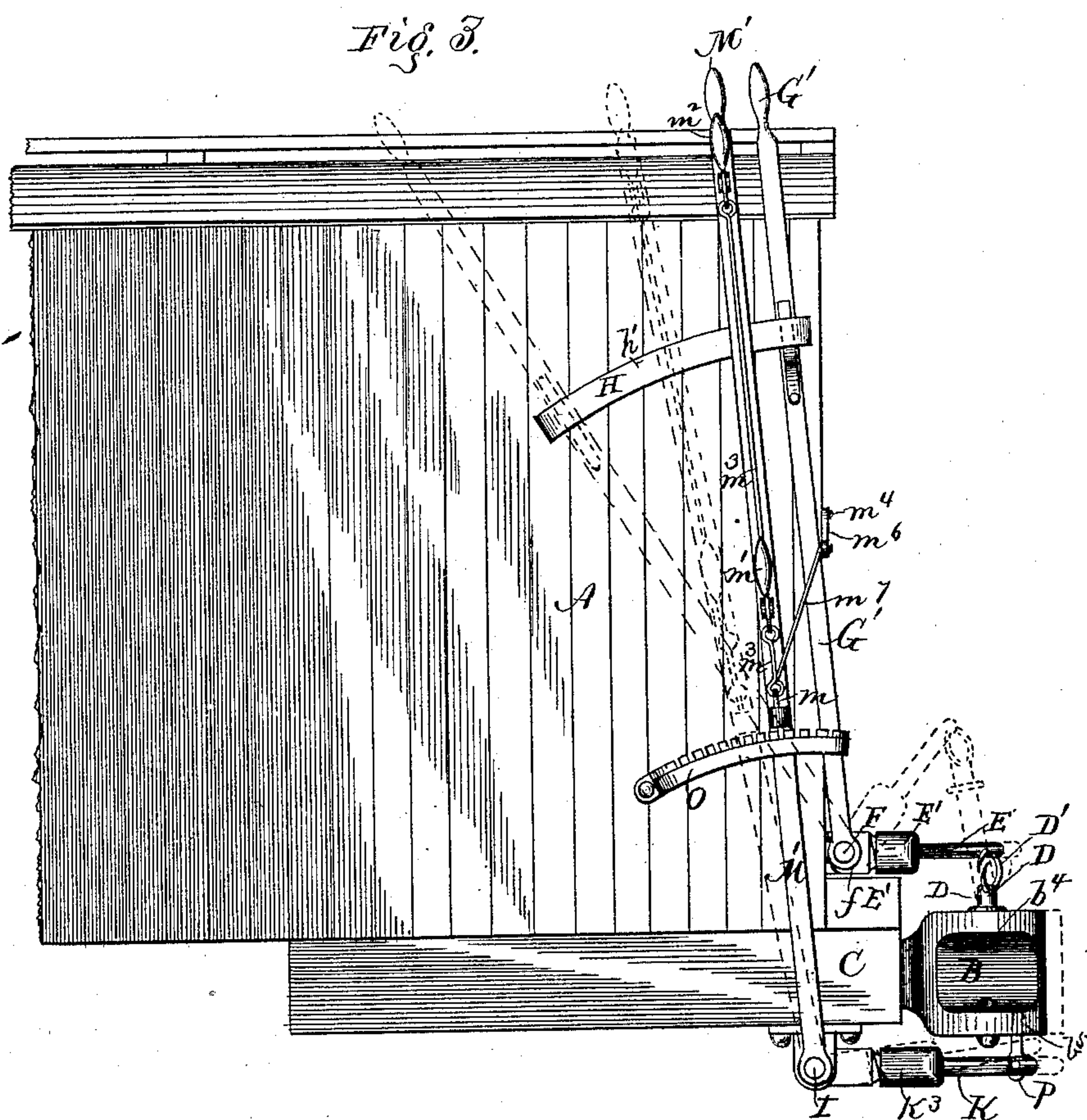
(No Model.)

2 Sheets—Sheet 2.

W. POWELL.  
CAR COUPLING.

No. 338,297.

Patented Mar. 23, 1886.



Witnesses:  
G. R. Richards,  
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Inventor:  
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# UNITED STATES PATENT OFFICE.

WILLIAM POWELL, OF ONEIDA, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 338,297, dated March 23, 1886.

Application filed January 5, 1886. Serial No. 187,646. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM POWELL, a citizen of the United States, residing at Oneida, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Railway Car - Couplings, of which the following is a specification.

My invention relates to a car-coupling of the class in which a draw-head, pin, and link of the ordinary form are employed; and the improvement consists in providing novel means for supporting the pin and link in position to properly enter the draw-head and couple or be coupled together, either automatically or by means of instrumentalities operative by hand either from the ground or from the top of the car, the link-and-pin supporting devices being constructed to adapt themselves to the varying positions of an ordinary yielding spring draw-head.

In the accompanying drawings, Figure 1 is an end elevation of a car body and coupling with a portion of the body and the bottom of the draw-head broken away; Fig. 2, a vertical sectional elevation in the line *xx* in Fig. 1, showing the coupling and a fragmental portion of the car-body; Fig. 3, a side elevation of one end of a box-car, showing the levers and arms for supporting the pin and link in their lowered positions by full lines and in their raised position by dotted lines.

The body A of the box-car is provided with the usual floor-sills, A', and end timbers, A<sup>2</sup>, which support a draw-head, B, secured to a draw-bar, B', in a well-known manner to admit of its limited longitudinal or yielding movement. This yielding movement of the draw-head is effected in this instance by means of coiled springs *b b'*, which encircle the draw-bar and exert themselves upon end blocks, *b<sup>2</sup>* *b<sup>3</sup>*, through which the draw-bar passes, one of said blocks, *b<sup>2</sup>*, being securely fixed to the sills of the car, and the other block, *b<sup>3</sup>*, being free to move with the draw-bar.

The draw-head B is supported and has a limited endwise movement within a box or bumper-plate, C, secured to the end timbers of the car.

The draw-head B is formed with the usual hollow bell-shaped body to readily receive the link of an approaching car. The draw-head

is also provided with coupling-pin holes *b<sup>4</sup>*, formed in both the top and bottom walls of the coupling-head, and with a link-lifter pin-hole, *b<sup>5</sup>*, formed in the said bottom wall slightly in advance of the lower coupling-pin hole, *b<sup>4</sup>*.

The coupling-pin D is supported upon the end of an arm, E, secured to a rock-shaft, F, supported by bearings *f* in a horizontal position above the draw-head, and hand-levers G G', secured to the respective ends of the rock-shaft F, provide simple and effective means for rocking the shaft and lifting the coupling-pin out of and allowing it to drop into the draw-head. The lever G is arranged upon one side of the car and the lever G' upon the other side of the car. These levers are of unequal lengths. The shorter lever, G, permits the rock-shaft F to be operated from the ground, and the longer lever, G', extends to the top of the car, and admits of its being reached and operated from the top of the car. A segment-plate, H, is secured to the body of the car, and is in this instance formed of a slotted or double-plated segment, *h h'*, between which the lever G' passes, and is held in any required position by the frictional contact of a spring-plate, *g*, secured to the said lever G', to bear against the inner side of one of the segments *h h'*, and thus hold the lever with a yielding pressure against the other segment, in whatsoever position the lever may be placed, until it is pulled down by hand or jarred down by the shock of an abutting car or train.

The middle portion of the rock-shaft F is flattened at *f'* to receive the mortised end of a tubular arm, E', into which is fitted an endwise-moving pin or arm, E, which serves to support the coupling-pin. A coiled spring, *e*, surrounds the pin E inside of the tubular arm, and a screw-cap, *e'*, threaded to engage with an external thread upon the tubular arm, incloses the spring and provides simple means for adjusting the normal length of the arm as well as the tension of the spring.

An open link, D', connects the end of the arm with the head of the coupling-pin and permits the latter to be readily removed from the pin or replaced. Bearing-blocks *f<sup>2</sup>*, secured to the car to fit close upon the opposite sides of the tubular arm E', support the mid-



5 dle portion of the shaft and hold the said arm accurately in position to lift and drop the pin into the holes in the draw-head. A similar system of rock-shaft, I, link-lifter arm K, pin P, and levers M M' are employed to support and guide the link N of a coupling into the draw-head of an approaching car. The hand-levers M M' are of unequal lengths, and are arranged correspondingly with the levers G G', above described, in order that each of the rock-shafts may be simultaneously operated from either the ground or the top of the car, and a segment rock-plate, O, secured to the side of the car below the segment-plates H, above described, serves to securely hold the lever M' in any required position. A spring-pawl, m, in this instance engages with the teeth of the rock-bar to secure the lever in a fixed position, which can be removed only by hand and by the following means: A handle, m', pivoted to the lever M' immediately above the segment rock-plate O, and a similar handle, m'', pivoted to the upper extremity of the lever, both of said handles being connected to the pawl by links or rods m<sup>3</sup> in a well-known manner, will provide means for lifting the pawl from the rock-bar either from the ground or from the top of the car upon one side thereof, and a pull-rod, m<sup>4</sup>, held in eye-staples m<sup>5</sup>, is arranged across the end of the car, and is connected by a bell-crank lever, m<sup>6</sup>, and link m<sup>7</sup> with the spring-pawl m, whereby the latter may be disengaged from the segment-rack by a person from the opposite side of the car when it is desired to rock the shaft I and operate the coupling-link supported by means of the lever M.

40 The link-lifter arm K is similar to but somewhat longer than the arm E, and is formed of a tubular section, K', secured by a mortised end to a flattened part of the rock-shaft I, and receives the endwise-moving pin or arm K and coiled spring K<sup>2</sup>, which are held and adjusted in said tubular section by means of a screw-cap, K<sup>3</sup>, fitted upon the tubular section K'. The outer end of the arm K is jointed to a link-lifter pin, P, which is supported in and passes through the hole b<sup>5</sup> in the draw-head above described, and in position to lift the link from the position shown by full lines into the position shown by dotted lines in Fig. 2.

55 The devices herein described operate in the following manner: When the link is to be lifted to enter the draw-head of an approaching car, the hand-lever M or M' may be operated after disengaging the spring-pawl from the segment-rack, and the lever placed and locked in position to hold the link to the required height. The hand-levers G G' of the approaching car are drawn back to the position shown by dotted lines in Fig. 3, with the coupling-pin lifted and inclined backwardly and partly supported or propped up by the walls of the upper pin-hole, b<sup>4</sup>, in the draw-head, and partly supported by the spring-

70 pressure of the lever upon the segment-plate H. When the draw-head or bumpers of the cars come together, the shock of the collision will jar down the pin, and throw the lever forward with sufficient force to overcome the frictional contact of the spring upon the segment-plate, and thus permit the pin to quickly and securely drop into the link and seat itself into the holes b<sup>4</sup> of the draw-head, to completely couple the cars together without other attention and without danger to the operator.

80 The spring-connections and extensible sections of the coupling-pin, arm E, and link-lifting arm K will admit of the free endwise movement of the draw-head without straining or interfering with the mechanism for operating the coupling pin and link, and admit of their adjustment to compensate for slight changes of position due to unequal expansion or contraction or wear and tear of material.

I claim as my invention and desire to secure by Letters Patent—

90 1. The combination, with a car, of the rock-shaft F, arm E, coupling-pin D, suspended from said arm, a hand-lever, G', secured to the ends of the rock-shaft, a smooth-surfaced segment plate or plates, and a spring-plate, g, secured to and adapted to hold said lever by frictional contact solely, which contact holds the pin up until released by the jar of the cars, substantially as and for the purpose specified.

100 2. The combination, with a car, of the rock-shafts adapted to respectively support the coupling-pin and link by means of arms secured to said rock-shafts, and levers secured to each of said rock-shafts, a segment rack-bar and pawl for holding the link-supporting mechanism in a fixed position, and the smooth-surfaced segment-plate for holding the pin-supporting mechanism by frictional contact only, substantially as described.

110 3. The combination, with a car, of the rock-shaft journaled to fixed bearings upon the car-frame, an extensible arm secured to the rock-shaft and formed of two sections united by a spring-coupling, and a link-lifter pin jointed to the vibrating end of the arm and supported upon a yielding draw-head, substantially as described, for the purpose specified.

120 4. The combination, with a car, of the rock-shaft journaled to fixed bearings upon the car-frame, an extensible arm secured to said rock-shaft and formed of two sections united by a spring-coupling, and a coupling-pin supported upon the end of said extensible spring-arm and adapted to pass vertically through holes in a yielding draw-head, substantially as described, for the purpose specified.

130 5. The combination, with a car, of the rock-shafts journaled to fixed bearings upon the car-frame, an extensible arm secured to one rock-shaft and formed of two sections united by a spring-coupling, a coupling-pin sup-



ported from the end of said extensible arm  
and adapted to pass vertically through holes  
in a yielding draw-head, a second extensible  
arm secured to the other rock-shaft, and a  
5 link-lifter pin jointed to the vibrating end of  
the second arm and supported upon a yield-  
ing draw-head, substantially as described.

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

WILLIAM POWELL.

Witnesses:

M. D. COOKE,  
HENRY BROWN.