

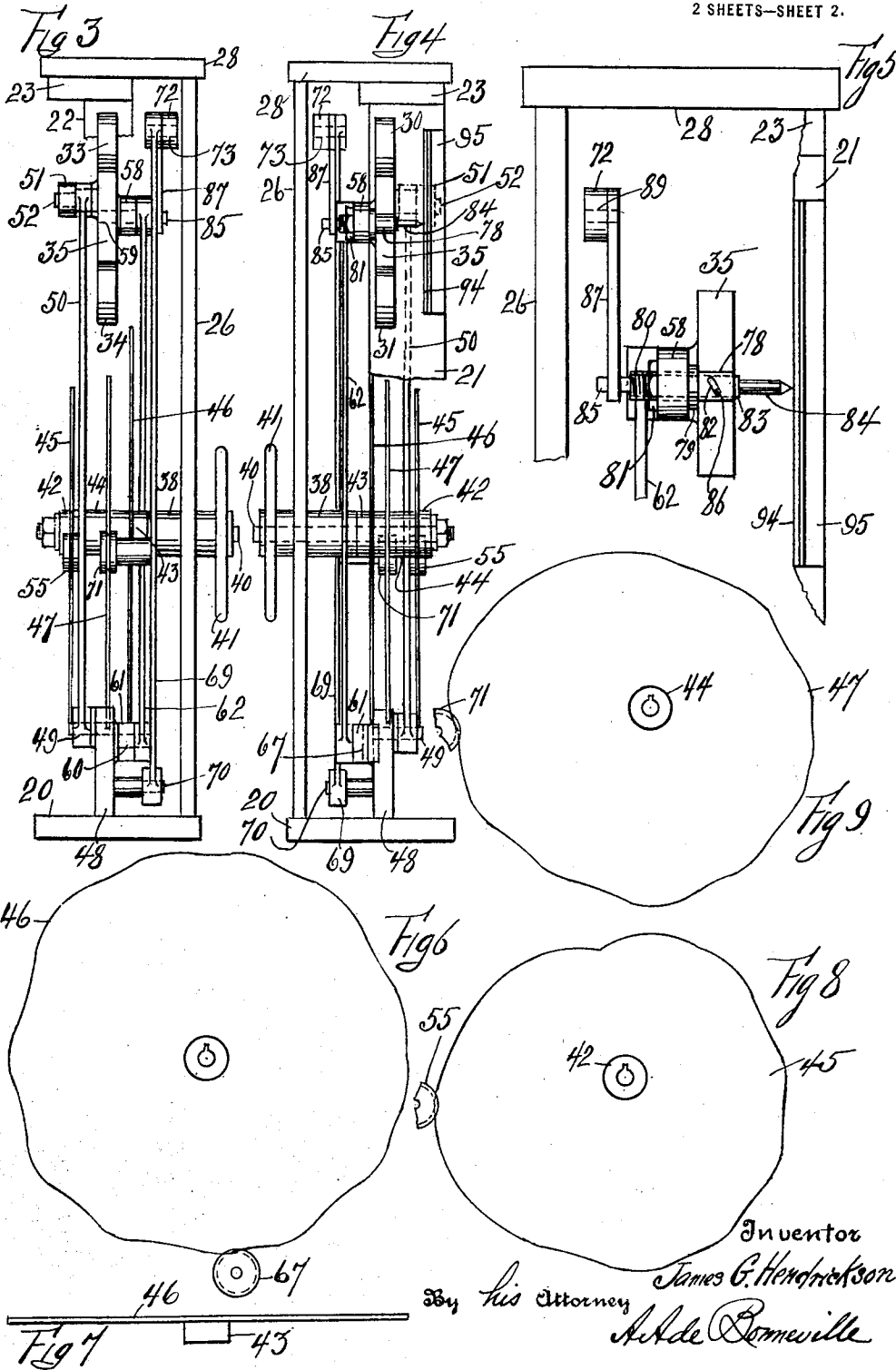


J. G. HENDRICKSON.  
 WRITING AND DRAWING APPARATUS.  
 APPLICATION FILED MAR. 29, 1919.

1,386,332.

Patented Aug. 2, 1921.

2 SHEETS—SHEET 2.



# UNITED STATES PATENT OFFICE.

JAMES G. HENDRICKSON, OF BAYONNE, NEW JERSEY.

WRITING AND DRAWING APPARATUS.

1,386,332.

Specification of Letters Patent.

Patented Aug. 2, 1921.

Application filed March 29, 1919. Serial No. 236,230.

*To all whom it may concern:*

Be it known that I, JAMES G. HENDRICKSON, a citizen of the United States, and a resident of Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in a Writing and Drawing Apparatus, of which the following is a specification.

This invention relates to a writing and drawing apparatus, in which a marking device, pencil, or like means, is directed in its movements by the coaction of two or more rotating cam disks and their appurtenances with said pencil.

In the drawings, Figure 1 represents a front elevation of an apparatus exemplifying the invention; Fig. 2 shows a top plan view of Fig. 1 with the top plate removed; Fig. 3 represents a lefthand side view of Fig. 1; Fig. 4 shows a righthand side view of Fig. 1; Fig. 5 is an enlarged fragmentary portion of Fig. 4; Fig. 6 shows an elevation of a cam disk designed to impart a vertical motion to the pencil of the apparatus; Fig. 7 is a top plan view of Fig. 6; Fig. 8 represents an elevation of a cam disk designed to impart a horizontal motion to the pencil of the apparatus and Fig. 9 shows an elevation of a cam disk that controls the pencil, so that the latter will dot the i's or cross the t's of a word, as may be required.

The apparatus exemplifying the invention in this instance comprises a frame with the base plate 20, the vertical front post 21, the vertical rear post 22, and the top plate 23 that connects the said posts. A vertical journal column 26 is at its lower end supported on the base plate 20 and at its upper end is connected to the top cross plate 28.

In an opening in the front post 21 are journaled a pair of guide rollers 30 and 31, which are spaced apart one above the other. In an opening in the rear post 22 are journaled a pair of guide rollers 33 and 34, which are also spaced apart one above the other. A slide bar 35 extends through the said openings in the posts 21, 22 and is maintained in proper position and guided by the guide rollers 30, 31 and 33, 34. In the column 26 is secured a journal bearing 38 in which is journaled an operating shaft 40 with a spline 40<sup>a</sup>. At one end of the shaft 40 is fastened an operating wheel 41. On said shaft are detachably secured the hubs 42, 43 and 44 of the cam disk 45, 46 and 47. Each hub has a groove extending from the open-

ing therethrough which slidably registers with said spline 40<sup>a</sup>.

From the base plate 20 extends the pillow block 48 and to the rear face thereof is pivoted, by means of the pivot 49, the main lever 50. A link 51 at one end is pinned to the lever 50 by means of the pin 52 and at the other end is pivoted to the slide bar 35 by means of the pivot 53. A cam roller 55 is journaled to the lever 50 and bears against the circumferential edge of the cam disk 45. By means of the cam disk 45 and its connections, a horizontal movement is imparted to the slide bar 35.

A pencil lever 58 is supported at one end on the fulcrum pin 59, which in turn is supported on the slide bar 35. From the front face of the pillow block 48 extends the pivot 60 which supports one end of the second main lever 61. A connecting link 62 connects the pencil lever 58 and the lever 61, by means of the pins 63 and 64. A cam roller 67 is journaled on the lever 61 and bears against the cam disk 46. The cam disk 46 with its appurtenances imparts a vertical movement to the pencil lever 58. A third main lever 69 is pivoted at its lower end to the front face of the pillow block 48 by means of the pivot 70. A cam roller 71 is journaled to the lever 69 and bears against the cam disk 47. A link 72 has one end pinned to the lever 69 by means of the pin 73. A spring 76 connects the lever 61 and the slide bar 35 to maintain the cam roller 67 in contact with the circumferential edge of the cam disk 46. A spring 77 connects the post 21 and the slide bar 35 to maintain the cam roller 55 against the circumferential edge of the cam disk 45.

In an opening in the pencil lever 58 is detachably secured the guide sleeve 78, which has extending therefrom the flange 79 and has the threaded end 80 for the nut 81. A helical guide slot 82 is formed in the sleeve 78. A cylindrical pencil holder 83 is supported in the sleeve 78 and at one end supports the pencil 84. The other end of the pencil holder 83 has formed therewith the squared projection 85. A pin 86 extends from the pencil holder 83 and engages the slot 82 of the sleeve 78. A lever 87 is pivoted at one end to the link 72 by means of the pin 89, and the other end of the lever 87 has a squared opening which engages the projection 85. A spring 90 connects the lever 69 and the slide bar 35, to maintain

the roller 71 against the circumferential edge of the cam disk 47, and maintains the pencil 84 in proper position. A plate 94 is fastened to the front post 21 by means of the angle iron 95, and provides means for holding in place the paper 98 or other object or material upon which the pencil 84 is to write or draw.

To operate the apparatus the shaft 40 is turned in this instance in the direction of the arrow A, which simultaneously turns all the cam disks 45, 46 and 47. The cam 45 imparts with its connections a horizontal movement to the pencil 84. The cam disk 46 imparts a vertical movement to said pencil. The cam disk 47 separates or lifts the pencil 84 from the paper 98 at predetermined points, as at the end of a word or sentence and for certain intervals, so that t's can be crossed and i's dotted in writing and gaps made in drawings or wherever required. This apparatus can be used as an advertising means to write a word or sentence, or make a drawing. It may advantageously be used for duplicating words, &c. and is specially useful as a toy.

Having described my invention what I desire to secure by Letters Patent and claim is:

1. In an apparatus the combination of a slide bar, a rotatable cam disk for the apparatus, the rotations of the disk causing the slide bar to move in straight translation, a fulcrum pin on the bar, a pencil lever supported on the pin, a second rotatable cam disk for the apparatus, the rotations of the latter disk causing the pencil lever to swing on its fulcrum pin and marking means carried on the pencil lever to mark on an object while the cam disks are being turned.

2. In an apparatus the combination of a slide bar, a fulcrum pin carried on the bar, a pencil lever with one end supported on the fulcrum pin, a pencil carried on the pencil lever, a lever with one end pivoted in a portion of the machine distant from the slide bar and the other end in connection with the slide bar, means to guide the slide bar in

straight translation, a cam roller journaled on the latter lever, a cam disk rotatably supported in the apparatus and bearing against the cam roller, a second lever pivoted in the apparatus, a link connecting the second lever and the pencil lever, a cam roller journaled on the said second lever and a second cam disk rotatably supported in the apparatus and bearing against the second cam disk.

3. In an apparatus the combination of a frame, a rotatable shaft journaled in the frame, a number of hubs detachably secured to the shaft, a cam disk carried by each of said hubs, a number of main levers pivoted in the machine adjacent to the base thereof, a cam roller journaled on each main lever, each of said cam rollers bearing against one of said cam disks, a slide bar in the frame and moved in straight translation with the movements of one of said main levers, a pencil lever with one end pivoted on the slide bar, said pencil lever swinging with the movements of a second main lever, a link with one end pinned to the third main lever, a lever with one end pinned to the swinging end of the link, a pencil holder actuated in the direction of its longitudinal axis by the latter lever and a marking means supported in the pencil holder.

4. In an apparatus of the character described the combination of a slide bar, a pencil lever with one end pivoted on the bar, means to swing one end of the pencil lever, a lever pinned to the swinging end of the pencil lever, a guide sleeve having a helical opening carried in the swinging end of the pencil lever, a pencil holder supported in the guide sleeve, a pin extending from the pencil holder and engaging said helical opening, said pencil holder connected to the lever that is pinned to the swinging end of the pencil lever and a pencil carried by the pencil holder.

Signed at Bayonne in the county of Hudson and State of New Jersey this 24th day of March A. D. 1919.

JAMES G. HENDRICKSON.