3 Sheets—Sheet 1.

A. J. DAVIS.
Automatic-Toy.

No. 209,468. **Patented Oct. 29, 1878.**

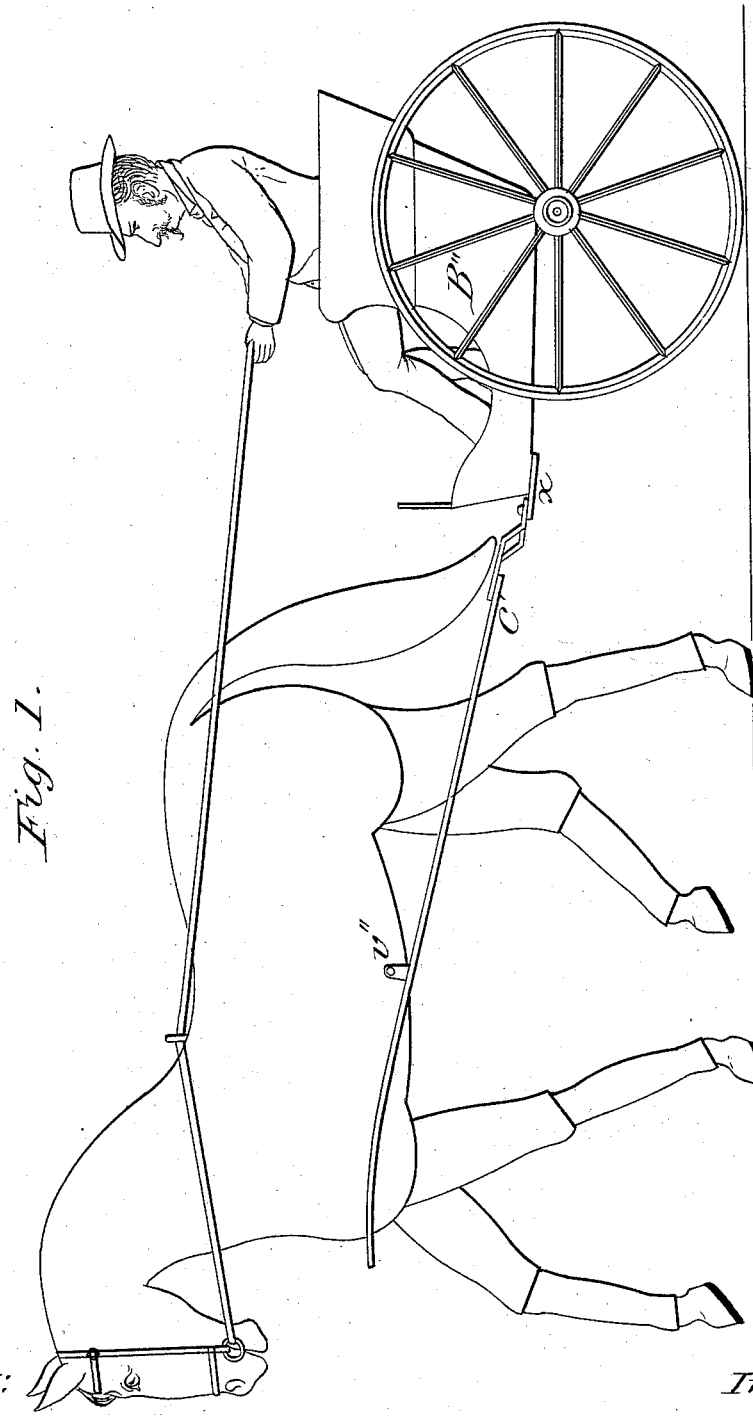

Fig. 1.

Attest:
Geo. F. Turner
J. W. Hoag

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Andrew J. Davis

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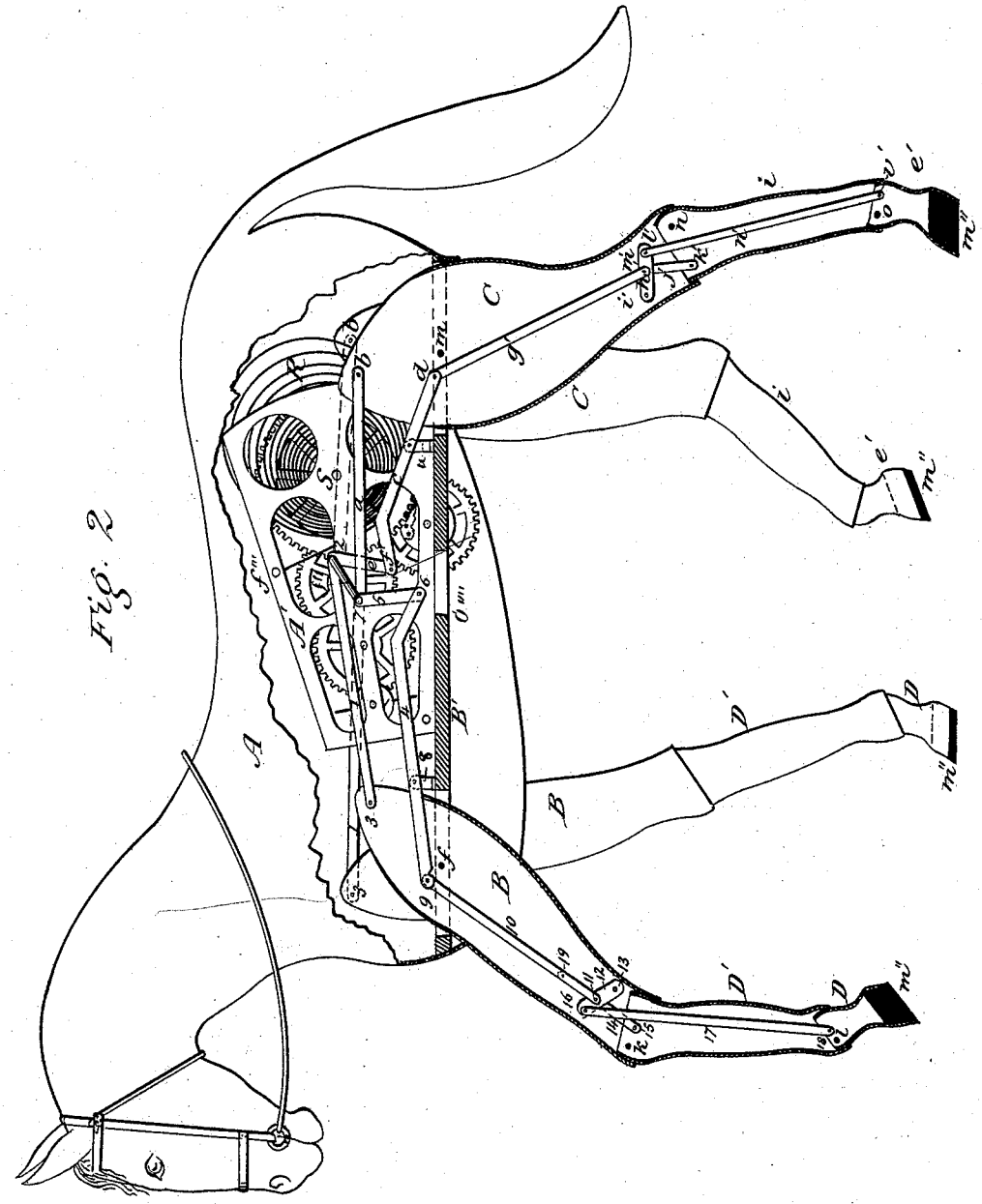

Fig. 2

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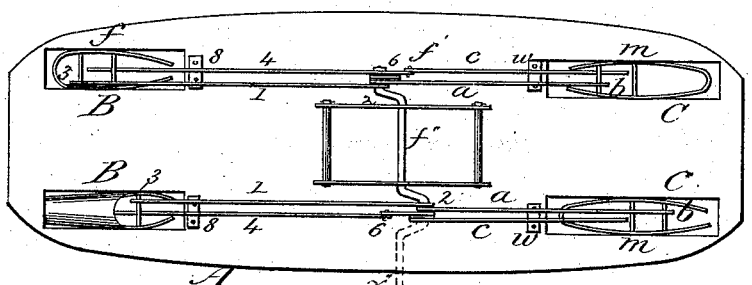
Fig. 4.



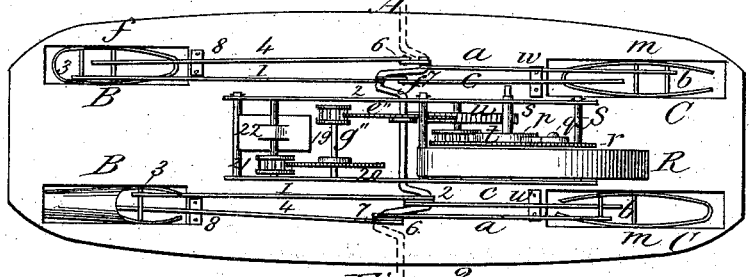


Fig. 3

Fig. 5

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UNITED STATES PATENT OFFICE.

ANDREW J. DAVIS, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN AUTOMATIC TOYS.

Specification forming part of Letters Patent No. **209,468**, dated October 29, 1878; application filed July 26, 1878.

To all whom it may concern:

Be it known that I, ANDREW J. DAVIS, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Child's Toys; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in child's toys; and it consists in an automaton representing a horse having a trotting or pacing movement, to which automaton is attached a buggy, in the seat of which is placed a figure representing a driver, the movement of the automaton being accomplished through the medium of a series of levers and a double compound crank-shaft operated by clock-work or other motor.

To enable others skilled in the art to which my invention is most nearly connected to make and to use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a side elevation of an automaton-horse attached to a buggy, in the seat of which is a figure representing a driver. Fig. 2 is a side elevation of the automaton-horse, representing a portion of the body removed, for the purpose of showing the arrangement of the levers, cranks, and operating mechanism. Fig. 3 is a top view or plan of the operating mechanism. Fig. 4 is a top view or plan of a portion of the operating mechanism, representing the arrangement of the parts for giving a pacing movement to a second horse, and when arranged and coupled together, as shown in Figs. 3 and 4, one horse will have a trotting movement and the other a pacing movement. Fig. 5 represents the crank-shaft used for imparting the necessary movement for pacing, and the dotted lines x''' represent the arrangement of the crank-shaft when two horses are coupled together, both having the trotting movement.

A represents the body of the horse, B the fore legs, and C the hind legs, which are hollow and pivoted to the shell A at f and m, and pivoted at points k, l, n, and o. To the lower part, D, of each of the fore legs, at 18, is attached a lever, 17, the upper end of which, at 16, is attached to a lever, 12, pivoted at 13 to part B of the leg. To the lever 10, at 19, is pivoted a lever, 14, which is pivoted to the part D′ of the leg at 15. To the lever 12, at 11, is pivoted lever 10, which, at 9, is pivoted to lever 4, which is pivoted at 8 and connected at 6 to lever 5, which is connected to the outer wrist of the crank-shaft f'' at 7. To the upper end of the fore leg B is pivoted, at 3, a lever, 1, which is connected to the inner wrist, 2, of the crank-shaft f''. To the outer wrist of the crank-shaft f'', at 7, is also connected a lever, a, the other end of which is attached to the hind leg C at b; and to the inner wrist, 2, of the crank-shaft f'' is also connected a lever, e, which, at f', is pivoted to a lever, c, which is pivoted at w. To the end of lever c, at d, is pivoted a lever, g', which is pivoted, at h, to lever m', which is pivoted to the leg C at i. To the lever m', at l', is pivoted a lever, n', which is pivoted at v' to the part e' of the hind leg. To the lever m', at h, is pivoted a lever, J′, which is pivoted at k' to the part of the leg C marked i.

The shaft S is provided with a coil-spring, R, gear-wheel r', and a ratchet-wheel, P, the pawl q' of which is pivoted to the gear-wheel r'. The gear-wheel r' gears into a wheel, t, on the axes of which is a wheel, u, which gears into a wheel, e'', on the crank-shaft f'', and the wheel e'' gears into a wheel, q'', on the axes of 19′, on which is a wheel, 20, which gears into a wheel, 21, on the axis of which is a retarding-fan, 22. Said operating mechanism is arranged in a frame, A′, which is secured to the base-board B′, to which, at f and m, are pivoted the legs B and C. The spring R, one end of which is attached to a cross-bar, f''', and the other end is attached to the shaft S, by means of an ordinary winding-key, can be wound up so as to impart power to the driving-wheel r', which transmits its power to the other operating mechanism.

B″ represents a toy buggy, provided with shafts C′, which is attached to the body of the horse by means of a transverse bar, v''. The shafts are pivoted to the body of the buggy at x for the purpose of arranging the plane of the shafts at any desired angle with rela-

tion to the body of the buggy, whereby the automaton-horse may be made to travel in any desired direction.

The levers hereinbefore described, pivoted and connected to the several parts of the legs B and C and to the operating crank-shaft and mechanism, will impart to said legs those movements imitating the peculiar movements of the several parts of the legs of a horse when trotting or pacing.

By arranging a frame in a second horse, which is provided with a similar arrangement of levers and a crank-shaft, the same as the crank-shaft *f''*, and the two crank-shafts connected, as indicated by dotted lines *x''*, between Figs. 3 and 4, the two automaton-horses can be made to travel together, supporting each other in an upright position. The motor or clock-work may be placed only in one horse, and the horses may be made to trot or pace simply by the modification of the crank-shaft.

The parts D and *e'* of the legs B and C are furnished with elastic hoofs, marked *m''*, constructed of gum or other elastic material. The hoofs when made thus will give a springy action to the legs and avoid the rattling noise of the hoofs on the floor when the horses are traveling.

Having thus described my improvement, what I claim as my invention is—

A toy horse the fore legs B of which are jointed at *f k l*, and provided with pivoted levers 17, 12, 10, 4, 5, and 1, and the hind legs C jointed at *o n m*, and provided with pivoted levers *n'*, *g'*, *c*, *e*, and *a*, all of which are combined with the compound crank-shaft *f''*, operated by clock-work as a motor, substantially as herein described, and for the purpose set forth.

ANDREW J. DAVIS.

Witnesses:

WM. L. LAPSLY,

A. C. JOHNSTON.