

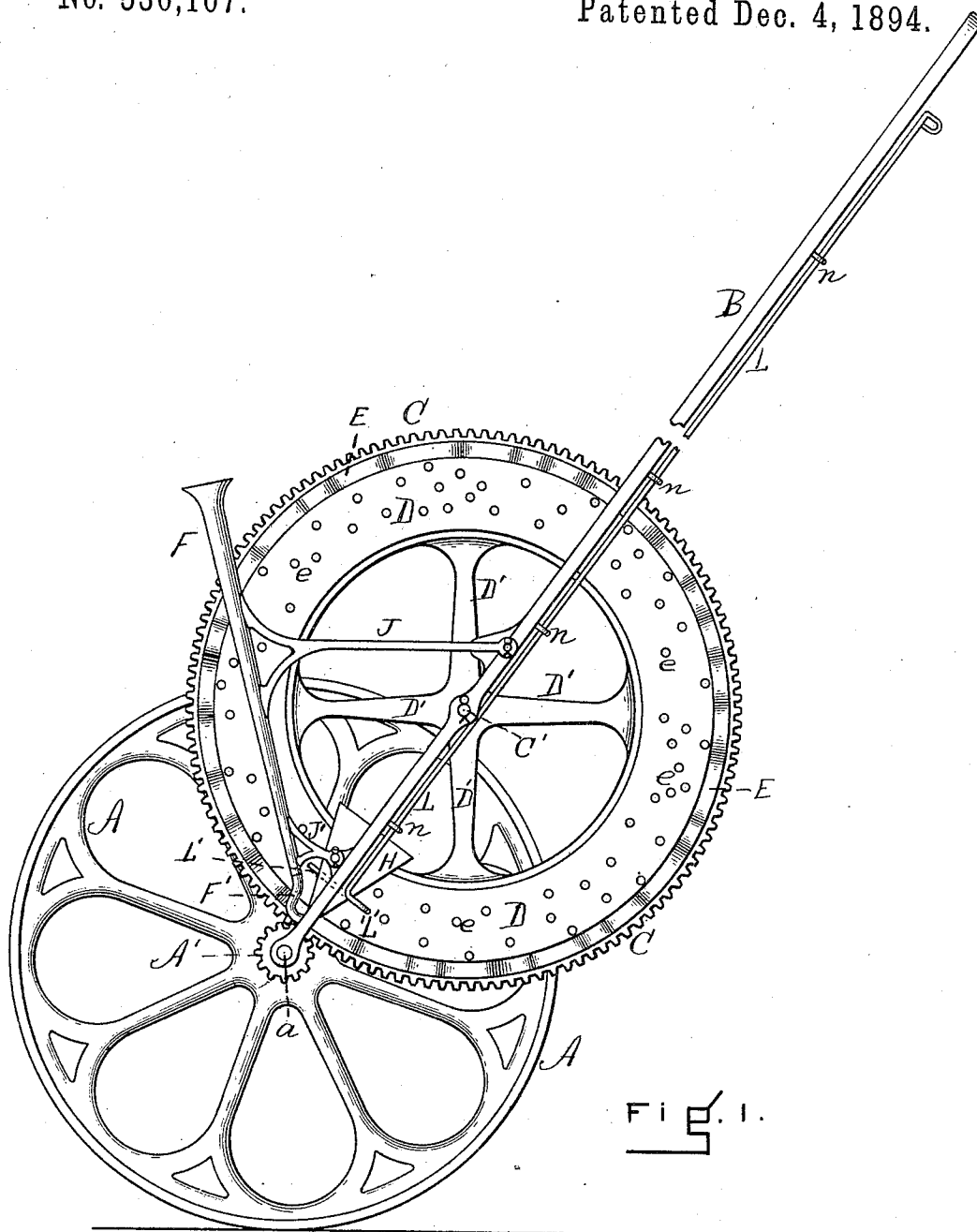
(No Model.)

W. A. HILL.
TOY.

2 Sheets—Sheet 1.

No. 530,107.

Patented Dec. 4, 1894.



WITNESSES

J. M. Hartnett.
B. M. Williams

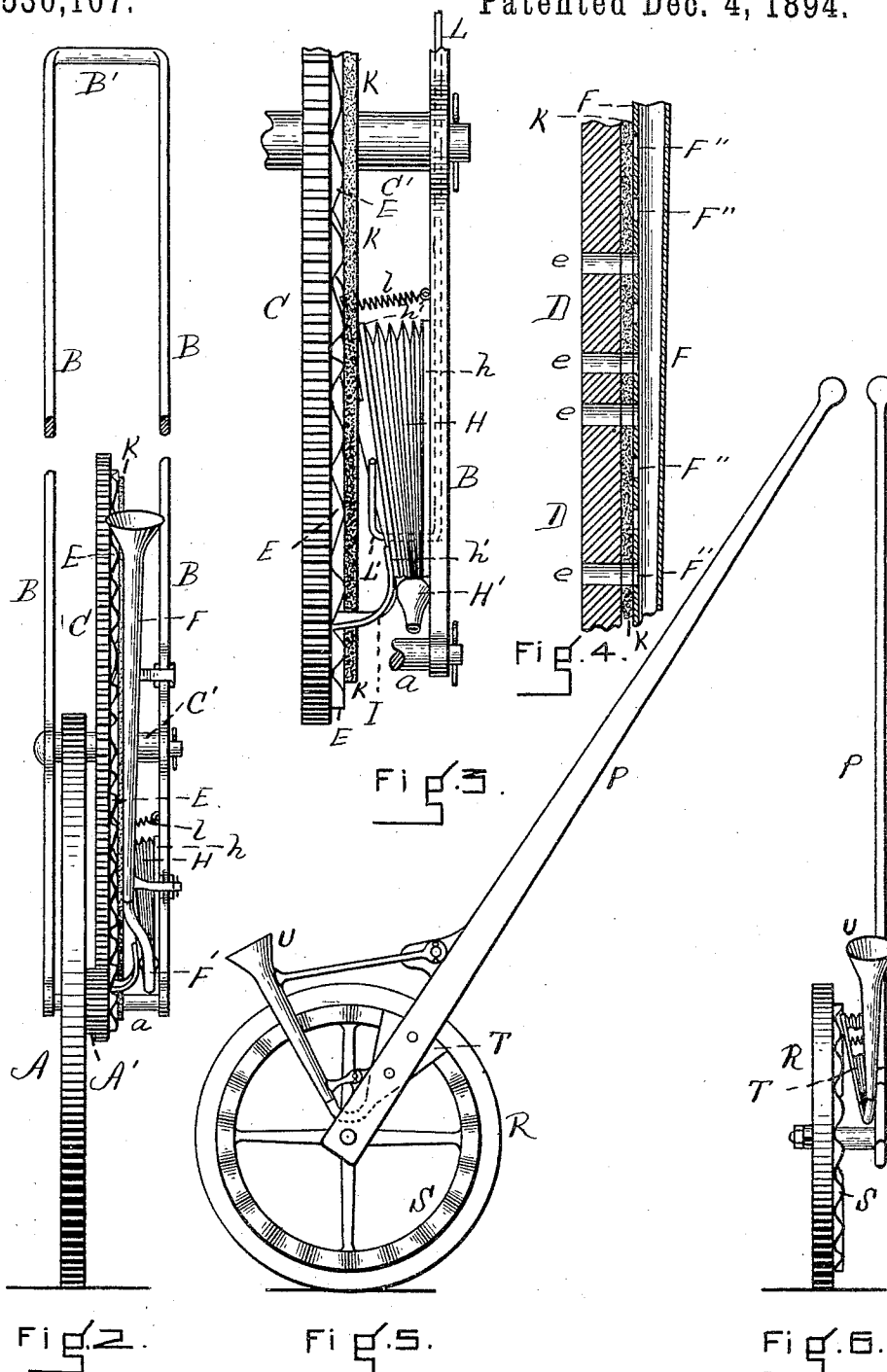
INVENTOR.

Wilford A. Hill.
By his Atty.
Henry Williams.

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UNITED STATES PATENT OFFICE.

WILFORD A. HILL, OF WALTHAM, ASSIGNOR OF ONE-HALF TO JOHN C. MILLER, OF MELROSE, MASSACHUSETTS.

TOY.

SPECIFICATION forming part of Letters Patent No. 530,107, dated December 4, 1894.

Application filed March 12, 1894. Serial No. 503,243. (No model.)

To all whom it may concern:

Be it known that I, WILFORD A. HILL, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Toys, of which the following is a specification.

This invention relates to that class of toys which comprise a wheel adapted to be trundled on the ground or floor by means of a handle in the hand of a child, and my improvement comprises such a wheel and handle and mechanism below described whereby the toy, when the wheel is rolled over the ground, will give out musical tones, preferably arranged in the form of a tune.

The nature of the invention is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved toy, a portion of the handle being represented as broken out. Fig. 2 is a front elevation of the same. Fig. 3 is an enlarged front elevation of a portion of a device showing the relation of the bellows to the music wheel. Fig. 4 is an enlarged detail in vertical section of portions of the trumpet and music wheel. Fig. 5 is a side elevation showing a modification. Fig. 6 is a front elevation of the same. Similar letters of reference indicate corresponding parts.

A represents a wheel adapted to be rotated by being rolled over the ground or floor.

B is a handle, made in two parallel parts, as shown, its ends connecting loosely with the opposite ends of the shaft or axle *a*, and its central portion *B'* bent at right angles, as shown, and serving not only as a connection for the two parts of the handle, B, but as a convenient gripping place for the child operating the toy.

Fast on the wheel A, between the two portions of the handle, or on the axle *a* so as to be rotated with said wheel is a pinion *A'*. This pinion engages the cogs on the periphery of the large gear wheel C, which is supported by the shaft *C'* having its bearings in the opposite portions of the handle B. This wheel C is made flat for quite a distance from the periphery toward the center, of material constituting a circular plate D of even width,

and connecting by spokes *D'* with the hub, which rotates on the axle or shaft *C'*.

The portion D of the wheel, which will hereinafter be termed the music wheel, is provided with numerous perforations as *e*, the arrangement of which is not accidental, but after a preconceived plan. On the outer face of the music wheel, that is, the face which is not next the driving wheel A, near its periphery is an annular series of protuberances E, each of which is produced by and consists of two inclined sides, but the angles of inclination of the sides of the different protuberances vary, and even the angles of inclination of a single protuberance are often unlike.

F is a trumpet or horn, and may stand for any musical wind instrument which is adapted to this device. The lower, smaller end of this trumpet is connected by a tubular connection *F'* with the nozzle *H'* of a bellows H. See Figs. 2 and 3. One side or wall *h* of the bellows is rigidly secured to the handle B, and the other side or wall *h'* has secured to it one end of an engaging finger I, which is bent substantially at right angles, as shown in Fig. 3. The bellows is secured to the handle B in such a position that the engaging finger I will be in constant contact with the annular row of protuberances E.

The trumpet F is, for purposes of additional security, connected by brace-rods J *J'* with the handle B, and is set close to the face of the music wheel, being separated therefrom only by a strip of felt or other soft material K, (Figs. 2, 3 and 4) which serves to prevent the metallic surfaces of the trumpet and music wheel from coming into contact and rubbing against each other, and which may be attached to either the trumpet or the music wheel. In the drawings it is shown adhesively applied to the face of the music wheel, upon the portion D thereof, and is hence provided with perforations coincident with the perforations *e* in the music wheel. Moreover the wall of the trumpet next the portion D of the music wheel, is provided with perforations *F''* sufficient in number to be coincident with all the perforations *e* on the music wheel as it is rotated. In other words, if circles concentric with the periphery of the music wheel were drawn through

the different perforations *e*, it would be found that each perforation *F''* in the wall of the trumpet would be intersected by one of the said concentric circles.

5 The bellows is kept normally closed by means of the spring *l*. A slide *L* is adapted to move longitudinally with relation to the handle *B* by sliding in the eyes *n* secured to said handle, and the lower end of this slide-rod is bent around the bellows as shown at *L'*, Figs. 1 and 3. When this slide is in the position shown in Figs. 1 and 3, the bellows may be opened, but when it is moved up by the side of the handle, the portion *L'* thereof, moving up against the portion *h'* of the bellows, closes it.

The operation of the device is as follows: The slide *L* being down so as to allow the bellows to be opened, the wheel *A* is trundled by means of the handle *B*, with the effect that the pinion *A'* causes the music wheel *C* to rotate slowly. As it rotates, the portion *D* of the music wheel moves rotatively by the trumpet *F*, causing the perforations *e* to coincide successively with the perforations *F''*. Air enters the small end of the trumpet through the nozzle *H'* of the bellows (which is provided with the ordinary "clapper" or valve), and as the holes *F''* in the trumpet are brought into coincidence with the holes *e* in the music wheel, air passes from said bellows through the holes in the different portions of said trumpet through the holes *e* in the music wheel, and different notes of the scale are sounded. As will readily be seen, the notes on the scale are represented by the holes *F''*, and a tune represented by the holes *e*. It will therefore be seen that the notes on the scale, constituting the tune, are determined by the coincidence of the perforations *F''* *e*. The length of the notes is determined by the rotation of the annular row of protuberances *E* under the end of the finger *I*. After a finger has mounted a protuberance, its descent is rapid or gradual according to the angle on the farther side, or the upward angle may be long or short. The longer the downward angle, the longer the note, as, during the descent of the angle, the bellows is being pressed, and is sending air into the trumpet. When the finger *I* begins to mount the angle approached, the bellows is being opened by said finger, and no note is sounded. It will be seen therefore, that the notes may be long or short, staccato, &c.

In the modification shown in Figs. 5 and 6, *P* represents the handle, and *R* the music wheel, which rolls on the ground, and has an annular row of protuberances *S* which engage directly with the upper portion of the bellows *P*, whose nozzle is provided with the trumpet *U*. By this means, a series of notes of different lengths may be produced.

Having thus fully described my invention, 65 what I claim, and desire to secure by Letters Patent, is—

1. In a toy of the character described, a wheel provided with an annular row of protuberances, a bellows secured to a stationary portion of the device and held normally against said protuberances and adapted to be operated thereby, and a musical wind instrument connecting with said bellows and supplied thereby with air, said wind instrument being provided with perforations and set next an annular row of perforations in the music wheel, whereby as the said wheel rotates the perforations therein and in the wind instrument will coincide, substantially as set forth. 80

2. In a toy of the character described, a wheel provided with an annular series of protuberances arranged on a preconceived plan, a bellows secured to a stationary portion of the device and held normally against said protuberances and adapted to be operated thereby, and a musical wind instrument connecting with said bellows and provided with perforations at different points corresponding to the notes of a musical scale and set next an annular series of perforations in the music wheel, whereby as said wheel rotates the perforations therein and in the wind instrument will coincide successively so as to produce a musical tune or air, substantially as described. 95

3. In a toy, the combination of the music wheel *C* provided with the perforated annular portion *D* and the annular series of protuberances *E*, the bellows *H* having one of its walls secured to the stationary portion of the machine and the other free, the finger *I* extending from said bellows into engagement with said protuberances, means for holding the bellows normally closed and the wind instrument *F* provided with perforations *F''* and set next the music wheel so that the said perforations *F''* and those in the music wheel may move in and out of coincidence, substantially as set forth. 100

4. In a toy of the character described, the combination of the handle *B*, the bellows *H* having one of its walls secured thereto and the other free, and the slide-rod *L* provided at its lower end with the bent portion *L'* extending around against the free wall of the bellows, substantially as described. 115

5. In combination, the driving wheel *A* provided with the pinion *A'*, the gear music wheel *C* provided with the perforations *e* and protuberances *E*, frame or handle *B*, the bellows *H* secured to said frame and provided with the finger *I*, and the wind instrument *F* connecting with said bellows and perforated at *F''*, substantially as set forth. 120

WILFORD A. HILL.

Witnesses:

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