

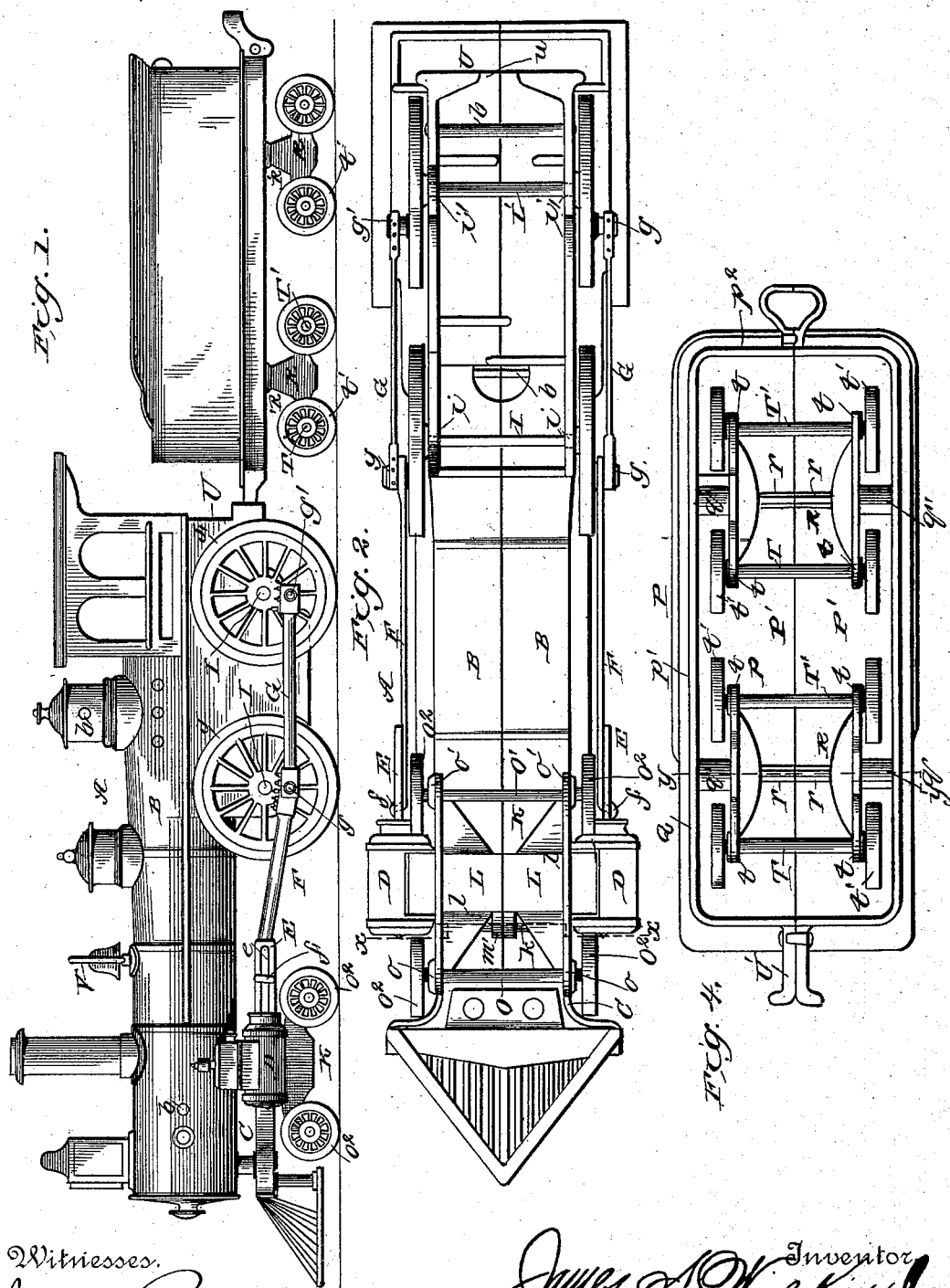
(No Model.)

2 Sheets—Sheet 1.

J. S. WILKINS, Jr.
TOY LOCOMOTIVE.

No. 384,658.

Patented June 19, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES S. WILKINS, JR., OF KEENE, NEW HAMPSHIRE.

TOY LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 384,658, dated June 19, 1888.

Application filed March 26, 1887. Serial No. 232,531. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. WILKINS, JR., a citizen of the United States, residing at Keene, in the county of Cheshire and State of New Hampshire, have invented a new and useful Improvement in Toy Locomotives, of which the following is a specification.

This invention relates to improvements in toy locomotives; and it consists of the peculiar combination of devices and novel construction and arrangement of the parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a toy locomotive embodying my present improvements. Fig. 2 is a bottom plan view thereof. Fig. 3 is a vertical transverse sectional view thereof on the line *x* of Fig. 2. Fig. 4 is a bottom plan view of the tender. Fig. 5 is a transverse sectional view on the line *y y* of Fig. 4, and Figs. 6 and 7 are detached perspective views of one of the trucks for the tender and the front wheels of the locomotive, respectively. Fig. 8 is a detail view of the bell-frame.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates a toy locomotive embodying my invention. This locomotive is cast in two longitudinal sections, each of which has one-half of the parts of the locomotive formed integral therewith—that is to say, each section B of the locomotive comprises one-half of the boiler, the cab, the steam and sand domes, the smoke-stack, and the several other parts. These longitudinal sections B of the locomotive are placed together so that the several integral parts thereof register properly with each other to present a complete and finished appearance, and the sections B are secured together in any preferable manner—as, for instance, by through-bolts *b*. To the front part of each section of the locomotive is formed the usual platform, C, which carries the pilot at its front end, and on the rear outer edges of the platform are provided the cylinders D, said cylinders and pilot being cast or formed separately of the sections B and suitably fixed thereon in proper positions. From the rear side of the cylinders extend or project the guides E, which are preferably cast separately from, or they may be made integral with, the

cylinders, and each of these guides is formed with a horizontal longitudinal slot, *e*, in which works the cross-head *f*, that is cast integral with the front end of one of the connecting-rods F. The front end of the connecting-rod is curved outward to extend through the slot *e*, and the head *f* is formed on the outer end of the said curved portion at right angles to the connecting-rod and in a vertical position, and is thereby adapted to bear against the outer side of the guide E. The rear end of the connecting-rod F is pivoted on a crank-pin, *g*, that is secured to one of the driving-wheels of the locomotive, and on this crank-pin is also pivoted the front end of another connecting-rod, G, which is pivoted at its rear end on a similar crank-pin, *g'*, of one of the rear driving-wheels of the locomotive.

Each section B of the locomotive is further provided with an integral section of one-half of the fire-box of the locomotive, and through the sides of these fire-box sections or halves are formed transverse aligned openings *i i'*, which openings are arranged near the front and rear ends of the fire-box sections, as shown. Through the aligned front openings, *i*, are passed a horizontal axle or shaft, I, and through the aligned rear openings, *i'*, is passed a similar shaft, I'. On the extremities of these front and rear shafts are journaled the driving-wheels J J' of the locomotive.

The driving-wheels J of the locomotive are journaled on the front axle, I, and the other driving-wheels, J', are journaled on the rear axle, I', as shown, and a pair of these driving-wheels are arranged on each side of the locomotive and thereby provide two pairs of driving-wheels. The front driving-wheels, J, are provided with the crank-pins *g*, on which are pivoted the meeting ends of the front and rear connecting-rods, F and G, and the rear driving-wheels, J', are provided with the crank-pins *g'*, on which the rear ends of the rear connecting-rods are pivoted, as is obvious.

It will thus be seen that I provide a toy locomotive which closely resembles and approximates the shape of an ordinary locomotive as at present ordinarily constructed. The device, being cast in two parts which are duplicates of each other, can be readily and quickly connected or secured together. By making the locomotive in two parts, as described, it

can be manufactured very cheaply and rapidly, and it is not liable to become easily broken or destroyed, as the sections mutually brace and strengthen one another.

5 K designates the front truck of the locomotive, which is pivotally connected to a transverse shaft or rod, k , and is free to turn thereon in a longitudinal line, as upon a pivot, to adapt the truck to accommodate itself to any
10 unevenness in the surface over which it moves, and thereby reduces to a minimum the liability of the locomotive to become upset and injured. This truck K is shown in detail in Fig. 7 of the drawings, and is made in two sections or parts, L. Each of these sections or
15 parts L of the front truck of the locomotive comprises a horizontal plate, l , having the inclined converging sides, as shown, to reduce the weight of the truck. The inner opposing
20 edges of the sections or parts l of the truck are each provided with a longitudinal vertical flange, m , which is cast integral therewith, and in front of this vertical flange is formed an integral boss or lug, m' , through which is formed
25 an opening. When sections of the truck are adjusted together, the plates l thereof are arranged in the same plane with their inner edges in contact, and the flange m and perforated ears m' align or register with one another, as is obvious. The ears or lugs m' of
30 the truck are placed or fitted in a recess or chamber, n , formed in the lower front side of the locomotive, and through the aligned eyes in the said ears or lugs is passed a shaft or rod, k , which is fixed in the lower under side of the locomotive in any suitable manner, the vertical
35 flanges m of the sections being connected by through-bolts. Each of the sections of the truck is provided at its front and rear ends
40 and on the sides thereof with depending integral bearings o o' , the bearings o being arranged in the front portion of the truck and in line with each other, and the bearings o' in the rear portion of the truck and also in line.
45 Horizontal shafts O O' are journaled in these aligned front and rear bearings of the front truck, and on the extremities of these shafts are secured wheels O², of comparatively small diameter as compared with the diameter of
50 the driving-wheels. It will be observed that the truck-wheels serve to support the front end of the locomotive and that the truck is free to swing vertically on its pivot or shaft to accommodate the truck-wheels to any uneven
55 ness in the surface over which the locomotive moves, so that the latter will not be liable to fall or topple over.

The truck and driving wheels support the locomotive in a horizontal position, and as it
60 moves the connecting-rods are reciprocated back and forth by the motion imparted thereto by the driving-wheels, the front end of the front connecting-rod sliding in the longitudinal groove in the fixed guide E.

65 P designates the tender of the locomotive, which is removably coupled thereto in a manner which I will presently describe. This

tender is cast or formed in two longitudinal sections, which are suitably connected or secured together, each section P' of the tender
70 having one-half of the bed p and the vertical side and rear wall, p' p^2 , the meeting edges of the rear walls, p^2 , being arranged in line with each other to form a closed rear end to the
75 tender, while the front end of the latter is left open, as is usual. Each longitudinal section P' of the tender is provided on its under side with integral bearings q q' , the bearing q being
80 arranged near its front end, while the bearing q' is disposed at its rear end, as shown in Fig. 4. The bearings at the front and rear
85 ends are arranged in line with each other and within a vertical flange, Q, which depends from the side edges of the tender to protect and conceal the bearings from view.

R designates the trucks, each of which is cast in two sections, R'. Each section of the trucks is provided at its upper side with a tubular
90 bearing, r , which aligns with the corresponding bearing of the fellow section of the truck, and these bearings are arranged between and in line with the fixed bearings on the tender, and a shaft or rod, S, is passed through the
95 said aligned bearings, the said shaft being supported in the fixed bearings of the tender, while the tubular bearings of the trucks are free to swing or move thereon. Each section
100 of the truck is further provided with the aligned front and rear bearings t , in which are journaled the front and rear axles, T T', on which are secured the supporting-wheels t' . The
105 front and rear trucks of the tender are free to turn or swing on their respective shafts independently of one another, and the trucks are thus free to accommodate themselves to the
110 horizontality of the surface over which the tender moves.

The rear end of the locomotive is provided with a vertical flange, U, which depends therefrom, and in the middle of this flange is formed
115 a vertical slot or opening, u , which extends or opens through the lower edges of the flange. The front end of the tender is provided with a forwardly-projecting arm, U', having laterally-extending hooks on opposite sides of the
120 free end thereof, and this arm is adapted to fit in the slot or opening in the flange, to permit its hooks to bear against the side edges of the slot or opening and thereby detachably couple the tender and locomotive together.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings.

I provide a locomotive which can be manufactured with ease and rapidity, and consequently at a small cost, and the locomotive is
125 not likely to become upset or overturned when it travels over an uneven surface.

The crank-pins g and g' are secured to the front and rear driving-wheels by forming apertures therein and forcing the pins securely in the apertures. The bell-frame V of the locomotive is cast or formed separately from the longitudinal sections B, and at its lower end
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it has a depending headed stud, *v*. In securing the longitudinal sections together the headed depending stud of the bell-frame is first inserted between the halves or sections of the boiler at a proper point on the latter, and the bell-frame is held very securely in place by the head of the stud bearing against the inner sides of the longitudinal sections B.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a toy locomotive, the combination of the driving-wheels, the cylinder, the fixed guide in rear of the cylinder, having the horizontal longitudinal slot *e*, and the connecting-rod connected with the driving-wheels, and having its front end curved and extended through the slot *e*, and provided with a vertical cross-head, *f*, bearing against one side of the guide, substantially as described.

2. In a toy locomotive, the combination of a cylinder having a longitudinally-slotted guide extending rearwardly therefrom, the front and rear driving-wheels, each having the crank-pins, the front connecting-rod pivoted to the crank-pin of the front driving-wheel, and having its front end curved and extended through the slot in the guide, and provided with a cross-head, *f*, bearing against one side of the guide, and the rear connecting-rod connected at its ends to the crank-pins on the front and rear driving-wheels, as and for the purpose described.

3. In a toy locomotive, the divided truck having the supporting-wheels, both sections of the truck being pivoted to the body of the locomotive and adapted to turn or swing independently in a longitudinal direction, as set forth.

4. In a toy locomotive, the divided truck having the supporting-wheels, each section of the truck carrying a front and a rear wheel, and said sections being pivoted to the body of the locomotive, so as to have an independent movement, as set forth.

5. A toy locomotive formed of two sections secured together and having fixed aligned bearings on its under side, the transverse shaft fitted rigidly in the bearings, and the oscillating divided truck journaled on the said shaft, and each section of the truck carrying the

front and rear wheels, whereby said truck-sections are caused to act independently, as set forth.

6. In a toy locomotive, the combination, with a transverse shaft or rod supported beneath the boiler at the front end thereof, of a swinging truck having the bearings in its lower side and pivoted upon the shaft or rod, and the axles fitted in the bearings and carrying the supporting-wheels, as and for the purpose described.

7. A toy locomotive having the depending flange at its rear side provided with the vertical central open slot, in combination with the tender having the integral forward-projecting arm *U'*, provided with the T-shaped head at its front end to engage the slotted flange of the locomotive and couple the tender thereto, substantially as described.

8. A tender for locomotives formed of two longitudinal sections bolted together, embodying the T-headed hook *U'* at its front end, one portion of the hook being carried by each section of the tender, so that when the sections are connected together a complete hook, *U'*, is formed, as set forth.

9. A toy locomotive formed of two longitudinal sections secured together and having fixed aligned bearings on its under side, the transverse shaft fitted rigidly at its ends in the bearings of the sections, and the oscillating trucks journaled on the transverse shaft A between the said bearings and carrying the supporting-wheels, whereby the trucks are enabled to swing or oscillate longitudinally, as set forth.

10. A toy locomotive formed of two longitudinal sections, B, placed in alignment with each other and secured together, and a bell-frame having the depending headed stud provided with an annular flange to receive the proximate edges of the sections, as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES S. WILKINS, JR.

Witnesses:

J. A. BEMIS,
A. J. DAVIS.