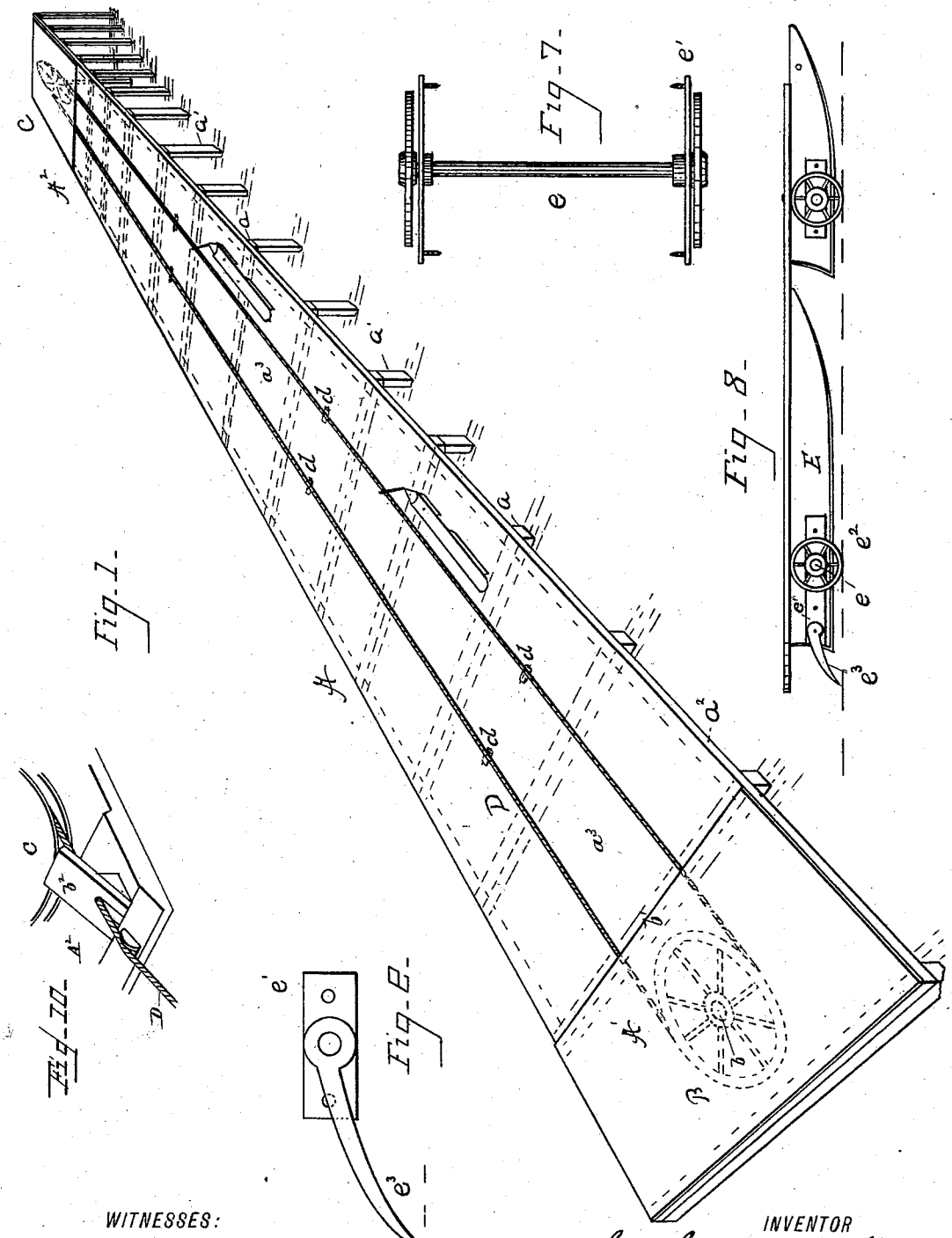
(No Model.) 2 Sheets—Sheet 1.

E. H. FENTON.

COMBINED SLIDING AND ROLLER COASTER.

No. 372,306. Patented Nov. 1, 1887.



WITNESSES:

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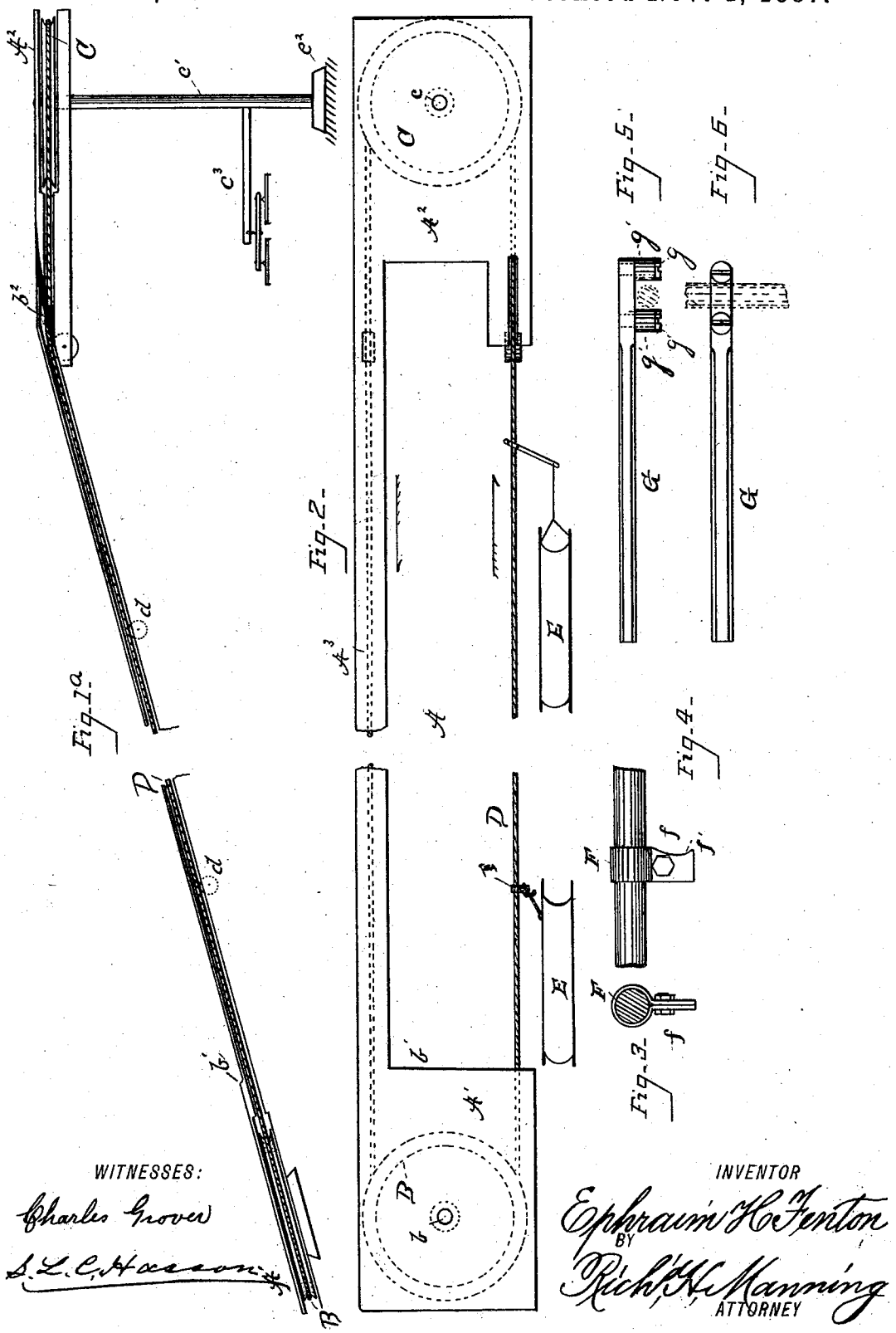

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UNITED STATES PATENT OFFICE.

EPHRAIM H. FENTON, OF KANSAS CITY, MISSOURI.

COMBINED SLIDING AND ROLLER COASTER.

SPECIFICATION forming part of Letters Patent No. 372,306, dated November 1, 1887.

Application filed January 17, 1887. Serial No. 224,653. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM H. FENTON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Combined Sliding and Roller Coasters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

My invention has for its object to provide for a coasting-incline a means for the elevation of toboggans or sleds from the foot of the incline to the top, and enable the said incline to be converted from winter to summer coasting, as well as to adapt sleds and toboggans to the alternate modes of locomotion on the incline; and it consists in the novel means hereinafter fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of an artificial incline supported from the ground upon standards or columns, and showing the traveling endless cable and pulleys. Fig. 1ª is a detailed side view of the endless cable, pulleys, and anti-friction idlers. Fig. 2 is a plan view of the cable, showing the case inclosing one side of the cable and the gripping devices for connecting the toboggans and sleds with the cable. Fig. 3 is a transverse view of the clip. Fig. 4 is a side view of the clip and a portion of the cable to which it is attached. Fig. 5 is a side view of the grip-bar. Fig. 6 is a top view of the grip-bar. Fig. 7 is a plan view of the shaft and wheels of the sleds. Fig. 8 is a side view of sleds connected in pairs and showing the wheels and checking devices thereon. Fig. 9 is a detailed view of the devices for checking the wheels. Fig. 10 is a detail view of the grooved inclined tripping-block.

Similar letters of reference indicate corresponding parts in all the figures.

In the construction of my invention I make an inclined platform or floor, A, of a suitable length to afford a descent for coasting, and construct the same with transverse beams *a a*, which beams are supported from the ground at the proper height by the standards *a' a'* on opposite sides of the platform.

Upon the top of the beams *a a*, I lay stringers a^2 a^2 in a longitudinal direction of the platform, and then make a smooth floor, a^3, for the platform, extending from the stringers a^2 a^2 upon one side to the stringers a^2 a^2 upon the opposite side of the platform, and inclined as described.

At the foot of the inclined platform A and upon its upper surface I journal, horizontally, a grooved wheel, B, and at the top of the incline, which is made horizontal to form a landing, and on the upper surface of the platform, I journal a grooved wheel, C. I then place around the said wheel B, and extending to and around the wheel C, an endless cable, D. On the platform A, and in a longitudinal direction of the cable D, and beneath said cable, I place at intervals the idlers *d d*, which consist of rollers let into the said platform and journaled to suitable plates thereon, over which the cable runs and prevents frictional contact of the cable with the platform. In the lower portion of the platform, and extending in a transverse relation over the pulley B and across the said end of the incline, I make a box for the wheel B, over which I place a covering, A', of plank, which is elevated above the platform A a distance slightly exceeding the thickness of the grooved wheel B, and so as to receive the journal *b* of said wheel or pulley therethrough. At the point *b'* of the covering A' the edge of the said covering is beveled, so as to offer no obstruction to the passage of the coasting-vehicles.

At the top of the incline platform A, and above the wheel C, I make a similar box or covering, A^2, for the said wheel C as that made for the pulley B, and in which the journal *c* of the said horizontal wheel or pulley C is mounted. On one side of the platform A, and extending from the portion A' of the covering over wheel B to the covering A^2 over the pulley C and covering one portion of the cable B, which runs longitudinally over the platform A, is placed a box-covering, A^3. I then connect rigidly with the journal *c* of the pulley C a shaft, *c'*, which extends downwardly beneath the platform A to a suitable support, c^2, upon the ground, in which the lower end of the shaft *c'* is journaled. I then attach to the side of the shaft *c'* horse or steam power, as preferred.

The pole c^3, extending from the shaft c', (shown in the drawings,) is provided for the horse-power.

In place of the platform A for the incline any natural inclined surface of ground, as a street, will be the equivalent, and the grooved wheels or pulleys A C may be placed beneath the ground, if preferred, and the cable carried to the curb of the street. The incline thus made for water use I flood with water, and, when congealed, the cable, it will be readily seen, renders the incline more serviceable.

For the purposes of my invention the traveling endless cable will during the time devoted to its use in coasting be propelled at a convenient rate of speed for the attachment of the coasting-vehicles E, which are made for either summer or winter service.

To enable the sleds or toboggans to be carried to the top of the incline after a descent has been made, I attach to the cable D the clips F. These clips are made from a narrow strip of metal, which is made of a sufficient length to go once around the cable D and depend a short distance beneath the cable, and through which ends, near the cable, I insert a screw-bolt, f, which binds the clip firmly around and prevents its slipping on the cable. On the front side portion of the end of the clip I make a notch, f', for the purpose hereinafter described.

The sleds or toboggans E, I provide with a transverse shaft, e, which extends through the opposite sides of said sleds and through a plate, e', which is attached flatwise on the outer portion of the side of the sleds. Upon the ends of the shaft e are placed the wheels e^2 e^2, which are removably attached to said shaft and are made of a suitable diameter to elevate the sleds from the ground and enable the sleds to be propelled in that manner.

Upon the rear end of the sled or toboggan E, I pivotally attach one end of a pointed curved bar, e^3, the opposite end of which bar will drag upon the ground and prevent the backward movement of the sled or toboggan in ascending the incline.

To enable the sleds or toboggans to be readily connected with the traveling cable D, I make a grip-bar, G, and at one end of said bar I attach two studs, g g, and around said studs I place the rubber sleeve g' g'. The studs g g are placed a slight distance apart, sufficient to slip over the cable D when at right angles thereto, and to the opposite ends of said grip-bar I attach the rope connected to a sled or toboggan. Thus the resistance of the sleds binds the end of the grip-bar on the cable, the rubber serving to prevent a shock to the sled in connecting said sleds or toboggans to the moving cable.

Should it not be convenient to use the grip-bar, the end of a rope attached to the sled is thrown over the ends of one of the clips of the moving cable. Upon the portion of the platform near the wheel C, and inclined at an angle from the platform to a point horizontal with the said wheel or pulley, and inclosing the sides of said cable, I place a grooved tripping-block, b^2, upon which the grip-bar G rides, and is thrown above and out of the cable upon reaching the horizontal portion of the platform at the top of the incline.

The advantages of my invention consist in providing for a streetway or other coasting incline an expeditious means of gaining ascent to the top of the incline, and which incline may be flooded with water while the cable is propelled.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. The combination, with an inclined coasting-plane, of an endless cable, pulleys on the said plane carrying said cable, and a box inclosing the cable on one side of the said inclined plane, substantially as described.

2. The combination, with an inclined coasting-plane, of an endless traveling cable, pulleys on the said plane carrying said cable, a suitable cover for said pulleys, and a box inclosing the cable on one side of the said inclined plane, substantially as described.

3. The combination, with the platform of a coasting-incline and an endless traveling cable, of a grooved inclined tripping-block, substantially as and for the purpose described.

4. A toboggan-grip consisting of a bar having studs placed a sufficient distance apart and upon one end of said bar and elastic sleeves on said studs, for the purpose specified.

EPHRAIM H. FENTON.

Witnesses:
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M. S. TOWSON.