

No. 721,336.

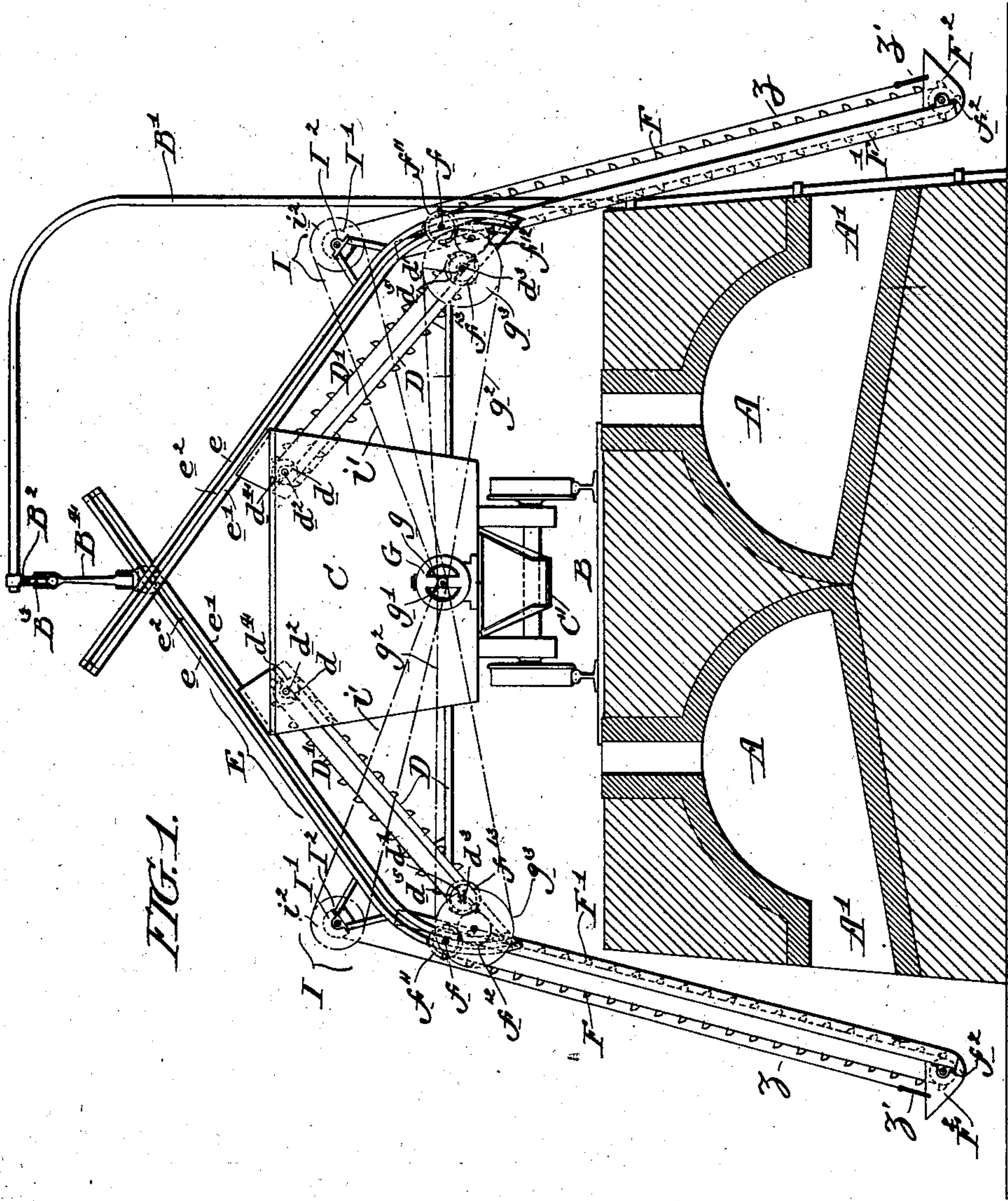
PATENTED FEB. 24, 1903.

H. J. SMITH.  
CAR CONVEYER.

APPLICATION FILED MAY 31, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:  
William C. Gassner  
Charles J. Snyder.

Inventor:  
Harry J. Smith  
By his Atty.  
L. Williams.

No. 721,336.

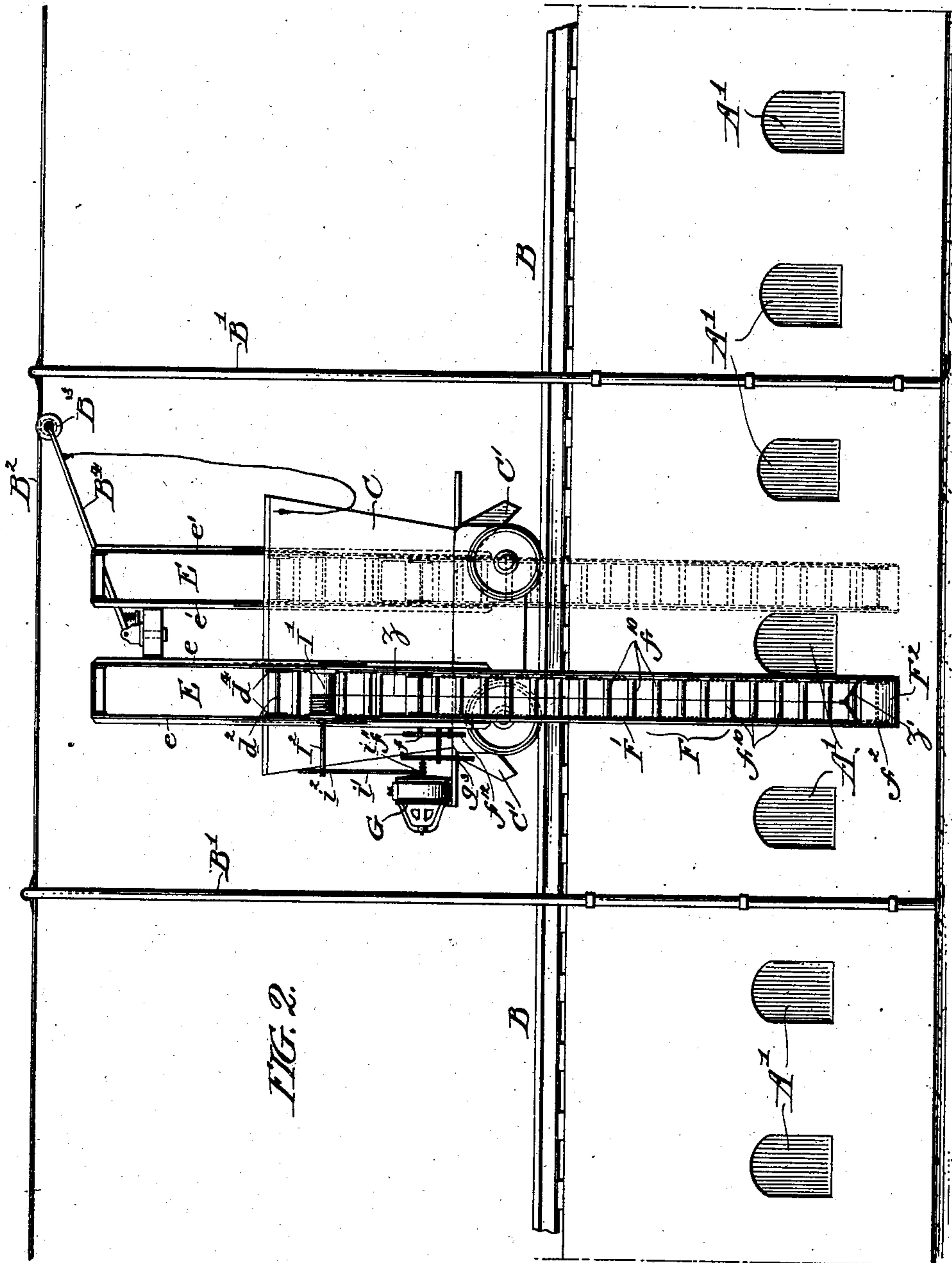
PATENTED FEB. 24, 1903.

H. J. SMITH.  
CAR CONVEYER.

APPLICATION FILED MAY 31, 1902.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:  
William C. Gassner  
Edward J. Snyder

Inventor:  
Harry J. Smith  
By his Atty.  
David S. Sullivan



No. 721,336.

PATENTED FEB. 24, 1903.

H. J. SMITH.  
CAR CONVEYER.

APPLICATION FILED MAY 31, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

FIG. 3.

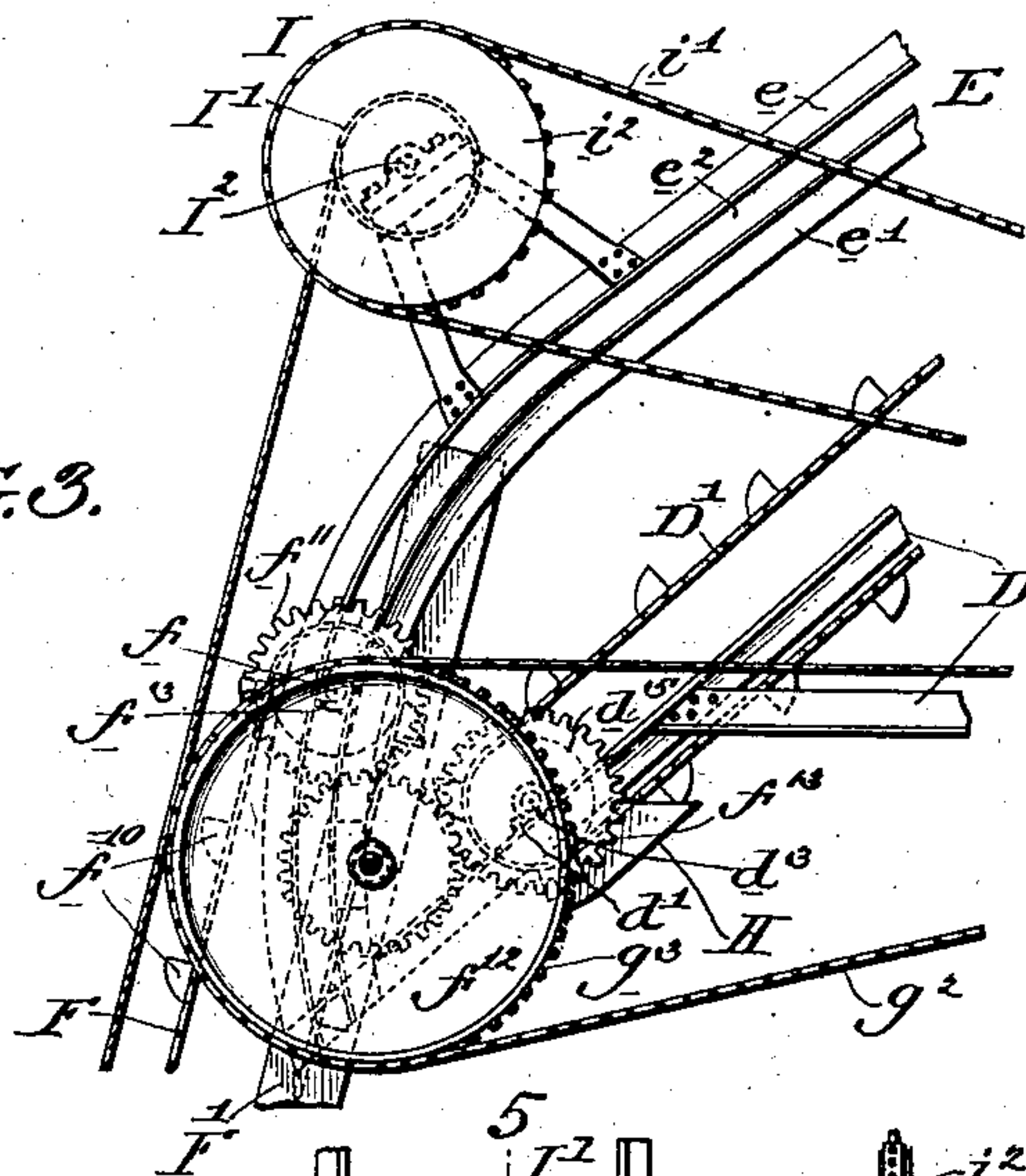


FIG. 4.

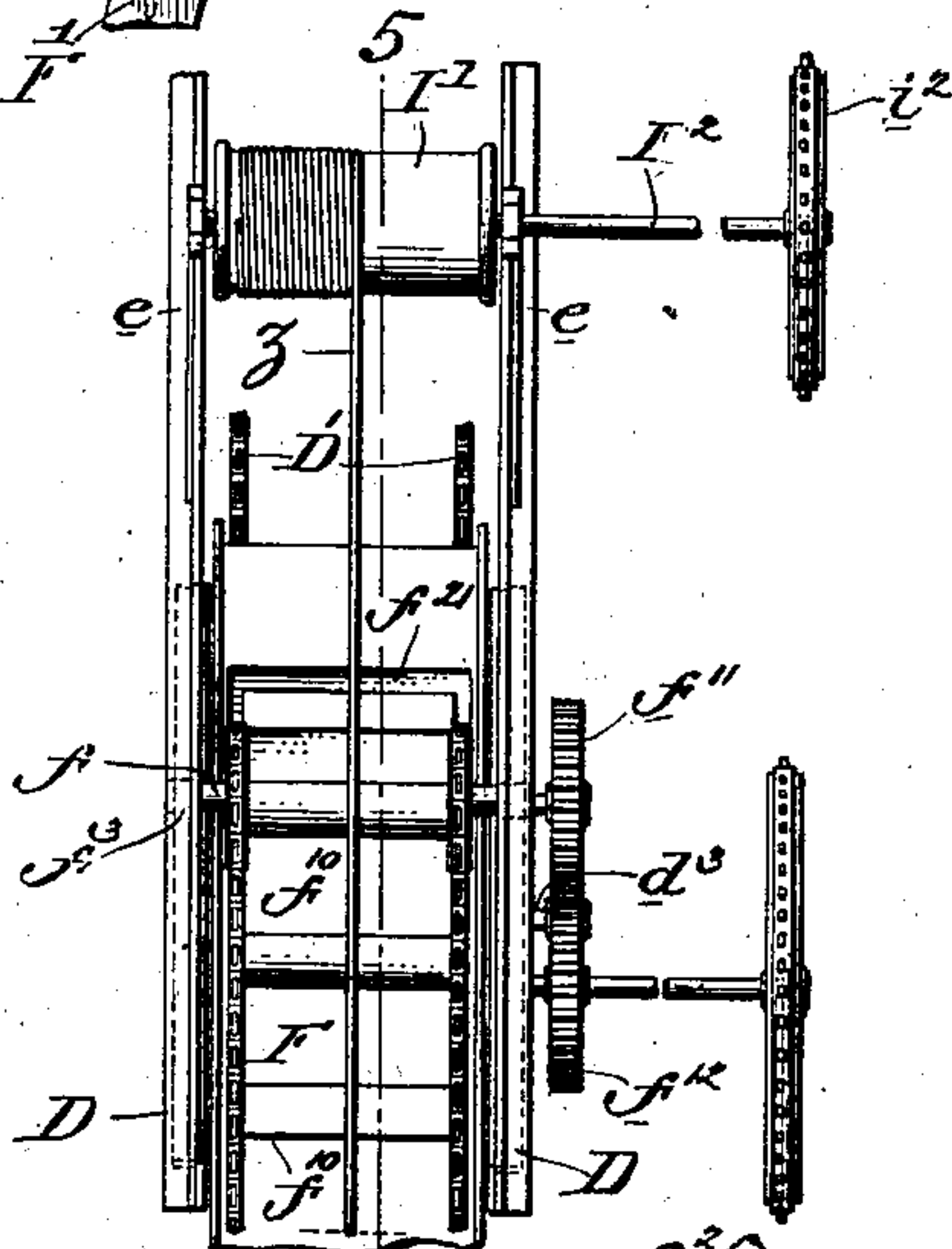
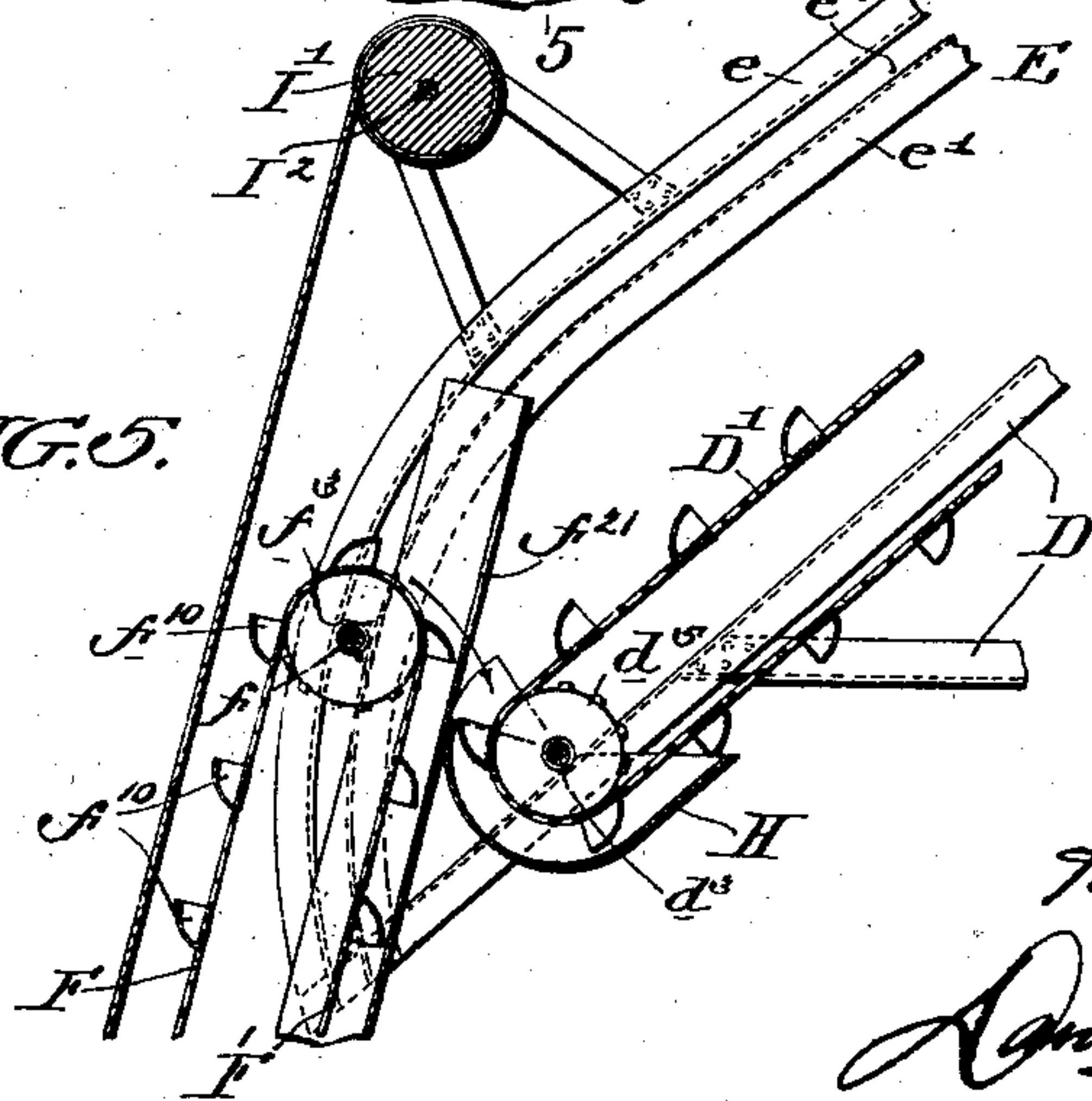


FIG. 5.



Witnesses:  
William C. Green,  
Edward F. Snyder.

Inventor:  
Harry J. Smith  
By his Atty.  
R. J. Williams



# UNITED STATES PATENT OFFICE.

HARRY JOHN SMITH, OF PHILADELPHIA, PENNSYLVANIA.

## CAR CONVEYER.

SPECIFICATION forming part of Letters Patent No. 721,336, dated February 24, 1903.

Application filed May 31, 1902. Serial No. 109,645. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY JOHN SMITH, a subject of the King of Great Britain, (but having declared my intention of becoming a citizen of the United States,) residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Car Conveyers, of which the following is a specification.

My invention relates to improvements in conveyer-cars; and it consists of an electrically-operated car or trolley-car provided with a system of elevators for handling finely-divided coal or coke, commonly known as "smalls," which accumulates in large quantities about the doors of coking-ovens and which must be removed from time to time, so that it will not choke the passage-way and interfere with the working of the ovens. In practice heretofore this waste product (small coke) has been removed by means of mule-carts, with the resulting evils that much time has been consumed in removal and much of the marketable product has been crushed and rendered useless by the maneuvering of the carts and drivers in getting the waste material or smalls away from the ovens.

In carrying out my invention the conveyer-cars are caused to travel upon tracks mounted above the ovens, and the waste product below is reached by means of extending conveyer mechanism which can be drawn upward or folded over the car when the same is loaded and ready to be removed to the dumping-ground or incinerating-furnaces, where the waste product is disposed of.

My invention will be more fully understood by reference to the accompanying drawings, in which—

Figure 1 illustrates a vertical section of a coke-furnace with a conveyer-car constructed in accordance with my invention arranged above the furnace and having the conveyers extended to receive the waste product from below. Fig. 2 is a side elevation of the furnaces and car relatively in the same position as shown in Fig. 1. Fig. 3 illustrates an enlarged front elevation of the gearing and connecting parts for operating the two conveyers. Fig. 4 represents an enlarged front elevation of the parts shown in Fig. 3, and Fig. 5 illustrates an enlarged vertical section on the line 5 5 of Fig. 4.

Referring to the reference-letters of the

drawings, A A represent two of the series of coke-ovens, which are arranged in a double row in a long line or battery and operated from opposite sides through doors A' A'. Above the ovens is a railway B, upon which travels the car conveyer C forming the subject-matter of my invention. Along the sides of the ovens are arranged a series of supports B', to which is attached a trolley-wire B<sup>2</sup>, which may be connected to a source of electrical energy to propel the car and its operating parts through the medium of a trolley-wheel B<sup>3</sup> and pole B<sup>4</sup>. On each of the sides of the car C is a supporting structure or framework D, rigidly united to the car and provided with bearings *d* and *d'*, in which are supported shafts *d*<sup>2</sup> and *d*<sup>3</sup>, supporting sprocket-wheels *d*<sup>4</sup> and *d*<sup>5</sup>, which carry the endless conveyer mechanism D'. Above the framework D is constructed a guideway E, formed of parallel members *e* and *e'*, arranged in pairs some distance apart, so as to leave a space *e*<sup>2</sup> to receive the shaft *f* of a conveyer mechanism F'. The conveyer mechanism F' is supported in a channel-shaped frame F', one end of which is furnished with bearings *f*<sup>2</sup> and with a hopper F<sup>2</sup>, into which the small coke is shoveled, so as to be picked up by the buckets *f*<sup>10</sup> of the conveyer mechanism. The opposite end of frame F' is guided between the structural parts of the guideway E, and being journaled to the shaft *f* by bearings *f*<sup>8</sup> is carried with the shaft as the conveyer mechanism is lifted. The shaft *f* is provided with a gear-wheel *f*<sup>11</sup>, which when the conveyer mechanism is in position shown in Fig. 1 of the drawings engages the teeth of a gear-wheel *f*<sup>12</sup>, which in turn engages the teeth of a gear-wheel *f*<sup>13</sup>, mounted upon the shaft *d*<sup>3</sup>.

The power for driving the conveyer is obtained from an electric motor G, supported on the front platform of the car, on the shaft *g* of which is a sprocket-wheel *g'*, which carries a sprocket-chain *g*<sup>2</sup>, passing around a sprocket-wheel *g*<sup>3</sup>.

In order to cause the conveyer mechanisms on each side of the car to be driven in the same direction from the motor, it will be noticed by reference to Fig. 1 that the sprocket-wheel *g*<sup>3</sup> to the right of the car is mounted upon the shaft *d*<sup>3</sup>, while to the left of the car the sprocket-wheel *g*<sup>3</sup> is mounted upon the shaft carrying the gear-wheel *f*<sup>12</sup>.

The upper end of the frame F' is provided



with an opening  $f^{21}$ , through which the buckets  $f^{10}$  discharge their contents into a hopper H, located so that the buckets of the conveyer D' may readily gather up the material and carry it into the car C.

When the car C has been loaded, the conveyer mechanisms F F on both sides of the car are drawn up over the conveyers D' D' by windlasses I I. As both are the same in character, a description of one will suffice for both. The drum I' is operated from the motor G by a sprocket-wheel  $i$ , a sprocket-chain  $i'$ , and sprocket-wheel  $i^2$ , which latter is mounted upon the shaft I<sup>2</sup>. The drum I' of the windlass is provided with a rope Z, which passes from the drum to a cross-rod Z' in the hopper F<sup>2</sup>. When the conveyer mechanisms D' and F are operating to load the car, the upper end of the rope Z is released from the drum I', so that the drum will revolve without effecting the lifting of the conveyer mechanism F; but when the rope Z is linked or otherwise fastened to the drum the conveyer mechanism will be lifted and at the same time disengaged from the mechanism by which it is caused to revolve.

A clutch mechanism may be arranged upon the shaft  $g$  of the motor, so that the winding mechanism may be thrown out of action when the conveyers are operating. When the car C has been filled and the conveyers F have been drawn up and folded over the car, the car is then moved over the railway B to the dumping-ground or to an incinerating-furnace, where the contents are discharged through one of the chutes C', leading from the bottom of the car and controlled by a suitable gate.

It will be understood that my invention is not limited to details of construction except where specifically pointed out in some of the claims. In others my invention contemplates, broadly, the principle of a conveyer-car, as will be hereinafter fully defined.

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

1. A car conveyer comprising in combination a car, inclined conveyers fixedly secured to the upper structure of the car and slidable conveyers depending from the ends of the fixed conveyers and adapted to be folded over the fixed conveyers, substantially as specified.

2. A car conveyer comprising in combination a car, a structural guideway mounted thereon, a conveyer adapted to move in the guideway and a fixed conveyer interposed between the movable conveyer and car, substantially as specified.

3. A car conveyer comprising in combination a car, a structural guideway mounted thereon, a slidable conveyer adapted to said guideway, a fixed conveyer located between the movable conveyer and car, and means for driving the slidable conveyer from the fixed conveyer when the former is extended, substantially as specified.

4. A car conveyer comprising in combination a car, a conveyer mounted in a structure fixedly secured to the car, a structural guideway mounted upon the car above said conveyer, a slidable conveyer, adapted to move in said guideway and to coact when extended with the first-mentioned conveyer and means for drawing up or folding the slidable conveyer, substantially as specified.

5. A car conveyer comprising in combination, a car, a framework and conveyer mounted upon each of the sides of the car, a guideway mounted above said conveyer, a conveyer slidable in the guideway, a windlass mounted upon the guideway for operating the movable conveyer and means as shown to operate the windlass, substantially as specified.

6. A car conveyer comprising in combination a car, a guideway mounted thereon, a conveyer mechanism adapted to be moved up and down in said guideway, a windlass for operating the conveyer in said guideway, a motor to operate said windlass, a conveyer interposed between the car and first-mentioned conveyer and means for driving the two conveyers in unison when in an operating position, substantially as specified.

7. A car conveyer comprising in combination a car, electric means for operating the car, a fixed conveyer mounted upon the car, a motor for operating the conveyer, a guideway mounted above said conveyer, a slidable conveyer adapted to the guideway, means for operating said conveyer in unison with the first-mentioned conveyer, a windlass adapted to raise and lower the slidable conveyer and means as shown to operate said windlass, substantially as specified.

8. A car conveyer comprising in combination a car, electric means for operating the same, a framework located in each side of the car, a conveyer mechanism journaled in said framework, provided at the lower end with a gear-wheel, a guiding-frame secured to the car and located above said conveyer, a slidable conveyer mechanism adapted to said guiding-frame, a gear-wheel arranged upon the upper end of the slidable conveyer mechanism, a gear-wheel engaging the gear-wheel of the first-mentioned conveyer mechanism which is adapted to engage and drive the slidable conveyer when it is in an extended position, electric means for driving said gears, a windlass adapted to lift the slidable conveyer and to move it into and out of engagement with the gear-train, and electric means for operating said windlass, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY JOHN SMITH.

Witnesses:

DAVID S. WILLIAMS,  
ARNOLD KATZ.