

(No Model.)

G. C. BLICKENS DERFER.

4 Sheets—Sheet 1.

CONVEYER APPARATUS.

No. 338,703.

Patented Mar. 30, 1886.

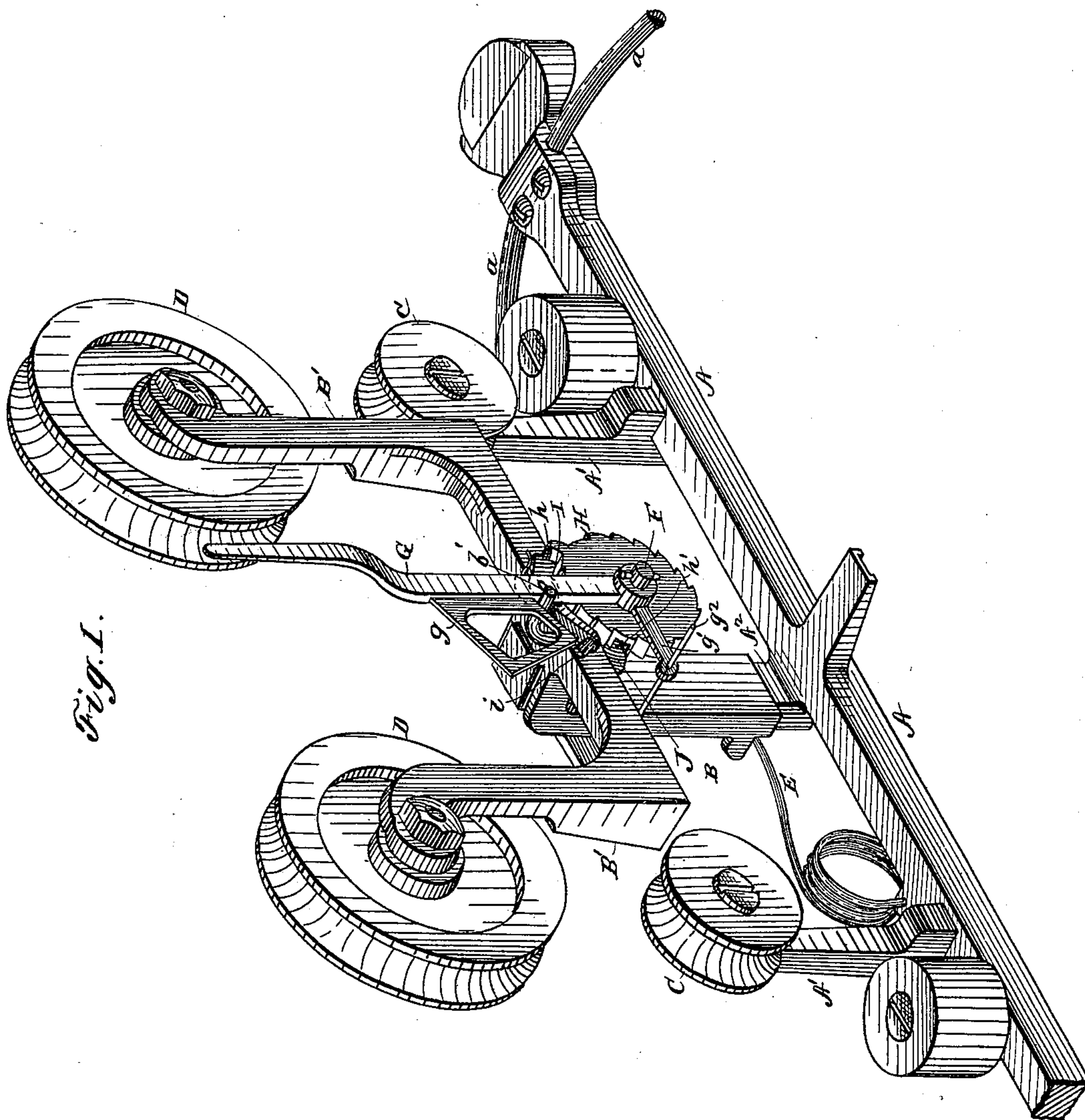


Fig. 1.

Witnesses

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(No Model.)

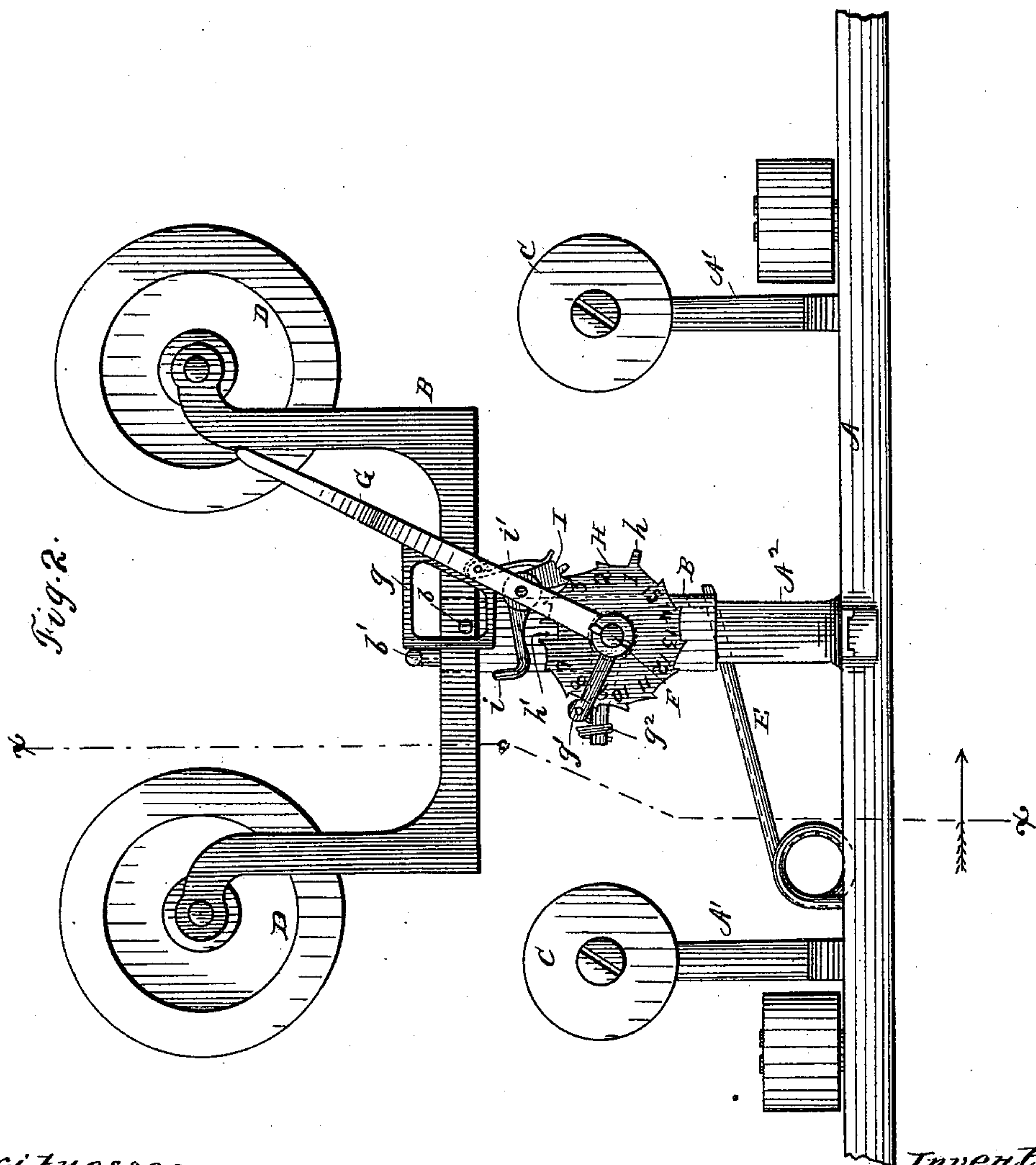
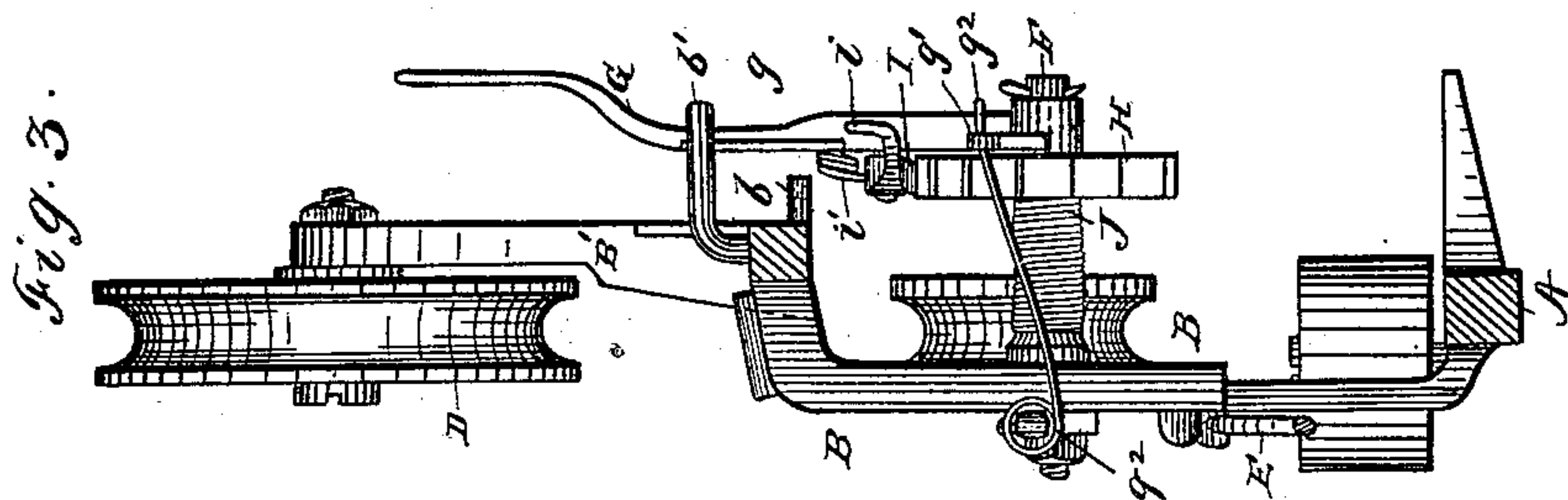
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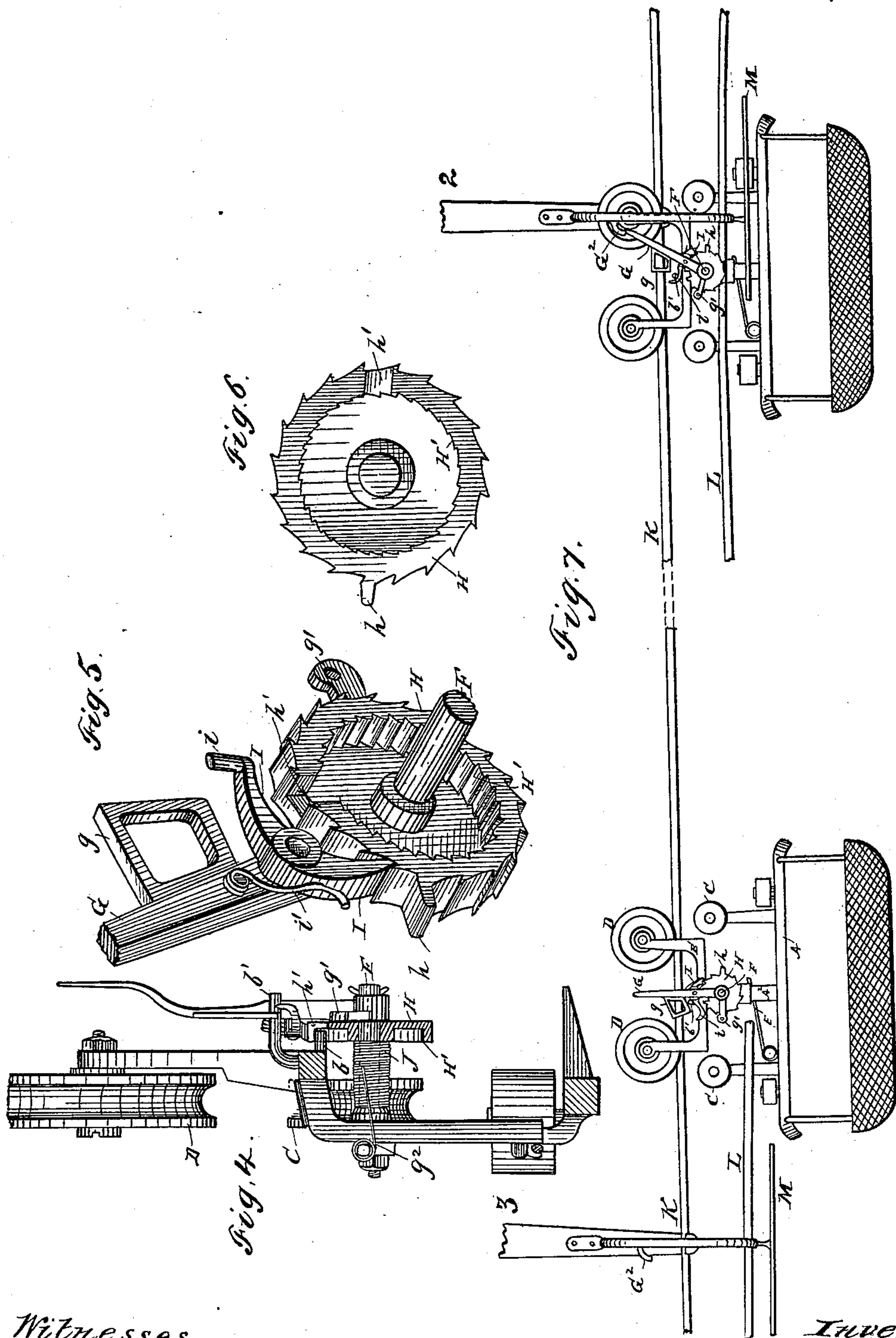
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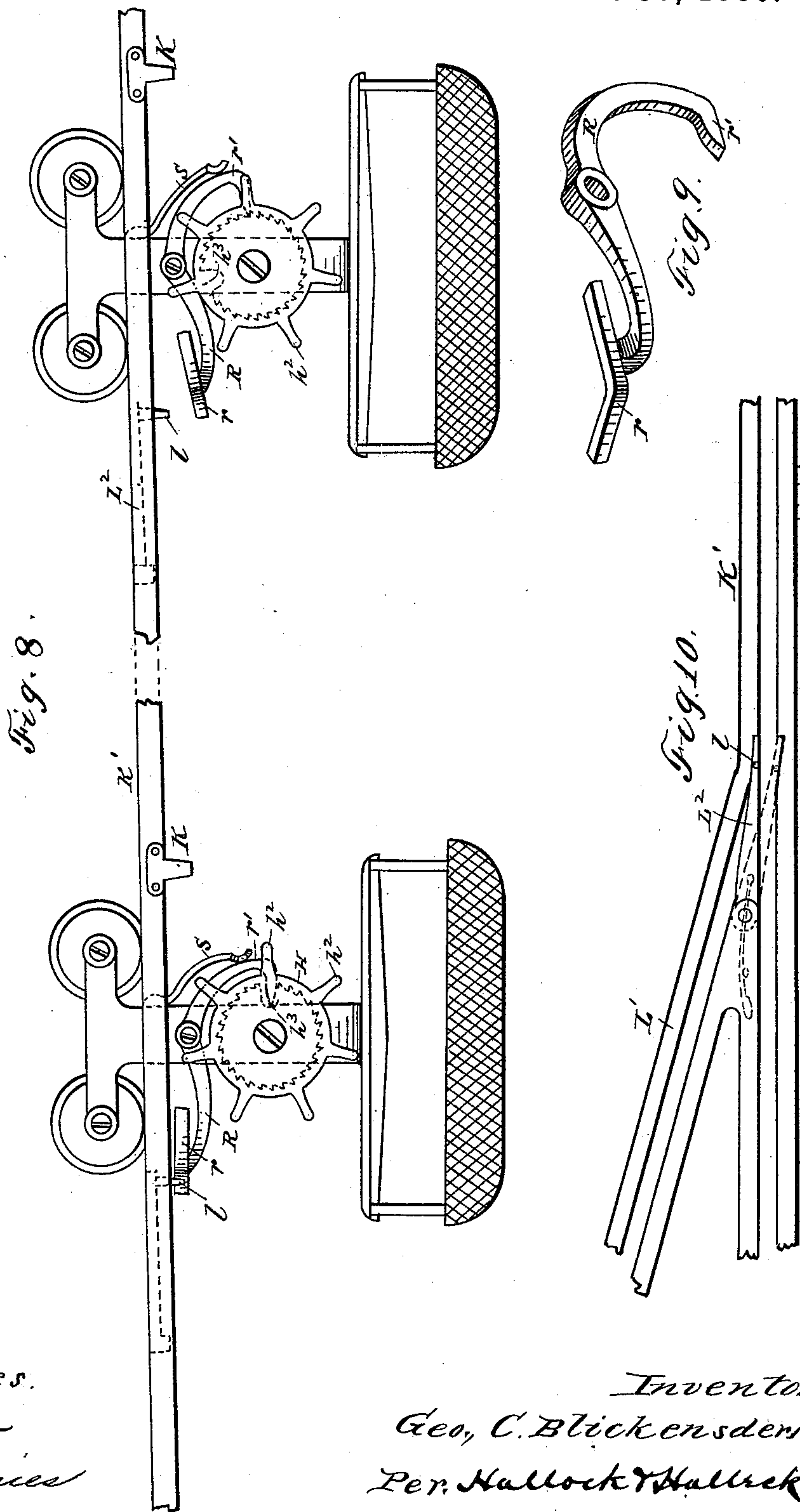
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A 778

UNITED STATES PATENT OFFICE.

GEORGE C. BLICKENS DERFER, OF ERIE, PENNSYLVANIA.

CONVEYER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 338,703, dated March 30, 1886.

Application filed September 1, 1885. Serial No. 175,913. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. BLICKENS DERFER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Conveyer Apparatuses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to carrier devices for stores and other like service; and it consists in certain improvements in the means for switching cars from the main to branch tracks or shunts, as will be hereinafter fully set forth, and pointed out in the claims.

The invention is applicable to the cars of various types of conveyers.

In the accompanying drawings I have shown it as applied to two different types of conveyers. In one the car has two sets of wheels, one for use on the main track and the other on the switch or branch tracks, which latter are brought into action by the action of the switching devices, and in the other the car only has one set of wheels, and is deflected by the switching devices from one track to the other.

An understanding of the application of my invention to these two generic types of conveyers will enable any person of ordinary mechanical acquirements to apply the said invention to any of the various systems wherein the cars or carriers are switched off from the main to side tracks, all of which fall within one or the other of the above types.

It is essential to the perfect working of a conveyer system that the cars be switched automatically at their destined station. This has been heretofore effected by means of certain pins, deflectors, or levers on the cars or at the switches coming in contact with certain devices as the car moves, and the said pins, deflectors, levers, or other parts are graded in length or position, so that only the car destined to a certain station will have the said parts brought into contact. This method is faulty in many respects. When the lines of track are long and the stations are numerous, it requires too great latitude of gradation; also the vibration of the cars on the track often

prevents the switching devices coming into contact at the proper time.

I have found it very desirable that the switching devices be alike on all the cars and at all the stations, so far as length and position are concerned. To effect this it is necessary to dispense with all graduated stops, levers, triggers, &c.

My invention is illustrated in the accompanying drawings, as follows:

Figure 1 is a perspective view of the running-gear of a car used on that type of conveyer apparatus in which the car is derailed from the main track and caught on a second set of wheels on the switch-track, and shows my device applied to effect the tripping or derailment of the main wheels. Fig. 2 is a side view of the same parts shown in Fig. 1. Fig. 3 is an end view of the same parts, looking from the section-line $x x$ in Fig. 2. Fig. 4 is a like view to Fig. 3, with the wheels H in vertical section. Fig. 5 is a perspective view of the wheel H and its attachments, looking from the opposite side from that shown in Figs. 1 and 2. Fig. 6 is a side view of the wheel H from the same side as is seen in Fig. 5, and shows the slot h' at a different point. Fig. 7 is a side elevation of the tracks and cars in different positions. Fig. 8 is a similar view to Fig. 7, but shows a car having only one set of wheels, and which is switched by being deflected onto the side track. Fig. 10 is a plan view of the track shown in Fig. 8. Fig. 9 is a perspective view of the part R, seen in Fig. 8.

Broadly, my device consists of a releasing device on the car, which is moved as the car passes each station on the line by a lever communicating therewith, being acted upon by coming in contact with a fixture at each station as the car passes, and which, when moved a certain fixed number of times, releases the mechanism which effects the switching of the car.

It will be apparent that a car provided with such a device will pass along a line of track until it has reached its destined station, when the means which will cause it to leave the main track will be released and brought into action.

In the two constructions I show in the accompanying drawings the details of construc-

tion differ, but each embody the broad feature above named.

It is probable that variations in details will be necessary in applying the said features to different systems of conveyers, and it is impossible for me to now describe all these variations.

The construction as shown in the first seven figures is as follows: When the car is to go onto the switch, the wheels D D are thrown up by the spring E, the part B B' of the frame-work being movable on the part A², and the wheels C C come upon the switch-track. The frame-work B B' is held down by pin b, which sets under the rim H' of the ratchet H. (See Fig. 4.) As soon, however, as the ratchet H is moved so the slot h' comes to the pin b, the frame-work B B' will be released and the spring E will throw it up. The ratchet H is pivoted on the stem F, which extends from the part A² of the frame through a slot in the vertically-movable part B of the frame. The ratchet as it is moved by its pawl winds up a spring, J. The ratchet is moved by the lever G, which is pivoted on the stem F, and has pivoted on it a spring-pawl, I. The lever G, as the car passes each station, is hit by a fixture, G², (see Fig. 7,) and moved, and as soon as the fixture is passed the lever is reacted by a spring, g². A pin, i, at the end of the pawl will prevent the lever G being thrown too far by the fixture G² by coming in contact with the arm b', extending from the frame B B'. A block, g, on the lever G prevents the lever from being reacted by the spring g² after the pin b has been released and the frame B B' has been thrown up, and thus holds the ratchet from being reacted by the spring J. When the pin b is in contact with the inner wall of the flange H', which may be roughened or toothed, as shown, it holds the ratchet from reaction when the pawl is moving back for a new engagement.

The car is set for a start as follows: Take the parts in the position shown in Fig. 2, press down on the upper wheel-frame, B B', and the pin b will pass down through the slot h', and the arm b' will come in contact with the rear end of the pawl I and throw its point out of the ratchet-tooth. This will cause the spring J to react the ratchet, and the stop-horn h will strike against the pawl. Relieving the upper wheel-frame from pressure, it will move up until the pin b comes in contact with the flange H'. The car thus set will appear as in Fig. 1, and when put on the track and run past a station the lever G will be moved by the fixture G², and the ratchet will be moved one notch. The upper wheels will be released and thrown up as soon as the slot h' is brought up over the pin b. Cars for different stations will have the slot h' removed from the horn h as many ratchet-notches as the station is numerically removed from the central station.

The rim H' may be adjustable upon the ratchet-wheel and provided with means to secure it so the slot h' will be at any point de-

sired, and then any car can be quickly adjusted to be switched at any station. The ratchet-teeth may be numbered, as shown in Fig. 2, to assist in such an adjustment. This arrangement would be convenient on extra cars, so that they could be sent on any line to any station on that line.

In the device shown in Figs. 8, 9, and 10 the construction is more simple, but the essential elements are the same. The car has only one set of wheels, which run on both the main and the switch tracks, and they are deflected from one of these tracks to the other by movable switch-tongue L². On the car there is a deflector, r, which strikes against the pin l in the switch-tongue and moves it to one side as the car moves. This deflector is on the lever R, which at its opposite end acts as the pawl of the ratchet. The ratchet-wheel has a notch, h³, which is a modification of the slot h' in the other construction. When the pawl end of the lever R falls into this notch, the end of the lever bearing the deflector will fly up, so that the deflector will be in position to come in contact with a pin, l, in one of the switches.

Fig. 8 shows two cars and the lever R in two different positions.

The ratchet-wheel H is provided with arms h², which come in contact with fixtures k on the track at each station and turn the ratchet-wheel.

I hereby reserve the right to make application for a separate patent, specifically claiming device shown in Figs. 8, 9, and 10, and modifications thereof.

What I claim as new is—

1. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of fixtures placed along the track at each station, in position to be struck by the operating-lever of a releasing apparatus on the cars which traverse said track, and cars for traversing said track, on which the devices for effecting the transfer of said cars to the switch-tracks are mounted, and retained from action by a releasing device which is moved by its operating-lever coming in contact with the said fixtures along the track, and which, when so moved a fixed number of times, will release the said switching devices, substantially as set forth.

2. In a car for a conveyer apparatus of the class herein named, the combination, substantially as set forth, of means, substantially as shown, for effecting the transfer of said car from the main to the switch track, a releasing device, substantially as shown, which retains said switching device from action until it has been moved into its releasing position, and a ratchet device which moves said releasing device in a manner substantially as shown.

3. In a car for a conveyer apparatus, the combination, substantially as set forth, of two sets of wheels, one for running on the main track and the other on the switch-track, one of which sets is adapted, substantially as described, to change its position when the trans-

fer of the car from one track to the other is effected, a releasing device, substantially as set forth, for retaining said movable set of wheels and releasing them at the proper time, 5 and a ratchet device, substantially as shown, for moving said releasing device.

4. In a car for a conveyer apparatus, the combination, substantially as set forth, of the frame A, with wheels C C, the frame B B', 10 with wheels D D, retaining-pin *b*, and arm *b'*,

the ratchet-wheel H, with rim H', stop *h*, and slot *h'*, the spring J, the lever G, with block *g*, the reacting-spring *g'*, and the spring-pawl I, with pin *i*, pivoted to said lever G.

In testimony whereof I affix my signature 15 in presence of two witnesses.

GEO. C. BLICKENSDECKER.

Witnesses:

W. G. RAINEY,

J. I. VEEDER.