(No Model.) 7 Sheets—Sheet 1.

R. E. HURLEY.

TRACK LAYING APPARATUS.

No. 428,276. Patented May 20, 1890.

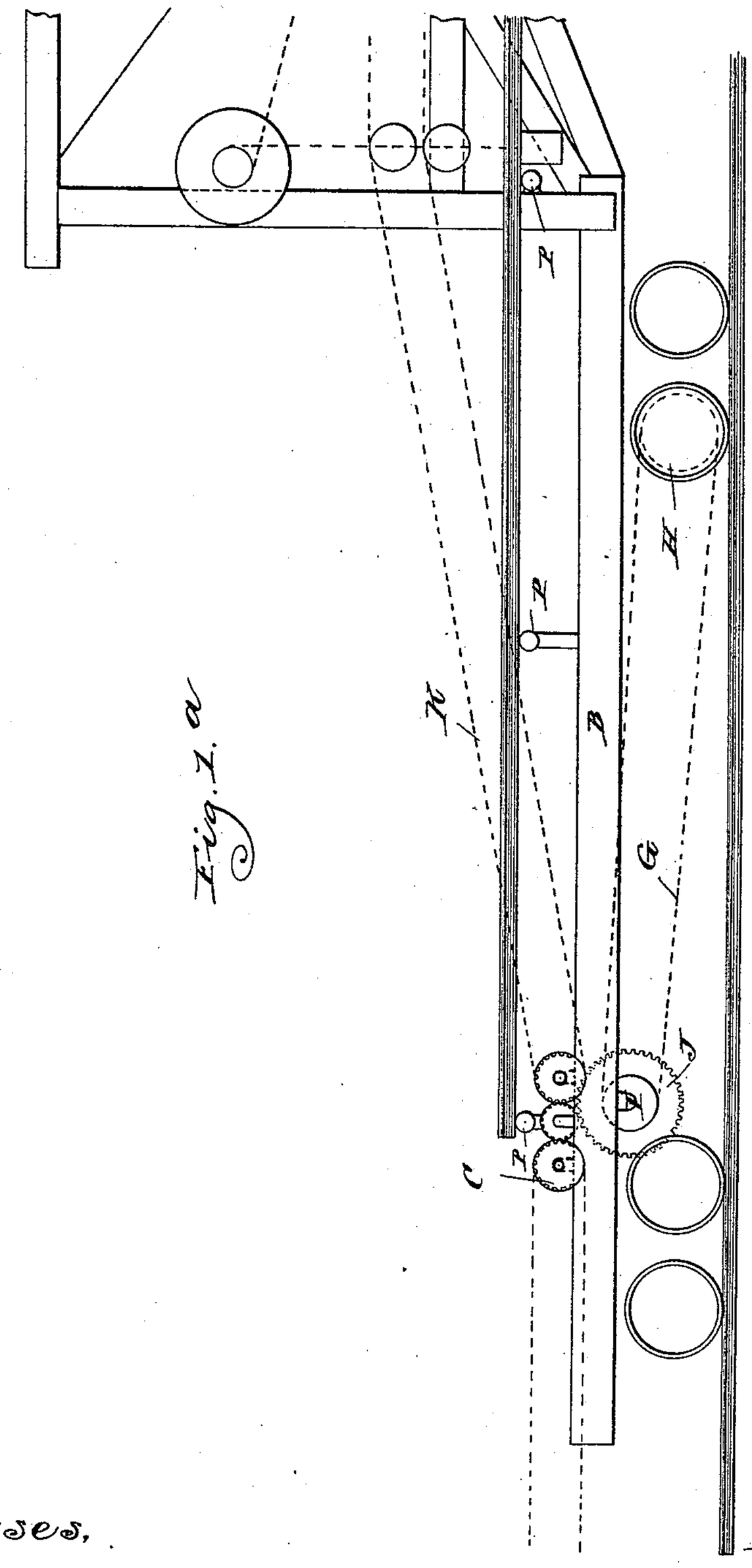

Fig. 1.

Witnesses,
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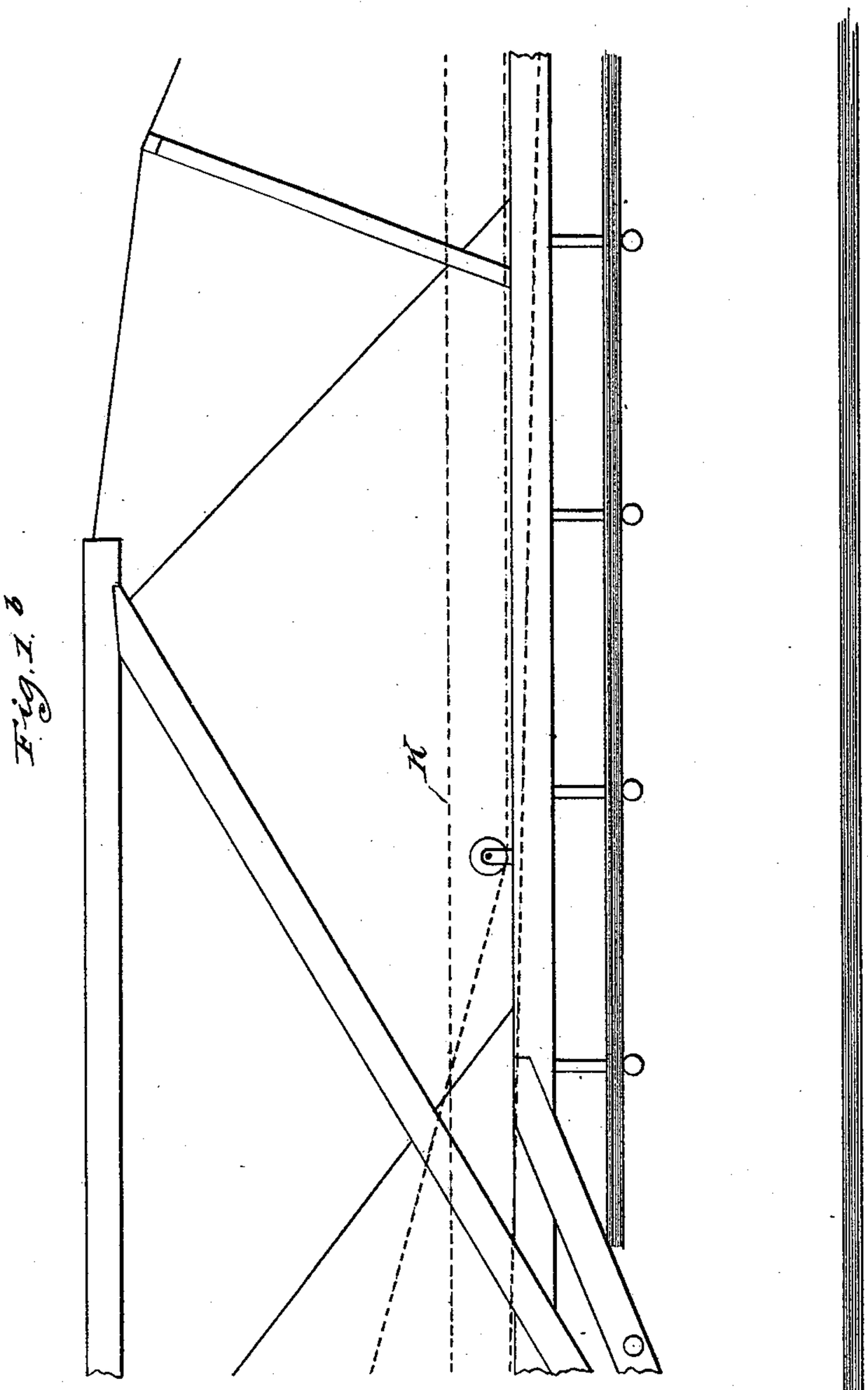

Witnesses,
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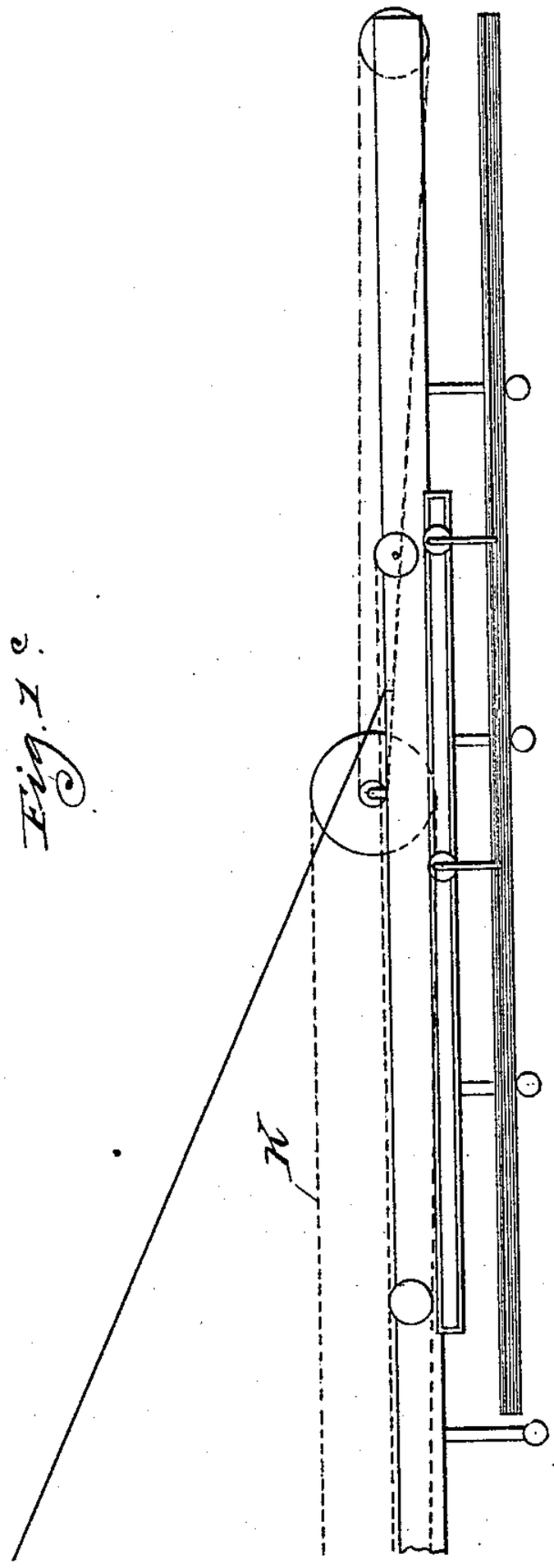

Witnesses
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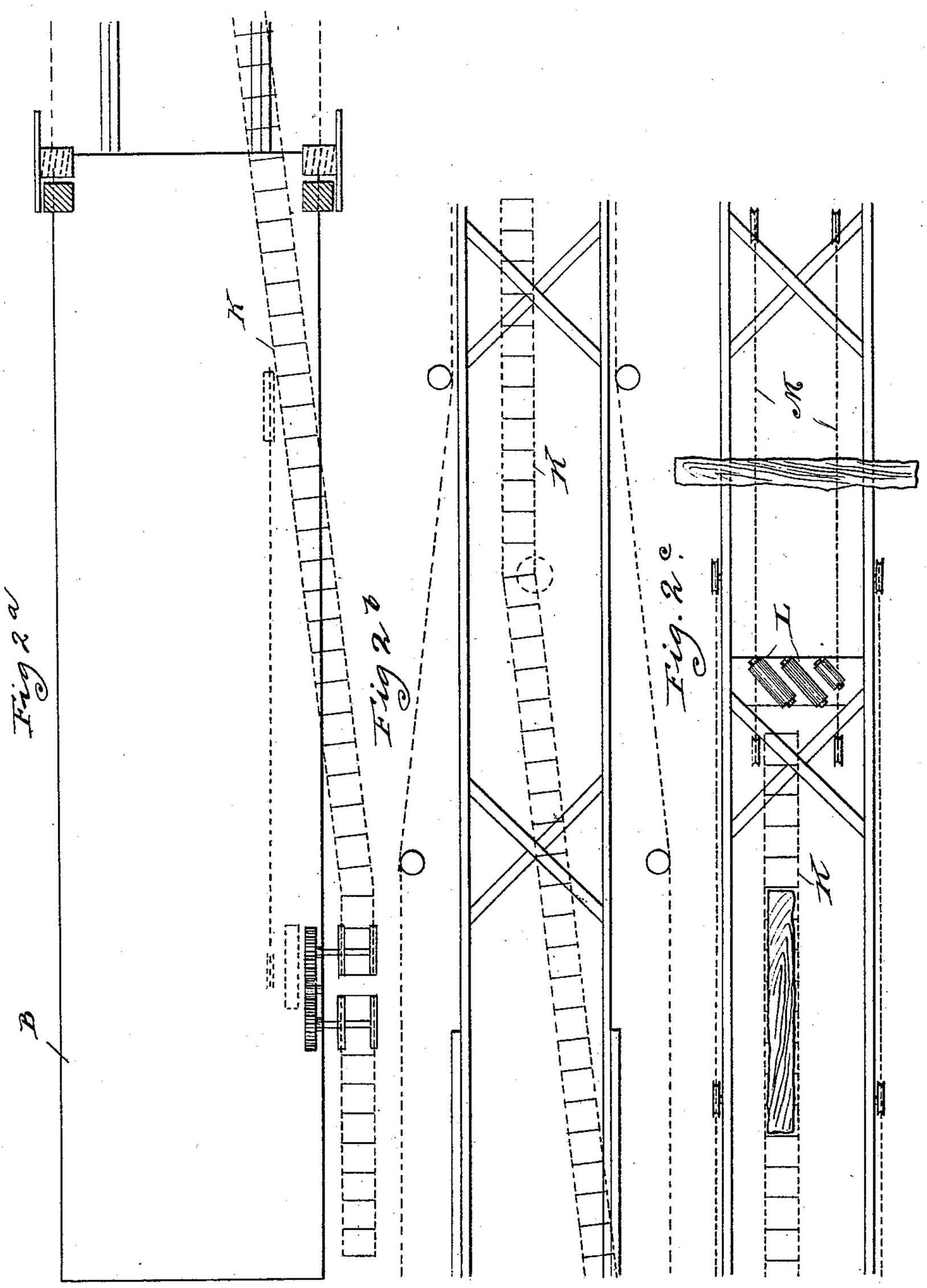

Witnesses,
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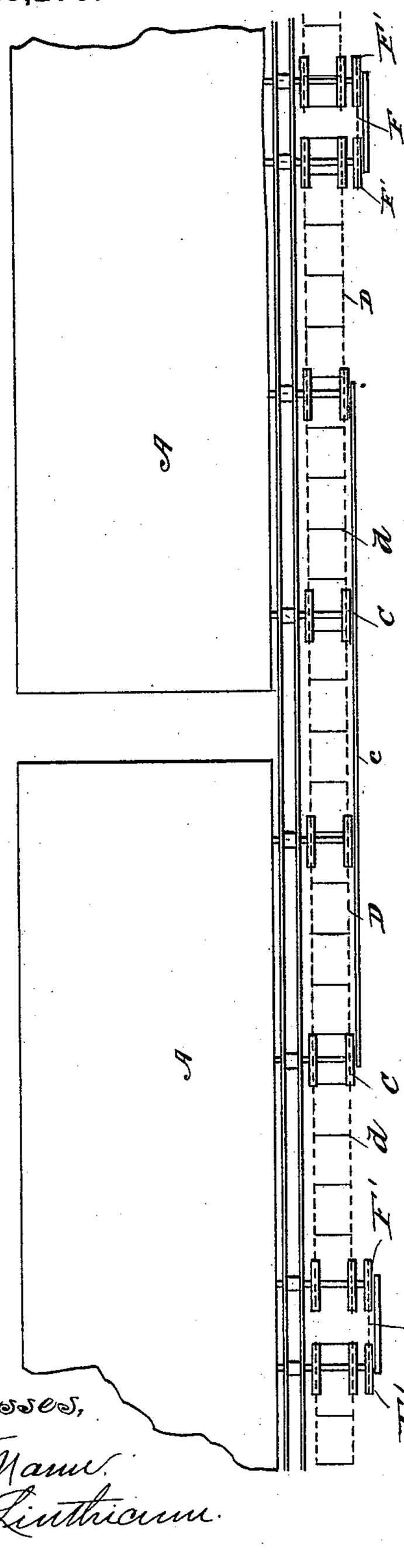

Fig. 3.

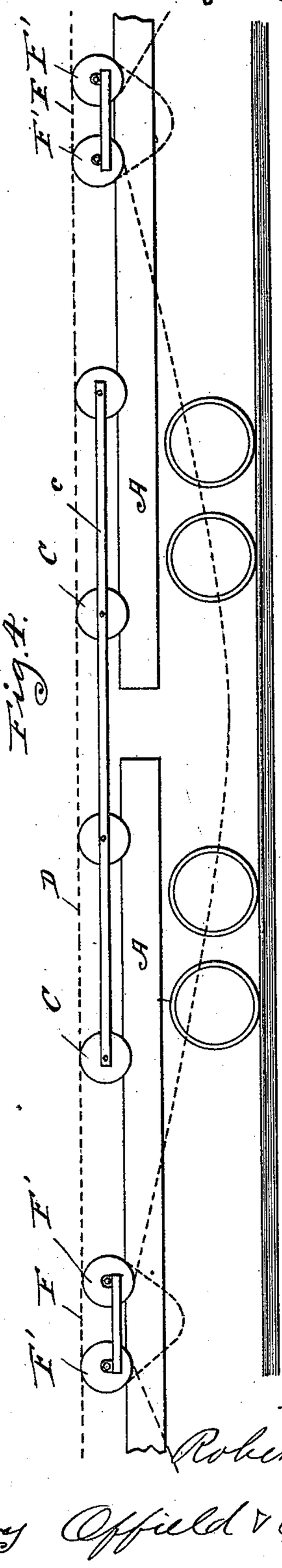

Fig. 4.

Witnesses,
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R. E. HURLEY.

TRACK LAYING APPARATUS.

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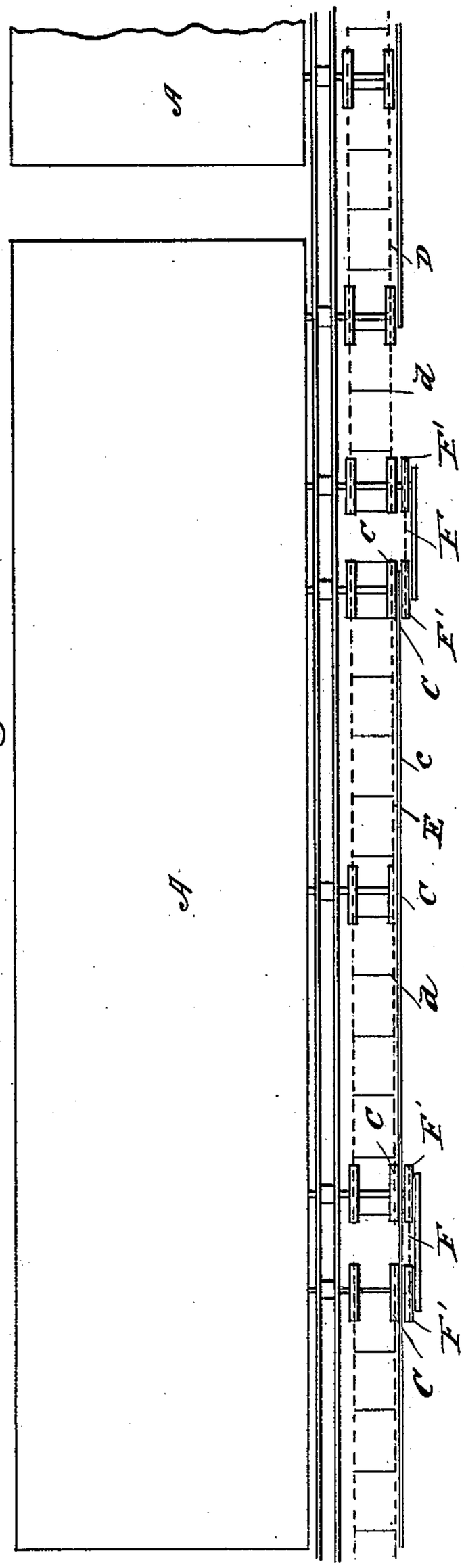

Fig. 5.

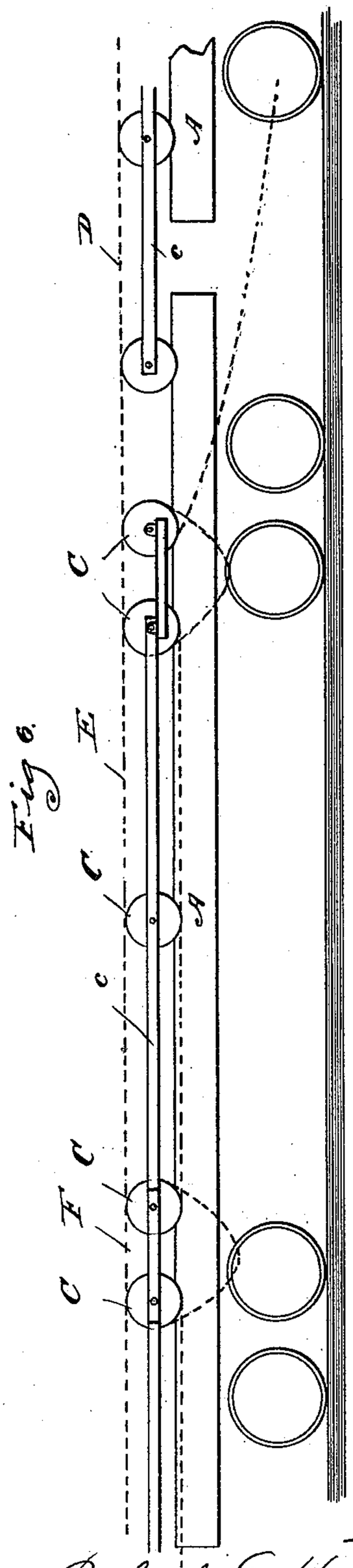

Fig 6.

Witnesses,
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R. E. HURLEY.

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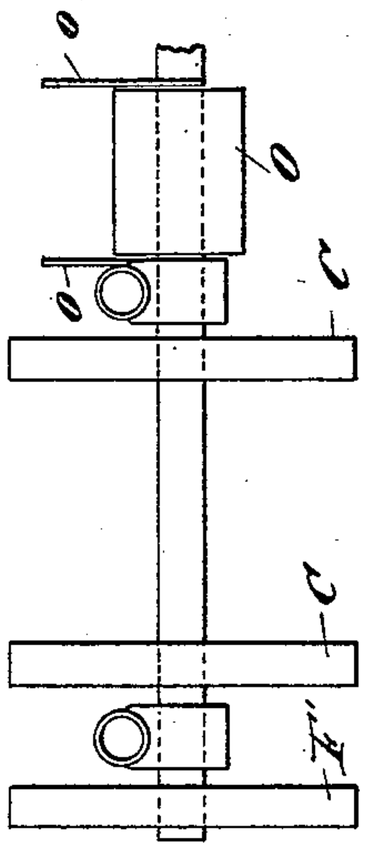

Fig. 8.

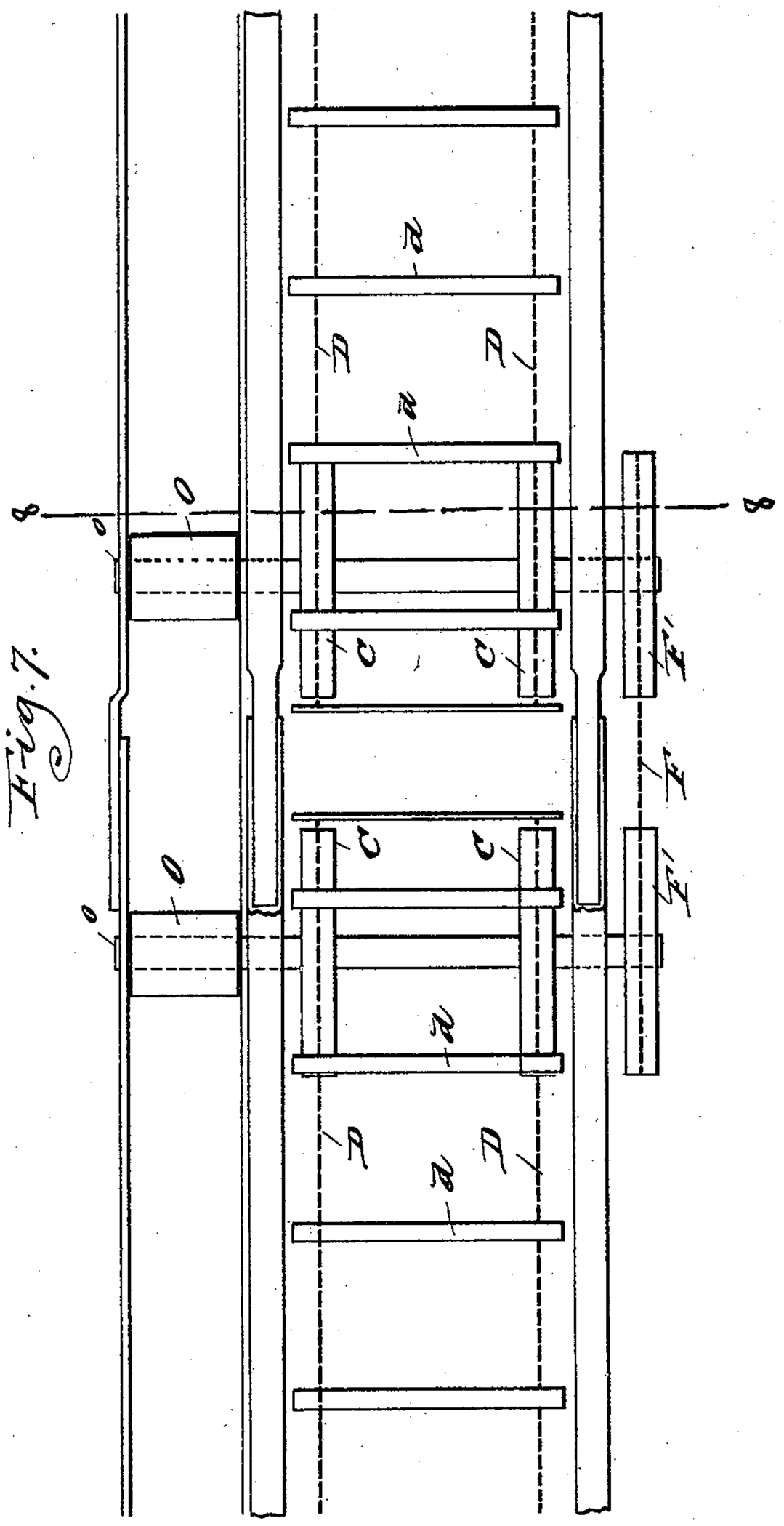

Fig. 7.

Witnesses,
E. G. Mann,
C. C. Linthicum.

Inventor,
Robert E. Hurley
By, Offield & Towle
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT E. HURLEY, OF CHICAGO, ILLINOIS.

TRACK-LAYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 428,276, dated May 20, 1890.

Application filed July 1, 1889. Serial No. 316,232. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. HURLEY, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Track-Laying Apparatus, of which the following is a specification.

My improvements relate to track-laying apparatus; and they consist in certain novel provisions for forwarding rails and ties upon the train of cars, and particularly to an improved cable construction, wherein a connected series of short endless cables is used in place of one long endless cable, and to provisions for operating said cables by power derived from the car-axles.

Track-laying apparatus has been provided wherein a single endless cable extending alongside the train of cars bearing the track materials has been propelled by a stationary engine mounted upon one of the cars of the train, said cable being adapted to rotate rollers upon which the ties and rails are forwarded. An objection to this arrangement is that the cable, being of great length, necessarily becomes slack, and various devices have been resorted to for taking up the slack. A further objection to such arrangement is that this long cable is necessarily very heavy, great power being necessary to move it, and in case of breakage the work must be suspended until the repairs can be made. Another objection arises from the fact that the lateral strain of this long cable is very great when the cars are rounding curves. The locomotive which is used to move the train usually affords more than sufficient power for that purpose, and I have provided for using this additional power to propel the cable, thus rendering unnecessary the use of a separate engine.

In the accompanying drawings, Figures 1^a, 1^b, and 1^c represent, when taken together, the forward end of a construction-train to which a part of my improvements are applicable, said figures showing the derrick-car and the forward end of the derrick. Figs. 2^a, 2^b, and 2^c show in plan view the same parts shown in the preceding figures. Figs. 3 and 4 show, respectively in plan and in side elevation, adjoining ends of two material-cars with cable-sections applied thereto. Figs. 5 and 6 are similar views of a modified or alternative construction. Fig. 7 is a plan view on an enlarged scale, particularly intended to show provisions for compensating for the taking up of slack in the train. Fig. 8 is a cross-sectional view on line 8 8 of Fig. 7.

Referring to the drawings, A represents the material-cars, and B the derrick-car.

Rotatably mounted upon frames supported by suitable brackets projected from the sides of the cars are the sprockets C, joined in pairs, and the members of the pairs being a suitable distance—say twelve inches—apart, and two or more of these pairs are connected by the same frame, the side pieces whereof are marked *c*. One of these frames bridges the space between adjoining car ends, as shown in Figs. 3 to 6, inclusive, and others support the cables between the ends of each car.

D are endless-cable sections, which, as will be seen by reference to Figs. 3 to 6, are passed around the sprockets of the frames of adjoining cars, so as to bridge the space between car ends and to provide means for forwarding the ties or other material. The frames *c* are preferably connected by the tie-rods *d*, on which the material is placed. A single cable provided with means for engaging the material may be employed. Similar cable-sections E will be carried from the pair of sprockets adjoining those over which cable D is passed and about similar sprockets at the opposite end of the frame, and in order to make the forwarding-cables practically continuous the adjoining pairs of sprockets, around which the cable-sections D E are turned, will preferably be set near together, as shown in the drawings, and the cables D E are driven by supplemental cables F, carried over sprockets F′, mounted on the axis of the sprockets C at the ends of adjoining frames. By this means power applied to one cable-section will drive all of the connected sections. These cables must be sufficiently slack to adapt them to variations in the length of the train caused by the slack in the couplings, and this slack may be provided for either in the cable-sections D or in the intermediate section F. The former is illustrated in Fig. 4 and the latter in Fig. 6. In order to compensate for this slacking of the cables, the frames are made to slide one upon the

other, as shown in Fig. 7; or one end of the frame may be fixed and the other adapted to slide in its supports.

The means for rotating the cable-sections are shown in Fig. 1[a], where G represents a driving-belt passed around a sprocket H on the car-axle and about a similar sprocket, as I, on a shaft bearing also a driving-gear J, through which power is transmitted to the shaft of one of the sprockets C, from whence it is transmitted through the series of cables. This connection is preferably made at the derrick-car, and the gear J is also made to drive the cable K, by which the ties are carried forward over the derrick.

By referring to Figs. 2[a], 2[b], and 2[c] it will be seen that cable K is carried forward at an angle to the sides of the car, so as to conduct the ties from the side of the car to the middle of the derrick. At the end of this cable are placed rollers L, (see Fig. 2[c],) set at an angle to the direction of travel of cable K, whereby the ties, which pass endwise with cable K, are turned so as to extend crosswise of the derrick. Cables M receive the ties from rollers L and carry them to the extreme forward end of the derrick and deposit them on the road-bed.

Secured on the shafts of the sprockets C are live rollers O, upon which the rails are forwarded, and guides *o* may be provided to keep the rails on the rollers. The rails are carried to the derrick-car on these rollers and are transferred to rollers P, mounted on the derrick-car, upon which they are moved by hand to the point over which they are designed to be lowered. They may be lowered by any suitable means.

I claim—

1. In a track-laying apparatus, the combination, with cars bearing the track material, of a series of conveyer-cables and intermediate cable-sections adapted to transmit the power from one conveyer-section to another, substantially as described.

2. In a track-laying apparatus, the combination, with cars bearing the track material, of a series of conveyer-cables and intermediate cable-sections adapted to transmit the power from one conveyer-section to another and of such length as to compensate for the slack of the car-couplings, substantially as described.

3. In a track-laying apparatus, the combination, with cars bearing the track material, of a series of conveyer-cables driven from the car-axles, said cables of such length as to compensate for the slack of the car-couplings, and means between adjoining conveyer-sections whereby the power is transmitted from one section to another, substantially as described.

4. In a track-laying apparatus, the combination, with cars bearing the track material, of a series of conveyer-cables for ties carried upon sprockets whose shafts are journaled at the sides of the cars, said shafts bearing thereon live rollers adapted to convey the rails thereon, substantially as described.

5. In a track-laying apparatus, the combination, with the material-cars, of a derrick-car and a sectional conveyer formed by a series of cables, the derrick-section being carried forward at an angle, whereby to bring the material from the sides of the car toward the middle of the derrick, and rollers adapted to change the direction of the ties, substantially as described.

6. In a track-laying apparatus, the combination, with a cable conveyer adapted to forward the ties in line with the road-bed, of a roller or rollers placed in the path of the moving ties and at an angle thereto, whereby to turn the ties so as to deliver them at right angles to the road-bed, substantially as described.

7. In a track-laying apparatus, the combination, with cable conveyers for ties constructed in sections, of means—such as the rollers described—interposed between the ends of the sections, whereby to change the direction of the ties, substantially as described.

8. In a track-laying apparatus, the combination, with a cable conveyer on which the ties are forwarded in line with the road-bed, of means—such as the rollers described—located at the terminus of said conveyer-section, for turning the ties at right angles to the road-bed, and a second conveyer-section adapted to receive the ties and to discharge them upon the road-bed, substantially as described.

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Witnesses:
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FREDERICK C. GOODWIN.