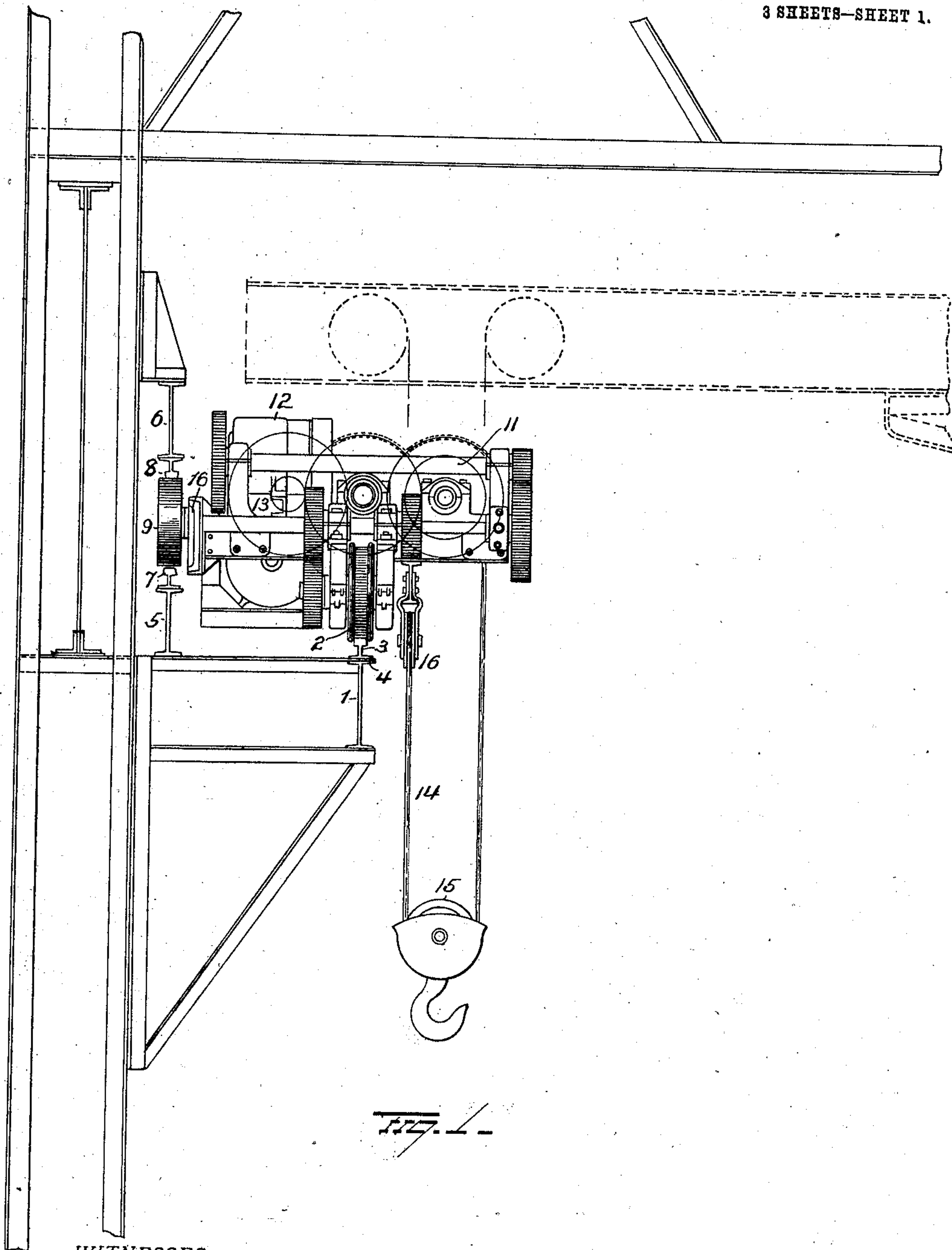


E. E. BROSIUS.
ELECTRIC TRAVELING CRANE.
APPLICATION FILED FEB. 21, 1908.

923,133.

Patented June 1, 1909.

3 SHEETS—SHEET 1.



WITNESSES
E. Nottingham
G. J. Downing

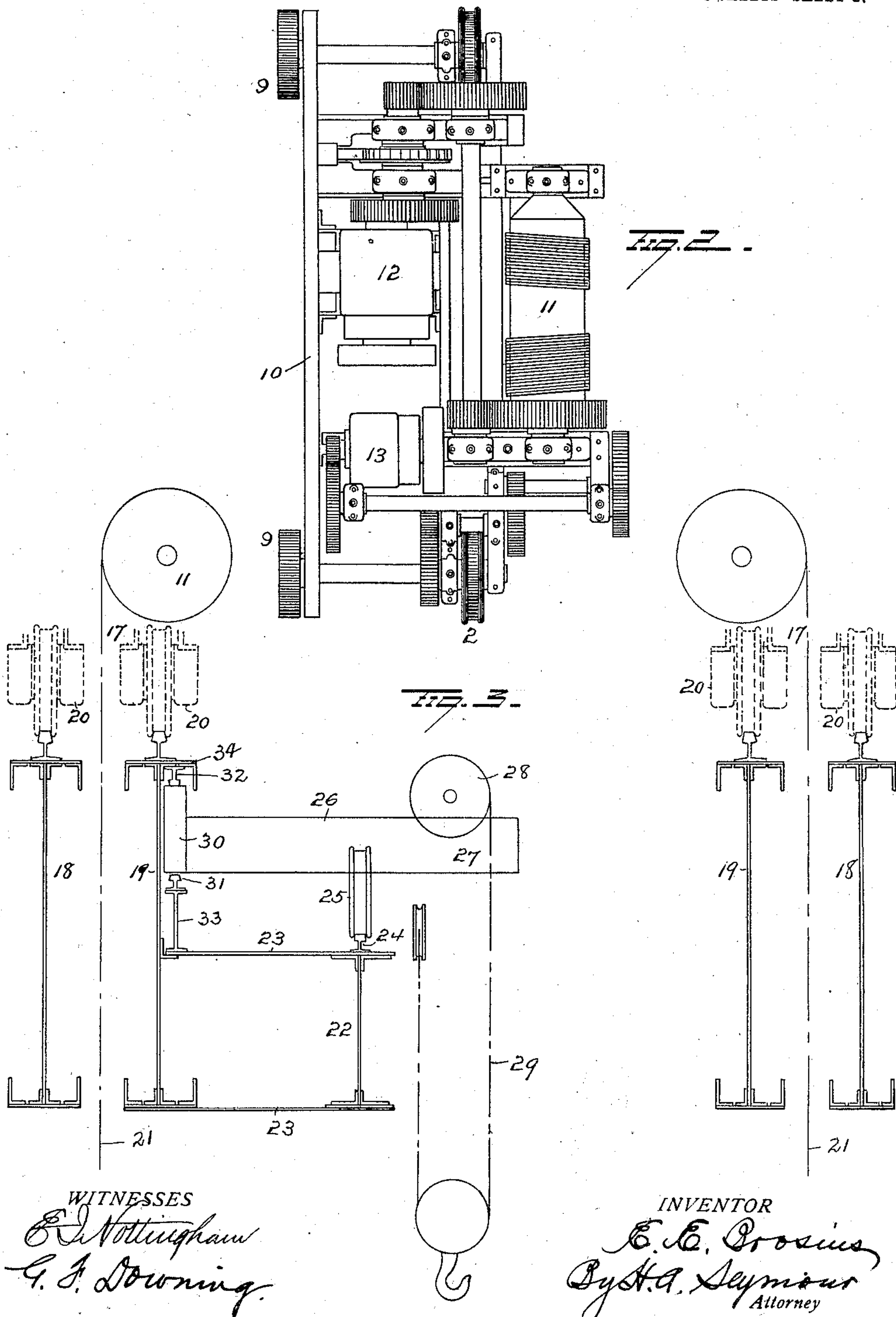
INVENTOR
E. E. Brosius
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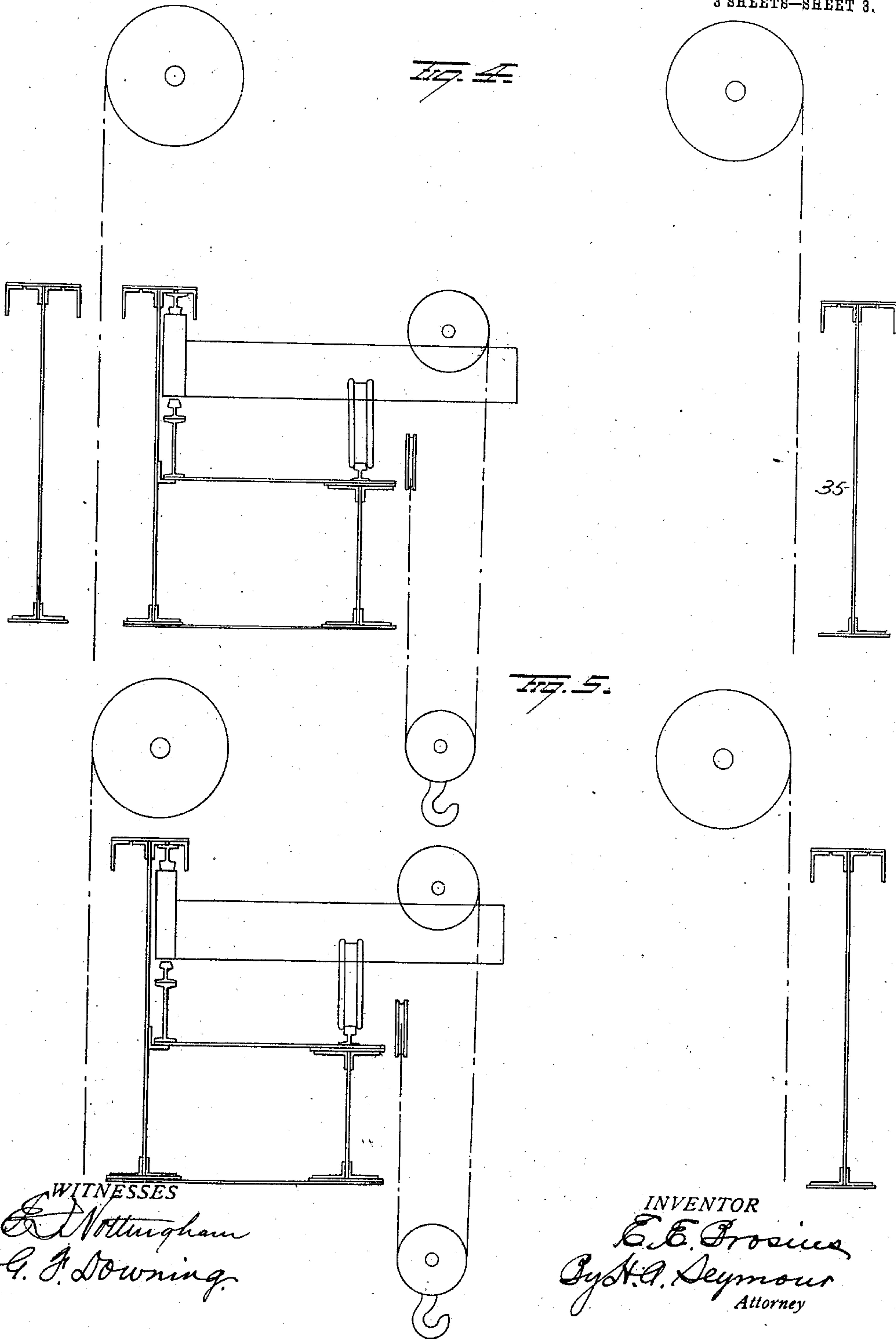
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UNITED STATES PATENT OFFICE.

EDGAR E. BROSIUS, OF ALLIANCE, OHIO, ASSIGNOR TO THE MORGAN ENGINEERING COMPANY, OF ALLIANCE, OHIO.

ELECTRIC TRAVELING CRANE.

No. 923,133.

Specification of Letters Patent.

Patented June 1, 1909.

Application filed February 21, 1908. Serial No. 417,173.

To all whom it may concern:

Be it known that I, EDGAR E. BROSIUS, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Electric Traveling Cranes; 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.

My invention relates to an improvement in electric traveling cranes and is adapted for use in wall cranes and ladle cranes.

The object of the invention is to provide a traveling crane in which the hoisting drum shall overhang the girder supporting one side of the crane while the opposite side of the crane is supported by top and bottom girders between which the supporting wheel of the trolley runs and is retained against vertical displacement.

With this object in view the invention consists in certain features of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in end elevation of a wall crane embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a diagrammatic view of a ladle crane embodying the invention, and Figs. 4 and 5 are modifications.

1 represents the main girder of a wall crane on which is supported the track wheels 2, 2, of a trolley, said wheels being double flanged to prevent their displacement from the track rails 3 supported upon the upper flange 4 of girder 1.

5, 6, represent respectively the lower and upper girders which are provided with rails 7, 8, between which run the track wheels 9, 9, mounted in the rear side frame 10 of the trolley, the tops of rails 7 forming the lower bearing for the wheels 9, being a plane above the top of rails 3, whereby the wheels 9 are in a higher plane than wheels 2.

11 represents the hoisting drum mounted in the trolley frame which projects laterally outward and overhangs the main girder 1. Drum 11 is operated by the electric motor 12 through suitable gearing while the trolley is actuated by motor 13 through suitable gearing transmitting motion to the axle carrying the supporting track wheels at one end of the trolley frame.

14 is the main hoisting rope, the two ends of which are attached to the hoisting drum and pass down outside of the main girder 1 and around the sheave 15 and thence upwardly over equalizing sheaves 16.

From the foregoing it will be observed that the weight of the trolley and load carried thereby is transmitted to the main girder 1 and also to the rear upper and lower girders 6 and 5, the upper girder 6 resists any overturning tendency of the trolley due to the contact of the under running track wheels which engage therewith.

In Fig. 3 I have represented my improvements as applied to a ladle crane in which 17 represents the main trolley which travels on the two sectional main girders each consisting of the web girders 18 and 19. In order to equalize the strains on these girders the weight of the main trolley and load carried thereby is equably distributed to these sectional girders by means of the equalizing trucks 20. However instead of employing equalizing trucks I may use single supporting wheels journaled in each of the four corners of the frame of the main trolley, two of said wheels being arranged to travel on the rails supported by the inner section 19, 19, of the main girders and the other two being arranged to travel on the tracks supported on the outer sections 18, 18, of said main girders. 21 represents the main hoisting ropes each of which passes down between the two sections 18, 19, of the main girders. Between the main girders is located an auxiliary girder 22 which is connected to the inner section 19 of the main girder by means of horizontal lacing bars 23 for the purpose of imparting lateral stiffness and rigidity to the auxiliary girders. Over the web of the auxiliary girder is secured a track rail 24 upon which runs the outer supporting wheels 25 of the auxiliary trolley 26. The frame 27 of the auxiliary trolley projects laterally outward and overhangs the auxiliary girder and upon such overhanging portion of the frame is mounted the hoisting drum 28 upon which is wound the hoisting rope 29. The inner end of the frame of the auxiliary trolley is provided with track wheels 30 which engage tracks 31, 32 mounted respectively on the girder 33 and the under side of the main girder flange 34. This arrangement of tracks effectually prevents any overturn-

ing tendency of the auxiliary trolley and insures a simple and economical construction and arrangement of girders for supporting the auxiliary trolley.

- 5 In Fig. 4 is represented a modified form of ladle crane which differs from the construction illustrated in Fig. 3 only in respect to the construction of the main girders and supporting wheels for the main trolley.
- 10 In this form of crane one side of the main trolley is supported by a main girder consisting of a divided or split girder composed of two web girders between the section of which one of the main hoisting ropes
- 15 passes while the other side of the main trolley is supported by a single web girder 35 the main hoisting rope passing downwardly inside of the same and thereby preventing any overturning tendency of the
- 20 main trolley.

Fig. 5 represents another modification of ladle crane embodying my improvement and in which the main trolley is supported by two web girders one hoisting rope passing outside of one of the main girders while

25 the other hoisting rope passes down inside of the other main girder.

From the foregoing it is evident that my improvements may be varied in many particulars both in its construction and application and hence I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but,—

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

1. In a traveling crane, the combination with a trolley provided at its outer side

40 with a hoisting drum overhanging the outer supporting girder and wheels mounted on a rail on said outer girder, of supporting wheels at the inner side of the trolley frame, and rails arranged to engage the upper and

45 lower surfaces of said inner supporting wheels, the lower rails for the inner supporting wheels being in a plane above the rail for the outer wheels.

2. In a traveling crane the combination

50 with an outer main girder, of a trolley frame, the supporting wheels on the outer side of which travel on a rail on said main girder, rails engaging the upper and lower sides of the trolley supporting wheels at

the inner side of the trolley, the lower rails 55 for the inner wheels being in a plane above the rail for the outer wheels, a hoisting drum on said trolley, the said drum overhanging the main girder, and electric motors on the trolley frame adjacent to the 60 inner side of the latter.

3. In a ladle crane, the combination with main girders and a main trolley supported thereon, and an auxiliary girder located between the main girders, of an auxiliary 65 trolley provided with supporting wheels arranged to run on track-rails supported by the auxiliary girder and having track wheels connected with the inner end of its frame and which engage with track rails 70 on their upper and lower surfaces.

4. In a ladle crane, the combination with main girders, a main trolley mounted thereon and an auxiliary girder located between the main girders, of an auxiliary trolley 75 having its hoisting drum overhanging the auxiliary girder and provided with supporting track-wheels at its outer side which run upon rails mounted on the auxiliary girder and also with track wheels on its 80 inner side adapted to engage track wheels located above and below the same.

5. In a traveling crane, the combination with main girders and a main trolley thereon, of a girder intermediate the main girders and a trolley supported by said intermediate girder and one of the main girders 85 below the top of the latter, whereby a clear unobstructed way is left for a hoist rope from the main trolley, between the intermediate girders and the outer main girder. 90

6. In a traveling crane, the combination with main girders and a main trolley thereon, of a girder intermediate the main girders, an auxiliary trolley supported by said 95 intermediate girder and one of the main girders below the top of the latter, and a hoist drum on the auxiliary trolley, the said drum overhanging the intermediate girder, substantially as described. 110

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

EDGAR E. BROSIUS.

Witnesses:

CLARENCE L. TAYLOR,
C. D. PELL.