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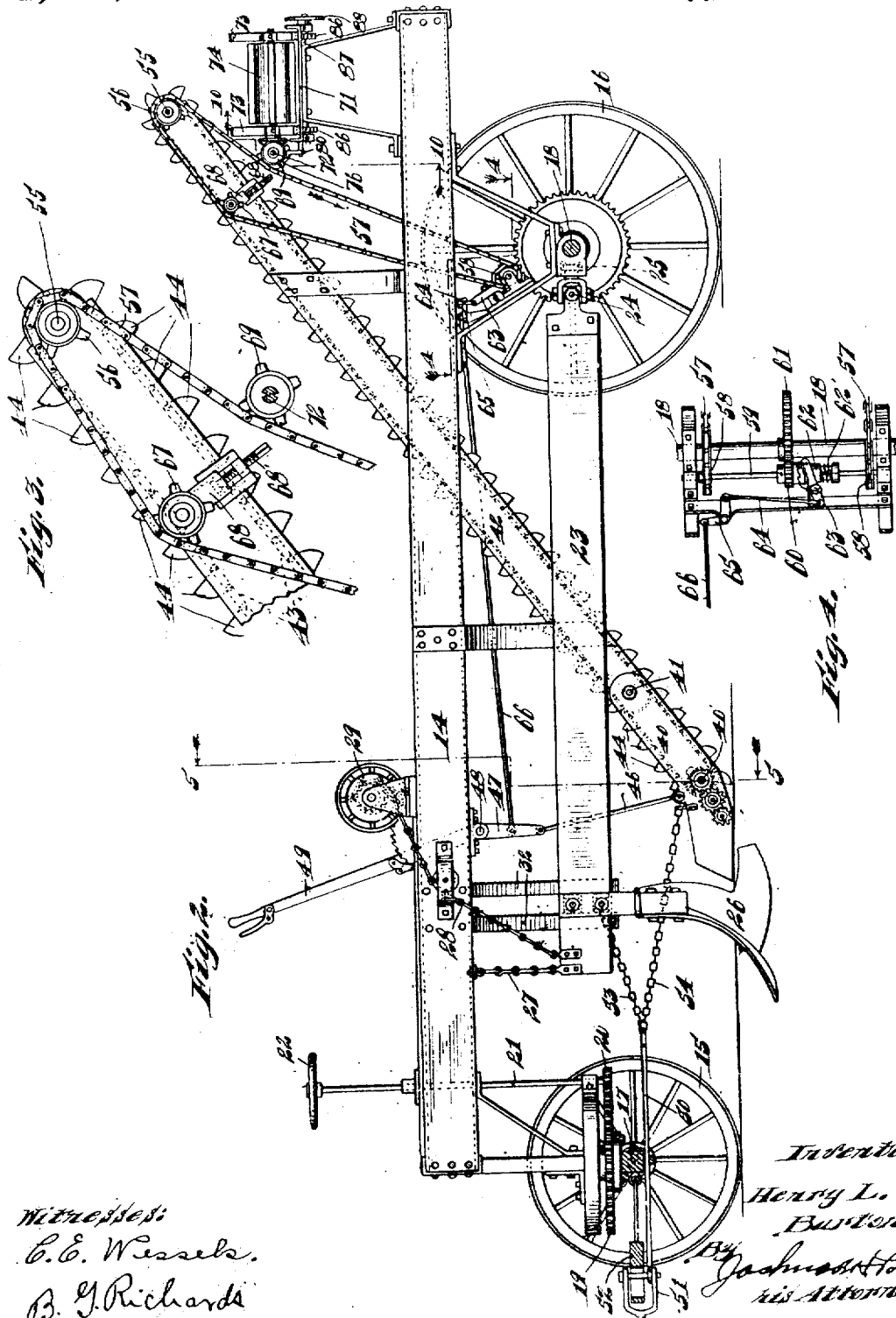
Witnesses:
C. C. Wessels.
B. G. Richards

In Senton
Henry L. Barton,
By Joshua N. Hottel
his Attorney,

H. L. BARTON.
GRADING MACHINE.
APPLICATION FILED OCT. 11, 1915.

Patented June 4, 1918.
5 SHEETS--SHEET 2.

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5 SHEETS--SHEET 3.



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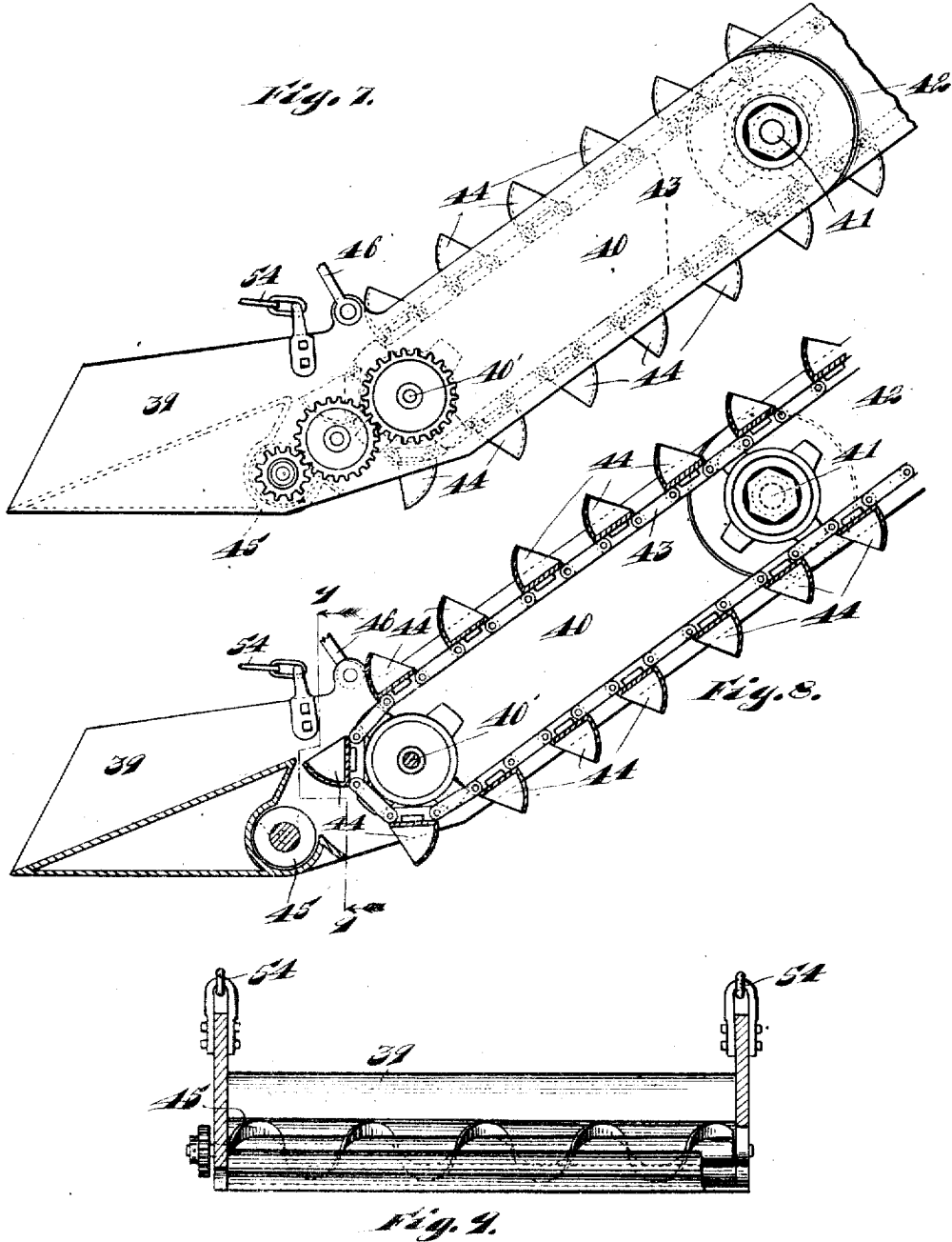
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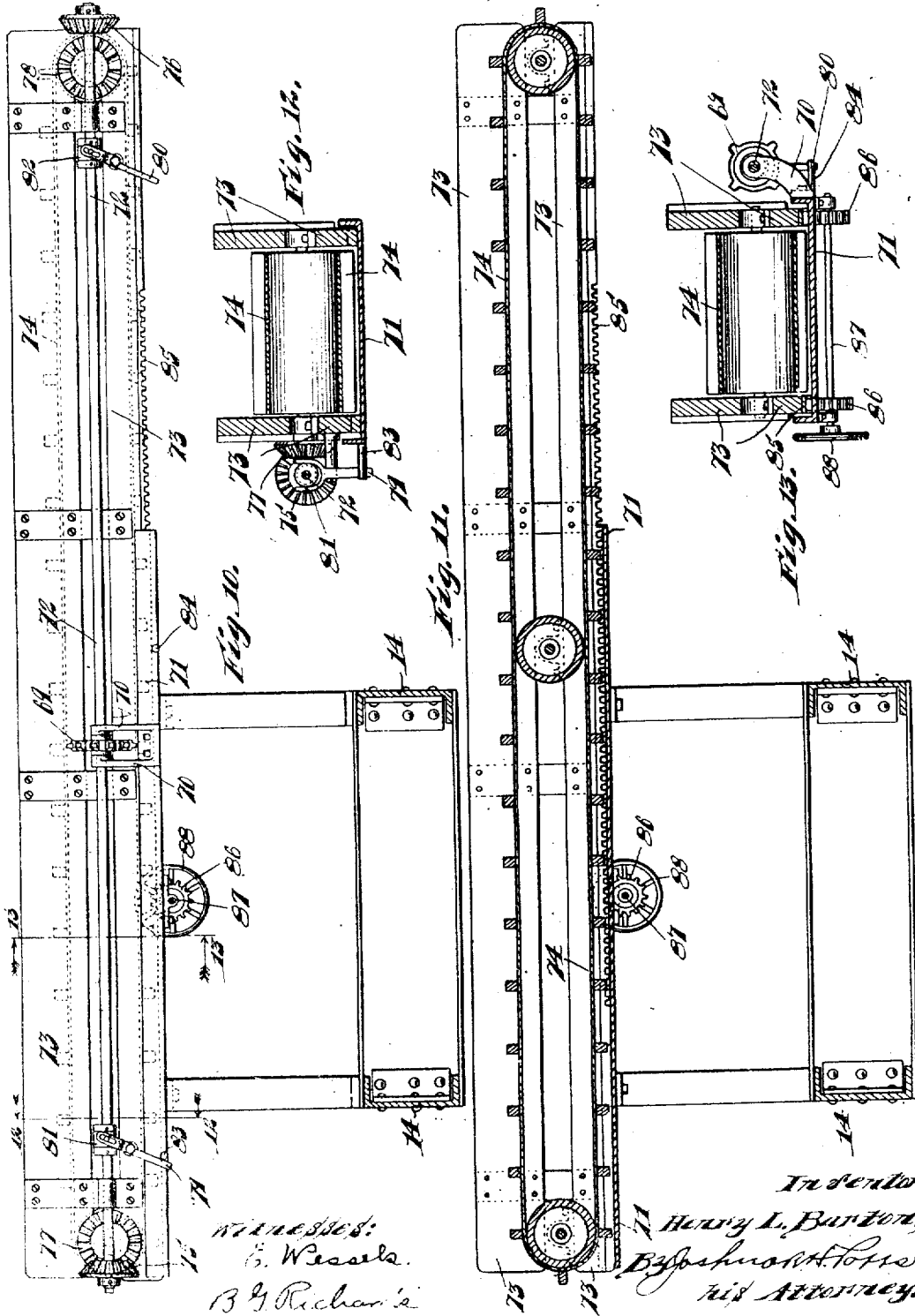
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Inventor:

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Witnesses:
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Inventor,
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 his Attorney.

UNITED STATES PATENT OFFICE.

HENRY L. BARTON, OF GARY, INDIANA, ASSIGNOR OF ONE-THIRD TO JOHN B. GREEN
AND ONE-THIRD TO GEORGE M. McROBERTS, BOTH OF GARY, INDIANA.

GRADING-MACHINE.

1,268,314.

Specification of Letters Patent.

Patented June 4, 1918.

Application filed October 11, 1915. Serial No. 55,168

To all whom it may concern:

Be it known that I, HENRY L. BARTON, a citizen of the United States, and a resident of the city of Gary, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Grading-Machines, of which the following is a specification.

My invention relates to improvements in grading machines, and has for its object the provision of an improved construction of this character which is simple and efficient in use, and which occupies but comparatively little space and may be used on either side of a roadway and operated in either direction.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a top plan view of a grader embodying my invention,

Fig. 2, a side elevation of the same shown partially in section,

Fig. 3, an enlarged section taken through the upper end of an elevator employed in the construction,

Fig. 4, a section taken on line 4—4 of Fig. 2,

Fig. 5, a section taken on line 5—5 of Fig. 2,

Fig. 6, a detail view of a plow adjusting bar employed in the construction,

Fig. 7, an enlarged elevation of the lower end of the elevator,

Fig. 8, a vertical section of the lower end of the elevator,

Fig. 9, a transverse section taken on line 9—9 of Fig. 8,

Fig. 10, a section taken on line 10—10 of Fig. 2,

Fig. 11, a vertical section corresponding with Fig. 10,

Fig. 12, a transverse section taken on line 12—12 of Fig. 10, and

Fig. 13, a transverse section taken on line 13—13 of Fig. 10.

The preferred form of construction, as illustrated in the drawings comprises a frame 14 mounted on front wheels 15 and rear wheels 16. The front wheels 15 are loosely mounted in the ordinary manner on

a front axle 17 and the rear wheels 16 are fixed to a rear axle or shaft 18 which is thus caused to rotate with the rear wheels. A gear 19 is fixed to the front axle 17 and meshes with a pinion 20 at the lower end of a steering shaft 21 provided with a hand wheel 22 above frame 14 for steering the machine. A plow beam 23 is secured at its rear end to the axle 18, said plow beam being provided with a knuckle joint 24 and a swivel joint 25 by means of which the beam may be swung vertically or laterally, or may be twisted or tipped on a horizontal longitudinal axis. At its front end beam 23 carries an ordinary plow share 26 and a stop chain 27 serves to limit the downward swing of the plow beam 23 and the depth of cut of the plow. An adjusting chain 28 is also secured to the front of beam 23 and is connected with a windlass 29 by means of which the plow 26 may be vertically adjusted or may be entirely raised from contact with the ground, as will be readily understood.

A transverse adjusting bar 30 is pivotally connected at 31 to the beam 23 and extends transversely across the frame 14 and passes slidably through a bracket 32 suspended on said frame. Bar 30 is provided with a plurality of holes 33 adapted to receive pins or bolts 34 and by means of which the position of the bar 30 may be adjusted in " " bracket 32 to control and adjust the lateral position of the plow 26. A brace 35 is pivotally connected at 36 with the plow beam 23 and is adjustably secured to the cross bar 30 by means of pins or bolts 37 passing through perforations 38, as indicated. By this arrangement, the plow 33 may be tilted or angularly adjusted as desired.

A scraper or scoop 39 is arranged at the lower end of the lower section 40 of an elevator, said section 40 being pivoted at 41 to the upper section 42 of the elevator, said section 40 being thus arranged so that the same may be elevated from contact with the ground when desired. The elevator consists of an ordinary endless chain 43 running over suitable sprockets as indicated and provided with buckets or scoops 44 for carrying dirt. A screw conveyer 45 is arranged in the scoop 39 in position to discharge any dirt or stones missed by the buckets 44, said screw conveyer being geared to the lower shaft 46 of the elevator as indicated. The

elevator section 40 is adjusted through the medium of links 46 connected with arms 47 on a transverse shaft 48 mounted in the frame of the machine and operable through a hand lever 49, as shown. By this arrangement, it will be observed, that the scoop 39 and lower section 40 of the elevator may be raised from operative contact and cooperation with the plow 26 when desired and locked in such raised relation.

A draft bar 50 is pivotally connected with a draft clevis 51 having a bolt and slot connection with the draft tongue 52 which is connected with the axle 17 in the usual manner and by means of which the machine may be drawn by a traction engine or other suitable means. At its rear end the draft bar 50 is connected by means of a chain 53 with the bar 30 and by means of chains 54 with the lower elevator section 40, so that the draft power will be directly transmitted to both the plow and the scoop.

The upper shaft 55 of the elevator 42 carries two sprockets 56 and sprocket chains 57 are passed over the sprockets 56 and also over sprockets 58 on a counter-shaft 59 mounted in the frame of the machine. Shaft 59 carries a loose pinion 60 meshing with a gear 61 on axle 18. A clutch 62 is feathered on shaft 59 and normally held in engagement with pinion 60 by means of a spring 62'. The clutch 62 is operated by means of a lever 63 connected by a cable 64 with a bell crank 65 which in turn is connected by means of a cable 66 with one arm 47 on shaft 48 so that upon elevation of the scoop 39, the operative connection between the rear axle 18 and the elevator will be discontinued and the operation of the elevator stopped. Each of the chains 57 also runs over an idler sprocket 67 adjustably mounted on a block 68 rendered adjustable by means of a set screw 68', so that the tension in the chains may be adjusted as desired.

One of the chains 57 runs over a sprocket 69 mounted in a bracket 70 secured to the forward side of a channeled guide 71 mounted on the rear of the machine under the upper end of elevator 42. Sprocket 69 is feathered on a shaft 72 mounted on the side of conveyer frame 73 on which an ordinary belt conveyer 74 is mounted. Shaft 72 carries bevel gears 75 and 76 at its opposite ends arranged to mesh respectively with bevel gears 77 and 78 connected with the conveyer shafts to operate the same, the arrangement being such that when shaft 72 is shifted to the right, in the position indicated in Fig. 10, gears 75 and 77 will mesh and the conveyer 74 be operated to effect discharge of material from the right hand end of the conveyer. Likewise when shaft 72 is shifted in the other direction, the gears 76 and 78 will mesh thus causing operation of the belt conveyer 74 in the opposite direction

and delivery of material from the other end of the conveyer. The shifting of shaft 72 is automatically effected through the medium of levers 79 and 80 pivoted to the side of conveyer frame 73 and having a slot and pin connection respectively with loose collars 81 and 82 on shaft 72. These levers cooperate with stop pins 83 and 84 on the sides of guide 71, so that when the elevator frame is shifted to the right, as indicated in Fig. 10, the lever 79 strikes the pin 83 and automatically shifts gears 75 and 77 into mesh with each other. Shifting of the frame 73 in the other direction causes lever 80 to strike pin 84 thus automatically shifting gears 76 and 78 into mesh with each other, reversing the direction of operation of the conveyer. Conveyer frame 73 is provided on its bottom with two rack bars 85 meshing with pinions 86 on shaft 87 provided with a hand wheel 88, the arrangement being such that the conveyer frame 73 may be readily shifted from one position to another, as will be readily understood. By this arrangement, it will be observed that the conveyer frame may be readily shifted to project from either side of the machine and to deliver material from its projecting end, thus permitting of the use of the machine in narrow quarters on either side of the street and traveling in either direction.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A grading machine comprising a frame; an elevator on said frame; a transversely movable conveyer frame arranged to slide transversely of said grading frame in operative relation with said elevator; an operating shaft at each end of said conveyer frame; a conveyer traveling over said shafts; a shaft extending longitudinally of said frame and capable of longitudinal motion relatively thereto; operative connections between said longitudinal shaft and said conveyer shafts whereby longitudinal motion of said longitudinal shaft serves to reverse the direction of operation of said conveyer shafts; and automatic means for effecting longitudinal movement of said longitudinal shaft upon transverse movement of said conveyer frame to effect reversing of said conveyer, substantially as described.
2. A grading machine comprising a

wheeled frame; a plow on said frame; an inclined elevator cooperating with said plow and arranged longitudinally in said frame; a transversely movable conveyer frame arranged to slide transversely of said frame in operative relation with said elevator; an operating shaft at each end of said conveyer frame; a conveyer traveling over said shafts; a shaft extending longitudinally of said frame and capable of longitudinal motion relatively thereto; bevel gears on said conveyer shafts; bevel gears on said longitudinal shaft arranged to mesh alternately with the bevel gears on said conveyer shaft upon longitudinal movements of said longitudinal shaft; means for moving said conveyer frame transversely; and automatic means for effecting longitudinal movement of said longitudinal shaft upon each transverse movement of said conveyer frame to effect reversing of said conveyer, substantially as described.

3. In a machine of the class described, the combination with an elevator of a scoop

arranged to direct material thereto; and means located under said scoop and adjacent said elevator in position to receive any material falling between said scoop and elevator and operating to discharge said falling material laterally from said scoop, substantially as described.

4. In a machine of the class described, the combination with an elevator of a scoop arranged to direct material thereto; and a worm located under said scoop and adjacent said elevator in position to receive any material falling between said scoop and elevator and operating to discharge said falling material laterally from said scoop, substantially as described.

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

HENRY L. BARTON.

Witnesses:

JOSHUA R. H. POTTS,
CORA F. SCHIEBER.