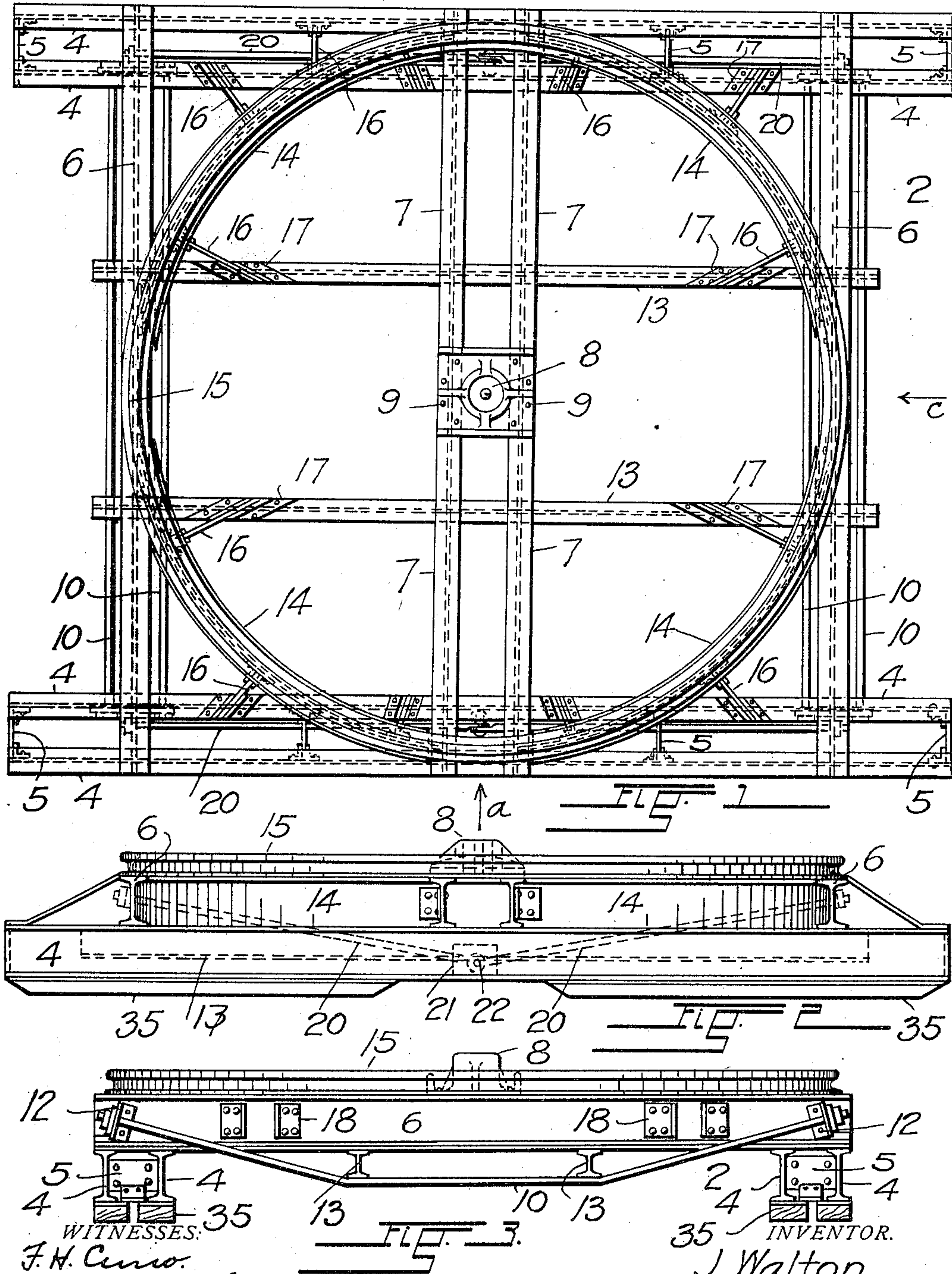


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EXCAVATING MACHINE.  
APPLICATION FILED MAY 12, 1910.

998,818.

Patented July 25, 1911.

3 SHEETS—SHEET 1.

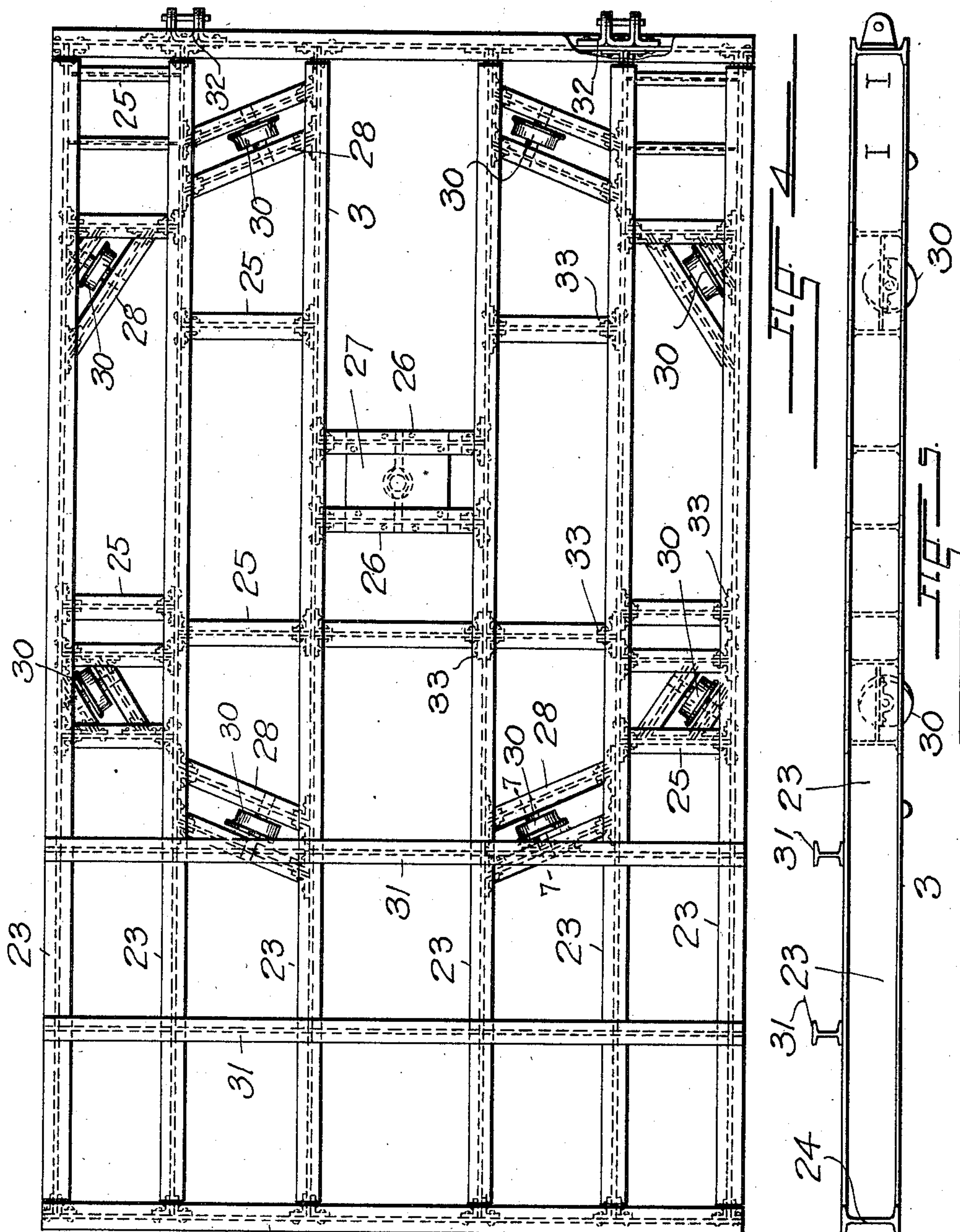


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WITNESSES:  
F. H. Curo.  
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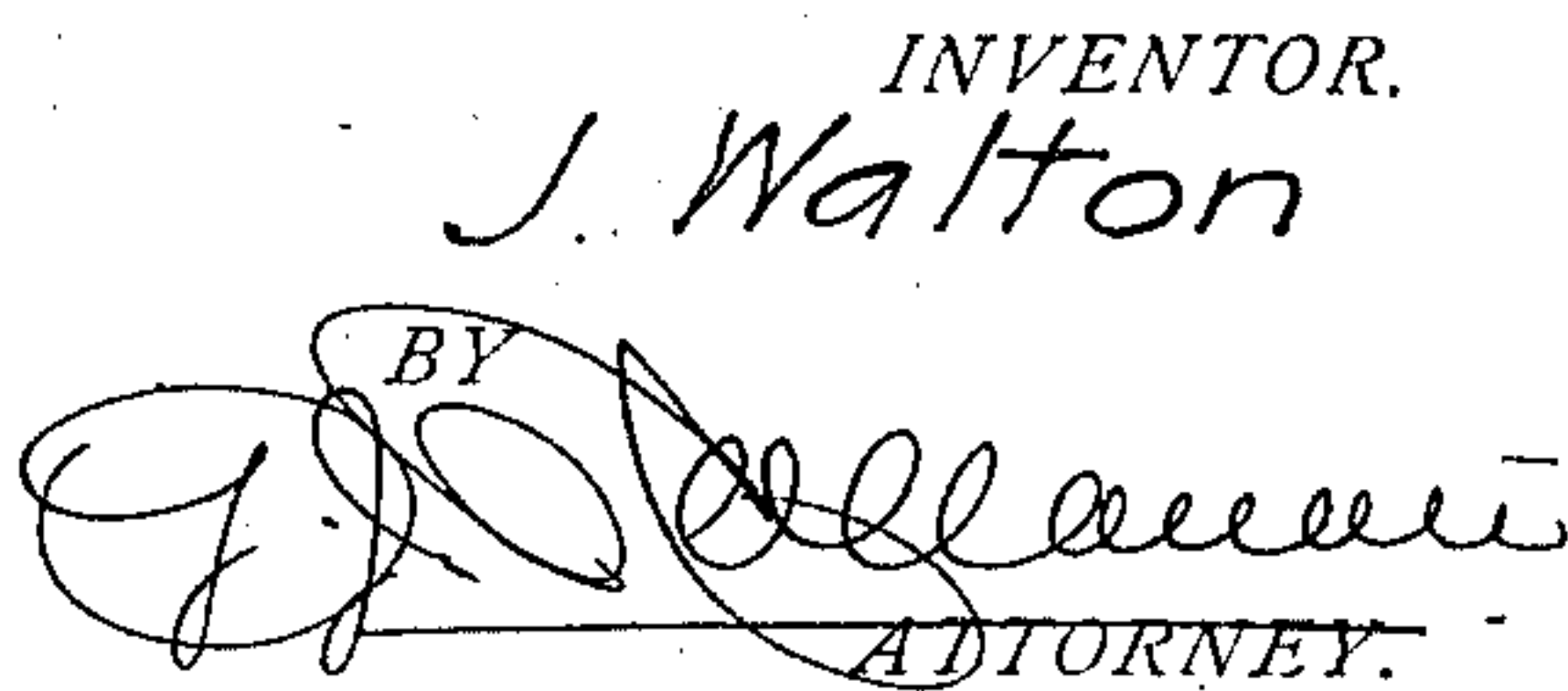
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998,818.

3 SHEETS—SHEET 3.





# UNITED STATES PATENT OFFICE.

JOSEPH WALTON, OF DENVER, COLORADO.

## EXCAVATING-MACHINE.

998,818.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed May 12, 1910. Serial No. 560,820.

*To all whom it may concern:*

Be it known that I, JOSEPH WALTON, a citizen of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Excavating-Machines, of which the following is a specification.

This invention relates to excavating machines and, more particularly, to the construction of the lower deck and the thereon rotatably mounted turntable which, together, constitute the support for the boiler, the hoisting engine, and the boom from which the excavating bucket is suspended.

The object of my invention is to provide a structure of the class described in which simplicity of construction is combined with durability, strength and rigidity. I attain this object by the mechanism illustrated in the accompanying drawings in the various views of which like parts are similarly designated and in which—

Figure 1 represents a plan view of the lower deck, Fig. 2, a side view thereof looking in the direction of the arrow *a*, Fig. 1, Fig. 3, a similar view looking in the direction of the arrow *c*, Fig. 1, Fig. 4, a plan view of the turntable, Fig. 5, a side view thereof, Fig. 6, a central transverse section through the lower deck and the turntable in their operative position drawn to an enlarged scale, and, Fig. 7, an enlarged section taken along the line 7—7 Fig. 4.

Referring to the drawings by numerals, 2 designates the so-called lower deck of an excavating machine and 3 the upper deck or turn-table which is rotatably mounted thereon as is shown in Fig. 6.

The lower deck 2, the construction of which is illustrated in Figs. 1 to 3 inclusive, is composed of parallel sills and cross beams, framed together and strengthened by properly applied truss- and tie-rods for the support of a circular rail on which the turntable travels. The sills 4 are arranged in two parallel pairs, the members of which are rigidly connected by means of distance-plates 5 applied at their ends and at intermediate points. Mounted transversely upon the sills are the cross-beams 6 and 7, two of which are disposed near the ends thereof, while two others are placed at opposite sides of the center of the structure in comparatively close proximity to each other for the

support of a step-box 8 which is secured thereto by means of bolts or rivets 9. The end-beams 6 are furthermore connected by means of truss-rods 10 which are joined thereto at opposite sides by means of brackets 12 and which are properly strained beneath two parallel truss-beams 13 which are secured below the cross-beams 6 and 7 in parallel relation to the sills 4 and in a plane with the upper surfaces of the same.

Diagonally disposed between the end-beams 6 and the center-beams 7, in a horizontal plane with their upper surfaces and in concentric relation to the step-box 8, are arcuate beam-sections 14 of equal curvature, which, together with the portions of the cross-beams between their ends, constitute a continuous support for a circular track-rail 15. The sections 14 which are rigidly secured upon the subjacent sills 4 and truss-beams 13, are steadied and braced against laterally directed stresses by means of a plurality of braces 16 applied at opposite sides thereof, and firmly secured to the adjacent sills 4 and truss-beams 13 by angularly bent plates 17.

Brackets 18 secured to one of the end-beams 6, are designed to pivotally secure a pair of "spuds" by means of which the carriage is braced while the machine is in operation and which not forming part of the present invention, have been omitted from the drawings.

The various beams comprised in the construction of the lower deck are I-shaped in cross-section and they are fastened together by means of angle-plates, while the inner members of the double sills 4 are furthermore connected with the cross-beams 6 by angularly arranged tie-rods 20, the lower ends of which are secured to said members and therewith connected stiffening plates 21, by means of bolts 22.

The turn-table 3 as illustrated in Figs. 4 and 5, comprises a rectangular structure composed of longitudinally and transversely disposed beams, I-shaped in cross-section, which are rigidly framed together for the support of the boiler, engine, boom and other operating parts of the excavating machine.

The parallel longitudinal beams 23, (preferably six in number) are of equal length, and firmly fastened together at their ends by cross-beams 24 and at intermediate points by distance-beams 25. These various beams



extend with their upper surfaces in one horizontal plane, the distance-beams having been disposed in irregular order at points where the stress upon the longitudinal beams is greatest.

Two distance beams, designated in the drawings by the numeral 26, are placed in comparatively close proximity to each other between the two middle ones of the six longitudinal beams 23, for the purpose of securing the pivot-casting 27, which, when the parts are assembled, extends into the step-box 8 of the lower deck 2, and which is secured against the lower surface of the beams 26 by means of bolts, rivets or other suitable fastening devices.

Disposed obliquely between two adjoining longitudinal beams or between one of the longitudinal beams and an adjacent distance-beam 25, and at equal distances from the center of the pivot 27, are a plurality of pairs of short beams 28, which carry, at their lower surfaces, axially alined shaft-hangers 29 in which flanged wheels 30 are revolvably mounted. The axes of the various wheels extend radially with relation to the pivot 27, and their treads are arranged in a circle, the diameter of which is equal to that of the contact circle of the ball of the rail 15 on the lower deck, upon which the wheels are, in practice, supported.

Two parallel, transverse beams 31 are secured upon the longitudinal beams 23 to support the boiler in which the steam required to operate the hoisting-engine is generated and brackets 32 fastened to one of the end-beams 24, are designed to pivotally connect the boom from which the excavating-bucket is suspended.

The various beams comprised in the construction of the turn-table or upper deck are, like those of the lower deck, fastened together by means of angle-connections 33 which are riveted to their webs as is shown by broken lines in Fig. 4 and by full lines in Fig. 6 in which the relative position of the two elements comprised in my invention, are clearly shown. When the excavating machine is in operation the lower deck and the thereon mounted turn-table are movably supported upon a plurality of rollers which are placed underneath wooden runners 35, which are secured to the sills 4 of the lower deck structure as shown in Figs. 2 and 3.

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

1. In an excavating machine, a lower deck structure comprising parallel sills, cross beams connected therewith, arcuate beam sections placed between said cross-beams in concentric relation to each other, and a circular rail disposed upon said cross-beams and said sections.

2. In an excavating machine, a lower deck structure including a step-box, a continuous rail-support and a rail disposed upon the latter in concentric relation to said box, and a turn-table having a pivot adapted to enter said box and wheels arranged to operatively engage said rail.

3. In an excavating machine, a lower deck structure comprising parallel sills, cross-beams connected therewith, a step-box secured to two of the latter, arcuate beam sections placed between the cross-beams in concentric relation to said box, a rail disposed upon said sections, and a turn-table having a pivot adapted to enter said box and wheels arranged to operatively engage said rail.

4. In an excavating machine, a lower deck structure comprising parallel sills arranged in pairs, the members of each pair being rigidly connected in spaced relation to each other, a rail support connected with said sills, and a circular rail disposed upon said support.

5. In an excavating machine, a lower deck structure comprising a suitable frame, a rail support connected therewith, braces rigidly connected with said frame and said support and extending laterally with relation to the latter, and a circular rail disposed upon the said support.

6. In an excavating machine, a lower deck structure comprising parallel sills, cross-beams connected therewith, arcuate beam sections disposed between the latter in concentric relation to each other, braces extending laterally from said sections and a circular rail disposed upon the latter.

7. In an excavating machine, a lower deck structure comprising parallel sills and cross-beams framed together, a circular rail supported thereon, and truss-rods connected with said cross-beams so as to counteract downwardly directed forces.

8. In an excavating machine, a lower deck structure comprising parallel sills, cross-beams connecting the same, truss-beams extending below the latter, truss-rods strained beneath said truss-beams and connected to said cross-beams, and a circular rail supported upon the latter.

9. In an excavating machine, a lower deck structure comprising parallel sills, two cross-beams centrally disposed thereon, a step-box connected with the latter, cross beams disposed between the central beams and the end-beams in concentric relation to said box, and a circular rail disposed upon said cross-beams and said sections.

10. In an excavating machine, a lower deck having a circular rail, and a turn-table composed of rectangularly arranged beams rigidly fastened together, and wheels revolvably mounted thereon in circular arrangement to operatively engage said rail.

11. In an excavating machine, a lower



deck having a circular rail, and a turn-table comprising longitudinal beams, cross-beams connecting the ends thereof, distance beams connecting the same at intermediate points, 5 and wheels revolubly mounted between the longitudinal beams and arranged in a circle to operatively engage said rail.

12. In an excavating machine, a lower 10 deck having a step-box and a circular rail concentric therewith, and a turn-table comprising longitudinal beams, cross-beams connecting the ends thereof, distance beams connecting the same at intermediate points, a pivot connected with two of said distance 15 beams and adapted to enter said box, and wheels revolubly mounted between said longitudinal beams in a circle of which said

pivot is the center, to operatively engage said rail.

13. In an excavating machine, a turntable 20 comprising longitudinal and transverse beams rigidly fastened together, beams disposed in pairs between said longitudinal beams in tangential relation to concentric circles, and wheels revolubly mounted be- 25 tween the members of each of said pairs, their axes being radial relative to said circles.

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

JOSEPH WALTON.

Witnesses:

G. J. ROLLANDET,  
J. A. SENKS.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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