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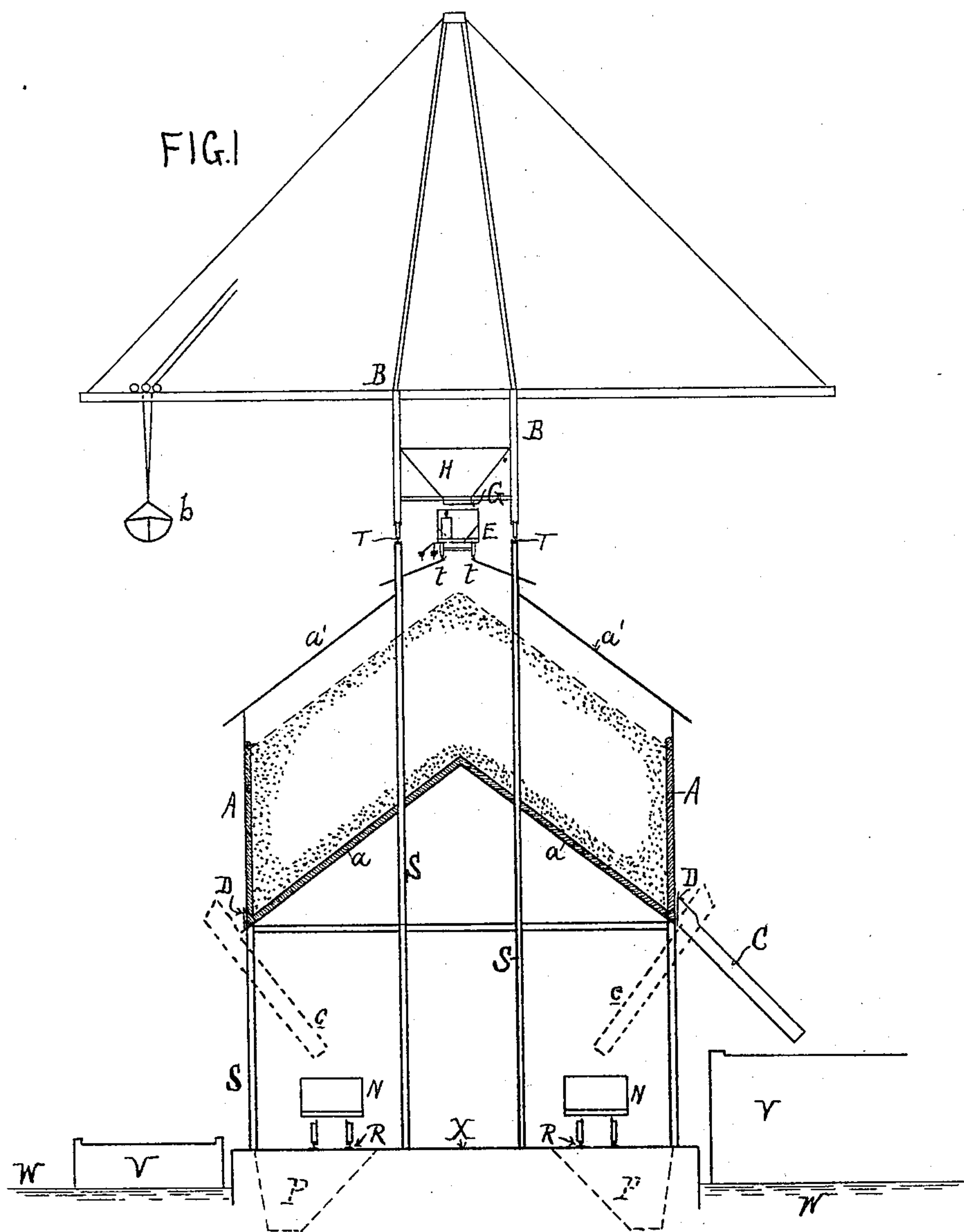
PATENTED MAR. 27, 1906.

A. SMITH.

APPARATUS FOR HANDLING COAL AND OTHER GRANULAR MATERIAL.

APPLICATION FILED JAN. 31, 1905.

3 SHEETS—SHEET 1.



Witnesses
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Augustus Smith
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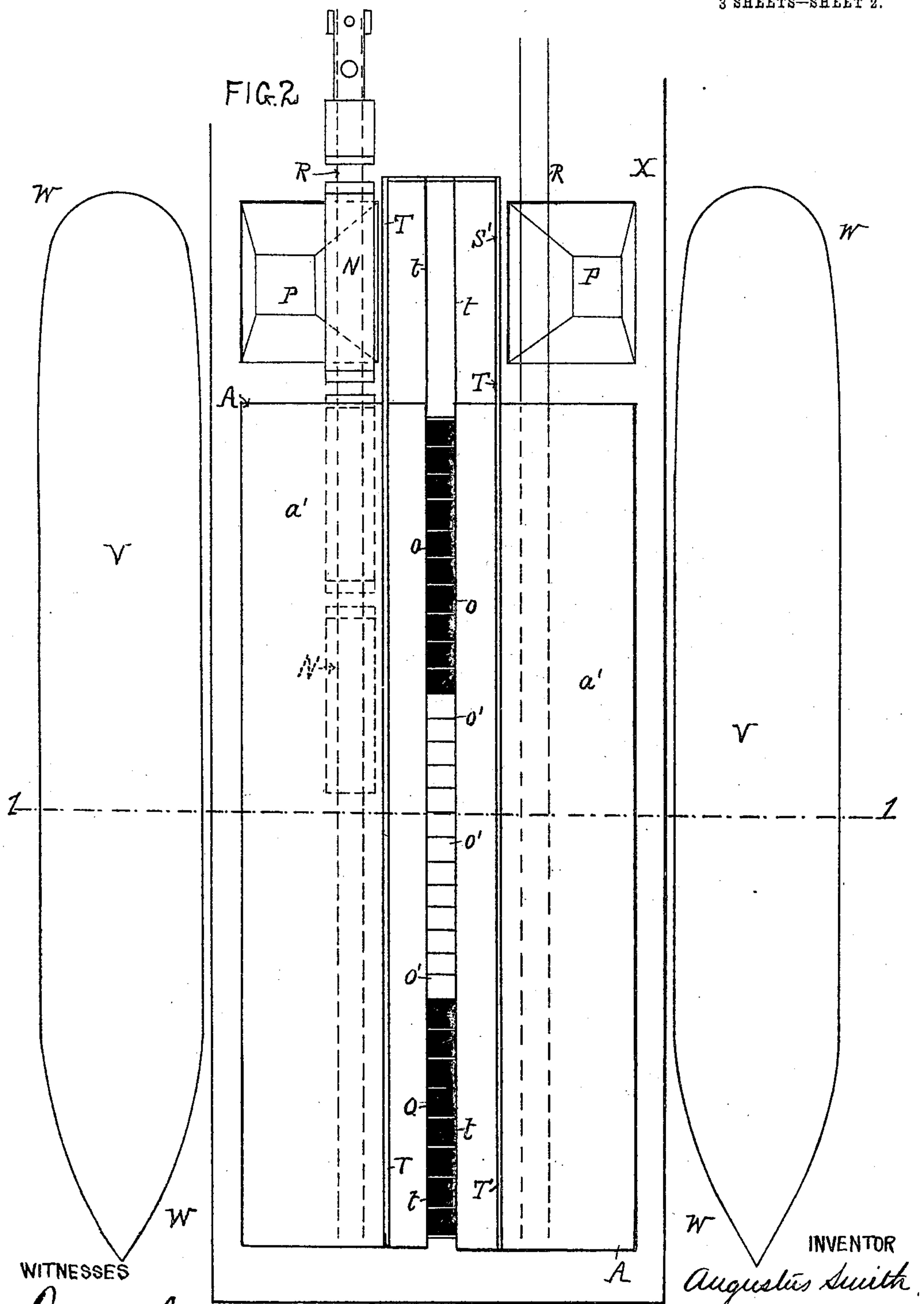
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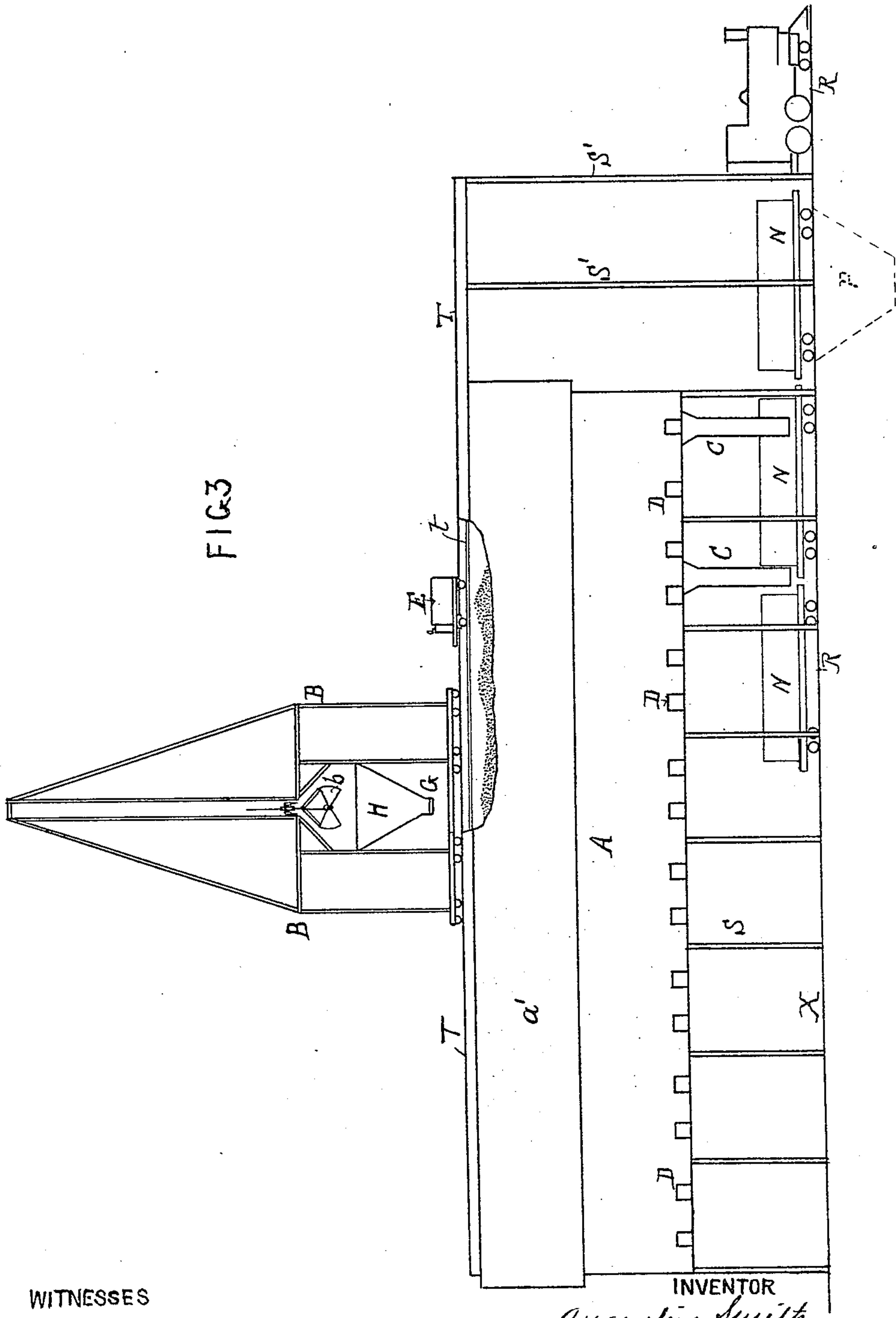
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UNITED STATES PATENT OFFICE.

AUGUSTUS SMITH, OF NEW YORK, N. Y.

APPARATUS FOR HANDLING COAL AND OTHER GRANULAR MATERIAL.

No. 816,391.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed January 31, 1905. Serial No. 243,509.

To all whom it may concern:

Be it known that I, AUGUSTUS SMITH, a citizen of the United States of America, residing in the borough of Manhattan, in the city, county, and State of New York, have invented an Improved Apparatus for Handling Coal and other Granular Material, of which the following is a specification.

My invention relates to the construction of a plant for the handling and storage of coal and other granular material; and the object of my invention is to simplify and improve the construction and operation of such a plant or apparatus.

In the accompanying drawings, Figure 1 is a transverse vertical section as if taken on the line 1 1, Fig. 2, except that in Fig. 2 the traveling tower with its hopper and the distributing-car have not been shown. Fig. 2 is a diagrammatic plan view showing the relative positions of the tracks on which the traveling tower, the distributing-car, and the surface-cars move, respectively, with relation to each other and to vessels moored alongside the pocket. Fig. 3 is a longitudinal side elevation of the structure, part of the roof being broken away in order to illustrate the function of the distributing-car.

While my invention is applicable to the handling and storage of various kinds of granular material, it is particularly useful for the handling and storage of coal at a coal-ing-station.

A A indicate the four side walls of a rectangular storage structure, which I prefer to provide with a floor *a a*, inclined downward from a longitudinal center line to both sides, with discharge-gates along each side at D D. In some cases it may be preferable to make the floor slope to one side only. Suitable chutes C may be provided to be moved along the sides of the structure so as to be brought opposite any gate D and to guide the discharge from the gate into the vessel to be loaded. The whole is mounted upon structure S on the ground X.

In the drawings I have indicated the plant as if located on a wharf or pier projecting out into the water, W representing water where floating vessels V may be brought up to the edge of the wharf and alongside the building on either side, either to unload coal or other granular material into the building for storage or to be loaded with such material from the supply in the building. The building may, however, be arranged alongside of

or between railway-tracks or elsewhere convenient for loading and unloading by means of any suitable hoisting, elevating, or conveying appliances. In case of the structure being built on a pier to serve vessels, when it may be desirable to bring vessels as near as possible to the outlet-gates D, provision may be made for unloading or loading railroad-cars by placing the tracks for them as shown at R R. In order to unload cars N on tracks R R, an extension to the structure is built at S', onto which the traveling tower B, (hereinafter described,) with its elevating machinery, may be moved so that its buckets, tubs, or scoops *b* may be let down into the cars to be unloaded or into specially-constructed pits P P, into which it may be more convenient to dump the cars by opening gates in the bottom thereof. Also cars could be reloaded from the storage structure through the gates D D by reversing the chutes C to the dotted positions shown at *c c*, Fig. 1.

On top of the structure is built a track T T, on which a traveling tower B, equipped with any suitable elevating machinery with buckets, tubs, or scoops, may be caused to move backward and forward, so as to take material from either side of the structure and at any point in the length thereof or from either side of the extended structure S' and deposit same in the elevated hopper H, built in the tower, which hopper is closed at the bottom by a gate G, Figs. 1 and 3. Another track *t t* is provided on the top of the structure, on which runs a distributing-car E, so arranged that it may be moved under the hopper H in the traveling tower and be filled with the coal or other granular material through the gate G, then moved to any point of the structure S and discharge its load through the bottom of the car into the storage-space contained within the walls A A.

I prefer to cover the storage-house with a roof *a' a'*, inclined to be substantially parallel with the floors *a a*. The inclines of the floors are at such an angle that the granular material will flow down them, and immediately over the longitudinal center line of the building and of the tracks T T and *t t* is left an opening, so that the distributing-car E may dump its load at any point in the length of the structure, and if the storage-pocket is covered by a roof *a' a'* this opening O may be suitably closed by a series of removable hatch-covers O', Fig. 2.

The traveling tower and the distributing-

car may be moved longitudinally along the structure by hand-power or by any mechanical power; but it is essential that the movements of the car and tower be independent of
5 each other.

In the storage of bituminous coal it is important to limit the depth of the coal in order to avoid spontaneous combustion, and it is for that reason I make the floor *a a* inclined
10 at about the natural angle which a coal-pile will assume, thus securing large storage capacity with a uniform and safe depth. It is also found necessary to turn over the pile of bituminous coal at intervals, so as to avoid
15 combustion, even in a depth of coal which might be safe for a short period of time. My improved construction of apparatus is adapted to do this by drawing the coal from the bottom of the pocket through the chutes in
20 the dotted positions *c c* into cars on tracks *R R*, whence it can be moved to the extension structure *S' S'*, to be raised by the tower into the hopper *H*, and thence placed by the distributing-car *E* back into the storage-pocket
25 at some other point.

I have shown and described a distributing-

car *E* running on rails *t t* for conveying material from the hopper *H* to any point of the pocket, and in general it will be found that a car is best adapted for this purpose, though
30 it is obvious that a conveyer could be used instead of the distributing-car.

I claim as my invention—

A plant for handling coal or other granular material, said plant comprising a storage
35 structure with a traveling elevating apparatus mounted on the top thereof and a distributing means mounted on the top thereof, and an extension at one end of the storage structure, so that the elevating and distributing
40 apparatus may be moved out past the structure proper to raise coal or other granular material from points within the prolongation of the planes containing the sides of the storage structure proper.
45

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

AUGUSTUS SMITH.

Witnesses:

HUBERT HOWSON,
F. WARREN WRIGHT.