

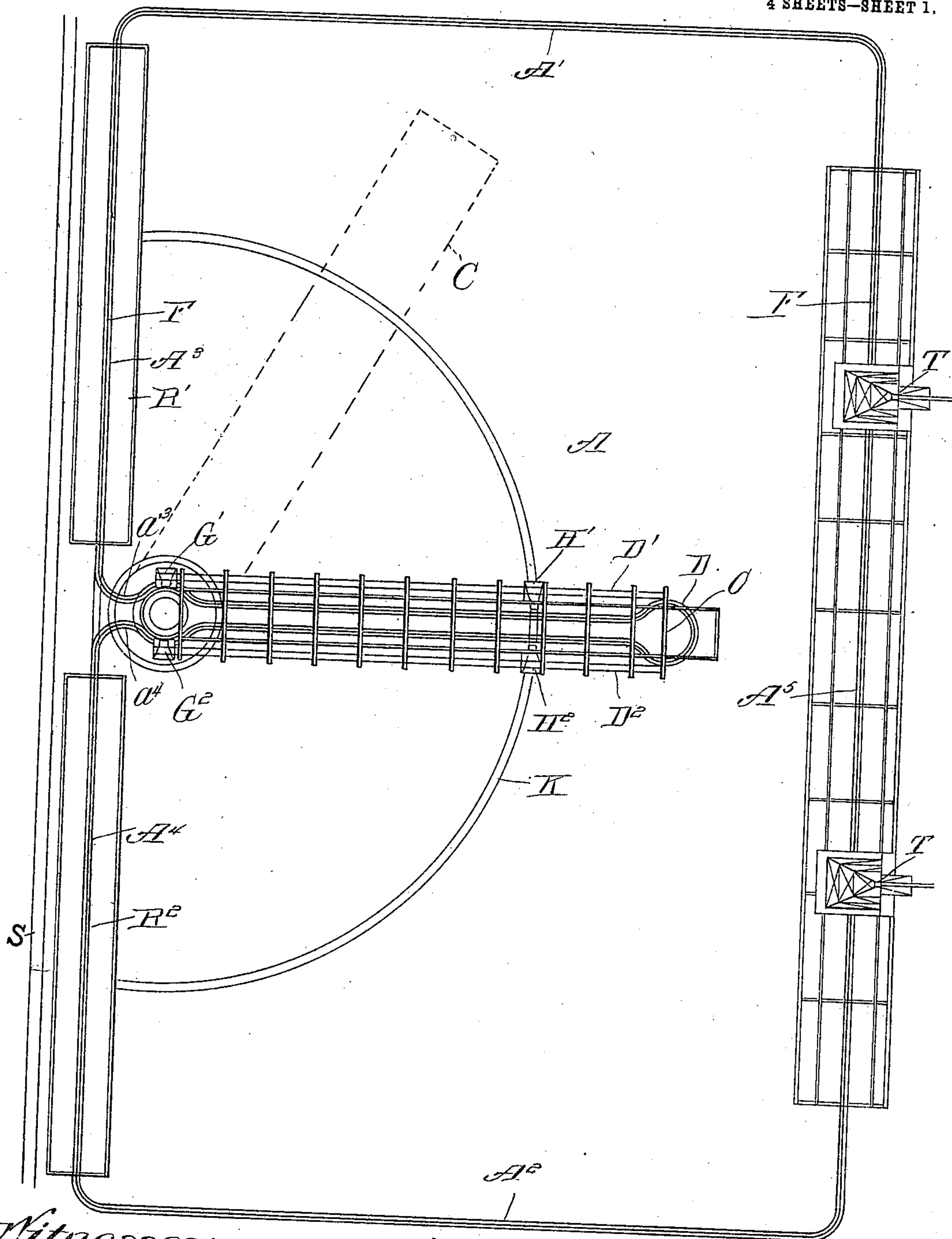
No. 837,586.

PATENTED DEC. 4, 1906.

W. J. SELLECK.
APPARATUS FOR STORING MATERIAL.

APPLICATION FILED NOV. 7, 1905.

4 SHEETS—SHEET 1.



Witnesses:

F. H. Carter

C. A. Mullen.

Fig. 1.

Inventor:

William J. Sellers

by *Lambert M. Wilkinson*
Att'y

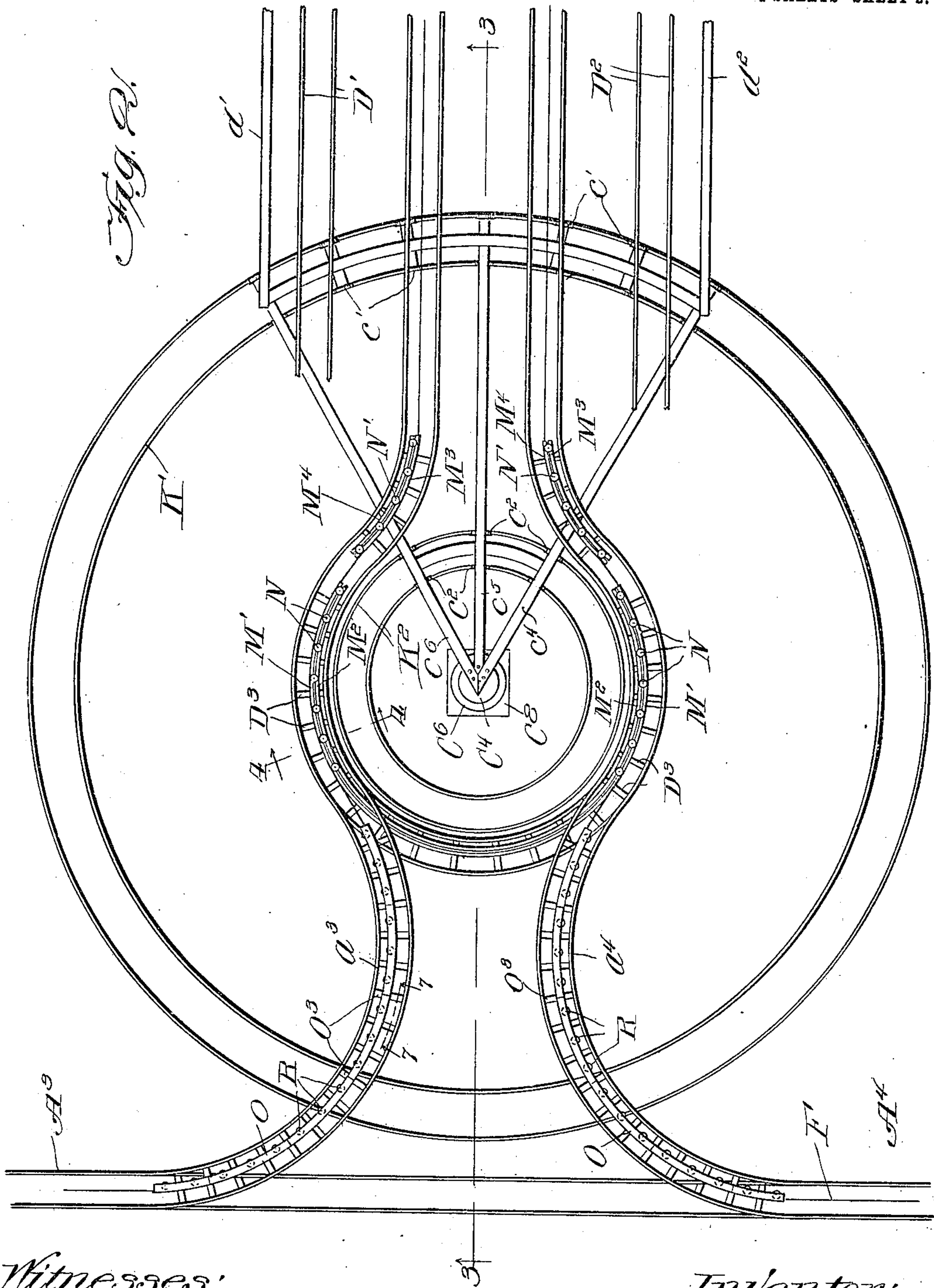
No. 837,586.

PATENTED DEC. 4, 1906.

W. J. SELLECK.
APPARATUS FOR STORING MATERIAL.

APPLICATION FILED NOV. 7, 1905.

4 SHEETS—SHEET 2.



Witnesses:
H. S. Prittner
C. A. Mullen

57
Inventor:
William J. Silluk
by Hamilton Wilkerson
attys

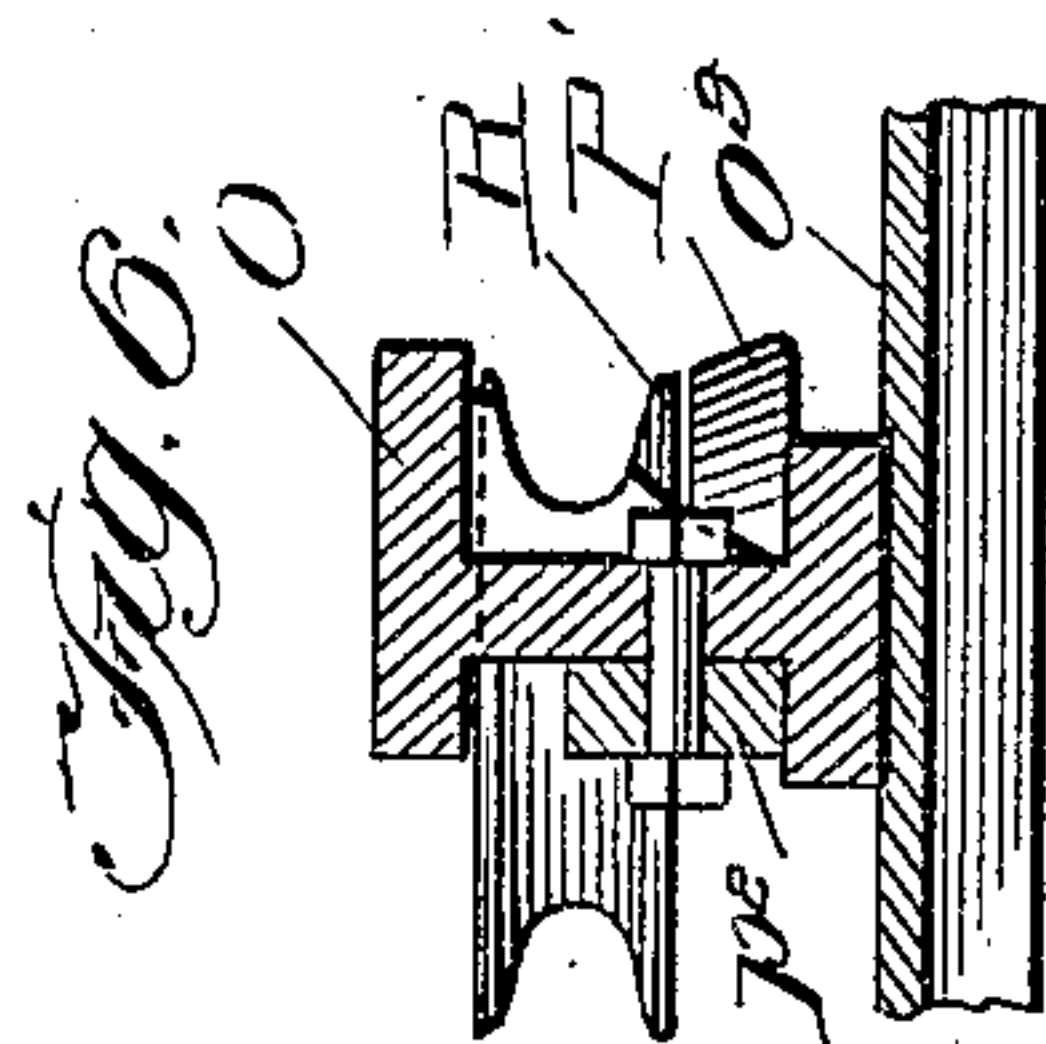
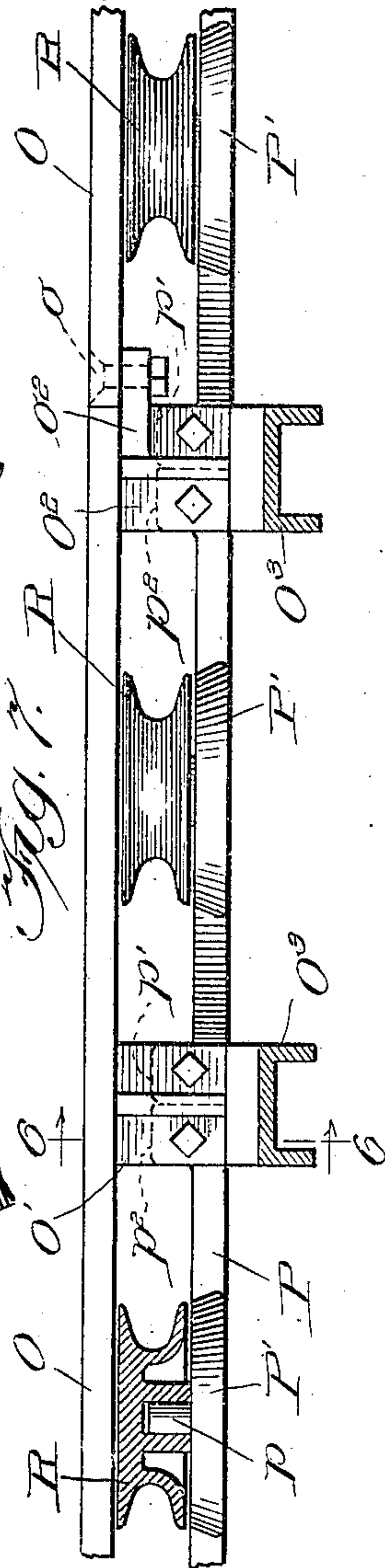
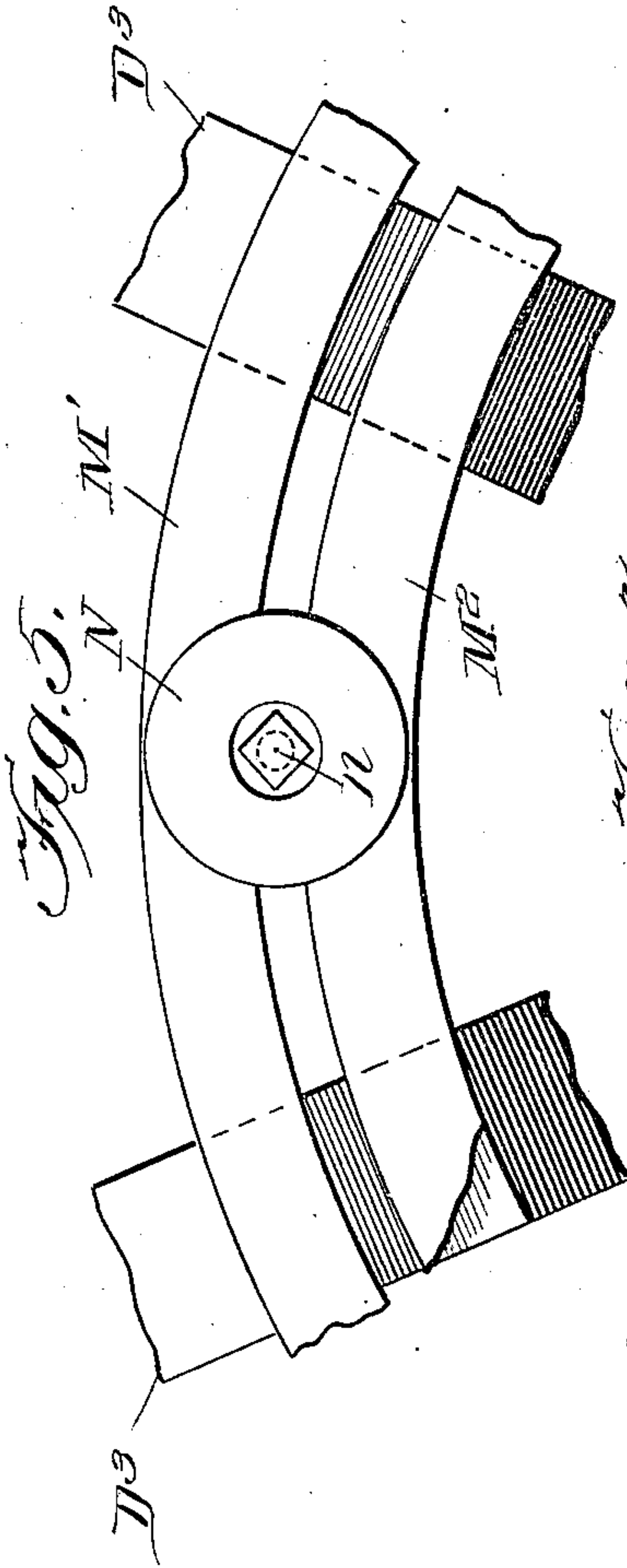
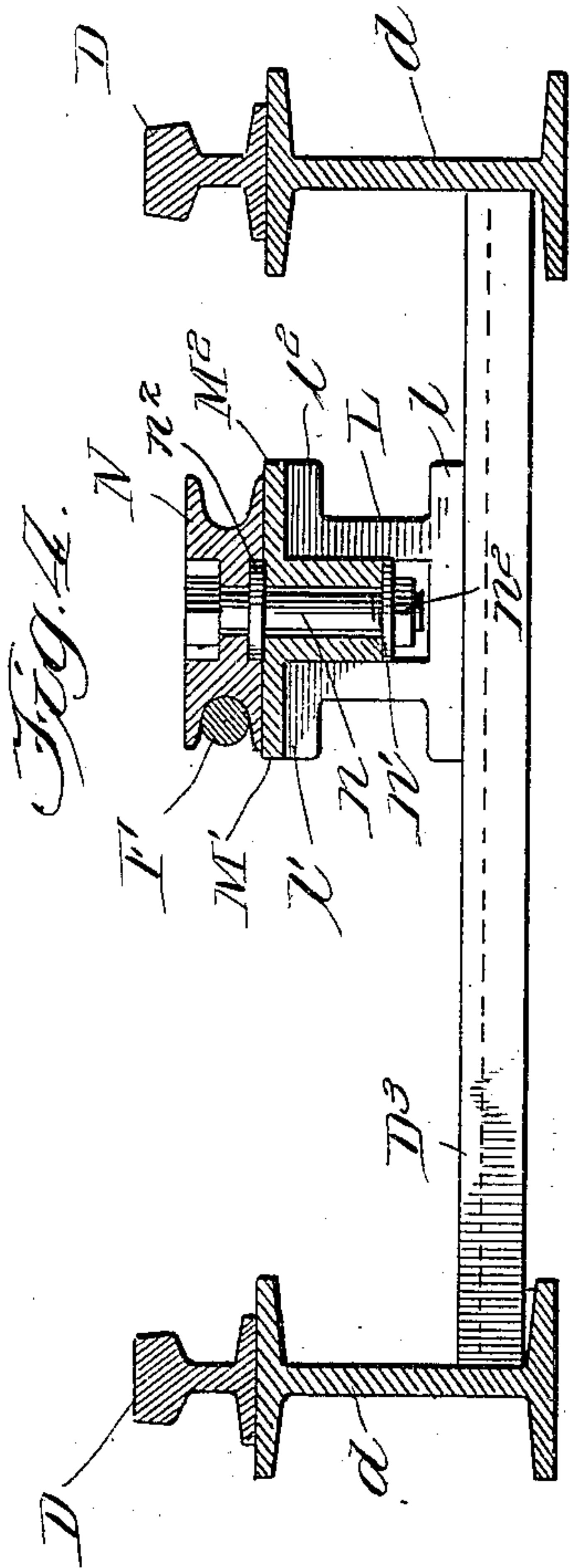
No. 837,586.

PATENTED DEC. 4, 1906.

W. J. SELLECK.
APPARATUS FOR STORING MATERIAL.

APPLICATION FILED NOV. 7, 1905.

4 SHEETS—SHEET 4.



Witnesses:
H. S. Craithen
C. A. Mullen

Inventor:
William J. Sellick
by Lambert W. Milner
attys

UNITED STATES PATENT OFFICE.

WILLIAM J. SELLECK, OF RIVERSIDE, CONNECTICUT.

APPARATUS FOR STORING MATERIAL.

NO. 837,586.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed November 7, 1905. Serial No. 286,282.

To all whom it may concern:

Be it known that I, WILLIAM J. SELLECK, a citizen of the United States, residing at Riverside, county of Fairfield, State of Connecticut, have invented a certain new and useful Improvement in Apparatus for Storing Material; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to apparatus for depositing coal or other material upon a storage area and for removing the material from the storage area preparatory to reshipment.

At points where coal is unloaded, particularly from vessels, it is desirable that apparatus should be provided for depositing the coal throughout the storage area, from which it may be removed and reloaded upon cars when desired.

The primary object of my invention is to provide an apparatus for depositing and removing coal or other material throughout an available storage-space, so that all portions thereof may be rendered accessible and thereby utilized.

A further object of my invention is to provide an apparatus by means of which coal or other material may be distributed throughout a storage area by continuing the cars in which the coal is received from the unloading apparatus over a movable bridge adapted to be so adjusted as to cover any proportion of area.

A still further object of my invention is to provide an apparatus of the character referred to which will be comparatively simple in construction, practicable in operation, and which will enable coal or other material to be expeditiously and economically handled.

My invention generally described consists in a horizontal swinging crane or bridge located above a storage-space and pivotally supported at one end adjacent a track extending around the storage-space, so that the loaded cars may be switched from the track to the crane and dumped at any desired point over which the crane has been located.

My invention further consists in providing a horizontally-swinging crane with means for removing material from a storage-space over

which the crane is adapted to swing preparatory to reshipping the material.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is a diagrammatic plan view; Fig. 2, an enlarged plan view showing the pivotally-supported end of the crane; Fig. 3, an enlarged sectional view on line 3 3, Fig. 2; Fig. 4, an enlarged sectional view on line 4 4, Fig. 2; Fig. 5, a detail plan view of the adjustable means for guiding the cable; Fig. 6, a sectional view on line 6 6, Fig. 7; and Fig. 7, an enlarged sectional view on line 7 7, Fig. 2.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference-letter A indicates a storage area for receiving coal or other material after it has been unloaded from vessels or cars for storage until such time as it may be desired to reship the material. Surrounding the storage-space are tracks A', A², A³, A⁴, and A⁵, supported upon suitable elevated structures, such as indicated at B in Fig. 3.

C indicates a horizontally-swinging bridge or crane, one end of which is pivotally supported adjacent one side of the storage-space. The crane is supported in an elevated position above the storage-space and at substantially the same height as the tracks surrounding the storage area. A circular track K, composed of parallel rails, concentrically surrounds the pivot of the crane and is adapted to support the crane intermediate of its pivot and its outer end through the medium of a suitable structure. A suitable supporting structure, such as shown at C' in Fig. 3, is provided beneath the crane at the pivotally-supported end thereof. Extending around the point about which the crane is adapted to swing are circular tracks K², upon which travel trucks c², supporting the inner side of the structure C', while concentric supporting-tracks K' are located around the tracks K² and support thereon trucks c', located beneath the outer portion of the supporting structure C' of the crane.

Supported upon the crane C is a loop-track D, the loop at the inner end of which is located concentrically with respect to the point about which the crane is adapted to swing. The portion of the loop at the inner

end of the track which extends beyond the center of rotation of the crane is supported by suitable trusses C^2 and C^3 , projecting from the supporting structure C' . The portion A^3 of the track which surrounds the storage area is provided with curved rails a^3 , having switch-points which overlie the circular loop of the track D at the inner end of the crane. The portion A^4 of the track which surrounds the storage area is in a similar manner provided with curved rails a^4 , having switch-points which overlie the rails of the inner loop of the track D at the opposite side thereof from the portion engaged by the switch-points of the rails A^3 .

An endless cable F is provided for propelling cars along the track located around the storage area, such cable also extending around the loop-track D on the crane C. The curved track portions a^3 and a^4 are provided with guide-pulleys, suitably supported, around which the cable passes. In Figs. 6 and 7 I have illustrated in detail the guiding means for the cable fixed between the rails of the tracks a^3 and a^4 . Supported upon cross-ties O^3 , extending between the rails of each track, is a curved plate O, preferably formed in connected sections. Each section of the curved plate O is supported above the ties O^3 at a point intermediate of its ends by a standard O' , the base of which is fixed to a tie O^3 . A similar standard O^2 is provided at one end of each section of the plate O and is supported upon the adjacent tie O^3 . A lug o^2 projects laterally from the standard O^2 and is adapted to support the adjacent end of the adjoining section of the plate O. Any suitable means—such, for instance, as bolt o —may be provided for securing the end of one section of the plate O to the lug extending from the standard beneath the adjacent end of the adjoining section.

Located between the standards which support the sections of the curved plate O are horizontal guide-pulleys R, each of which is journaled upon a pin p , projecting above a bracket P. The ends of each bracket P are provided with ears p' p^2 , which are secured to the standards O' and O^2 by any suitable means—such, for instance, as bolts. Each bracket P is provided with a projection P' , extending beneath the guide-pulley supported thereby, such projection serving to guide the cable to the pulley above the same should slack in the cable permit the same to fall from within the groove in the pulley.

Adjustable guide-pulleys for the cable are provided between the rails of the track D throughout the curved portions thereof, located around the center of rotation of the crane. In Figs. 4 and 5 I have illustrated in detail such adjustable guide-pulleys. Blocks L, each having an opening in the center thereof and provided with feet l , which are secured above the ties D^3 , are supported be-

tween the eye-beams d d , underlying and supporting the rails of the track D. Supported upon the blocks L are curved angle-plates M' and M^2 , the vertical flanges of which extend downwardly within the openings in the blocks, while their horizontal flanges project in opposite directions and are supported upon lugs l' l^2 , projecting laterally in opposite directions from the blocks L. Guide-pulleys N rest upon the horizontal portions of the angle-plates M' M^2 and are provided with depending bolts n , lying between the vertical flanges of the angle-plates. A nut n^2 is provided on the lower end of each bolt n , which clamps a washer n' between the same and the lower edges of the angle-plates. A spacing-collar n^2 surrounds each bolt n intermediate of the head thereof and the upper surface of the plates M' M^2 in order that the guide-roller N, journaled upon the bolt, may rotate freely when the bolt is clamped to the plates M' M^2 in any adjustable position. It is obvious that the positions of the pulleys N may be adjusted by loosening the nuts n^2 and sliding the bolts n along the groove formed between the angle-plates. Similar adjustable guide-pulleys N' are supported between curved plates M^3 M^4 at the curved portions of the track D intermediate of the circular loop at the inner end thereof and the straight portions, as clearly shown in Fig. 2.

The crane C is provided with tracks D' D^2 on each side thereof upon which pick-up mechanism travels. The pick-up tracks are supported upon suitable beams d' d^2 at the top of the crane, so that the pick-ups will travel above the plane of the cars on the track D.

E indicates a pick-up bucket, supported from a trolley e in any well-known manner.

f indicates a cable for raising and lowering the pick-up bucket. Depending from the inner ends of the pick-up tracks E' and E^2 are hoppers G' and G^2 , the lower ends of which are above the curved portions of the circular loop of the track D on either side of the center of rotation of the crane. Similar hoppers H' H^2 depend below the pick-up tracks D' D^2 at a point near the outer end of the crane, as indicated in Fig. 1.

R' R^2 indicate pockets supported beneath the portions A^3 and A^4 of the track which surrounds the storage area. The coal or other material may be deposited in such pockets from the cars upon the tracks over the same and loaded from the pockets into cars upon the track S. The coal may be deposited into pockets from the same cars into which it is placed by the unloading mechanism, or the coal after being stored on the storage area may be deposited in such pockets from cars loaded by the pick-up mechanism on the crane C.

In order that the crane may be swung horizontally without danger of the supporting-

trucks c' and c^2 binding upon their supporting-tracks K' K^2 , respectively, braces, such as c^4 c^5 c^6 , extend from the supporting structure C' to the center of oscillation of the crane and support a center plate C^4 , which engages a pin C^7 . The pin C^7 is supported by a plate C^6 , mounted upon a suitable foundation C^8 . The pin C^7 extends concentrically within a flange C^5 , depending from the plate C^4 , while an upwardly-projecting circular flange c^7 on the plate C^6 surrounds the flange C^5 . Oil or other lubricant may be placed within the groove formed between the pin C^7 and surrounding flange c^7 to facilitate the relative movement between the superposed center plate and to prevent dirt from working in between the pin C^7 and the surrounding flange C^5 .

The manner of using and operation of my invention are as follows: Cars are drawn along the tracks surrounding the storage area A by means of the cable F. The cars receive coal or other material from suitable unloading apparatus—such, for instance, as unloading-towers T of usual construction. The cars are drawn by the cable over the curved track a^3 or a^4 onto the loop-track D upon the crane. When the car reaches the desired point upon the crane, it is dumped, and the empty car returned by the cable to the point where the material is being unloaded. The crane C may be swung about its center of rotation to any desired position above the storage area—such, for instance, as the position indicated by dotted lines in Fig. 1. By adjusting the position of the crane coal or other material may be deposited throughout the storage area. When the crane is swung from the central position, (shown in Fig. 1,) it is necessary to adjust the positions of the guide-pulleys N, inasmuch as the switch-points at the ends of the curved tracks a^3 a^4 are located above the rails of the loop of the track D, and hence the rails of the track D pass below the switch-points when the crane is moved. For instance, when the crane is swung into the position shown in dotted lines in Fig. 1, it is necessary to remove the pulleys N adjacent the switch-points of the track a^3 and to insert such pulleys in front of the switch-points at the ends of the rails of the track a^4 . In a similar manner when the crane is swung in an opposite direction the pulleys adjacent the end of the track a^4 are removed and placed in front of the track a^3 . In this manner the cable is guided between the curved portions of the rails of the loop of the track D around the center of rotation of the crane. When it is desired to remove the coal or other material from the storage-space, the pick-up buckets are put into operation, and the material dumped from the pick-up buckets into the hoppers H' , H^2 , G' , or G^2 , by means of which the coal is directed to cars upon the loop-track D and is by them removed to any points desired above the pockets R' or R^2

and deposited in them preparatory to loading the coal upon cars on the track S for re-shipment.

From the foregoing description it will be observed that I have invented an improved apparatus for storing and handling coal or other material, by means of which the material may be deposited upon and removed from any portion of the storage area and by means of which the material may be carried directly from the point where it is unloaded to any point above the storage area by means of the same motive power, owing to the cable F extending along the track around the storage area and also along the loop-track upon the crane.

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

1. The combination with a storage area, of an elevated track on one or more sides thereof, a horizontally-swinging crane extending over said area, and a track on said crane connected with said elevated track.
2. The combination with a storage area, of an elevated track on one or more sides thereof, a horizontally-swinging crane extending over said area, a loop-track on said crane connected with said elevated track, and an endless traction-cable extending adjacent said elevated and loop tracks.
3. The combination with a storage area, of an elevated track on one or more sides thereof, unloading mechanism located adjacent said track, pockets beneath said track, a horizontally-swinging crane extending over said area, and a track on said crane connected with said elevated track.
4. The combination with a storage area, of pockets located on one or more sides thereof, a stationary track supported above said pockets, a horizontally-swinging crane extending over said area, and a track on said crane connected with said stationary track.
5. The combination with a storage area, of an elevated track on one or more sides thereof, storage-pockets beneath said track a horizontally-swinging crane extending across said storage area a track on said crane connected with said elevated track, and conveying apparatus carried by said crane adapted to remove material from points in said storage-space.
6. The combination with a storage area, of an elevated track on one or more sides thereof, a horizontally-swinging crane extending over said area, a track on said crane, and switches leading from said elevated track to a curved loop of the track on said crane located concentrically around the center of movement of the crane.
7. The combination with a storage area, of an elevated track on one or more sides thereof, a horizontally-swinging crane extending over said area, a track on said crane, switches

leading from said elevated track to a curved loop of the track on the crane located concentrically around its center of movement, and a traction-cable extending along the rails of the elevated track and continuing along the rails of the track on the crane.

8. The combination with a storage area, of an elevated track on one or more sides thereof, a horizontally-swinging crane extending over said area, a track on said crane, switches leading from said elevated track to a curved loop of the track on the crane located concentrically around its center of movement, a traction-cable extending along the rails of the elevated track and continuing along the rails of the track on the crane, and guide-pulleys for said cable adjustably located between the rails of said loop.

9. The combination with a storage area, of an elevated track extending around said area, a horizontally-swinging crane extending over said area, a loop-track on said crane forming a continuation of said elevated

track, and a continuous traction-cable adjacent said elevated and loop tracks.

10. In an apparatus of the character described, the combination with a storage area, of a movable unloading-tower, a horizontally-swinging crane movable independently of said tower, a track extending into proximity with said tower, comprising a continuous loop supported upon said crane and an endless traction-cable for said loop-track.

11. In an apparatus of the character described, the combination with a storage area, of a movable unloading-tower, a continuous track extending into proximity with said tower, and a horizontally-swinging crane upon which a loop of said track is supported above the storage area.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM J. SELLECK.

Witnesses:

GEO. L. WILKENS,
HATTIE B. LEHMAN.