

No. 782,694.

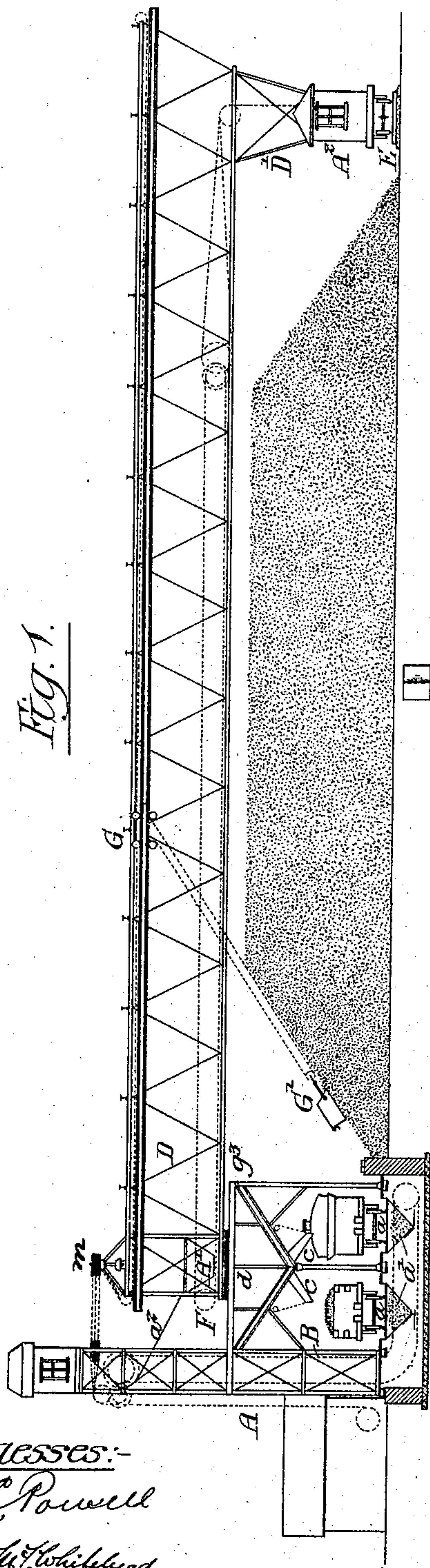
PATENTED FEB. 14, 1905.

C. PIEZ.

STORAGE APPARATUS.

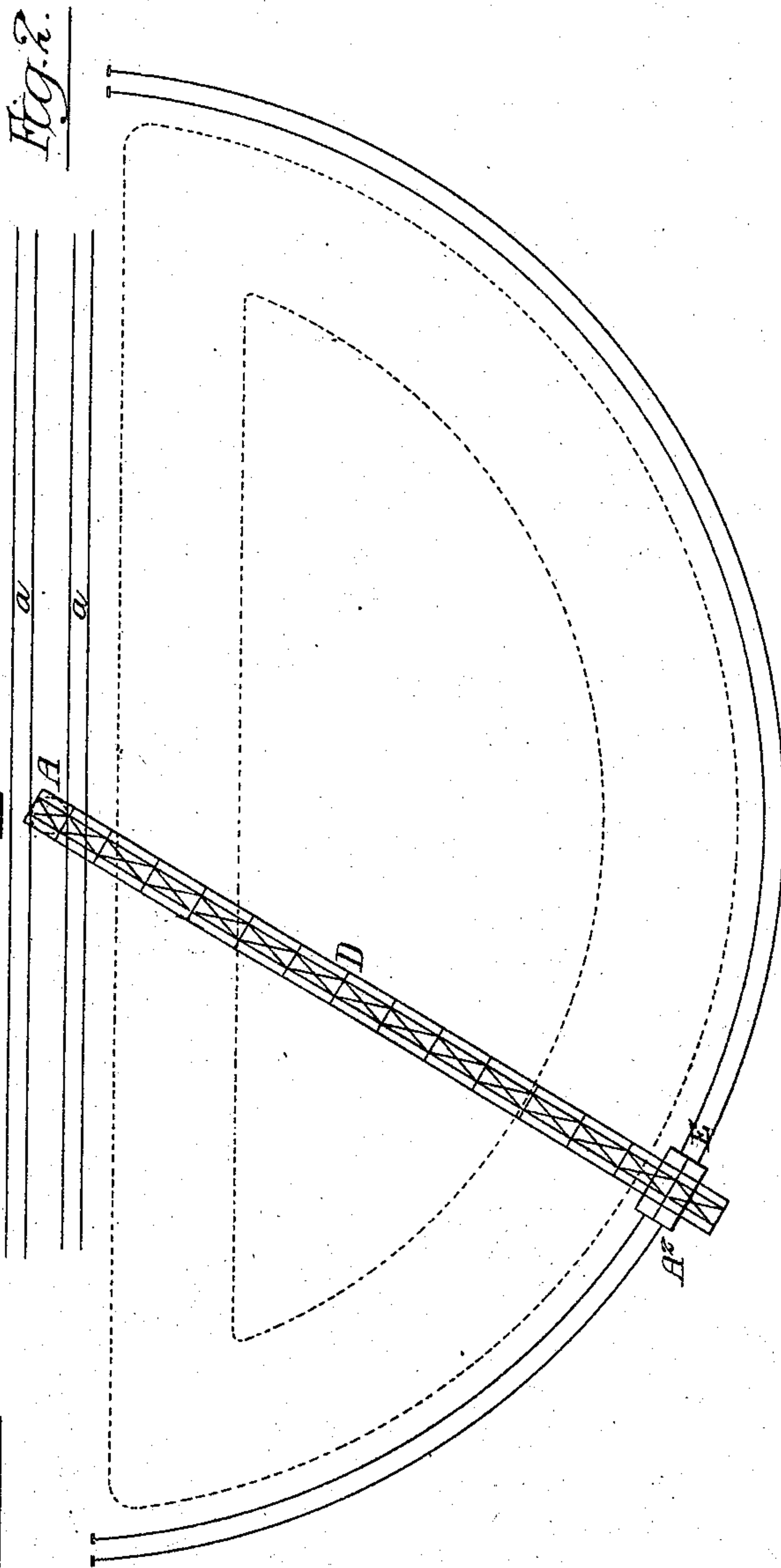
APPLICATION FILED OCT. 18, 1899.

3 SHEETS--SHEET 1.



Witnesses:-

A. E. Powell
Louis H. T. Whitehead



Inventor:-

Charles Piez.

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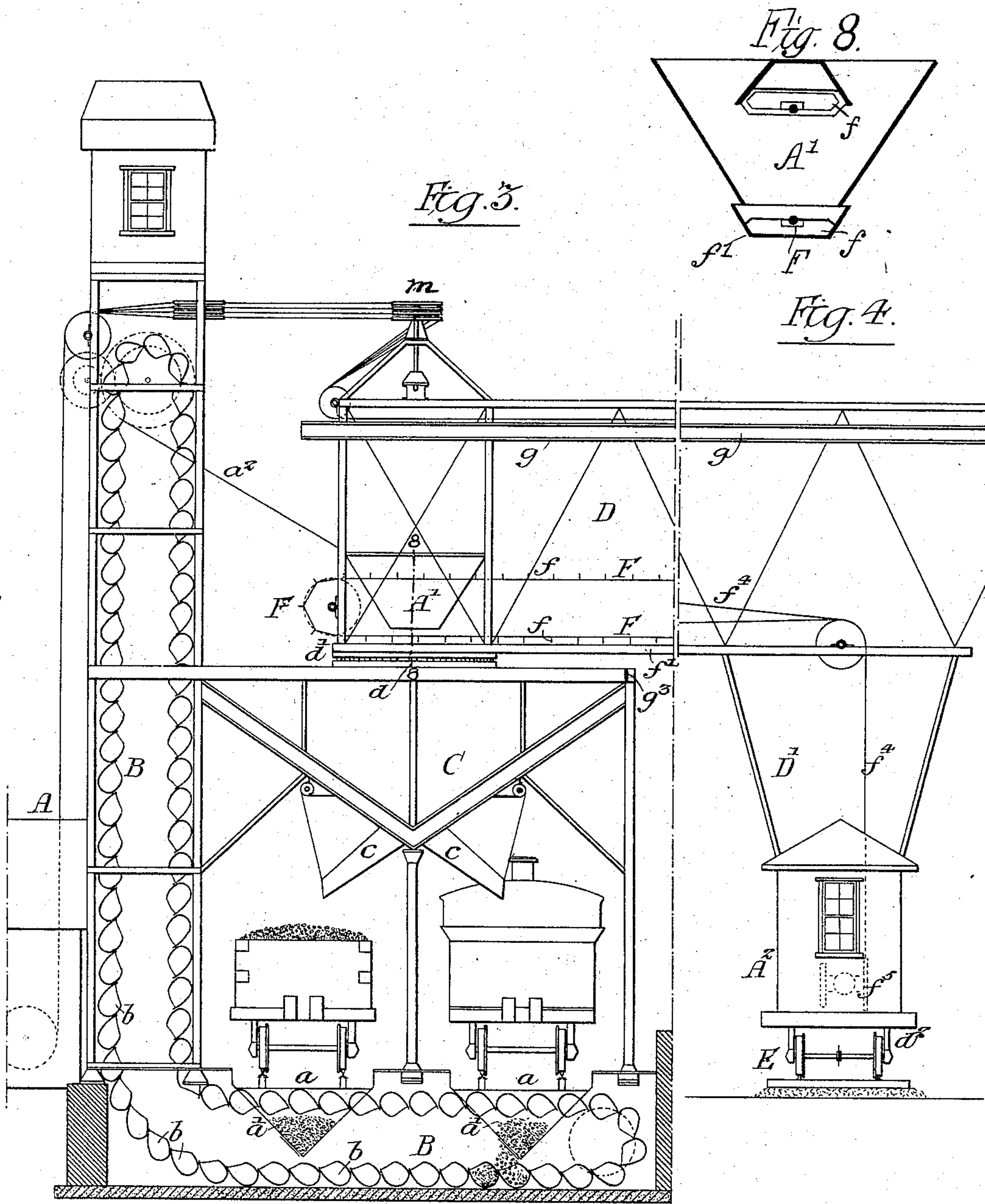
Howson & Howson

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3 SHEETS—SHEET 2.



Witnesses:-

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3 SHEETS—SHEET 3.

Fig. 5.

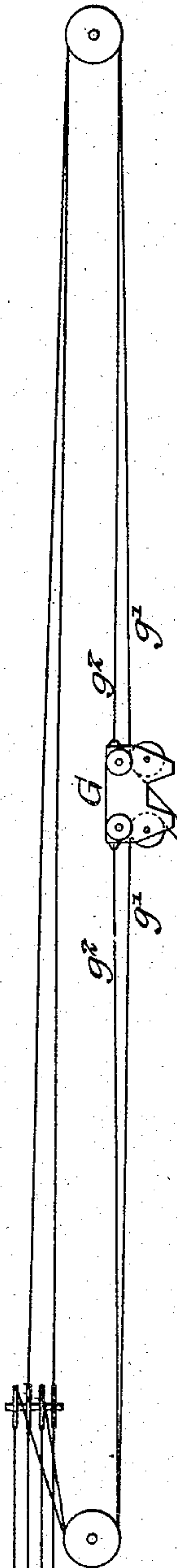


Fig. 7.

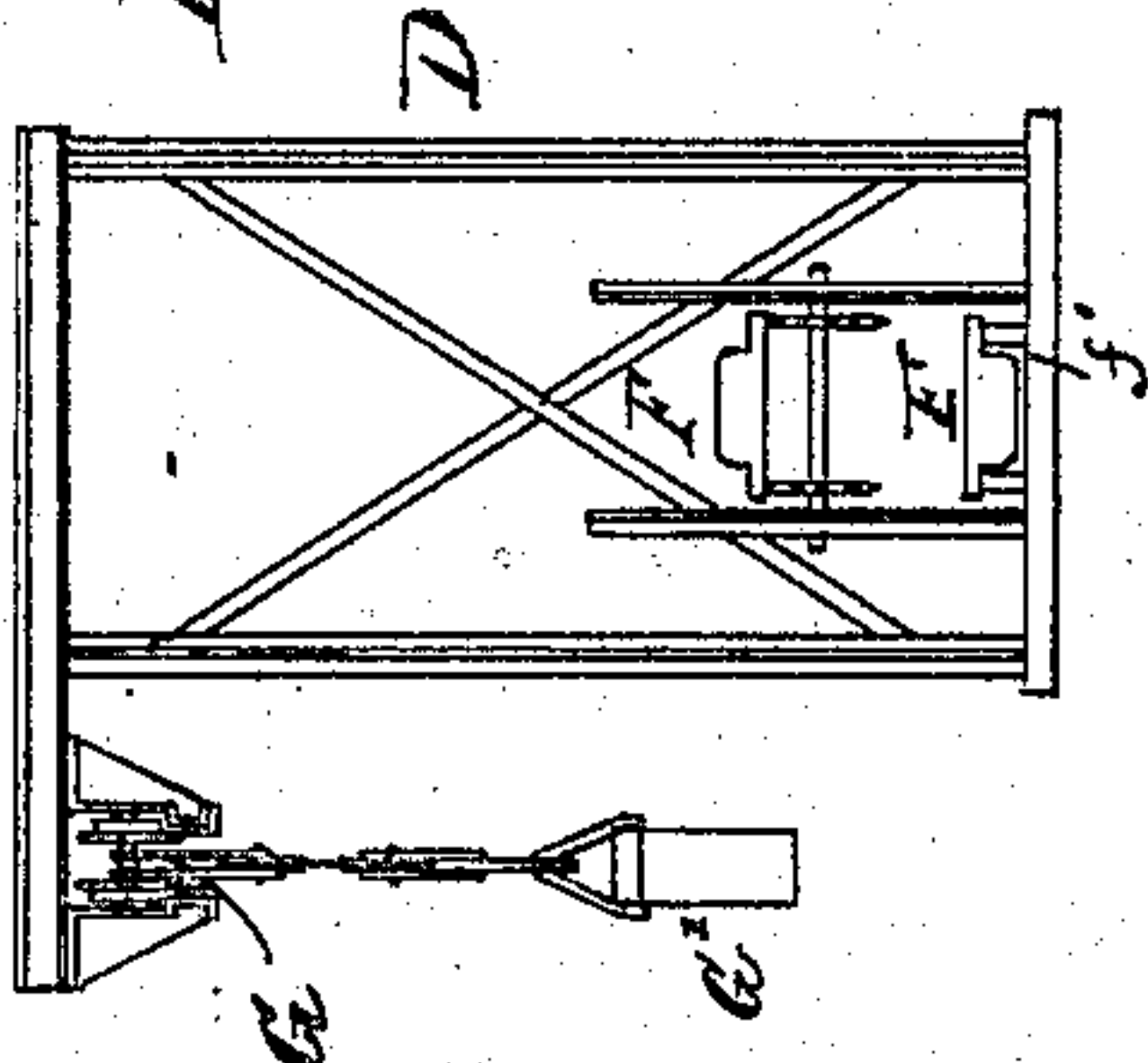
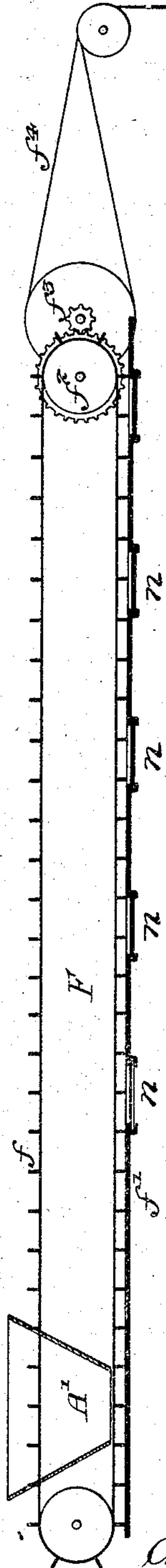


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES PIEZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
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STORAGE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 782,694, dated February 14, 1905.

Application filed October 18, 1899. Serial No. 734,017.

To all whom it may concern:

Be it known that I, CHARLES PIEZ, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Storage Apparatus, of which the following is a specification.

My invention relates to certain improvements in mechanism for piling coal or similar material and for removing material from the pile.

The object of my invention is to provide a structure which shall make it possible to pile the material in a semicircular pile from a fixed point and to return said material to the same point from the pile when it is desired to remove the same. This object I attain by constructing a fixed structure and pivoting to the said structure a movable frame. An elevator and a hopper are mounted on the fixed structure and on the frame two or more conveyers, one of which receives material from the elevator to be distributed upon the pile, and the other collects and conveys material from the pile to the hopper. These operations I may perform simultaneously, as hereinafter described.

In the accompanying drawings, Figure 1 is a side view illustrating my improved apparatus for removing and storing piles of material. Fig. 2 is a plan view. Fig. 3 is an enlarged view of the pivoted end of the apparatus. Fig. 4 is an enlarged view of the outer end of the apparatus. Figs. 5 and 6 are diagram views of the carrier-driving mechanism. Fig. 7 is a vertical cross-section of the truss, showing the position of the scoop and also that of the belt conveyer. Fig. 8 is a section on the line 8 8, Fig. 3.

A is a fixed structure in which is a bucket elevator B, having buckets *b*, which receive the material from cars or other carriers. In the drawings I have shown tracks *a*, upon which the cars are run. The tracks are mounted above the horizontal portion of the elevator, so that the cars will discharge directly into hoppers *a'*, which feed the material to the elevator. Directly above the tracks is a bin

or hopper C, into which material is loaded from the pile, and this bin has chutes *c c* to allow the material to be fed onto the cars or other carriers when it is desired to remove the material from the pile. This structure can be used as a coaling-station for locomotives, in which case the locomotive is run onto the track *a* and the coal from the bin above can be discharged directly into the tender. When it is necessary to replenish the pile, the coal-cars can be run onto the track *a* and discharged into the hoppers *a'*, the elevator B elevating the coal and discharging it onto an inclined chute *a''*, through which the coal passes to a hopper *A'*, mounted on a pivoted truss structure D.

The truss structure D is pivoted at *d* and in the present instance is mounted on roller-bearings *d'*, although any suitable devices may be used at the pivot without departing from the main feature of the invention. The outer end of the truss structure has a leg *D'*. On the lower end of this leg is a truck *d''*, having wheels adapted to a semicircular track E, so that the truss structure can be swung on its pivot to any point within a given arc. Suitable driving mechanism is connected to the wheels of the truck and operated from the cab *A''* on the truck, so that when the operating mechanism is thrown into gear with the wheels the truss can be swung on its pivot as desired.

F is an endless-belt conveyer of the open chain type, having flights *f*, Fig. 6. This conveyer travels over a bed *f'* on the lower member of the truss D. The bed *f'* extends directly under the hopper *A'*, and the conveyer is driven in any suitable manner and is under the control of the operator in the cab *A''* on the truck. In the present instance the sprocket-wheel shaft *f''* is geared to a shaft *f'''*, which is operated by a rope *f''''*, leading from a drum *f'''''* in the cab *A''*. The coal or other material as it is carried by the elevator is dumped into the hopper A and conveyed onto the bed to the point of discharge by the conveyer F, so that the material will be piled

properly. The bed may have a series of openings, as shown in Fig. 6 at $n\ n$, or may be in the form of a traveling apron.

On one or both sides of the truss structure 5 is a rail g , to which is adapted the trolley G , and from the trolley is suspended the reloading bucket or scoop G' . A rope g' passes to the trolley from suitable drums and around guide-wheels on the trolley to the bucket or 10 scoop. An independent driving-rope g^2 is connected to the trolley, so that the scoop or bucket G' can be drawn over the surface of the coal and loaded, then elevated to a point 15 directly under the trolley and the trolley conveyed to a point directly above the hopper C , at which point a trip g^3 acts upon a latch g^4 on the bucket, which holds the pivoted bottom g^5 of the bucket in position so that as soon as the latch strikes the projection the 20 bottom of the bucket will swing open and its contents be discharged into the bin. I preferably provide two trolleys and buckets, one at each side of the truss structure, so as to increase the capacity of the apparatus; but one 25 bucket and one trolley may be used and may be placed at any convenient point. The truss construction when one trolley and bucket are used is illustrated in Fig. 7, which shows the position of the scoop G' while being conveyed by the trolley G . The relative position 30 of the belt conveyer F is also indicated. The driving-ropes for the bucket pass around wheels at the pivot of the truss, as shown at m , Figs. 1 and 3, so that the movement of the 35 truss will not interfere with the proper handling of the ropes.

In some instances I may dispense with the endless-belt flight-conveyer for piling the ma-

terial and use the trolley and bucket for piling as well as for removing material from the pile 4 when it is desired to cheapen the structure.

I claim as my invention--

1. In a storage apparatus, the combination of a segmental storage-floor, a fixed structure at one side of said floor, a horizontal truss 4 structure pivoted to the fixed structure at a given distance from the floor and arranged to swing over said floor, a segmental track for supporting the outer end of the pivoted structure, a conveyer on the pivoted structure, and 5 means on the fixed structure for feeding said conveyer with material to be conveyed and piled on the floor, substantially as described.

2. The combination of the fixed structure, a movable structure pivoted thereto, means 5 for supporting the outer end of the pivoted structure, a hopper carried by the pivoted structure, said hopper-being situated at the pivot-point, a hopper or bin on the fixed structure directly under the pivot of the movable 6 structure, tracks, said fixed structure being open so as to allow of the passage of cars on said tracks, with an L-shaped elevator, the horizontal section of said elevator being arranged to receive material from the cars, and 6 means for transferring the material from the outer end of said elevator to the hopper carried by the pivoted structure, substantially as described.

In testimony whereof I have signed my name 7 to this specification in the presence of two subscribing witnesses.

CHARLES PIEZ.

Witnesses:

- WILL. A. BARR,
JOS. H. KLEIN.