

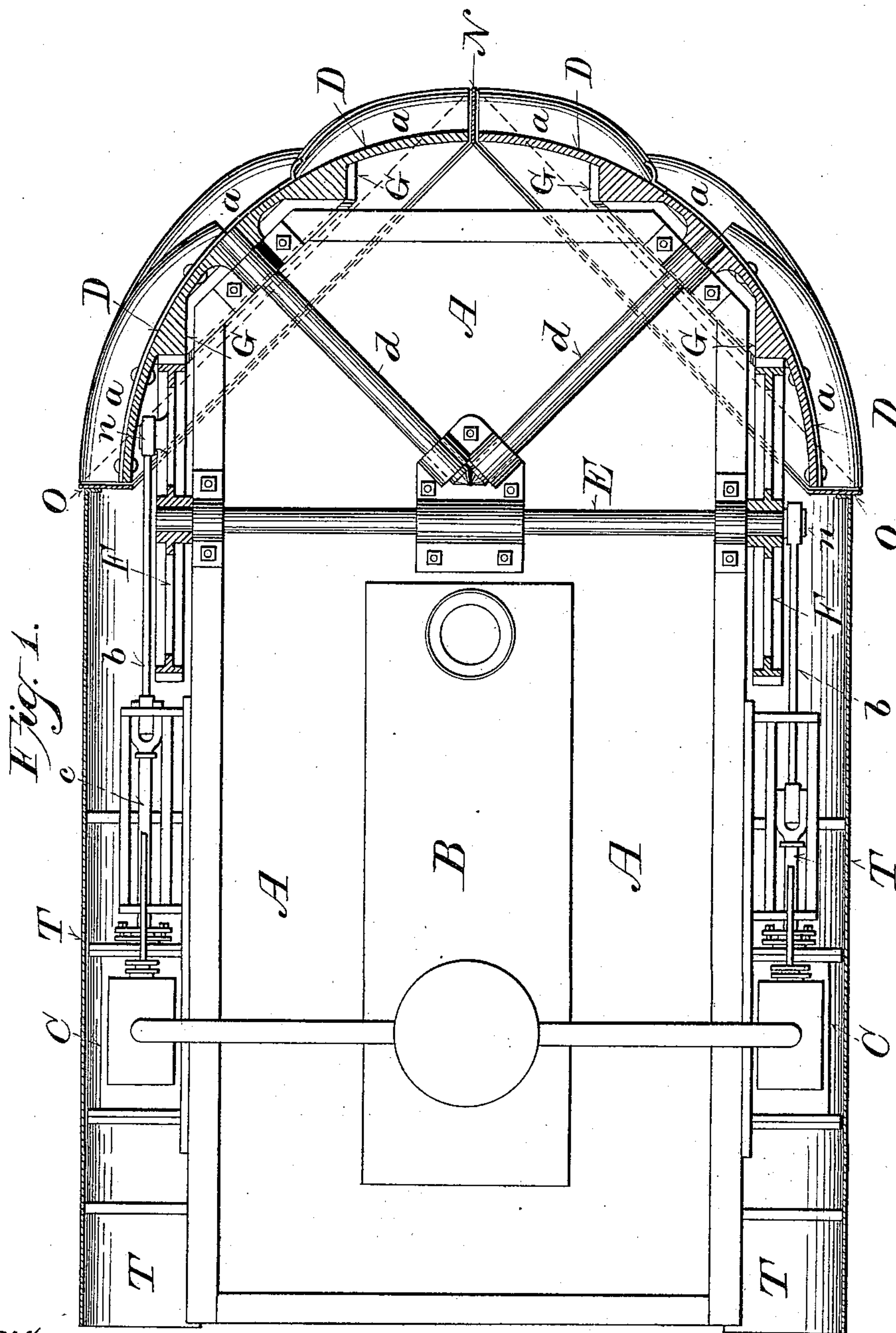
(No Model.)

4 Sheets—Sheet 1.

L. MORGAN.  
TRACK CLEARER.

No. 330,725.

Patented Nov. 17, 1885.



Witnesses:

Chas. R. Goss.  
George Coll.

Inventor:

Lyman Morgan,  
By *W. B. R. R. R.*  
Attorney.

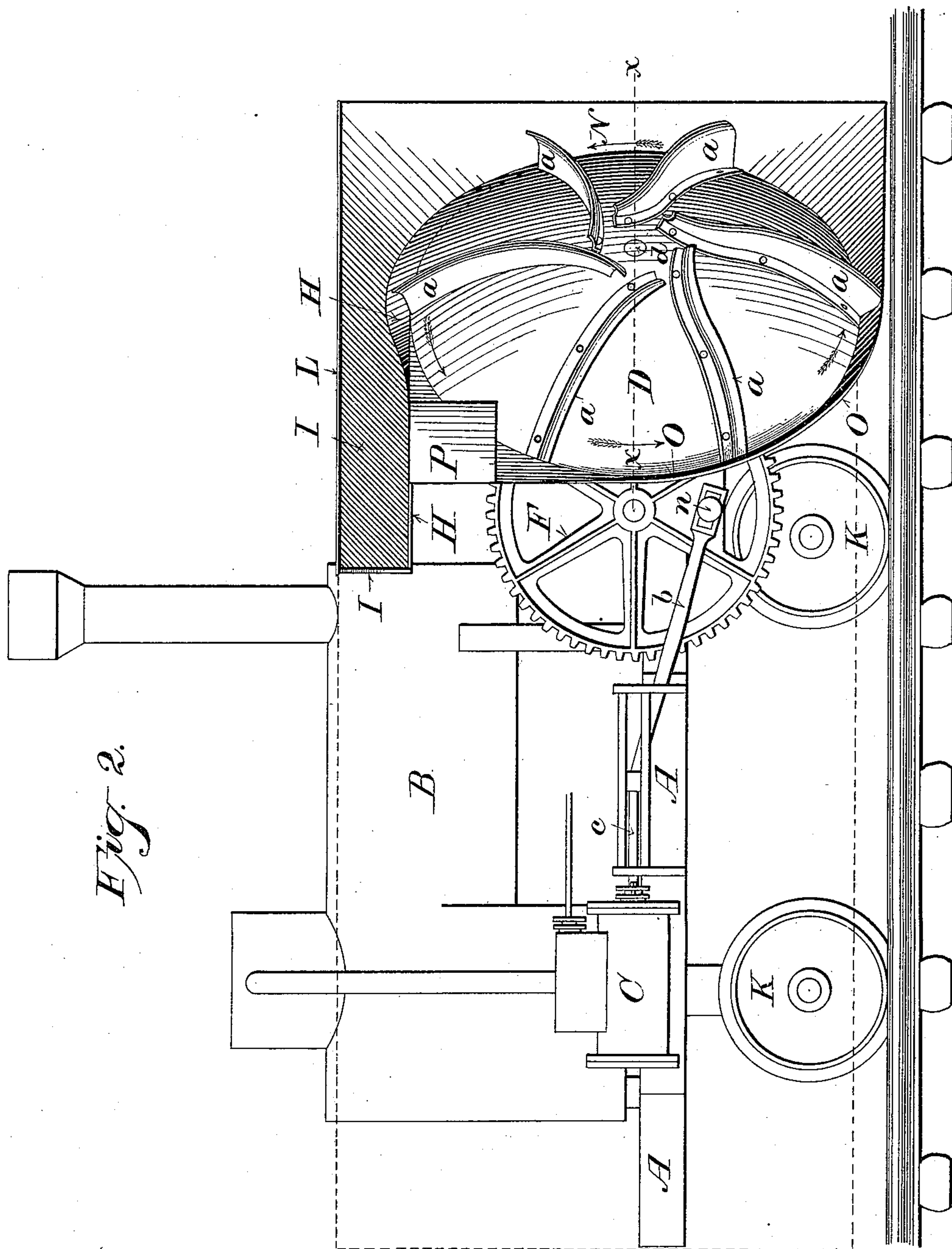
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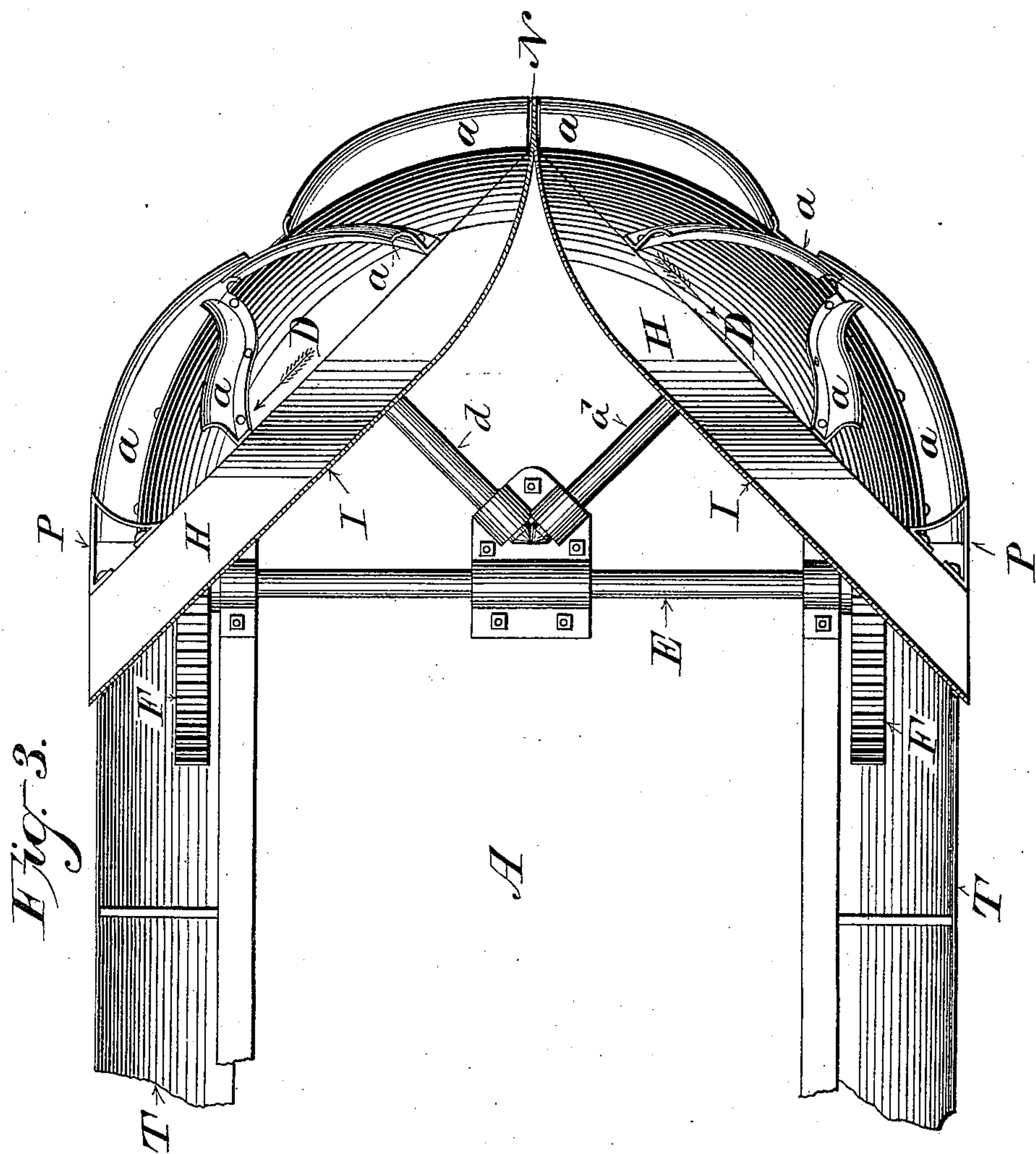
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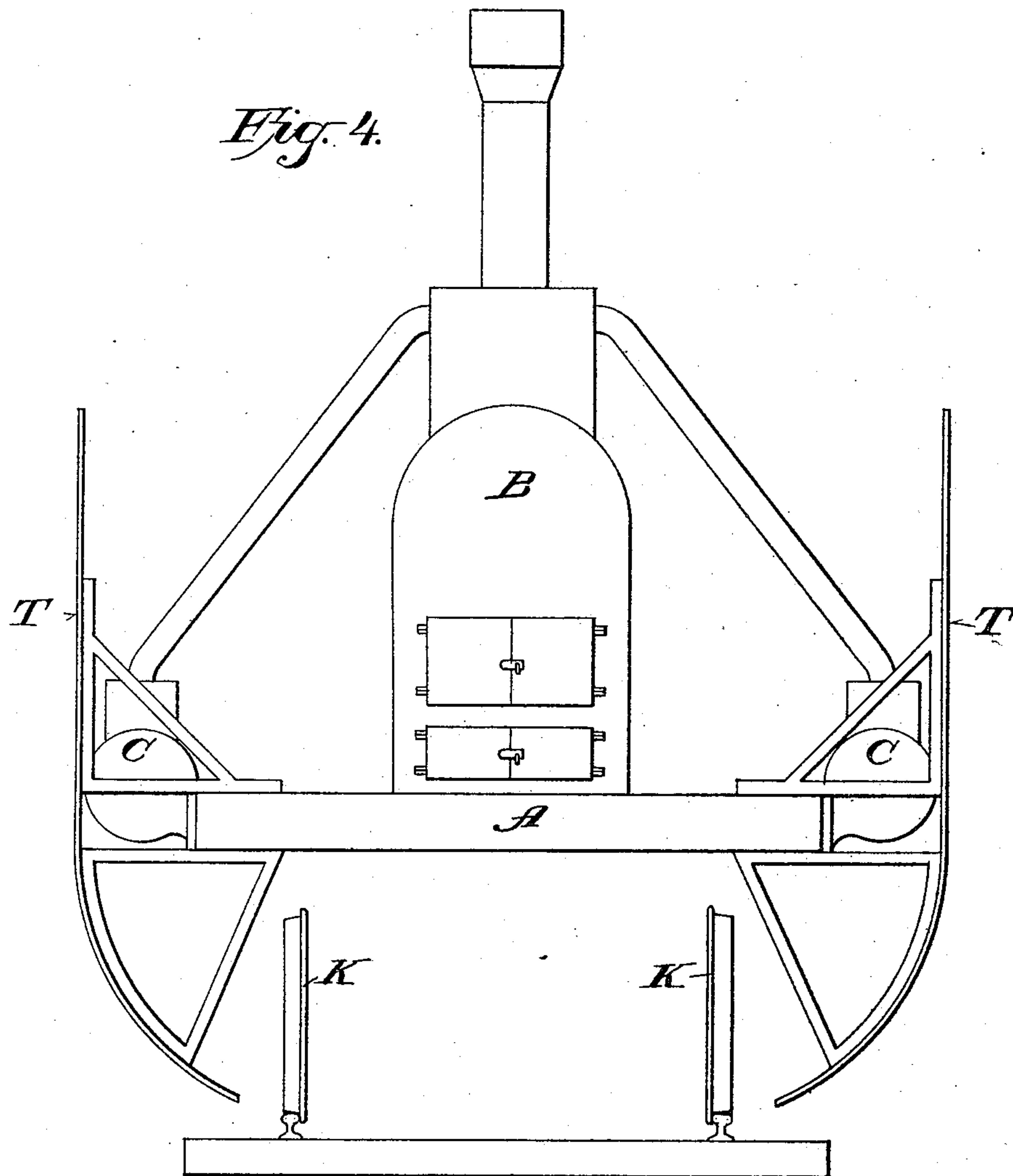
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*Witnesses:*

*Chas. R. Goss.*  
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*Inventor:*

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# UNITED STATES PATENT OFFICE.

LYMAN MORGAN, OF PORT WASHINGTON, WISCONSIN.

## TRACK-CLEARER.

SPECIFICATION forming part of Letters Patent No. 330,725, dated November 17, 1885.

Application filed January 12, 1885. Serial No. 152,617. (No model.)

### *To all whom it may concern:*

Be it known that I, LYMAN MORGAN, of Port Washington, in the county of Ozaukee and State of Wisconsin, have invented certain  
5 new and useful Improvements in Track-Clearers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the  
10 same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to quickly and  
15 effectually remove snow, ice, sand, or similar obstructions from railway-tracks.

It consists, essentially, of a pair of convex rotary disks provided upon their convex faces with wings for cutting and removing the snow,  
20 &c., in front of them, and mounted at the forward end of the supporting-car, and diverging rearwardly from the beak of the plow, of scrolls located about the peripheries of said disks to retain the snow, &c., upon said wings  
25 until the same is carried up and discharged through suitable chutes at the sides of the machine.

In the accompanying drawings like letters refer to the same parts in each figure.

30 Figure 1 is a plan view of my improved machine showing the disks in medial horizontal section on the line *x x*, Fig. 2. Fig. 2 is a side elevation of the machine with the front side guard removed. Fig. 3 is a plan or top  
35 view of the disks and discharging-chutes, the cap-plates of the latter being removed; and Fig. 4 is a rear elevation showing the side guards.

40 A is the car or frame-work supported upon the wheels K K, or upon ordinary car-trucks.

D D represent the rotary disks, which are mounted in an upright position at the forward end of the car A upon the front ends of the shafts *d d*, the ends of which are beveled and  
45 roll together, so as to mutually brace each other and said disks. These disks D D have convex front faces and are set with their peripheries in planes diverging rearwardly from the beak N of the plow. A horizontal section  
50 passing through their axes cuts said disks in a semicircle, as shown in Fig. 1.

*a a* are wings or scoops having sharp up-

turned cutting-edges, and secured to the convex faces of disks D on lines inclined to the rear from the radii of said disks, the latter  
55 turning in the direction indicated by the arrows, Figs. 2 and 3. The inner ends of said wings *a a* are curved upward, or in the direction of their upturned edges, to throw the snow, &c., toward their centers. 60

N is the prow or beak secured to the framework of the machine, separating the disks at their forward approaching edges, and advancing to the front edges of the wings *a a* at the point of their nearest approach thereto, as  
65 shown in Fig. 1.

O O are scrolls forming a continuation of the beak N about the under and rear edges of disks D, where they are made of about the same width as wings *a a*, the ends of which  
70 run closely thereto, as seen in Figs. 1 and 2. By this means the snow, &c., taken up by the wings *a a* is retained upon the faces of the disks D until it is carried up and discharged at the upper rear quarters of said disks through  
75 chutes formed by the scrolls H H, vertical backs I I, and horizontal guards or covers L. The said backs I I form continuations of the beak N, and diverge rearwardly to points on each side even with the outer edges of the wings  
80 *a a* at the outer limits of their travel. The scrolls H H begin at points about the middle of the front edges of disks D D and gradually widen out, forming continuations of the faces of said disks, till they reach the top thereof, where they  
85 are gradually brought into a horizontal position, in which they are continued, with their front edges in a vertical plane passing through the edges of the disks till they meet the outer edges of the scrolls O O, which are continued  
90 up in a vertical line from the rear edges of the disks, as seen in Fig. 2, and close the spaces between the forward horizontal edges of said scrolls H H and the curved edges of said disks.

T T are vertical side guards extending back  
95 from the rear edges of scrolls O O and chutes H I H I, as shown in Figs. 1, 3, and 4, and indicated by dotted lines in Fig. 2. They are preferably curved inward at the base, as shown in Fig. 4, and may be extended at the top, if  
100 desired, so as to envelop the entire car and parts of the machine mounted thereon, to prevent the snow thrown up by the disks from being blown back into the cut.



To prevent the wings *a a*, when rapidly rotated, from throwing the snow, &c., over the top of the discharging-chutes, the backs *I I* may be made higher, or, preferably, horizontal forwardly-projecting guards *L* may be attached to the upper edges of said backs *I I*, as seen in Fig. 2.

*P P* are vertical cutters attached to the rear upper corners of the scrolls *O O*, as seen in Figs. 2 and 3. The inner faces of said cutters are curved, as shown in Fig. 3, to throw the snow, &c., in upon the faces of the disks, where it will be caught by the wings *a a*. The inner faces of disks *D* are provided with gears *G G*, formed integral therewith, or separate, as may be most convenient.

*F F* are gears provided with crank-pins *n n*, and mounted upon the ends of transverse shaft *E*, so as to mesh with said gears *G G*. The gears *F F* are connected with steam-cylinders *C C*, by means of crank-pins *n n*, through piston-rods *c c* and pitmen *b b*. The cylinders *C C* are supplied with steam from the boiler *B*, borne upon the car *A*.

My improved machine operates as follows: The disks *D D* being rotated in the direction indicated by the arrows, preferably by means of an independent engine and boiler, *B*, mounted upon the same car with the plow, the machine is advanced by a locomotive, or by means of self-contained mechanism, against the obstructing snow, ice, or sand. The wings *a a* take up the snow, &c., pressing against the faces of the disks *D*, and retained thereon by the scrolls *O O*, and carry the same around and up at the front to the top of the said disks, where it is discharged into the chutes formed by scrolls *H, I*, and *L*, from which it is cleared by the forward movement of the car and the rotation of the wings *a a* and discharged at the sides of the machine beyond the disks.

In clearing away ice or very heavy compact snow the advance of the car must be so regulated as not to stop the rotation of the disks, the wings *a a* of which gradually cut their way through the obstructing mass about the whole area of the disks.

The mechanism for propelling the plow should be specially constructed for the purpose and be applied to the supporting-car, in order to properly regulate and give a firm, steady advance movement to the plow.

I do not broadly claim the rotary disks provided with radial wings, as they have been heretofore shown and patented.

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

1. In a railway-track clearer, the combination of the disks *D D*, provided with wings *a a*, scrolls *O O*, and discharging-chutes *H I*, substantially as and for the purposes set forth.

2. In a railway-track clearer, the combination of the beak *N* and a pair of convex rotary disks having wings or cutters *a a* on their convex faces, and set with their peripheries in planes which diverge rearwardly from said beak *N*, substantially as and for the purposes set forth.

3. In a railway-track clearer, the combination of convex rotary disks *D D*, having wings *a a* on their front convex faces, means, substantially as described, for retaining the snow, &c., upon the faces of said disks until the same is carried by said wings to a convenient point of discharge, and means, substantially as described, for receiving the snow, &c., from said disks and discharging the same at the sides of the machine, substantially as and for the purposes set forth.

4. In a railway-track clearer, the combination of the convex disks *D D*, having wings *a a* on their convex faces, gears *G G*, and gears *F F* meshing therewith, and mounted upon the ends of shaft *E* and connected with steam-cylinders *C C*, substantially as and for the purposes set forth.

5. In a railway-track clearer, the combination of the convex rotary disks *D D*, having wings *a a* secured to their convex faces, beak *N*, scrolls *O O*, closing the space between the ends of the wings about the lower portion of said disks, and discharging-chutes composed of scrolls *H H* and backs *I I*, diverging from the forward end of the machine rearwardly toward the sides, substantially as and for the purposes set forth.

6. In a railway-track clearer, the combination of the convex rotary disks *D D*, having wings *a a* attached to their convex faces, retaining-scrolls *O O*, discharging-chutes *H I H I*, and cutters *P P*, substantially as and for the purposes set forth.

7. In a railway-track clearer, the combination of the rotary disks *D D*, provided with wings *a a*, and the side guards, *T T*, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LYMAN MORGAN.

Witnesses:

CHAS. L. GOSS,  
GEORGE GOLL.