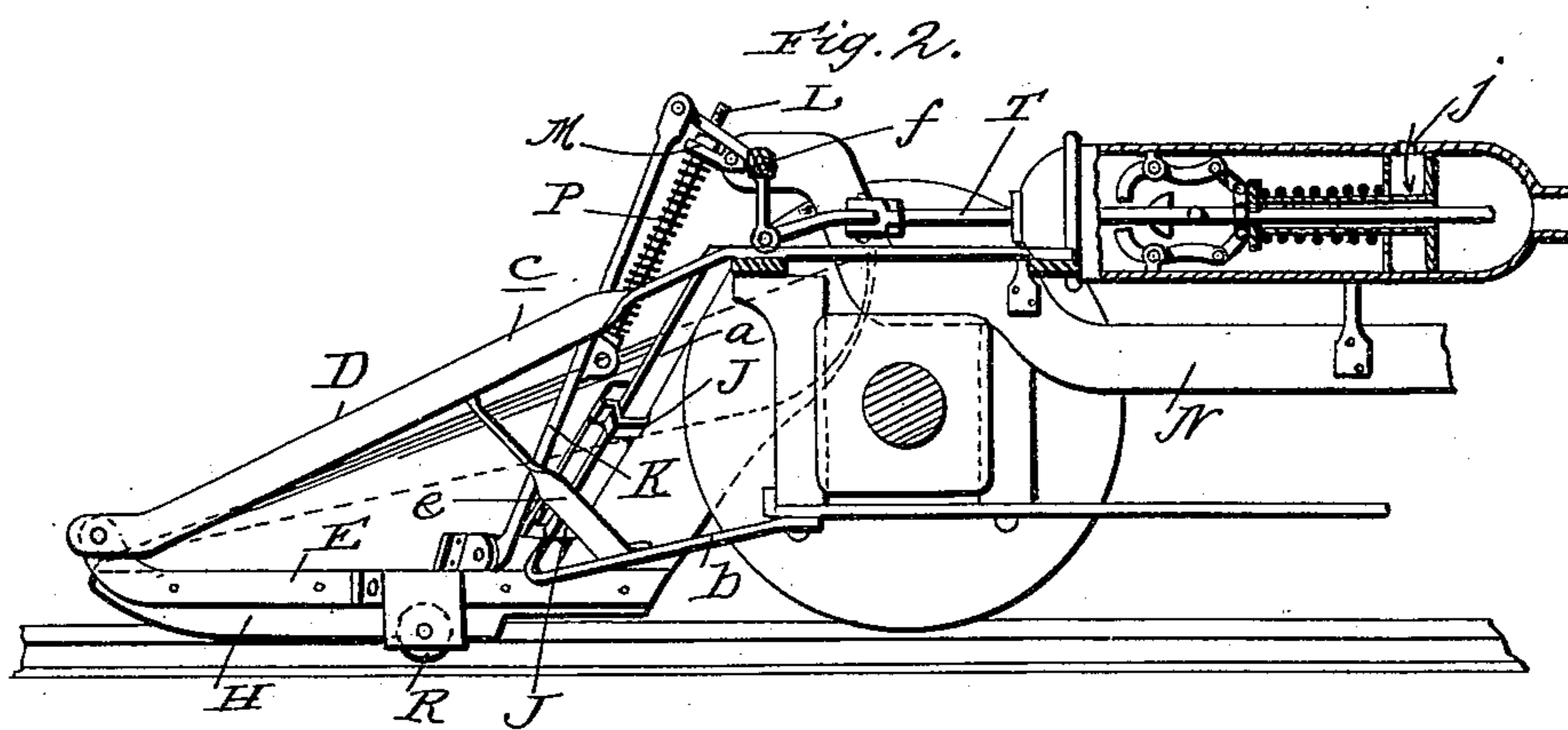
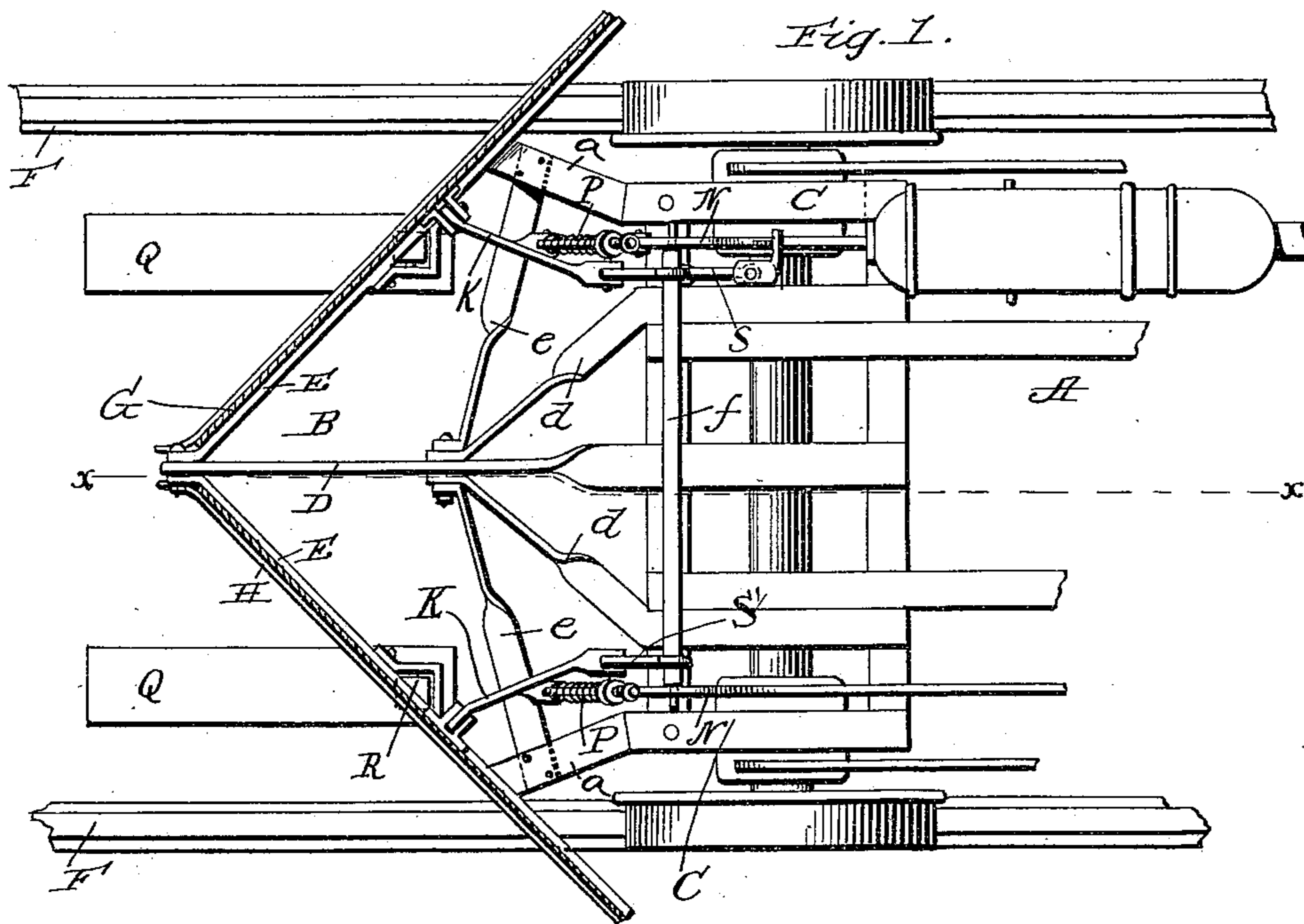


2 Sheets—Sheet 1.

No. 547,134.

Patented Oct. 1, 1895.



Witnesses
C. H. Raeder
R. H. Matthews.

Inventor
Charles Russell
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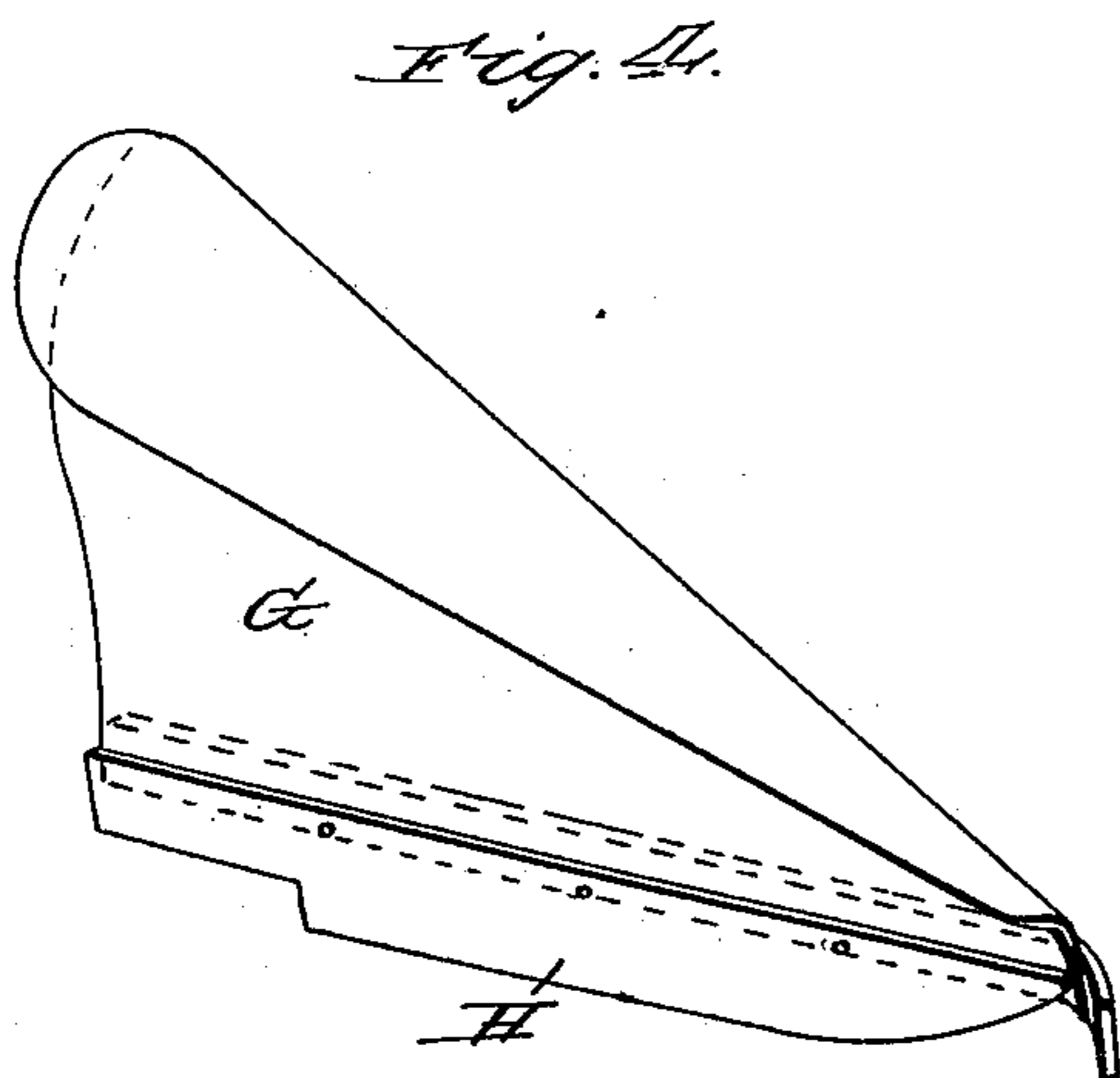
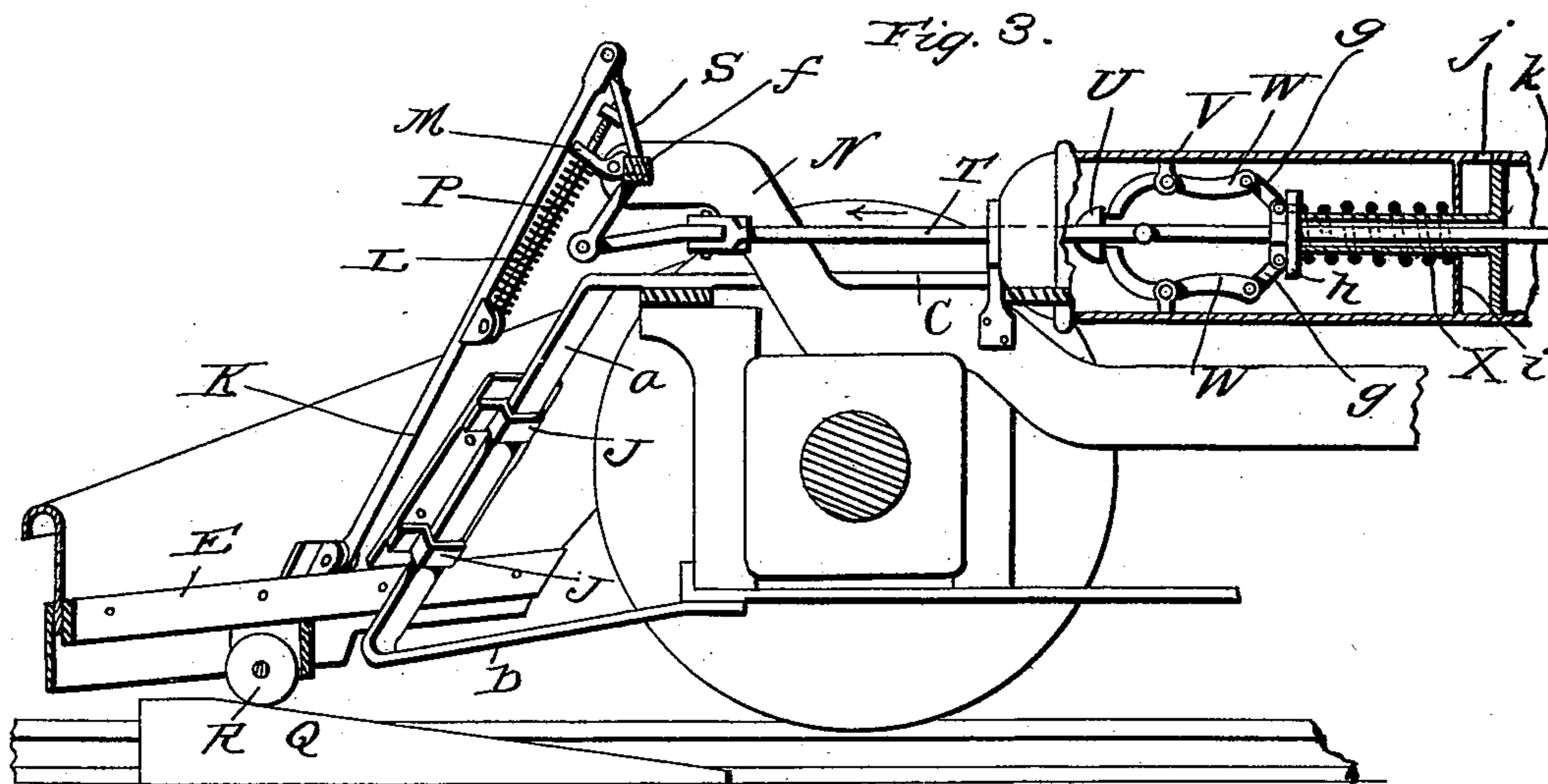
(No Model.)

2 Sheets—Sheet 2.

C. RUSSELL.
SNOW AND ICE FLANGER.

No. 547,134.

Patented Oct. 1, 1895.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES RUSSELL, OF MISSOULA, MONTANA.

SNOW AND ICE FLANGER.

SPECIFICATION forming part of Letters Patent No. 547,134, dated October 1, 1895.

Application filed February 12, 1894. Serial No. 499,931 (No model.)

To all whom it may concern:

Be it known that I, CHARLES RUSSELL, a citizen of the United States, residing at Missoula, in the county of Missoula and State of Montana, have invented certain new and useful Improvements in Track-Clearers; and I do 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 appertains to make and use the same.

My invention relates to improvements in that class of track-clearers known as "ice and snow flangers," and its novelty will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of a locomotive-truck equipped with my improved ice and snow flanger. Fig. 2 is a longitudinal vertical section taken in the plane indicated by the line *xx* of Fig. 1. Fig. 3 is a detail longitudinal section with parts broken away; and Fig. 4 is a detail perspective view of one of the flangers or knives and one of the moldboards, together with the adjustable bar carrying the same.

Referring by letter to said drawings, A indicates the truck of a locomotive or car, which may be of any suitable construction, and B indicates the main frame of my improved snow and ice flanger. This frame B may be of any suitable construction; but I prefer in practice to form it of the bars C, which are fixedly connected to the upper side of the truck, adjacent to the ends thereof, and extend forwardly from the truck and then downwardly and laterally outward, as shown at *a*, and then rearward, as shown at *b*, and which have their rearwardly-extending portions *b* fixedly connected to the under side of the truck; the bar D, which is fixedly connected to the upper side of the truck, midway the length thereof, and extends forwardly and downwardly from the same, as shown at *c*; the braces *d*, which are connected to the bar D and the upper side of the truck, and the braces *e*, which are connected to the bar D and the bars C, as shown.

E indicates two bars which have their inner contiguous ends curved upwardly and pivotally connected to the forward end of the frame-bar D. These bars E diverge rearwardly from the bar D and extend across the track-rails F, and they are designed to carry

the moldboards G and the flangers or knives H. (Better shown in Fig. 4.) The moldboards G are designed and adapted to move the snow off the track and deposit it at the sides of the same, and the flangers or knives H are adapted to clear the space between the rails, so as to enable the wheel-flanges to engage the inner sides of the heads of the rails and reduce the liability of accident.

The moldboards G are provided on their inner or rear sides with clips J, which loosely receive the portions *a* of the frame-bars C, so as to permit of the moldboards and the bars E and flangers H being moved vertically. The moldboards G and flangers H are designed to be moved vertically but a slight distance, and as the clips J on the moldboards are in practice made much larger than the portions *a* of the frame-bars C it will be seen that the said clips will not interfere with free movement of the bars E, flangers H, and moldboards G, notwithstanding that the bars E are pivotally connected at their forward ends to the frame-bar D and the moldboards are also provided with the loosely-connected rods K, to which are connected the rods L, which take through guides, as M, on the bars N, and are surrounded by coiled springs P, which tend to press and yieldingly hold the bars E in proper position and thus increase the efficiency of the flangers or knives, the nut on rods L controlling the vertical movement of rod K and flanger G.

In order to automatically raise the bars E and the flangers and moldboards, so as to enable them to pass over switch mechanism and other obstructions between the track-rails, I provide the inclined blocks Q between the track-rails at a suitable distance from the obstructions and equip the bars E with wheels, as R, to engage said blocks, and in order to hold the said bars, moldboards, and flangers or knives in their raised position I provide the mechanism better illustrated in Fig. 3. This mechanism comprises the levers S S', which are mounted on a rock-shaft *f* between the bars N and are connected at one end to the rods K, the piston-rod T, which is connected by a link with the other end of the lever S and is provided with a beveled enlargement U, the piston-cylinder V, and the lever-jaws W, which are preferably arranged in the piston-cylinder, as shown. These lever-jaws

W are pivotally connected to suitable bearings on the inside of the cylinder V, and their rear ends are connected by links, as *g*, with a head *h*, loosely mounted on the rod T, and the forward ends of the said lever-jaws are normally pressed inward toward the rod T, so as to hold the enlargement U of said rod by the coiled spring X, which is interposed between the head *h* and a stationary partition *i* in the cylinder, as illustrated. By reason of this construction it will be seen that when the bars E and the moldboards and flangers are raised by the wheels R engaging the inclined blocks Q, the lever S will be swung in the direction indicated by arrow, and the rod T will be drawn forward, so as to pull the beveled enlargement U from between the forward ends of the lever-jaws W, when the spring X will return the forward ends of the jaws to their normal position, so as to enable them by engaging the enlargement U to prevent rearward movement of the rod T, and consequently downward movement of the bars E, &c. When it is desired to lower or return the bars E and the moldboards and flangers to their normal position, compressed air, steam, or the like is let into the cylinder V through the port *j*, so as to act against the piston *k*, which is connected by sleeve *k*² with the head *h*, and move said piston and head rearwardly and thereby move the forward ends of the jaws W apart, so as to permit the enlargement U on the rod T to pass said jaws and the springs P to return the moldboards and flangers to their operative positions.

It will be seen from the foregoing description, taken in conjunction with the drawings, that my improved flanger is very simple and cheap, and that it may be readily applied to a locomotive-truck and is easily operated and highly efficient in use, which is an important desideratum.

I have specifically described the construction and relative arrangement of the several parts of my improved flanger in order to impart a clear and full understanding of the same; but I do not desire to be understood as confining myself to such construction and arrangement, as such changes or modifications may be made in practice as fairly fall within the scope of my invention.

Having described my invention, what I claim is—

1. In a track clearer or ice and snow flanger, the combination of a main frame, bars E, loosely connected at their forward ends to the main frame and carrying flangers or knives and mold boards, and springs connected with the bars E, and adapted to press and yieldingly hold the same in their operative position, substantially as and for the purpose set forth.

2. In a track clearer or ice and snow flanger, the combination with a frame comprising bars as C, D; of bars E, loosely connected to the frame bar D, and having clips loosely receiving the bars C, and carrying knives or flangers and mold boards, substantially as and for the purpose set forth.

3. In a track clearer, the combination of a locomotive or car truck, a frame rigidly connected to the truck, ice flangers or knives and mold boards connected with the frame and adapted to be raised and lowered, a lever, a rod connecting the flangers and mold boards with the lever, a rod connected to the lever and having an enlargement as U, spring pressed lever jaws adapted to engage the enlargement U, and hold the flangers and mold boards in a raised position, and a suitable means for opening said jaws, substantially as and for the purpose set forth.

4. In a track clearer, the combination of a locomotive or car truck, a frame rigidly connected to the truck, ice flangers or knives and mold boards connected with the frame and adapted to be raised, a piston cylinder, a rod T, connected with the flangers or knives and the mold boards and having an enlargement U, spring pressed lever jaws adapted to engage the enlargement U, and hold the flangers and mold boards in a raised position, and a piston arranged in the piston cylinder and adapted when moved in one direction to open said lever jaws, substantially as and for the purpose set forth.

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

CHARLES RUSSELL.

Witnesses:

K. M. NICOLAS,
F. P. KERN.