

I. K. KERR.  
SNOW PLOW AND RUTTER.

Patented July 28, 1891.

Fig 3

Inventor.  
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# UNITED STATES PATENT OFFICE.

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## SNOW-PLOW AND RUTTER.

SPECIFICATION forming part of Letters Patent No. 456,576, dated July 28, 1891.

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*To all whom it may concern:*

Be it known that I, ISAAC K. KERR, a citizen of the United States, residing at Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented certain new and useful Improvements in Loggers' Snow-Plows and Rutters; and I do hereby 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 has for its object to provide a combined rutter and snow-plow for forming and keeping clear logging-roads.

On logging-roads it is desirable to have a constant track for the runners of the logging-sleds, and it is best to have the track in the form of ruts of substantially the same width as the sled-runners. I generally construct the road before the freeze-up or the fall of snow. When the snow falls, it will be compacted in the ruts and form an icy path or guideway for the sleds. In case there is no snow, and even sometimes when there is, the ruts are partially filled with water, which, upon freezing, afford the icy path. It is desirable to keep the ruts clear to a sufficient distance below the surface of the road to enable them to act as guideways for the runners and prevent the sluing of the sleds. It is also necessary to keep the surface of the road clear of deep snow. To do this work I adjustably mount a rutting-tool in a suitable seat in the sled-runners. The tool is spoon-shaped on its lower or cutting end and is mounted so as to project below the bottom of the runner. It is adjustable by suitable levers under the control of the operator, so as to cut the rut or clear the same to a greater or less depth, as may be desired. In front of the rutter the runners are provided with lateral openings to permit the outward passage of the snow from the space between the runners. Between the runners, forward of the rutter, is located a V-shaped plow for clearing the central part of the road-bed. This plow is supported from its corners by hangers adjustable by suitable levers mounted on the sled. Sets of drag-rods connect the plow with the forward end of the sled. These drag-rods are in pairs of unequal length, one short rod and one long rod being attached to each side

of the plow. The long rod is pivotally connected to the plow at some point back of its center and has its front end pivoted to the inner front end of the runner. The short rod is pivotally connected to the plow at some point forward of the center and has its front end pivoted to the front cross-bar of the sled, which may be the pole-bar. A pair of relatively long flanging wings are pivoted to the outside of the runners at their forward ends, and are provided with inwardly-extended pin-racks at their rear ends, which work through slots in the rear ends of the runners. This construction adapts the same to be set at any desired angle to the sled. Directly back of the rutter are pivotally attached to the outside of the runners a pair of relatively short flanging wings, which are preferably connected at their rear ends to the sled-runner by a toggle-joint, the runner being cut away at the point of attachment to form a seat, into which the toggle will fold when the wing is in its closed position. The plow and the wings are each preferably provided on their bottoms with flanging plates or cutters for the more ready separation of the snow and ice. The plow and the wings are also provided with side-boards projecting at an angle outward from their upper edges for the better clearance of the snow.

My machine is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of the same, some parts being broken away. Fig. 2 is a left-side elevation, one wing being broken away. Fig. 3 is a section of one of the wings or side pieces of the plow, and Fig. 4 is a detail showing the rutting-tool detached.

A A B B B C is the sled, of which A A are the runners, B B B the cross-bars, and C the front bar or pole-piece. Each runner is cut away to provide lateral openings, as shown at *a*, and a rutter-tool seat. (Shown at *a'*.) The runners are also cut away at their rear ends, as shown at *b*, for the passage of the rack-bars.

D is the rutter-tool, provided with longitudinal slots *d d'*. This tool rests on the seat *a'* chisel fashion and is adjustably secured thereto by set-screws *d<sup>2</sup>* from a face-plate *d<sup>3</sup>*, working through the slots *d*. A lever E is pivoted to the runner and has its lower end

working through the slot  $d'$  of the rutter. By swinging this lever into different positions the rutting-tool may be set to any desired cut and secured in that position by lock-pin  $e$  and segment-plate  $E'$  or otherwise, as may be desired.

$F$  is the V-shaped plow.  $G$   $G'$  are the drag-rods connecting the same to the forward end of the sled, of which  $G$  are the longer and  $G'$  the shorter set.

$H$  are the hangers;  $K$ , the pivoted levers mounted on the frame for adjusting the same. These levers may be held in any desired position by pin-bars  $L$  or otherwise.

$M$  are the long wings, and  $N$  the rack-bars for adjusting the same.

$P$  are the short wings, and  $p$  the toggle-lever for effecting their adjustment.

$f$  are the flanging plates attached to the sides of the plow and the pivoted wings.

The operation is as follows: The parts having been set in their desired position under the forward movement of the sled, the ruts will be cleared by the rutting-tool, the plow will clear the snow from the center of the track, forcing the same outward through the lateral openings in the runners, the long flanging wings will throw the main body of the snow on the outside of the ruts to a considerable distance therefrom, and the part passed outward from the center of the track through the openings will be caught by the short wings and forced far enough outward to clear the track on the outside of the ruts.

In case it is desired to use the rutter independently of the plow and the flanging wing, as may be done when forming the ruts before a snow-fall, the plow and the long wings may be removed. The manner of supporting the plow renders it adjustable, while at the same time it is firmly held in its proper position.

By actual practice I have found this a very serviceable machine.

What I claim, and desire to secure by Let-

ters Patent of the United States, is as follows:

1. The combination, with the sled, of the V-shaped plow located between the runners, and sets of drag-rods of unequal length, one short and one long rod extending from different positions on the sides of the plow to the forward end of the sled, substantially as described.

2. The combination, with the sled having lateral openings in its runners, of a pair of relatively long wings attached to the front ends of the runners and a pair of relatively short wings attached to the runners back of said openings, substantially as described.

3. The combination, with the sled having lateral openings in its runners, of the V-shaped plow between the runners, the relatively long flanging wings attached to the forward ends of the runners, and the relatively short wings attached to the runners in the rear of said openings, substantially as described.

4. The combination, with the sled-runner, of the rutting-tool adjustably mounted therein, provided with a lever-receiving slot, the lever pivoted to the sled, having one end working in said slot, and means for securing the lever in different positions, substantially as described.

5. The combined rutter and snow-plow comprising the sled having lateral openings in its runners, the rutting-tools adjustably mounted between the runners, the plow adjustably mounted to the forward ends of the runners and the short wings pivoted to the runners in the rear of said openings, and means for securing said adjustable parts in any positions in which they may be set.

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

ISAAC K. KERR.

Witnesses:

JAS. F. WILLIAMSON,

EMMA F. ELMORE.