

BOSTON & MAINE SHOULDERING CAR, FIG. 1—SIDE ELEVATION.

To incorporate the Quebec Southern Ry. Co.

Respecting the Algoma Central Ry. Co.

Respecting the British Yukon Mining, Trading & Transportation Co., & to change its name to the British Yukon Ry. Co.

Respecting the Dominion Atlantic Railway Company.

Respecting the Buffalo Ry. Co. (Foreign).

Respecting the Safety of Ships.

To incorporate the Ottawa, Brockville & St. Lawrence Ry. Co.

Respecting the Salisbury & Harvey Ry. Co.

To incorporate the Lake Superior & Hudson's Bay Ry. Co.

Respecting the Schomberg & Aurora Ry. Co.

Respecting the Timagami Ry. Co.

To confer on the Commissioner of Patents certain powers for the relief of the Servis Railroad Tie Plate Co. of Canada, Ltd.

#### A Roadbed Shouldering Car.

F. Barr, Assistant General Manager of the Boston & Maine R.R., has favored us with a photograph & drawings of a shouldering & levelling car, built at the Co.'s shops. It consists of a specially constructed flat car with wings fitted with interchangeable knives. The wings can be extended or contracted & the knives raised or lowered either by hand or by air, depending upon the construction of the car.

The following description of it is taken from the Railway & Engineering Review:

The length of the car over end sills is 34 ft. & the capacity 70,000 lbs. The width over side sills is 6 ft. 4 ins. & the distance from the outside of the end sill to the centre of the body bolster, 4 ft. 8 ins. The distance between centres of needle beams is 4 ft 4 ins., & the height from the top

of rail to the centre of the drawbar, 2 ft. 10 1/2 ins. It is equipped with M. C. B. vertical plane pocket couplers. Four of the longitudinal sills in the framework are 5x12 in. timbers, two other longitudinal sills are 5x8-in. timbers, & the two end sills are 7x8-in. timbers. The body bolsters are constructed of wood & iron.

Fig. 1 shows the side elevation of the car, with the wings removed. The wings are hinged to upright posts standing against the side sills, at either side of the car, & securely braced both crosswise the car & longitudinally. The position of the wings is controlled by sliding struts guided within the boxed way suspended from the middle portion of the car, & forced in or out by the large hand wheel & chains appearing in this view. The wings are constructed of heavy timbers strongly framed together. The cutter knives, carried at the bottoms of the wings, may be operated either by compressed air, as shown in the rear elevation view, fig. 2; or by rack & pinion as shown by the half-tone view of the car in service, fig. 3. By using air there is a saving of the labor of 3 men, as 1 man can operate the cutters by air, but 4 men are required to raise or lower them when both wings are being used on single track, or 2 men, if only one wing is being used, as on double track.

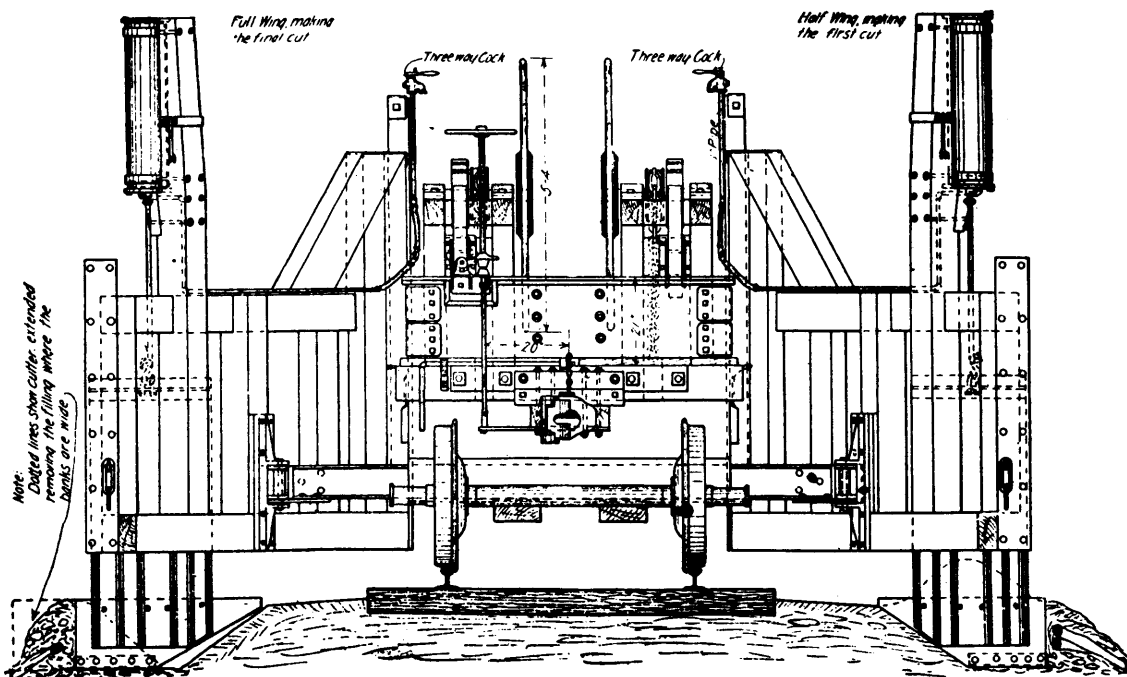
The air cylinder for operating each cutter is 10 ins. in diameter, stands vertically (fig. 2), & is attached to a support which is part of the wing. In the rack and pinion arrange-

ment a hand wheel is attached to the opposite end of the shaft to which the pinion is secured, the rack being secured to the cutter. Fig. 1 shows the air receiver, 30 ins. in diameter & 54 ins. long, located at the end of the car which is forward while the car is in service. At either end of the car are ballast boxes, in which old iron can be placed to hold the car down to its work. The manner of admitting air to the operating cylinders, & other details, are made clear in the accompanying illustrations. It should be noted that the position indicated for the right wing, in fig. 2, is half way open, while the left wing is shown fully extended.

Fig. 4 represents a cross section of the roadbed showing the condition of the shoulders after the car has passed over them. The dotted line shows the reach of the knife moved out to its extreme length. A special cutter for levelling purposes has a reach of 12 ft. beyond the rail.

This machine has been used on the B. & M. for a variety of purposes, as explained by the following account from Mr. Barr: "One use of it has been the levelling of the subgrade for a parallel track, or any work calling for the displacement of material within reach of the machine, such as widening out a fill or grading for additional tracks. By extending the wings, gravel or other material can be levelled off to a width of 12 ft. or more from the track & to any depth desired not exceeding 18 ins. All surplus material may be removed from

both sides of roadbed on single, & from outside of double, track to leave a uniform shoulder of any shape desired, cut with lines exactly parallel to the rail whether on straight or curved track. As a result, a uniform cross section is not only obtained, but the drainage of the ballast is greatly improved, thereby doing away to a large extent with shimming during the



BOSTON AND MAINE SHOULDERING CAR, FIG. 2.—REAR ELEVATION.