"BUCKING SNOW" IN THE MOUNTAINS.

THE first railroad to make any systematic effort to fight snow and keep its tracks open was the Central Pacific. When that route across the Sierra Nevada mountains was proposed, it was declared impracticable by many because of the great depth of snow that falls near the summit and remains from November till far into the succeeding summer. However, the company's engineers provided against the blocking of the track by avalanches in the most exposed places by building long and costly snow sheds. These sheds are constructed of heavy timbers and iron, and are so made that their slanting roof is a continuation of the slope of the steep mountain side along which the road is built. An avalanche of snow that would otherwise bury the track from ten to forty feet deep, is continued on its course by the roof of the shed, and glides on further down the mountain. Their great strength enables them to support an enormous weight of "white drapery." The deep snow belt extends for ninety miles on the Central Pacific, and for half that distance the track is protected by sheds, at an original cost of $10,000 per mile. One stretch of one and one-half miles near Donner lake cost $75,000. While the train glides securely through these long wooden tunnels the comfortable passengers can scarcely realize that over their heads may be a solid bank of snow, thirty feet deep, bearing down upon the roof with a weight that would crush any ordinary structure. These sheds have to be constantly guarded and watched, as fires in them are frequent, and storms sometimes render them dangerous. Watchmen constantly patrol them, and engines equipped for fighting fire are kept at several stations, ready to hasten to any point upon being summoned by telegraph.

Snow sheds, however, are not enough to keep the track open, for during storms snow accumulates on the exposed sections with astonishing rapidity. Snow plows were introduced for this purpose. These were first rather diminutive affairs, resembling somewhat an ordinary plow with a double share and mold-board, for turning a furrow in both directions. Gradually the size was increased, until now an immense plow is used that stands as high as the smoke-stack of an engine. These plows are used in a way that calls for great nerve and good judgment on the part of the daring men who handle them. Five or six powerful engines are put behind a plow, and when a snow bank is encountered they take a run of about a quarter of a mile, at forty or more miles an hour, and plunge full tilt into the great white wall in their front. The snow is sent flying in great masses on either side of the track, and the plow and engines are brought to a full stop in from fifty to two hundred feet, sometimes completely buried in the snow. A large gang of men then shovel out the rear engine, which is uncoupled and run back, followed in the same way by all the others and the plow. Then follow a second run and a second headlong plunge into the snow. This method of fighting snow has been denominated "bucking" by the hardy men who engage in it, and many a man has lost his life while doing this work. Engines are often derailed and collisions occur. Scarcely a storm in the mountains is successfully fought without injury to some of the combatants, and this branch of railroad service is not very eagerly sought after, except by a few daring spirits, who love the exhilaration of the sport and the spice of danger that attends it.

Since the Central Pacific inaugurated and developed this method of keeping its tracks open, a number of other lines have been built in our Western mountains, where the snows fall deep and often. The Northern Pacific crosses the Rockies, Cœur d' Alenes and Cascades. The Oregon Short Line crosses the Rocky and Blue mountains and comes down the gorge of the Columbia, where snowslides are constantly blocking the track and calling for the services of the plow. Far to the north the Canadian Pacific crosses in rapid succession the Rocky, Selkirk and Gold ranges. On the south the Southern Pacific's Oregon line has, perhaps, the most troublesome route of all, in Northern California. The Sacramento mountains, lying between Shasta and Sacramento valleys, have always been noted for their excessive depth of snow, and the next range to the north—the Siskiyou—does its share to give the snow plow employment. Of these new lines, the Canadian is the only one that has followed the example of the Central in constructing long lines of snow sheds, though a few exposed places on other lines have been thus protected. It is now considered cheaper to fight the snow with the improved methods than to build and maintain those expensive barriers. This position is strengthened by the invention two years ago of a new machine, known as the "rotary" snow plow.

The rotary plow is known technically as the "rotary steam snow shovel," and consists of a double set of steel blades in the form of a wheel, resembling much the fan wheel of a windmill. This wheel revolves at a rapid rate, the power being supplied by an engine in the car to which it is attached. Back of the wheel, and in a measure inclosing it, is a steel hood, narrowing toward the back, from the rear and top of which projects a chute. The rotary is pushed by one or more engines, according to the work to be performed. The steel blades cut the snow and press it back into the conductor behind it, where it is expelled through the chute with such force as to throw it above a high bank and fifty feet or more from the track.