

tongued and grooved pieces laid across. In silos with horizontal girts or with wooden hoops the door can be made as described as above for the wooden hooped silo. In a stave silo struts will have to be put in between the two staves that make the side of the door. These two staves should be extra strong. Eighteen inches is wide enough for a door.

The natural clay makes a good floor. It is well to excavate this to basin shape, and if there is any danger of rats cutting through, cover it with concrete or tamp into it broken rock or gravel. The roof is necessary only to keep out the rain and snow. On a rectangular silo the roof can be put on the same as for any building of that shape. To roof a round silo is not so easy. I know from experience that it is very tedious to make a conical roof of shingles. When the circles get small almost every shingle has to be cut to make a neat job. For a small round silo probably the best way is to cover with planks cut wedge-shaped so as to fit together in a cone and cover these with some kind of roofing paper. For a large silo use eight or ten or more, wide rafters and nail planks or laths across them from one to another and then cover with roofing paper or shingles, making a hip over each rafter. If you wait till the silo is full to put on the roof you will need no staging. The filling may be done as fast as you please or as slow as you please, provided the top of the ensilage is not exposed long enough to spoil; I have tried both plans and have always made good ensilage. The finer it is cut the better it will pack, and the better it will keep. The blowing machine set to cut 1/2 inch and making 800 to 1,000 revolutions does excellent work, knocking the stalk all to pieces and almost pulping it. (The first day mine was used it wore a hole through a seasoned oak plank one inch thick, placed above the silo to turn the ensilage down. It was 34 feet higher than the machine and more than 50 feet from it.) They are simpler and give less trouble to operate than the machines with carriers, but require more power. If you have to use a horse power or small engine, you will have to use a carrier machine, but if you can command a thresher engine then it is simply a matter of a little more fuel and water. A good force for rapid filling will be about as follows: Two men in silo, two at machine, engineer, water boy, four teamsters, three loaders, one man with machine cutting.

in the Cascade mountains along the Skagit and Methow rivers and in the mountains between Republic and the Colville river.

The party in the central district of the western section will be in charge of Mr. A. E. Murlin and will survey the Skykomish quadrangle, which includes an area of about 800 square miles north and south of the Great Northern railroad in the vicinity of Skykomish, within which are many mines and much valuable timber. A portion of this quadrangle is within the Washington Forest Reserve. Mr. Murlin will have as his principal assistants Messrs. W. C. Guerin and C. W. Sutton.

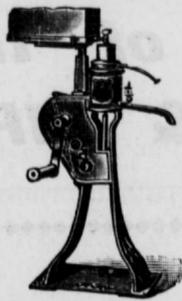
Mr. A. H. Sylvester will have charge of the third party in the western section, or that operating in the southern district, and will outfit at North Yakima. The work will be a continuation of that done during the preceding field season in the Mount Aix quadrangle. The greater portion of this quadrangle is in the Mount Rainier Forest Reserve. It includes a number of the passes along the summit of the Cascades, and the headwaters of the White and Cowlitz rivers flowing to the west, and of the American, Bumping, and Tietan rivers, tributaries of the Natches and Yakima rivers. Mr. Sylvester's principal assistant will be Mr. Ralph Cogwell.

All of the work in the western section is a continuation of the systematic survey, began several years ago, of the gorest areas of the Cascade mountains.

**GOVERNMENT MAPPING OF CENTRAL AND WESTERN WASHINGTON.**

Editor The Ranch:—Announcement is made that the topographic branch of the United States Geological Survey will continue this season the mapping of the forest regions of Washington in the Cascades, under the general oversight of Mr. Richard U. Goode, geographer. The section will be covered by parties operating in three districts.

The party in the north district will be in charge of Mr. R. A. Farmer, and will outfit at Wenatchee. The area selected to be surveyed will be that known as the Stehekin quadrangle, in the Washington Forest Reserve, and will include the upper portion of Lake Chelan and a portion of the crest line of the Cascade range. In this general locality will also be a party under Mr. E. M. Fry, whose duties will be to determine by spirit leveling elevations above the sea level of various points



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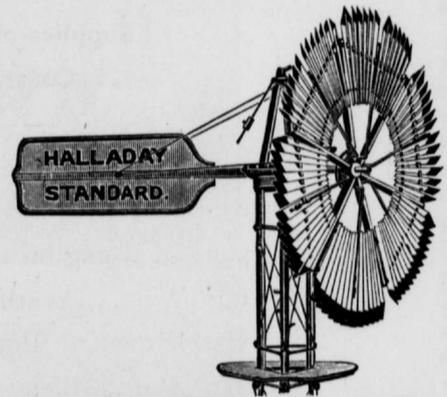
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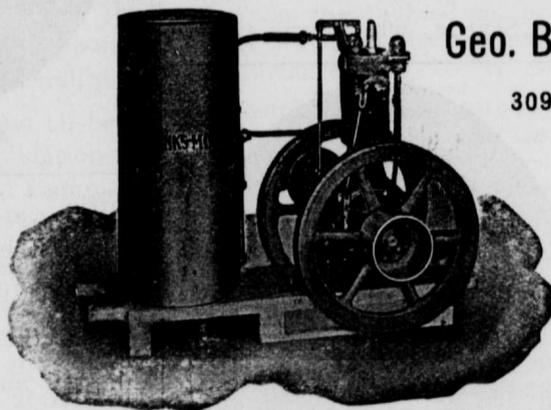
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