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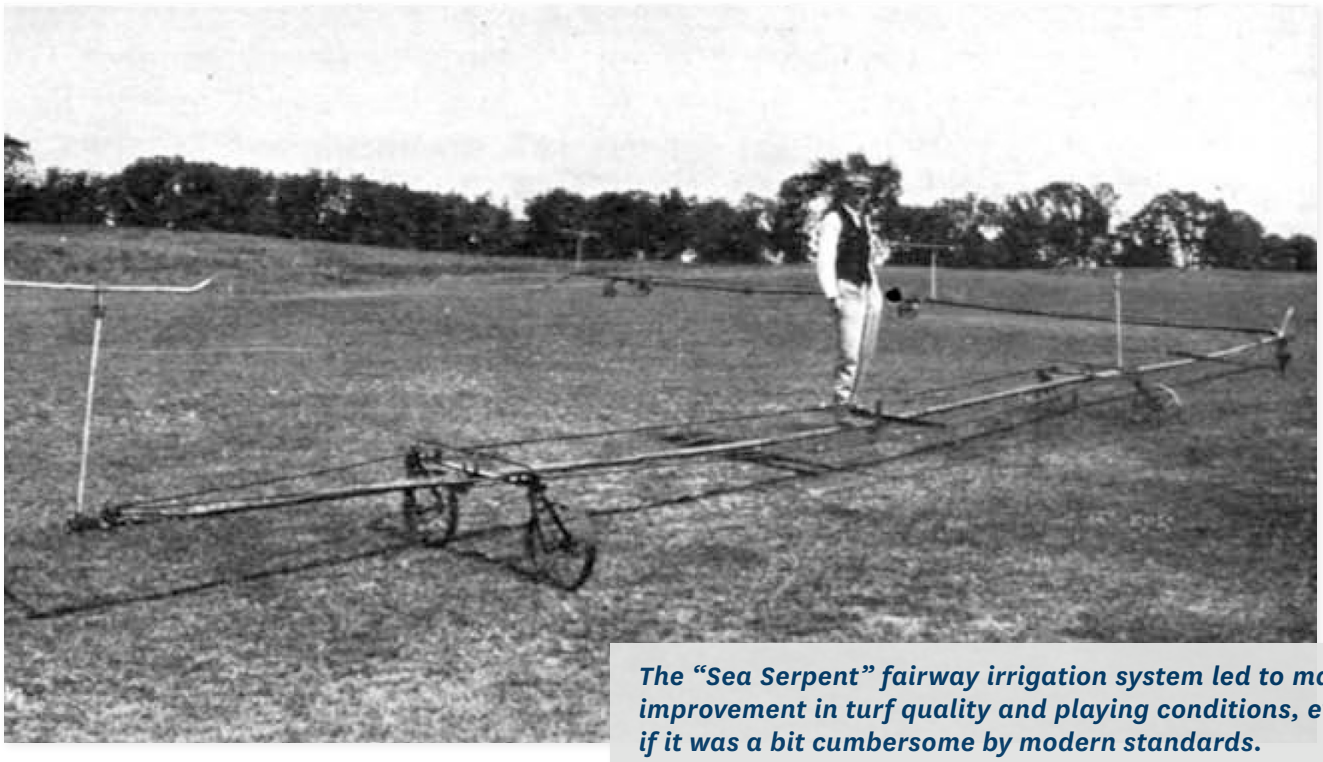

The "Sea Serpent" fairway irrigation system led to major improvement in turf quality and playing conditions, even if it was a bit cumbersome by modern standards.

SPRINKLING THE FAIRWAY

BY W.F. BROOKS, MINIKAHDA CLUB, MINNEAPOLIS | BULLETIN OF THE USGA GREEN SECTION NOVEMBER, 1923

Editor's Note: Frustration with unpredictable weather has always been a part of golf course maintenance. Rainfall, in particular, is a very fickle ingredient in the agronomic plan. Irrigation is meant to even out the ups and downs of precipitation and provide at least the minimum amount of water necessary throughout the season. This excerpt from a 1923 Green Section article describes efforts at one golf course to understand the benefits of fairway irrigation and develop a system for watering fairways that would be effective and affordable. While the image of the maintenance staff hauling around a large apparatus they called the "Sea Serpent" to water fairways might seem comical now, it was a big step forward at the time. This article shows that being able to "make our own rain and make it with certainty when we need it," has long been a dream of golfers and golf course superintendents alike.

During the last four years, Minneapolis and vicinity have suffered from excessive drought, the rainfall for these years being far below normal. Summer after summer the fairways of the Minikahda Club have been in good condition at the beginning of the season, but when the spring rains were over they have turned brown and hard under the heat of midsummer, thus detracting greatly from the pleasure of playing and the beauty of the course. The high ridges have burned to a crisp and the grass faded away; the lower areas have naturally kept in better condition. A few scattering showers gave only temporary and partial relief. During all this time it was very apparent that the weeds were thriving and spreading and the good grasses being gradually driven out. The question naturally was, "What can be done to alleviate this condition?"

In April of this year I decided to determine by actual experiment what water and seed would do, my theory being that if we could maintain beautiful putting greens with seed and judicious watering, there was no reason why we could not maintain beautiful fairways by the same method. I selected for the experiment the worst piece of fairway I could find on the entire course. A circular area 50 feet in diameter was marked out with a tennis marker, a stake driven into the center, and the area divided into quarters. In the first quarter we sowed red fescue; in the second quarter we sowed redtop; in the third quarter we sowed bluegrass, and in the fourth quarter we sowed a mixture of 40% bluegrass and 60% redtop.

On the first day of May we started watering this area. A rotary sprinkler was placed on the center peg at 7:00 in the morning each day and was kept running for one hour. This was continued during the months of May, June, and July. The results were marvelous. In 30 days, the area stood out from the rest of the fairways as though it had been painted a beautiful emerald green. The seedlings began to appear thick, strong, and healthy. By the middle of July the new grass and the old grass inside the circle had grown to such a degree that they had practically driven out the weeds and dandelions, the fairy rings were all filled with a mat of good grass, and the entire area formed an almost perfect lie for a golf ball.

With this demonstration available, the matter of installing an apparatus to water the entire fairways was placed before the Board of Governors of the Club, an estimate of the cost was submitted, and they authorized the undertaking. Various methods were investigated and after a two-weeks period of experimenting, the "Sea Serpent," as the boys called the apparatus, was developed, as shown in the accompanying illustration.

Each machine is made in two sections, in equal lengths of 53 feet. The hose connection allows the two sections to be placed at any angle to fit narrow places on the fairways or when passing around bunkers, and is flexible enough to fit any uneven fairway. Each machine is equipped with four rotary sprinkler heads and will cover an area 160 feet across the fairway and 60 feet lengthwise of the fairway. Side mains of 1.5-inch pipe are laid lengthwise of the fairway in the rough, with 1.5-inch outlets every 250 feet.

By September 1 we had four machines in operation, and they ran every day in September. The results have far exceeded our expectations. Our fairways have been restored to their former excellence. The seed planted last fall and this spring, much of which was apparently laid dormant, is all coming up, thick and healthy in appearance. The seedlings are driving out the knot-weed, dandelions, and other weeds, and the fairy rings are all filling.

Now, the first question asked is, "What did it cost?" Four machines, with hose and side piping necessary have been installed for $2,500. We sprinkle the fairways in the daytime and the putting greens at night, and approximately the same number of rotary sprinklers are in operation during each period. The cost of operation is comparatively small. We pump by electricity, and the current costs about $3 a day; one man at $4 a day will tend four machines; and as we pump our water from a lake adjacent to our own premises, we have no expense for water.

I have prepared this article for the benefit of those of my fellow golfers who have, no doubt, suffered as we have in attempting to overcome the difficulties incident to climatic conditions over which we have no control. From now on at Minikahda Club we shall make our own rain and make it with certainty when we need it.

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