

Evanston's Fairway Water System Described

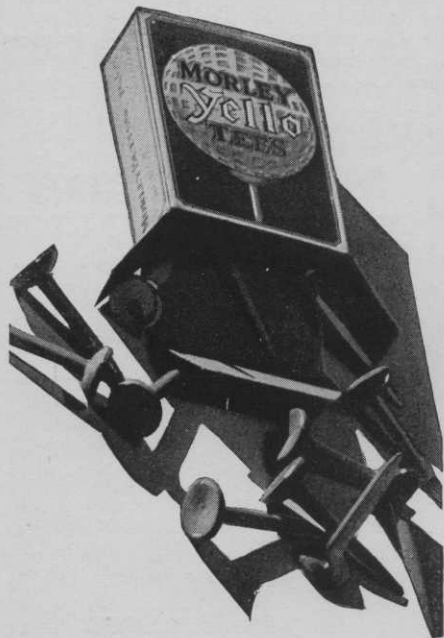
By PAUL E. GREEN

EVANSTON Golf club is located on Dempster Street about two miles west of Evanston, in the Chicago district. It consists of approximately 200 acres of land on which is laid out an eighteen hole golf course with the usual accompaniment of tennis courts, croquet grounds, etc. The land is very flat, considerably wooded, and much of the sub-soil generally is a tight clay with very little top soil. The west or first nine has a decidedly poorer quality of soil than the east or second nine. The fairways are very wide as would be expected from the acreage in the club, and there is no crowding of the holes. The course is 6500 yards long and was built about ten years ago, the club having moved from a previous location at that time. The property was purchased at an average cost of about \$700.00 an acre, and due to

the growth of the city of Chicago and the surrounding communities it is now valued at about \$10,000.00 an acre.

Due to the soil condition and extreme variations in temperature which are prevalent in Chicago and vicinity, there have been long summer periods when the fairways, particularly on the first nine, burned very badly. The grass and turf has never been very good. The club is a popular one and play is heavy so there naturally have been many complaints as to the condition of the fairways. Because of the value of the property, three or four years ago there was a demand by a considerable percentage of the membership that the club sell and rebuild on more desirable ground, but the convenience of the club to the north side of Chicago, it being possible to reach it in from 30 to 40 minutes from downtown, induced the majority of

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the members to refuse a flattering offer for the property which would have netted them several times what they had invested.

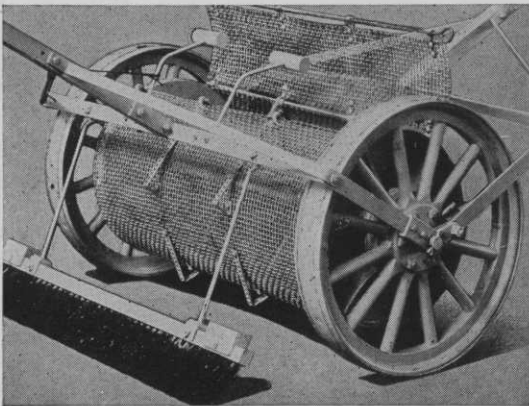
There are approximately one hundred and fifty golf courses in what is known as the Chicago district. Several of them had experimented with sprinkling fairways and three or four of them had constructed systems. The expense of these systems as commonly reported, however, was very high, one club reporting that it spent nearly \$100,000.00 in such investment. (Including well and house watering system—Ed.) The directors and members of the Evanston club hesitated at such an expenditure and the writer was called in to advise them as to their hydraulic problem, and to estimate the cost.

Present System

A study of the problem developed that the watering system for their greens was good; it consisted of a complete system of circulating mains varying in size from four inches at a maximum near the clubhouse, to one and a half inches in diameter as a minimum at the farthest point from the source of supply. The source of supply was a twelve inch well some 1,500 feet in depth which penetrated the water bearing Potsdam sandstone and the water stood normally about 70 feet from the surface. A test showed that it was good for 500

gallons per minute. The machinery, however, was not adequate to pump such an amount nor were the mains of sufficient size to distribute this amount of water without so reducing the pressure as to render them practically useless for fairway sprinkling. The sprinkling of greens requires from five to seven gallons per minute per green. The sprinkling of fairways was found to require from 100 to 200 gallons per fairway per minute and on the basis of normally sprinkling three fairways at one time, and in cases of emergency still more, it was decided that the mains and the pumping machinery should be of sufficient capacity to pump and distribute not less than 750 gallons per minute, though not necessarily all through one main.

The cost of pumping the water is a large factor in the operation of a fairway sprinkling system. Deep well pumps are not and cannot be from their nature, the most efficient type of pumping machinery, and the calculation showed that the cost of water so pumped would be not less than 15c per thousand gallons, and that in order to be safe it would be necessary to install much larger pumps and enlarge the pump house. Such a layout together with the distributing mains would cost in the neighborhood of \$50,000.00. It



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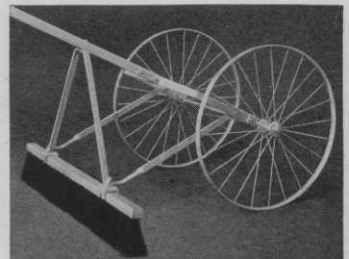
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further developed that the surrounding community of Niles Center, Illinois, was enlarging its water system in an adequate manner, that the club property was surrounded by mains ranging in size from 12 inches in diameter down to six inches, and that the water could be purchased from the village on a sliding scale which would average about 13c a thousand gallons. By properly designing the distribution system, using all of the old mains which would be of any use and reinforcing certain lines, a satisfactory distribution system adequate to sprinkle the eighteen hole golf course which was distributed over a 200 acre tract could be built for less than \$20,000.00 as against about \$50,000.00, by using their own plant, building, and installing the necessary new machinery.

Greenkeeper Supervises

On receipt of this report the directors of the club immediately authorized the expenditure and the writer was authorized to enter into the necessary contracts for the work. The plans were made in great detail, so that the greenkeeper could supervise the work with a minimum of effort, all material was purchased direct, and a contract was let for the ditching, laying, testing, backfilling, and connecting of the old distribution system to the new one. This contract was entered into about November 1st, 1927, and in spite of adverse weather conditions, was fully completed by May 15th, 1928, and is now in operation. The mains are four feet deep. The total cost of construction was \$17,500.00.

Results Apparent

Before the system was completed there was an insistent demand for its use. The spring of 1928 was an exceptionally dry one and the results are already apparent. One very noticeable result of the installation is the demand on the part of the membership that the property be sold has practically ceased. Members are much better satisfied and the grass and turf is rapidly developing. The greenkeeper estimates that much less seed, sand and fertilizer will be required than has ever been used before and the water bill has, on a unit basis, been materially reduced.

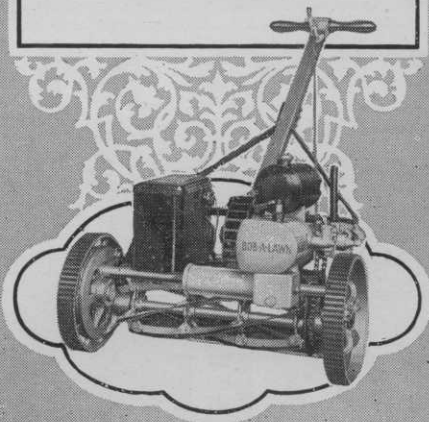
While the system has as yet been in operation too short a time to get the full benefit yet some features stand out very strongly. One of these is that the pressure at the main shall be approximately 75 pounds and about 45 pounds at the sprinkling nozzle. A second is that it is not

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necessary to spend exceedingly large sums to build a fairway sprinkling system, but that it is necessary to have one completely and adequately designed. The Evanston club was fortunately situated as regards water supply and it is not probable that many representative clubs can install such a complete system at so low a price, but unless the situation is very adverse no fairway sprinkling system should cost more than \$35,000.00 or \$40,000.00. The third feature is that night sprinkling seems to work best. One and one-half inch hose is used, and nozzles of about 35 gallons capacity.

One man, in addition to the one man needed for sprinkling the greens, is the labor required. Finally, there is a lot of difference in the various types of sprinkling nozzles. Some will cover fifty per cent greater area than others. Simplicity is desirable, and showiness is not a factor.

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variably shows an operating profit each year is the Lakewood Country club of Denver. It was organized in 1908 and its no-assessment, no-loss record is remarkable.

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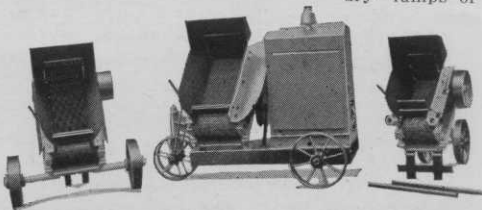
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