

# Golf Course Irrigation

By W. A. BUCKNER

THE problem of fairway watering is no longer perplexing or prohibitive in cost. The business end of golf is now very generally handled by men who have made it a study, rather than by a doctor one season, then a lawyer and then an undertaker and so on down the line, each trying to beat the other's record of not spending any money. The men who do the real work on up to date golf club committees today have brought the business up to a standard of efficiency which many other lines of business would do well to emulate.

Golfers in general have therefore grown expectant to a degree that a few years ago would have been considered irrational. With the advent of turf putting greens, came the worst thing that has happened to golf clubs, the installation of inadequate water systems and toy sprinklers. This was of course very well for a short time, but from the turf green idea sprung the

turf fairway dream and the grass tee experiments, so that in a short time the water systems installed for greens only, were wholly inadequate. But they had cost a considerable sum nevertheless, and the club members were loath to pay for tearing them out and putting in new systems. This prevails today to a certain extent, but not with the clubs being handled by good business men. However, it has had a disastrous effect on progress. The small pumping plants and the small water systems are responsible for the hundreds of different types of toy sprinklers, the manufacturers of which were in keen competition trying to get great distance out of a small sprinkler on poor pressure. Sort of trying to pull oneself up by the boot straps. It cannot be done.

Like every other progressive business, the business of golf course construction and upkeep had to pass through



*A view of the Eighth Green at the Monterey Peninsula Country Club, one of the many California golf courses equipped with a modern and complete irrigation system*

the experimental stages as in the past we had no experimental stations operated by men thoroughly familiar with the needs of the courses, as we now have.

The organization of the district greenkeepers' Associations was the first real stride in the direction of economy and efficiency. Then came the National Greenkeepers' Association and with it *THE NATIONAL GREENKEEPER*, its official organ, the clearing house, so to speak, of progressive ideas. This magazine places every greenkeeper, experienced or inexperienced, in close touch with the trend of things he is most interested in and will do more for golf than any organization or system of things that can be conceived of by those not familiar with the knowledge that is required of greenkeepers.

This matter is perhaps more apparent to the writer than to the average golfer, as being in the business of promoting turf, closer contact is made with the real needs of clubs, than is made by those who follow other lines of endeavor.

The modern methods of golf course irrigation include the fairways as well as the tees and the greens. After a course has been laid out the first thing to be considered is the water system, as there can be no worth while course without a good system. You read every day about where and how to locate the pumping plant most convenient to the water etc., so we will not dwell on that subject here.

As has been said, originally water systems were built for green irrigation only, but these greens have gradually grown larger and the practice of watering the approaches, when water was available, followed. Then came the grass tees and later the final demand for turf fairways and thus the problem of fairway irrigation.

#### *California Clubs Pioneers in Irrigation*

The California clubs have pioneered the way in this extensive watering for the reason that the climate is such that grass is necessary for comfort and California being the "playground of the world" just naturally had to devise ways and means to promote this luxury in an economical way. The construction engineers and sprinkler manufacturers got together and thought out a plan, to use much less pipe and save installation cost and upkeep by using giant sprinklers. This saved a great deal of money also in elimination of hose and labor. California having a climate demanding artificial irrigation practically throughout the entire year, was therefore, the cradle of the all turf courses and the home of the golf course sprinkler industry.

At the present time, practically every golf club on the Pacific coast boasts of an all-grass course and during the past two years they have been equipped with the famous slow motion type of sprinkler which covers many times the area of previous types of giant sprinklers and most of the new courses during the past year have adopted the hoseless system of golf course irrigation

for fairways. The Castlewood Country Club at Pleasanton, California, is a shining example of what can be done with an adequate water system. This course is built on the estate of the late Mrs. Phoebe Hearst and is one of the most beautiful courses in the world.

The hoseless system enables this club to irrigate the course with less than half the men it would take to operate a hose system. The saving of labor and hose much more than pays the interest on the investment, or rather the added cost of this system over the hose system, to say nothing of eliminating the human element and misplaced sprinklers which so often happens with men using hose and portable sprinklers while watering at night.

#### *The Hoseless System*

A hoseless system is similar to a hose system, except that instead of having hundreds of hydrants strung along the fairways and thousands of feet of hose, there is a valve for each unit of seven hoseless sprinklers. The valve is outside the fairway and the pipes leading out into the fairway from the water main are installed so that each outlet is an equal distance from all other adjacent outlets. That is the outlets are on the staggered or equilateral plan. The distance apart runs from 75 to 100 feet according to the amount of pressure in the system. The outlets are installed practically flush with the soil so that the mower does not find them. Some clubs set their sprinklers up by screwing them into the outlets, but the most up-to-date and convenient method is to use quick couplings. These couplings have a female member which has a hinged cover or lid to keep out grass cuttings and trash and is installed flush with the soil. Then the sprinkler is equipped with the male member of the coupling and has a small lever to press down and lock the sprinkler end to the ground connection. This can be done in an instant and the sprinkler can be taken off the system in the same time by simply raising the lever.

When irrigation is desired a man goes out with seven sprinklers and sets them up on a unit and opens the valve. He then sets up as many units as the water supply will take care of. When this is done, he returns to the first unit and moves these sprinklers forward to the next vacant unit and so on around the course. Most California courses have a water supply that will take care of an entire fairway at a time, which simplifies matters very much. Tees are watered by using the adjustable concealed head of special golf course type. They are installed flush with the soil and as the tees are played "off or from" there is no objection to having one or two of these heads in a large tee. All that is necessary then, to irrigate a tee is to open a valve. This eliminates dragging hose and sprinklers to the most inconvenient spots on the course.

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## *Vegetative Planting*

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good turf at certain seasons of the year or under favorable conditions for grass growing. None however, has the ability to grow under such adverse conditions as does the Washington, or to keep in such good condition from one end of the year to the other and from year to year. No other strain has a more attractive color. None is so resistant to the encroachment of weeds and diseases. When it comes to thriving under use and abuse, the Washington is in a class by itself. The use of the Washington strain has pushed the line of successful creeping bent growing far to the south and west of where it was thought possible a few years ago for any creeping bent to survive the heat of the summers. It has been tried in comparison with several other strains at the Missouri Botanical Gardens at St. Louis and by the Kansas Experiment Station at Manhattan, Kansas and in both instances it has proved its superiority over the others. It is doing splendidly at Knoxville, Tennessee, and there appears no valid reason why it should not do well anywhere in the cotton belt if given ordinary care during the summer.

The Metropolitan resembles the Washington in many ways. It is a little lighter in color and finer in texture. There is also more of a tendency to upright growth. On rich lands of the North Central States it makes a wonderful turf. It will not survive heat and drought as well as will the Washington but its fine close texture makes it a favorite where it can be grown.

### *The Pro and Con of Stolons and Seed*

The question is often asked "What is the future of vegetative planting?" From all indications at the present time this method of planting turf is steadily growing in popularity in the middle west and south of the Ohio River. Most of the new courses in the north and east are using stolons for their greens but there seems to be a falling off in the number of courses that are changing their seeded greens to creeping bent by the vegetative method. While tried out thoroughly, vegetative planting has never become popular on the Pacific Coast. This is largely due to the fact that the eastern strains of bent which have been used for planting are not adapted to an all-the-year-round climate. And then too they have a creeping bent grass out there which comes from seed which makes better turf than any of the strains of creeping which are planted vegetatively. The demand for stolons for lawns is increasing rapidly. The ease and cheapness of upkeep of this kind of turf appeals to the pocket-book as its attractive appearance does to the eye. Vegetative planting of creeping bent appears to have become established as a permanent factor in the production of fine turf in this country.

## *Fairway Irrigation*

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Putting greens will of course permit of no couplings or sprays being installed in the putting surface. However quick couplings can be placed just outside and the hoseless sprinklers used if desired. This wastes considerable water, which many clubs really like as it provides an excellent collar of turf outside the putting surface. An ideal method for watering the putting greens is to have a duplex valve installed near the green. These boxes are of the concealed type. Then have a 50 or 60 foot length of hose and a slow motion sprinkler on roller stand which will cover an entire green 100 feet in diameter or more. Place the sprinkler on the green so that it will cover the entire surface and leave it there until the green is properly watered. Then by pulling the hose the sprinkler will roll off the green without marring it and without the attendant having to walk on the green while it is wet. If the wind is blowing the sprinkler is placed a little off center. This is an ideal way to water greens. Unless a turf collar is desired, then of course the hoseless system is the thing to have.

A hoseless system costs about 25 per cent more than a hose system, figuring cost of hose initially purchased.

Many of the fine old courses constructed before the modern methods of irrigation came into vogue, are now reconstructing and installing the present day methods and it is believed they will suffice for all time to come. There are many capable engineering concerns in all parts of the country who have the data on California installations. Many clubs as well as engineering companies have sent men to the Pacific coast to study the efficiency of California irrigating systems and we have yet to find one of them returning home disappointed.

Mr. Wendell Miller, the drainage expert of Columbus, Ohio, spends every winter out here and last winter he had Mr. Edward Dearie, the secretary of the Chicago District Greenkeepers Association with him. The writer spent some time with these gentlemen and found them very enthusiastic and as a result Mr. Miller has made several installations in Michigan and Eastern territory and advises that he has several contracts coming in for this year's work.

It is well worth the time of any club official or engineering representative who can come to California to spend some time around Los Angeles or San Francisco golf clubs. They will be amazed at the progress made in new methods of watering. There are dozens of the prettiest courses ever seen, which a few years ago were nothing but barren wastes of sand.

While this article was written to feature fairway irrigation, it has been thought proper to amplify it a bit and tell of new methods for watering greens and tees with modern equipment.