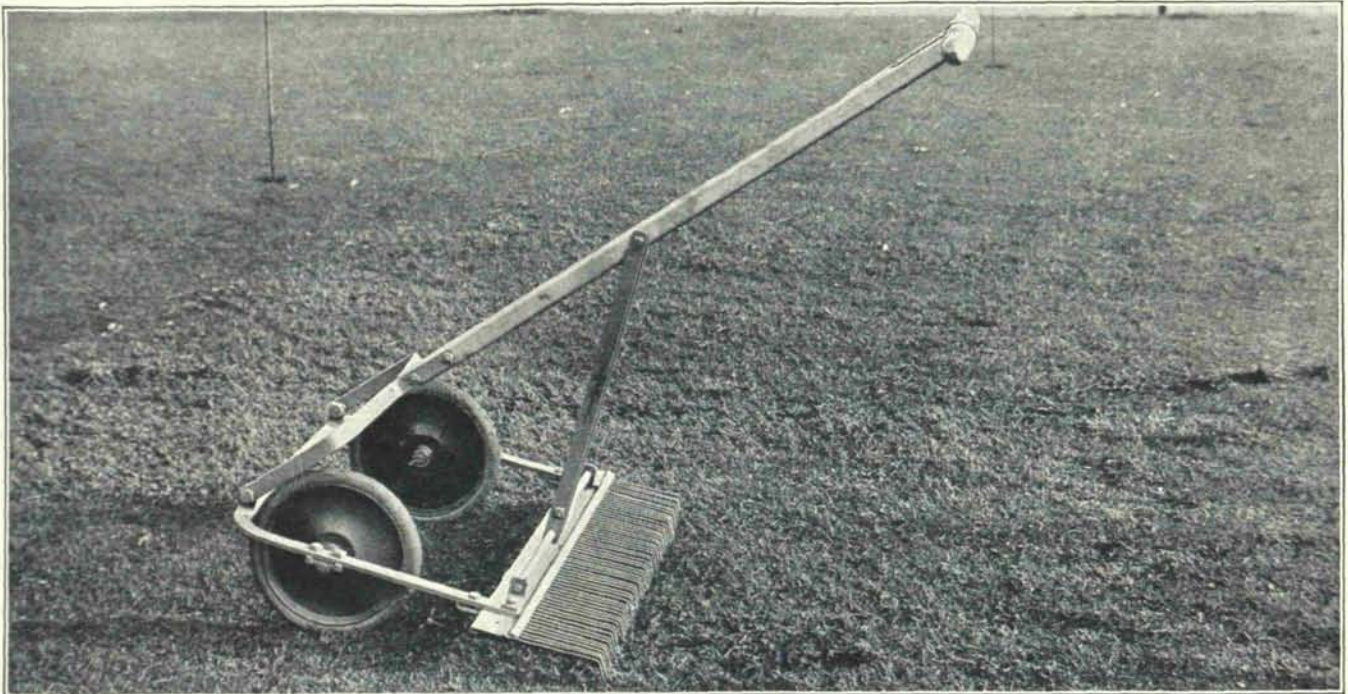

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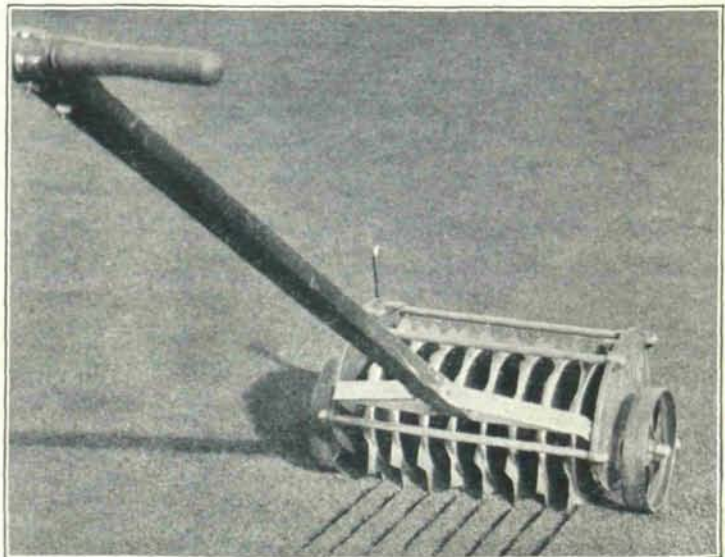
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The NATIONAL GREENKEEPER

(Registered U. S. Patent Office)

Official Organ of The National Association of Greenkeepers of America

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Contents

GREENKEEPERS VISIT TORONTO By J. H. Evans	5	GOLF COURSE CONSTRUCTION FROM THE GREENKEEPER'S STANDPOINT Chapter No. V—Irrigating the Golf Course By Edward B. Dearie, Jr.	20
MINIKAHDA ENTERTAINS GREENKEEPERS By Colonel John Morley	8	JOHN QUAILL SAYS:	26
HOSELESS IRRIGATION By Wendell P. Miller	9	NEW ENGLAND NOTES By Llewellyn L. Derby	27
MID-WEST GREENKEEPERS' PAGE By A. L. Brandon	15	VISITING TORONTO COURSES By John Quail	29
HOW I FERTILIZE MY GREENS By Lawrence Huber	16	AROUND THE OFFICE DESK	31
		MARKET PLACE AND BUYERS' GUIDE	33

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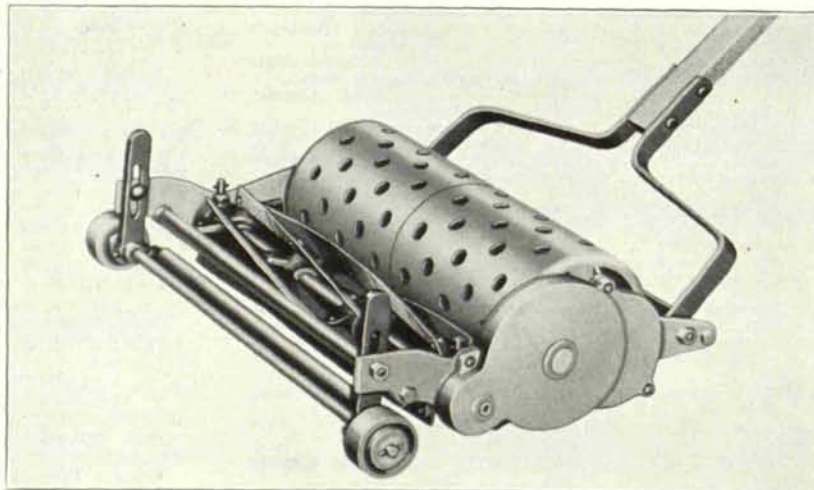
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IDEAL GREENSMOWER

Greenkeepers Visit Toronto

BY J. H. EVANS
Golf Editor, Toronto Globe



JOHN Morley, president of the National Association of Greenkeepers of America, found himself in a familiar atmosphere when he and his associates of the Executive committee visited Toronto for the first time to hold an executive meeting and spend three days as the guests of Course Superintendent W. J. Sansom, of the Toronto Golf club, Bert Hawkins, Howard Lloyd and others.

For Mr. Morley found among course superintendents in Toronto, his own folk-men who could recall the British Isles when Mr. Morley

knew the late Lord Morley, statesman and historian, as the editor of the Newcastle Daily Chronicle. While the business of the greenkeeper absorbed his attention, yet Mr. Morley found more than one opportunity to discuss Britain and British life before America offered an excellent livelihood to anyone who could care for a golf course when the game was in its infancy on the American continent.

The British connection made Mr. Morley dear to the greenkeeper who knew of him only or who had heard of him through Vice President Sansom. He and his associates were welcomed by the exclusive Toronto Golf club and were entertained in every club which they found time to visit before Mr. Morley de-



9TH, GREEN, ROYAL YORK GOLF CLUB, TORONTO
This is a sporty 200 yard hole. In the background is the Home Smith residence

parted for Columbus and later with F. A. Burkhardt, Cleveland, and John MacGregor, Chicago, to proceed to Interlachen for a tour of inspection at the request of the club before the United States open championship.

Arriving on June 22, Mr. Morley and his party were taken to the Scarboro club and then to Cedar Brook after which they were shown the city. On Monday, the party was entertained at the Toronto Golf club where a luncheon was tendered by the club which was represented by F. J. Mulqueen, chairman of the Green committee. A keen discussion took place on the character of the soil to be found bordering on the shores of Lake Ontario.

Louis Evans of Philadelphia felt that the soil was too close and dried out too quickly and advocated the use of a coarser sand to obtain the desired putting surface. Robert Hayes of New York believed that peat moss would provide the carpet which could not be obtained under the prevailing conditions. Out of the debate which became warmer as it proceeded Mr. Mulqueen and Mr. F. C. Armistage, the club secretary, secured opinion of value to improve a course, regarded from the point of view attention paid to it, as the first in the Dominion.

Leaving the Toronto club, Mr. Morley spontaneously remarked on the natural beauty of the course and compared it with conditions under which the course superintendent carried on in the United States, forced by these conditions to obtain natural beauty by artificial means. Mr. Morley commented on the wooded character of the properties which he had seen about Toronto.

Greenkeepers Visit Many Courses

AFTER the luncheon, the party visited Lakeview, Mississauga, Islington and wound up at Royal York before proceeding to the Old Mill, on the banks of the Humber river, for the dinner being tendered it by local greenkeepers and the Rice Lewis company. There were thirty one guests at the dinner, including Mr. Sansom, Mr. Morley, George Davies, Louisville, Ky.; Arthur Stephens, Erie Downs, Bridgeburg; John Quail, Highland Country Club, Pittsburgh;

Robert Hayes, Pelham Manor, New York; John Austin, Humber Valley, Toronto; John Anderson, Cedar Brook and Scarboro, Toronto; William Kirby, Lambton Country club; C. W. Freeman, Toronto Hunt club; Jim Connaughton, Monroe Golf club; Pittsford, N. Y.; J. Stanfield, Mississauga County Club, Toronto; J. Abbott, Islington Country Club; William Philipson, Willowdale Country Club, Buffalo; A. E. Lundstrom, New York City; L. M. Evans, Philadelphia; F. Burkhardt, Cleveland and Robert E. Power, editor of the National Greenkeeper.

Other local guests included H. Hawkins, James Titterington, F. A. Hamm, John J. Cameron, M. A. Chadwick, Charles Robinson, Roy Gilverson. Among the number who heard Mr. Morley deliver an interesting address on the tasks before the greenkeeper of the American continent were club secretaries charged with the responsibility of relating their revenues to the development and upkeep of their courses.

The good wishes of the city and at the same time its invitation to the Greenkeepers' association to hold a convention at some time in Toronto were extended by Controller Simpson who knows nothing of the game. The Controller is a friend of Ramsay Macdonald and of prominent Labor leaders of the United States, Canada and in Europe. Realizing the value of organization, the Controller urged the greenkeeper to solidify his ranks for his own benefit and struck a responsive note, indeed, when he confessed his ignorance of golf, but pointed out that the course superintendent and the greenkeeper was the essential factor in the game.

Mr. Morley was to have attended a luncheon of the American Seed association on June 24, but was unable to do so on account of a meeting of his executives held in his rooms in the Royal York hotel. After the meeting Mr. Morley announced that Louis M. Evans, Philadelphia; George Davies, Louisville and John MacGregor, of the Chicago Golf club had been named a committee to enter into a conference with the Club Managers' and the Professional Golfers' association on matters

(Continued on page 17)

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Minikahda Entertains Greenkeepers

BY COLONEL JOHN MORLEY, *President*
National Association of Greenkeepers of America

MINIKAHDA royally entertained the Minnesota greenkeepers in honor of the visit of the writer and Jack MacGregor of Chicago, to Minneapolis the week of the National Open Championship. The greenkeeper at Minikahda is Charles Erickson, president of the Minnesota Greenkeepers' Association, and one of the district vice-presidents of the N. A. G. A.

It was our good fortune to arrive in Minneapolis Monday, July 7 and visit the Golden

Valley Golf Club and Woodhill Country Club. On Tuesday we visited Minikahda, which we found in the pink of condition, also Minneapolis Golf Club, which was in fine shape. All the clubs we saw had fairway watering systems and in spite of the intense heat everything was green and beautiful.

On Wednesday morning we went over the Interlachen course with Erich Pahl and then returned to Minikahda for the luncheon ten-

(Continued on page 32)



FOUR HORSEMEN OF THE 1930 NATIONAL OPEN
Held at the Interlachen Country Club, Minneapolis, July 10th, 11th, 12th. Reading from left to right, Erich Pahl, Greenkeeper; Willie Kidd, Professional; Harrison R. (Jimmy) Johnston, National Amateur Champion; Charles Van Nest, Green Committee Chairman.

Hoseless Irrigation

Recent developments in automatic systems for watering golf turf show great saving in labor costs. Engineering features are interesting

BY WENDELL P. MILLER, *Consulting Engineer*

"THE old order changeth"—and many greenkeepers are welcoming the spread of hoseless irrigation. Fortunate indeed is the greenkeeper who enjoys complete hoseless irrigation and more fortunate will be the greenkeeper of the near future with his "pop-up" sprinklers concealed underground and controlled by automatic timing clocks.

The concealed sprinkler is already here. William Bell, Southern California architect, is installing 1100 "pop-ups" on the grounds of the Agua Caliente golf course at the famous race track in Mexico. The sprinklers are spaced eighty feet apart each way on a triangular arrangement.

The development of these concealed sprinklers for golf course has been very slow but now will go forward rapidly. Until recently the market has been confined to the so-called "commercial underground" irrigation companies whose efforts have been confined to private estates, large lawn, cemeteries and parks. There are several of these companies which have operated for some years and have made many installations—but none on golf courses. Perhaps their high prices and expensive method of distribution has kept them out of the golf course market. Also the same factors which have held back hoseless irrigation generally have prevented the introduction on golf courses of the lawn brands of concealed sprinklers.

Install Samples

THERE is one good way to spread the use of hoseless irrigation. Sample tees or greens which are entirely hoseless can be installed at very little expense, say perhaps one or two

hoseless tees in order to get an appropriation for the remaining tees. Then a hoseless green, and so forth. If these preliminary installations are carefully made according to good engineering practice, then the entire preliminary installation can be subsequently incorporated in a comprehensive fairway and water supply program.

Unfortunately, the cost of fairway irrigation is accentuated by the usual abandonment of existing tee and green systems which are almost invariably found wanting in some essential particularly when the time comes for fairway watering. The use of short lived steel pipe is the main cause of abandonment. Inadequacy is the next important cause. Everyone who installs hoseless tees and greens should see to it that only genuine wrought iron piping, or cast iron, or their equivalents of adequate size, is used.

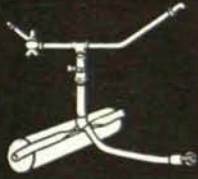
Hoseless Tee Irrigation

HOSELESS tee systems are of recent introduction. Various means have been adopted to secure individually controlled tee watering. For example, at Glenview, Chicago, ordinary lawn type sprays are permanently installed at each tee. Opening a valve starts the sprinklers. Nothing to handle but the valve and that takes only thirty seconds. This is labor saving to the Nth degree.

More recently the "pop-up" or concealed sprinkler has been introduced for tee irrigation. One pop-up is installed in the center or perhaps toward the windward side of the center of the tee. A gate valve is placed in the feed pipe, in a box just off the tee. Inch and



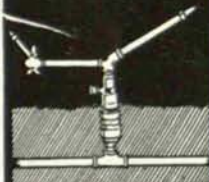
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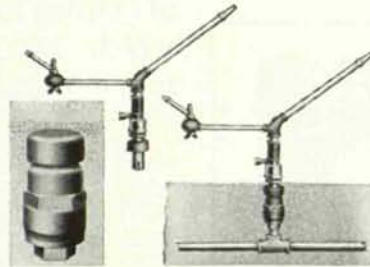
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one-quarter pipe is the smallest pipe desirable for a single pop-up. If two pop-ups are used on double tees, inch and one-half pipe will do. Where two or more pop-ups are used, one valve can be used to control all the leads though individual control is better.

In using pop-ups for tees, it is necessary to place an adjustment valve on the tee sprinkler if water is scarce or expensive. Through the use of an adjustment valve (which is placed underneath and directly attached to the pop-ups) the area sprinkled can be throttled down to the size of the tee. Recent installations of this character have been made at Pomonok Country Club, Flushing, Long Island; University of Michigan Golf Course, Ann Arbor, Michigan; Midlothian Country Club, Chicago and Cascade Hills Country Club, Grand Rapids, Michigan. These installations are of particular value for their even and accurate distribution of water and for the saving of labor.

The accompanying photographs illustrate the irrigation of both single and double tees by these underground, concealed or pop-up sprinklers. Working pressure in these installations runs from sixty-five to ninety pounds. The effective diameters are from sixty to eighty-five feet, except where throttled down as before explained. The quantity of water distribution ranges from ten to eighteen gallons per minute according to the sizes of nozzles used. Speed of rotation is about one and one-half turns per minute.

Installation Details

EACH concealed sprinkler is mounted on a vertical riser which, in turn, is connected to the supply pipe by means of a double swing joint consisting of two street ells, one screwed into the other. This "trick of the trade" provides a joint which will stand a jolt from passing equipment without breakage.

The sprinklers are set slightly below ground level, usually the thickness of your little finger below a straight edge laid across the hole. Each sprinkler is set in a length of ten inch drain tile, placed on end and filled with cut stone or gravel. The top of the tile comes just to the bottom of the sprinkler casing.