

# THE GOLF COURSE

A MONTHLY BULLETIN DEVOTED TO THE DISCUSSION OF MODERN METHODS AS APPLIED TO GOLF COURSE CONSTRUCTION AND UPKEEP

## Modern Golf Chats

By A. W. TILLINGHAST

**W**ITHOUT a doubt one of the most certain earmarks of a modern golf course are twisting, irregularly shaped fairways.

The boy from the backwoods shows unmistakably by the cut of his hair that Mother has taken the sugar bowl, placed it helmet-like over his head, and cropped around the rim. Whenever you see a fairway cut with the same precision, you may know immediately that the green committee is composed of antiquarians who are "sot in their ways."

Another time I shall discuss the simple twisting of the fairways of comparatively straight holes, but at this time let us consider the extreme types where the fairways snake around Dog-legs and Elbows.

As a rule, the two terms are used indiscriminately, but I always have made this distinction. A Dog-leg hole provides some pronounced obstruction, which forms a corner in a twisted fairway from either side. If it be impossible to carry over this obstruction, but at the same time necessary to get beyond it in order to open up the next shot, we have a Dog-leg.

If a similar obstruction may be carried by a courageous shot, which is rewarded by a very distinct advantage, we have an Elbow.

There is still a third variation, where a corner is formed close by the green itself, usually by the encroachment of a hillside or sandy waste, and this type is known as a Cape hole.

The inclusion of these very twisted types lends variety to any course, and in a great measure they may eliminate the old evil of paralleling which is encountered so frequently on courses of common pattern. Then, too, these types require less bunkering than the straight-aways, for usually the projecting areas are provided by Nature. In laying out courses inland where wooded sections are numerous, the planning of the Dog-leg is quite simple. The trees are permitted to remain along the side for such a distance as may be considered proper for a well-hit shot to exceed. Of course, the length of this shot would be regulated by the slopes of the fairway and the character of the turf. Under normal conditions, a player should be required to drive at least two hundred yards before the barrier to his second shot is removed. From this point the fairway turns abruptly either to the right or left, opening up the green or its approaches. The first hole of the new course at Pine Valley provides an excellent example of the Dog-leg, and,

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PUBLISHED AT  
25 WEST 45TH STREET, NEW YORK

BY

PETERSON, SINCLAIRE & MILLER, Inc.

IN CONJUNCTION WITH

CARTER'S TESTED SEEDS, Inc.

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R. O. SINCLAIRE, *Editor*

Vol. I                      APRIL, 1916                      No. 4

THERE is a certain course in this country whose undoubted merits can be appreciated by the best golfers, and yet nearly every expert, in commenting on the course, will refer with regret to the tricky qualities of the putting-greens. The excellence of the turf cannot be denied, but the green committee appears to take a fiendish delight in keeping the greens as fast as lightning, and on occasions placing the cups in almost impossible places. The chairman of the committee once asserted that he could cut a hole on one of the greens and place a ball thirty feet away from it, when he would wager that no one would be able to get down in two. On this same course, during a tournament, a player was on the green and his approach putt gathered so much speed that it ran off the green and actually was lost.

There never is any excuse for making putting impossible, and yet, in many tournaments, the committees apparently believe that they are unusually clever when they succeed in placing some of the cups in ridiculous spots. Of course, on flat greens it makes but little difference where the hole is cut, unless it is

way over on one side so close to the guarding pit that the approach is unnecessarily severe, but on greens which are very undulating, it is not at all difficult to cut a hole that is well-nigh impregnable to anything except a lucky stab.

It is an old trick of green-keepers to wager against a score which seems to be very probable, when they are aware that they are to place the cups, for it is quite possible to run a very fine performance many strokes above figures which would have been recorded had the cups been placed normally.

Undulating greens are most desirable when they fit the shots. Certainly a pronounced undulation should never figure at the very end of the ball's run to the cup. In other words, a hole should never be cut on a very pronounced slope which may play queer pranks at the very finish of a putt which had been correctly hit. The selection of locations for cups, previous to an important tournament, is a great responsibility, and it is best that the person who has it to do should walk around with a putter and a ball, trying out every selection to make sure that there exists no subtle trickiness which might escape the eye.

PROFESSIONALS and green-keepers frequently request us to advise them where they can secure situations. We shall be glad to furnish the names of competent men.



## Weeds in Putting Greens

BY LEONARD MACOMBER

WITH the advent of Spring and the warm weather every good greenkeeper has to be on the lookout for all alien growths in his putting greens and eliminate them as fast as they appear.

Every Monday morning there should be a close inspection of every green and any foreign plants found should be immediately scratched out or removed with a special tool and the hole or scar filled in, seeded, and topdressed. If a pile of rich, clean compost, mixed with grass seed, is taken along and handfuls applied to all weak spots, the job is soon done, provided the greens were thoroughly cleaned and renovated at the start of the season.

If once a good thick strong turf is produced and maintained, there is no room for weeds, but if they are allowed to multiply during the season, the greens soon get in a hopeless condition.

Weeds are often a sign of poverty of the soil or neglect. Very frequently freshly dug land and imported soil will produce a strong crop of weeds, both annual and perennial. How the weed seeds get into the soil and how long they will retain their germinating power is a debatable matter. Darwin tells us that seeds which germinated freely have been found in the little chamber at the end of a worm hole at a depth of eight feet. In his opinion, these seeds were taken down by the worms with the object of lining the little chamber in which they winter in a dormant condition—so as to prevent their skins, through which they breathe, from coming in contact with the cold damp soil.

There are a multitude of different ways in which weed seeds get into the ground, and the only way in making a golf course or a lawn upon foul ground is to allow it to lay fallow and clean it by frequently disturbing the surface with a hoe for a small plot and a harrow for a large area.

Then, after a turf is produced, keep it clean and top-dress only with rich, clean soil or rotted composts. No matter how careful a greenkeeper may be in preparing his dressings, some weeds are sure to make their appearance in spite of all the care taken to prevent them, but to a very appreciable extent they can be prevented by keeping the turf strong, thick, and healthy throughout the season.

There are upwards of fifty different kinds of weeds found in putting greens in the Eastern States. The definition of weed is the general name of any plant that is useless or noxious, so we have some grasses classified in some instances as weeds. For instance, *Poa Annua* or Annual Blue Grass, when in the minority, is often objectionable and is considered a weed. Then there is a weed—a sort of mossy water grass, Pearl Wort or *Sagina Procumbens*. I have seen putting greens in France entirely composed of this variety, and although they played a little slow, they were very fine indeed.

Overwatering or bad drainage quite often produces patches of this weed, and it is very difficult to get it out of a turf, although a sulphate of iron solution sometimes is an effective remedy and sometimes a dressing of slaked lime.

The annual weeds appearing in the Spring we do not have to worry much about, because they are extirpated by the mowing machine. The perennial weeds are divided into three classes, as follows:

- (1) Chick weed and other fleshy, shallow-rooted weeds.
- (2) Plantains and other weeds with roots not exceeding four inches in length.
- (3) Dandelions and other weeds with long tap-roots.

The best method to eradicate all these weeds is to remove them by hand, with special chisel tools, or lift the patches of weeds, sometimes using large hole



cutters for the purpose, and fill in with good clean turf taken from the turf nursery.

Clover is the most troublesome and difficult plant to get rid of. On newly sown greens the seedlings should be taken out by hand, but on established greens where it is intermingled with the grass plants, the only remedy is to apply highly nitrogenous fertilizer so as to help strengthen the grasses and have them get the best of the clover in time.

### Long Holes

AS a rule, a championship course possesses several three-shot holes, and the bunkering of such a hole is the great consideration, for hazards must be placed to make it impossible for the green to be reached with any sort of a third after either the drive or the second shot has been badly hit. These three-shot holes are necessary to provide variety, but there seems no reason for the building of a hole of over 550 yards in length.

To be sure, a hole is just as long as it plays, and unusual turf conditions must be considered, but in considering the length of holes generally, and analyzing them, we must assume that the conditions are normal.

A glance over the plans of the seven championship courses of Great Britain reveals the fact that not one of them possesses a single hole which measures 550 yards, the longest being the seventeenth at Westward Ho! which is 542 yards. St. Andrews' possesses two holes of over 500 yards—the fifth of 553 yards and the fourteenth of 516 yards. The twelfth at Prestwick measures 508 yards, and the sixteenth at Holylake 510 yards. There is not a single hole which measures 500 yards at either Muirfield or Deal.

As a word of warning to constructors of courses, let one suggest that in building their three-shotters they do not figure on length alone, but rather have always in mind the lay of the land and

thoughts of bunkering schemes, which will give the shots their true values.

### The Importance of Good Seed

THE suspension of field operations will provide an opportunity for looking closely into the question of the seed supply. Prominence has been given lately to the labor problem and the supply of manures, but little has been said about seed. Efficient labor and the use of suitable fertilizers will avail only so far as they are supported by a wise selection of seed. Unless this be pure, robust, and fertile, it does not matter much how much money is spent in labor and manures.

In the February *Journal* of the Board of Agriculture, Professor Biffen, of Cambridge, gives the results of a three years' inquiry into grass, clover, and mangold seed, but the principles apply to all kinds of seeds. The verdict on 676 samples examined was that "though seeds of the highest quality can be purchased, much of the seed offered for sale is of indifferent quality, while some of it is excessively bad." If the facts presented are typical, there is no need to look beyond the seed supply for an explanation of the poor returns yielded by large areas of both arable and grass land, and judging from the facts disclosed by Professor Biffen the supply of cheap seed is unlikely to diminish so long as farmers put price before merit.

The great defect of the seed trade is the method of distribution. Seed is sold in every market town in the country by tradesmen who have no special knowledge of the business and who probably know little concerning the origin or character of the seed they retail. The growing, harvesting and dressing of seed are skilled operations of the first importance; but if the buyer is to avail himself of the advantages offered by the exercise of such skill, he must procure his seed from trustworthy sources and have some sort of guarantee that the ar-



ticle is of the quality represented. The question of price should hold a secondary position. Guaranteed seeds of high germination are the best investment of the kind that farmers can make. Mr. Biffen tells of a sample of red clover seed which had so low a percentage of real value that a seed-rate amounting to over a ton per acre would have been necessary to secure sufficient clover seeds to provide a full plant—2,240 lb., as compared with the normal 10 lb. to 20 lb.

Deficiency in yield is not the only consequence of indifference as to the character of the seed sown. Foreign admixtures are not always harmless; weed seeds are often plentiful, and by introducing the seeds of docks, plantains, and such like—not to mention the parasitical dodder and other pests in imported seeds—the farmer nullifies the results of his weeding operations as effectively as he discounts the advantages of efficient tillage and judicious manuring by sowing seed of poor quality.

EDITOR'S NOTE.—The above article from the "London Times" contains much food for thought and should be carefully digested by Green Committeemen and others who have the responsibility of purchasing seed for Golf Courses, private estates, etc. It is a fact that seed purchased from a concern of known experience and reputation is actually cheaper than a poor grade which is much cheaper per bushel. High-grade seed contains practically no chaff and its cost represents actual seed. There is a great deal of fraud in the seed business, and it behooves one to go carefully and be sure what one is buying. The very best is by far the cheapest in the long run.

### Generous Teeing Grounds

LARGE teeing-grounds are constructed not only to fit the play to the wind or general conditions, but to save the turf as well. If the plates are moved frequently, back and forward and from side to side, the badly worn spots which we see only too often would not be made. Move the plates every day, and the turf will not suffer in the least. It is not to the liking of

everyone to have to play from a skinned teeing ground; indeed, comparatively few like it, and usually these are the poor players. The man who hits correctly wants to feel the club bite the turf a bit, and when he is forced to pick his ball cleanly, his stroke has lost its sting.

### Public Courses

THERE is scarcely a city of any consequence which has not provided a municipal golf course for the public or given the matter serious consideration.

Wherever these courses have been built the people have shown their appreciation by taxing the courses to capacity.

The absolute necessity of a municipal golf course is recognized by cities which are particularly desirous of the patronage of tourists. The majority of those who travel for pleasure play golf and though they may visit a city which does not provide golf for them, they will not tarry there long.

Then arises the question of whether an absolutely free course be built for the residents, or a semi-public course, operated by a city, over which visitors may play upon payment of a fee.

In some sections where the visitations of tourists are frequent, the latter development would seem to have first consideration, but in view of the unmistakably healthy growth of golf, the eventual solution carries with it the answer of "Both."

As it costs no more to construct any course along modern lines, there is no reason why public links should not be quite as up-to-date as any other, yet it must be remembered that those who frequent free courses are not so prone to observe the strict ethics of the game as others, and consequently in planning free courses, dangerous parallel fairways and blind shots of every description should be avoided. Such features should not exist on any course, but particularly on one given over to the public.



## Notes on Proper Fertilization

THE Green Committee of the average club is of necessity made up of men who are not thoroughly acquainted with the work they have to do, and lucky is the club which can command the services of an expert. The purpose of this article is to bring out a few facts regarding fertilizers which the average committeeman does not know, in order that costly mistakes may be avoided.

The chief fertilizers which are of interest in Golf work are chemicals of various kinds, animal manures, vegetable manures, and composts.

The chemical fertilizers, of which there are a countless number, are concentrated plant foods. They furnish nitrogen, potash, phosphoric acid, and other elements to the soil. They have no physical effect whatever and for grass at least should be used only in combination with organic manures in order to get the best results.

Animal manures have an entirely different function. In addition to the fact that they supply nitrogen, etc., they replace much of the humus (the technical name for decayed vegetable matter) which the growth of plants has removed. They are frequently most unsightly and have an unpleasant odor.

Vegetable manures are either leaf moulds or humus. They are nothing but decayed vegetable matter and are clean and pleasant to use. Frequently, however, they require the addition of chemical fertilizers according to local conditions. Humus is not a fertilizer in the ordinary meaning of the term. Little is known regarding its exact chemical composition and the analysis is of little or no value. Its chief function is its physical or soil-building effect.

Great care must be taken in selecting a fertilizer for a Golf Course. The first thing is to consider all the conditions and try to meet them with one material. Of course the first is the grass. Grass requires a nitrogenous manure. Should a manure rich in phosphates be

used clover would flourish and this is most undesirable. Even on greens quite free from clover phosphatic manures should be avoided, as they will frequently bring forth a large crop. The next important feature is the soil. If it is sandy, a highly soluble manure should be avoided, as the rain will wash it so deep as to be out of reach of the roots of the grass, thus wasting a large part of its value. A more nearly insoluble manure, while slower in action, would give more permanent results. The best time to use these manures is in the fall after the season is over, as they then have several months to become ready for plant use.

Carelessly used animal manures have been responsible for trouble on a great many courses. Sometime stable manure is used in its raw state, before it has become well rotted and weathered, but it should be kept for about a year, preferably in a special pit or in a heap made in such a way that the liquid carried to the bottom by the rain will not be lost. It is generally best to make a compost pile as described below. Manure should always be applied in a finely sifted form and should be worked into the soil with a stiff broom or bush harrow, so as to penetrate the surface soil and not to seriously interfere with play. Applying stable manure in large clods, as is frequently done (although this happens more often on lawns) shows very bad management indeed.

Another point to bear in mind is that manure cannot be mixed with lime without losing much of its value. Lime hastens the process of nitrification by decomposing the organic matter and turns it into ammonia in the form of a very volatile gas. This escapes in the air and is lost.

Vegetable manures, leaf moulds and humus have no objections from a sanitary or esthetic standpoint and are, therefore, when used intelligently, most desirable. Humus in particular is frequently used and can be applied as a top dressing without any dilution. Unlike chemicals, which are apt to burn if



used in too large quantities, humus can be used in any quantity without fear, but to get results it is most important to work it into the surface of the soil with brushes or rakes. It has a tendency to cause much quicker germination of the seed. Humus is not a true fertilizer and is chiefly important for its soil-building properties. It improves the tilth of the soil, making it more crumbly and greatly lessening its tendency to bake. It has great capacity for holding moisture and also improves the soil ventilation. This condition favors deeper rooting and assists the grass through the hot weather.

The use of the compost pile is very general and the results are well worth the trouble. It is preferably kept in a pit, although a heap will do if care is taken to conserve the liquid elements. Make it by alternate layers a foot thick of (1) soil, (2) sand, (3) manure, leaf mould or humus, or, if sand is not required by local conditions, (1) soil, (2) manure or humus. Finish off with soil. As composts should be allowed to stand for at least a year, twice the required quantity should be made up at first. A chemical fertilizer should frequently be added and it is always well to seek the advice of a grass seed house, so as to make sure the proper quantity and kind is used. Before using compost it should be thoroughly sifted.

It is impossible to go deeply into the subject of proper fertilization within the limits of this article, but a few further words of caution may be worth considering. Every Green Committee should establish a definite plan for each year's work for fertilization as well as seeding, etc. It would be best to secure the services of an expert to assist in the forming of a definite policy, so that improvement might go on from year to year. A poor system consistently carried out is apt to give better results in the end than a different good plan every year.

It is a pity that the average Green Committee does not realize that the seed companies are always willing and

glad to give assistance in selecting fertilizers which will be adapted to any local condition. Soils vary so much all over the country that a fertilizer which will give perfect results in one locality might be totally unfit for use elsewhere.

The Green Committeeman should also avoid too much dependence on experts in farm fertilization. The requirements for farm purposes and for fine turf are almost exactly opposite. The object of the farmer is to produce the heaviest, most succulent, and most nutritious crop possible. On the other hand, the ideal of the greenkeeper is to develop a hard, uniform, close turf, which does not grow too quickly or coarsely and can therefore be kept within bounds without too frequent and costly mowing; a turf, in fact, which would be of little value to the farmer. Should the greenkeeper apply the farmer's fertilizer, it would be very likely to prove the worst in the world for the desired result. Another source of error is the loose way the term grass is used in text books, where it is used to include such plants as clover, trefoil, etc., in addition to the true grasses.

The subject of fertilization of grass is a large and complicated one, and a club should not try to spend money on experimentation. This has already been done on an extensive scale by the seedsmen, and a duplication of their work would only result in needless waste. As stated above, the grass seed firms have accumulated large stores of information obtained by long experience and it is at the disposal of everyone. It would be foolish for a committee not to avail itself of this material, as it costs nothing. Nothing is too good in golf course work, and the best is cheapest in the end.

The present time is a good one to remove the worms which cause so much trouble and expense on the greens. They may easily be gotten rid of by the use of a good worm eradicator. Details of the method may be had from either of the publishers of "The Golf Course."



## Sane Distances

SOME green committees seem to think that on tournament days the course should be stretched to an extreme limit by placing the markers on the very back brink of the teeing grounds; indeed, in some instances the markers are set so far back that the players scarcely can find a safe footing. Most holes should be provided with two or three teeing grounds to be used under varying conditions, but there is no reason why only the back-grounds should be used on tournament days. The placing of the markers should be governed entirely by the velocity and direction of the wind and the condition of the fairway, for frequently holes lose their values under certain conditions, when the rear teeing grounds are played from. For example, a hole may present a very pretty two-shot problem under normal conditions, but if the wind be contrary, or the fairway slow, the grounds may be out of the reach of two shots; as a consequence, that hole becomes a three-shot hole, too, for it is likely that two long balls will fall short of getting home, leaving a short chipped approach or a mashie pitch.

## Resort Courses

THE players over-resort courses are becoming most fastidious. They insist upon courses of merit. A dozen years ago when a hotel was opened up for the season the boss would send out the hired man with a scythe to cut the greens before the 'bus came in with the first arrivals. But they can't succeed with the old style hotel course in these days. The players refuse to accept poor playgrounds, and although it is costly business to build and maintain a course, yet it seems to be good business for the proprietors of the golf hotels are prospering.

For example consider the best known resorts in America today, and you will find that the proprietors are exerting every effort to the improvement and maintenance of their golf courses. The guests insist on modern golf.

Pick up any advertisement and you will find the golf course advertised almost as prominently as the hotel itself. But aside from the actual necessity of the hotel links, the amount of its upkeep might be applied to advertising and yet possess but a fractional value of the publicity provided by golf.

## The 1916 Edition of Carter's Practical Greenkeeper

is now ready for distribution. Every Green Committee should have this useful handbook. A copy will be sent free to anyone interested.

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## Rolling

By L. M.

**A**NY fool can use a roller, but it takes a man with intelligence to use one with advantage on a golf course.

On established putting greens, the daily use of a light wooden roller is generally sufficient—a heavy roller being rarely needed except in connection with the spring renovation work, and on newly made greens or tees, when the turf is fairly firm and the surface dry.

Some people make a practice of rolling immediately after a heavy rain, but this is very bad, for sufficient time should always be given to allow the water to drain through the top soil—otherwise, if the soil is of a heavy nature, it is liable to cake and become waterlogged and sour.

Greens should never be rolled until the frost is entirely out of the ground. If a green is infested with earth worms, they should be eradicated before rolling or their casts brushed off with bamboo poles or birch brooms. Before mowing a putting green, sweep the surface so as to remove casts and pebbles, stones, etc., knocked out of sand traps onto the greens that would damage the mower; then mow and afterward roll with a light wooden roller to put on the finish.

On a putting green, the first object is to promote a healthy, strong, thick turf, and it is only by having this that a good putting surface can be obtained. How often especially on new golf courses do we find that the excessive use of a heavy roller has flattened out a more or less smooth surface at the expense of a healthy growth of grass. A first class putting green has never been made and maintained with a heavy roller. The grass plants have to breathe, so the soil should not be pounded down hard like a sidewalk.

Often we find greenkeepers correcting the putting surface of the greens with a heavy roller instead of topdressing them with rich, clean compost, filling in the cuppy places and then finishing off with a light rolling. If the surface soil of

putting greens becomes caked, the rains drain off without percolating through to the sub-soil. A light wooden roller should be in four sections, weigh about 150 pounds and be about four feet wide.

The fair greens of a golf course should be rolled once or twice in the early spring with a fairly heavy roller to smooth down the roughness caused by the frost, but the soil should be *dry* when rolled. During the season, heavy motor mowers should not be used, because the grass often has to be cut when the ground is wet and soon the soil is packed down like a brick pavement—especially where it is of a heavy nature.

It is not often necessary during the season to roll the fair greens, but when it is, light horse rollers should be used.

The combination horse mower and roller is the best machine on new courses, but everything considered the new "Threesome" or 86-inch cut mower used for the mowing alone with an occasional rolling with an ordinary horse roller is the best arrangement.

## To Green Committees



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## Modern Golf Chats

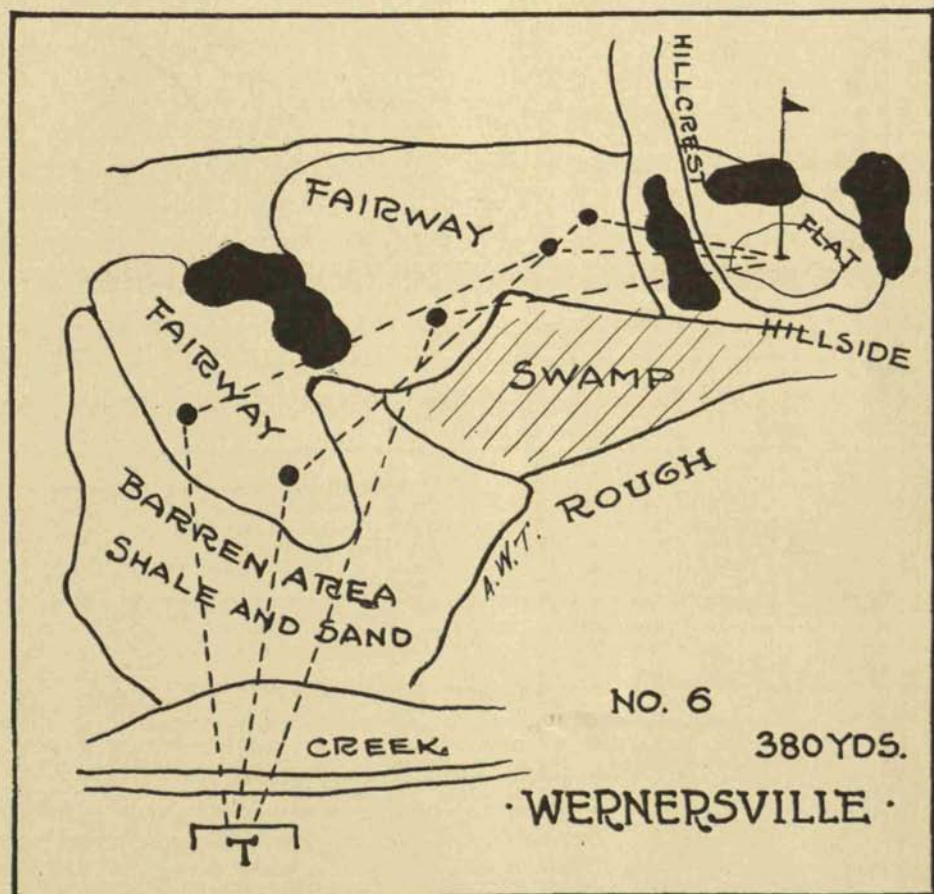
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indeed, many of our most modern courses present equally admirable types.

Last year I was called to Wernersville, Pa., to reconstruct a nine-hole course, and my rough sketch illustrates

the green with a second, for the bunkering is very close.

The word Rough, which looms forth threateningly from the sketch, need not carry terror with it. I insist that rough country should be a prominent feature on every course, but I am no believer in the matted rank grass variety, where



one of the new holes. Inasmuch as the corner of the swamp at Wernersville may be carried to a distinct advantage, it should be designated as an Elbow.

While the length is well within the command of a drive and a mid-iron or mashie, the player who declines to attempt the hazardous carry of the swamp will find it exceedingly difficult to reach

balls are rather sure to be lost, and vexatious, irritating delays occasioned. Like the instruments of torture from the days of the Inquisition, this form of rough belongs to golf of the past.

Rough country may be created to exact its penalty of one stroke without having the lost ball plague lurking within its borders.





## THE COLDWELL "THREESOME"

We call your particular attention to the features mentioned hereafter, as they are absolutely essential to a perfect machine of this type and are *found only in the Coldwell "Threesome."*

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**3**—The **Drive Wheels** have malleable hubs, steel spokes, wrought-iron rims and are made fast to shafts which turn on ball bearings inside the grease case. (All wear easily taken up from inside of case.)

**4**—**No springs are necessary** to keep the back roller from jumping up, as the Lawn Mowers are swung from the main frame by large friction surface hangers, which hold it down.

**5**—A single lever at the operator's right enables him to lift all three cutting knives free from the ground at once. It also permits him to throw out of gear all three revolving cutters without leaving his seat.

**6**—The weight of the super-structure and operator is evenly divided over the three Lawn Mowers. The combination of the carrying frame and a very simple draw rod mechanism makes one of the most desirable features of this machine, and it is this combination that makes absolutely positive the accurate position of the rear machine relative to the two front machines, insuring at all times, and under all conditions, the proper overlapping of the cuts. This valuable feature is found only in this machine.

*This style of machine* is designed for cutting wide swaths on grounds that are settled and dry, also where rolling and fine cutting are not the first consideration. On fine lawns where the turf is right and where pride is taken in having fine cutting and a beautiful velvety surface, free from horse marking, streaks, etc., there is only one type to use, that is the motor-driven Lawn Mower, which rolls the lawn every time it is cut. We make several varieties of this type, including both the "Walk" and "Ride" types, circulars of which we will be pleased to furnish on application.

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