

## TORO adds PUSH-BUTTON starting to the world's finest power mowers!

Now—after years of testing—an electric starter to match the well-known ruggedness of Toro heavy-duty mowing machinery!

A compact 6-volt battery packed with rechargeable power; a tiny, heavy-wound starter motor built for years of faithful service; a simplified, over-riding clutch starter-mechanism—that's all there is to it!

As optional equipment, you can have the ease of push-button starting on the Toro Park Special, the Toro Starlawn,

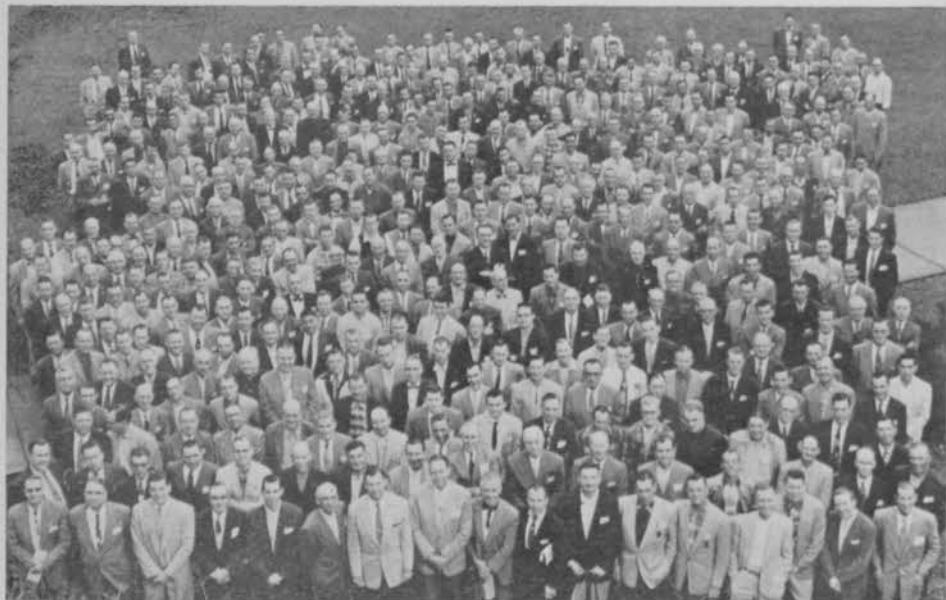
the 24 and 31 inch Toro Whirlwinds, and the mighty Toro Professional. It's even available (with a plug-in power supply of 110-volt current) on the new 20-inch Whirlwinds, the 21-inch Sportlawn and the revolutionary Toro Power Handle—the power unit that drives a whole family of standard Toro machines.

Your Toro distributor can give you complete information. See him soon!



**TORO MANUFACTURING CORP., Dept. G-46, Minneapolis 6, Minn.**

# Record Crowd at Purdue Turf Conference



Can you find yourself here? This is a view of the 485 turfmen who attended the Midwest Regional Conference held recently at Purdue University.

Nearly 500 turfmen, a record number, attended the annual Midwest Regional Turf Conference held at Purdue University, Mar. 5-7. More than 60 per cent of those attending were supts. or golf course representatives.

One of the highlights of the three day meeting, judging from interest manifested by those in attendance, was a speech by James Newman, Purdue agronomy professor, in which the turfmen were told how they could make wider use of long range weather forecasting in planning operations. This is an aspect of green-keeping that has been largely neglected, according to Newman, who suggested that supts. acquaint themselves with how weath-

er is manufactured and look into the possibilities of five-day, or longer, forecasts in order to help them in their work.

*Speech by Supt. Robert M. Williams, Beverly C.C., Chicago, at Midwest conference appears on page 74.*

Another feature of the conference which provoked a great deal of comment was the Zoysia nurseries which soon became the main attraction for many turfmen attending the conference. A great deal of information was sought and disseminated at the nurseries, according to W. H. Daniel, Purdue agronomist, conference chairman.

## Royal Canadian To Run Its Golf Day, June 9

Royal Canadian Golf Assn. will sponsor National Golf Day in Canada, June 9. The Canadians will play against the Fleck and Fay Crocker scores made at Oak Hill CC, Rochester, N.Y. that day.

The Canadian Golf Day revenue will go for junior golf promotion.

## Oklahoma Turfgrass Meeting

Disease Control was the main topic at the meeting of the Oklahoma Turfgrass Association held Mar. 12 at Southern Hills CC, Tulsa. Practically the entire session was devoted to outlining a disease control program for the year. A great deal of emphasis was put on the proper use of chemicals which can help the supt. in his fight against turfgrass diseases which are prevalent in Oklahoma.

## NEW BAG BOY FEATURES

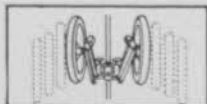
*from  
the  
tires  
up*



**1. Wide, Smooth Surface Tires** with almost double the tread, tends to float over turf.



**2. More Flexible Springs** makes Bag Boy pull easier—no club rattle either.



**3. Multiple Position Folding** allows wheels to be folded against bag without squeezing.



**4. Instantly Form-Fitting Brackets** adjust to any bag large or small—right now!



**5. New Flared Handle Grip** fits contour of hand, Bag Boy naturally follows. The relaxing way to pull.

## START SELLING **Bag Boys** TODAY

Bag Boy is the style and sales leader among golf carts, because Bag Boys *roll easily, handle easily* and give *trouble-free service*. Increase your profits. Start selling the famous Bag Boys\* today. Line includes Deluxe \$37.95, Special \$29.95, and folding Golf Seat \$11.95.

Write to Jarman-Williamson Co., 601 N.E. 28th Ave., Portland, Oregon, for name of nearest pro-distributor. Warehouses: Chicago, Illinois; Jersey City, New Jersey; Portland, Oregon.

\* Advertised in *Saturday Evening Post*, *Sports Illustrated*, and *Golf Digest*.

## OTHER BAG BOY FEATURES

- Folds in 6 seconds.
- Two sets of permanently lubricated ball bearings in each wheel.
- Light in weight, sturdy.
- Rustproof duraluminum.
- Cigarette holder.
- Identification crests on continental wheels.

## THE '56

# **Bag Boy**

- ★ *rolls easier*
- ★ *handles easier*
- ★ *gives trouble-free service*

# Fertilizer, Water Control To Keep Turf Healthy

By ROBERT M. WILLIAMS

Supt. Beverly Country Club, Chicago, Ill.

A report presented at the panel on fertilization and irrigation at Midwest Turf Conference, Purdue University.

THE part played by both fertilization and irrigation in keeping healthy turf is of such great proportion that my remarks are limited to more or less general conclusions.

The objective of our fertilizer program for tees, greens and fairways is to stimulate the grass plants to a degree that will produce maximum limits of tolerance for the following factors:



Robert M. Williams

1. Lengthen the golfing season as long as possible by extending the spring and fall growing periods.
2. Produce a turf that has a comparatively steady growth.
3. Maximum resistance to and recovery from damage of common enemies such as physical wear, disease, drought, insects and the like.
4. Control over mat and thatch development.
5. Appearance through color and density of the turf.
6. Minimum risk from burning the turf at the time of application or later.
7. Maintaining desirable levels of plant nutrients within the soil.
8. Lastly, but most important of all, playability that affords satisfaction for the majority of membership.

I believe that we would all agree that these objectives apply to your courses as well as to mine and to all areas on our courses.

The practices of fertilizer application vary considerably from area to area, course to course and from year to year due to changing conditions: Conditions such as type of grass, soils, weather, equipment and many others.

Our green and tee fertilizer program con-

sists of the total annual application of about 5 lbs. of nitrogen per 1,000 sq. ft., approximately 1 lb. of phosphorus per 1,000 sq. ft. and close to 2 lbs. of potash per 1,000 sq. ft.

## Change Fairway Program

Our fairway program of fertilization was changed last year. We started out last March with an application of 200 lbs. per acre of a half and half mixture of synthetic urea and white muriate of potash. The next application was activated sewage sludge at 600 lbs. per acre during the latter part of August. This gave us an annual total per 1,000 sq. ft. of approximately 2 lbs. of nitrogen, one-half lb. of phosphorus and 1½ lb. of potash. The application of urea and potash gave us a nice steady growth well up into July. The cost was about half of what we had been spending previously on ready mixed materials. Total bulk of the material was reduced from about 14 to 4 tons. The time of application was reduced from 24 to about 10 hours.

Now let us consider the closely related subject of irrigation. With irrigation, as in other practices, first of all what are the objectives? What are we trying to accomplish? My opinion is that we want to maintain a degree of soil moisture that will be most effective in sustaining the grass plant at the most practical level of general health. Here again, as with fertilizer, when we change the conditions of grass types, soil types, weather and many other factors, we must change our methods of practice in order to accomplish the same objectives.

## Concentrate on Soil Moisture

In the Chicago area, during adverse weather periods, soil moisture is the No. 1 consideration for maintenance of mixed poa annua and bent turf. The closer the degree of control over the soil moisture by the supt. the better results he will produce. By keeping a close watch over the soil moisture we have practically eliminated the loss of poa annua in putting greens. We still have had to sit by, though,

# NEW!

One shot is worth 10,000 words



*Sold through professional golf shops only*

## Walter Hagen proudly announces HAIG ULTRA-POWERED IRONS

Here is the most accurate and most powerful iron ever developed. All we ask is that you hit a few shots . . . to let your own hands discover its pin-line power.

We want to say only one other thing. This Ultra-Powered iron makes a magnificent final answer to your requests for a lighter iron with more "head feel." How did we do it?

We accomplished the major saving in weight by drilling out the hosel and inserting the shaft all the way through. Then we redistributed some of our "saved" weight throughout the blade. Thus we maintained desired swingweight in a substantially lighter iron . . . and gained a more potent blade as well.

What's more, we found the enormous strength of the new shaft-through-head union prevented head shimmy and ended vibration up the new, longer-tipped Rocket shaft. So we stepped up power, improved feel and gained accuracy, too!

Check with your Hagen salesman today. He'll be glad to let you "test-drive" these new Haig Ultra-Powered irons.

Haig  
  
Ultra

WALTER HAGEN,  
Division of Wilson  
Sporting Goods Co.,  
Grand Rapids, Michigan

## BOOK REVIEW

Golf Secrets of the Pros — By Larry Robinson. Published by Fawcett Publications, Greenwich, Conn. Price 75 cents.

Robinson, who's been close-up to star golf for many years as the New York World-Telegram Sun's golf reporter, has produced a highly interesting and helpful book in this profusely illustrated 148 page paperback book. Don't let the price fool you; there's a lot of fine stuff—type and pictures — in the book.

Pros who are subjects of the book's chapters are Snead, Middlecoff, Mangrum, Souchak, Armour, Stranahan, Bayer, De-Toski, Fleck, Littler and Jack Burke. Fleck, Littler and Jack Burke.

Among the informative pictures which pack the book are some of the GOLFING magazine special action series with the horizontal lines at knees, hips and shoulders and the vertical line through the center of the body; the pictorial treatment which has made it easier for the average golfer to read and understand golf pictures as his pro is using them for his instruction.

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recognized that turf was a part of agriculture. The fact that he did something about it eloquently is told in the mere listing of some of his agronomy students who have made significant contributions in the turfgrass world:

Dr. Howard B. Sprague, Dr. Burton H. Kiltz, Dr. Fred V. Grau, Dr. Glenn W. Burton, Dr. G. O. Mott, Gordon Jones, Dr. Ralph H. Engel, Dr. John Bengston, Dr. Willis Skrdla, Don Likes.

One could go on to name many more of his students who have reached the pinnacle in their professions — in genetics, in soil conservation, in range management, in pasture management, to name a few.

### Seeks Retired Superintendents

Art Snyder, who is running the Turfgrass Farm, 4961 E. 22d st., Tuscon, Ariz., is looking for some retired golf course superintendents who could supervise large plantings of Meyer Z-52 zoysia for three to five weeks. If you know any such men have them write Art.

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### Club Managers

Turn to page 126 — and make sure your active operating heads receive GOLFDOM in 1956.

and watch poa go out in fairway areas because of a lack of moisture control in these areas anywhere near that of the greens. Our green watering program during mid-season generally calls for the watering of the greens about every other night and sometimes every night, for periods varying from 15 minutes to 1 hour. One can readily see then that this sort of control has been out of the question on larger fairway areas because of the limitations of water systems.

At Beverly we are meeting this problem by installation of additional pumping facilities that will allow us to use approximately 1400 gals. per minute compared to the former 450 that has been more or less standard in the past. This simply means that we will have the capacity to water all tees, greens and fairways during one night if we so desire. And many is the time when poa annua starts turning blue with wilt that we say, "If that turf doesn't get water tonight, or sooner, it will be gone by tomorrow." At the same time we know that our water system will only allow for watering of perhaps 6 fairways and the rest will have to wait for one or two days more.

After we achieve moisture control through irrigation, drainage and aeration our last obstacle to maintenance of close cut bent and poa annua fairways is disease control of these larger areas.

To summarize, I believe it may be simply put: through controlled moderation of fertility and moisture we can expect turfgrass to be more resistant, more tolerant, healthier and more usable than ever before.

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### Dr. Frank Keim, Turfgrass Leading Teacher, Dies

THE sudden death of Dr. Frank D. Keim in Washington, D.C., on March 15, 1956 marked the passing of one of the greatest friends turfgrass people ever had. His name and his fame though little known in turfgrass circles, has been carried to the ends of the earth by his loyal students in agronomy from the University of Nebraska. Dr. Keim, the teacher, gave so much of himself to his hundreds of students, that they multiplied his gospel a thousandfold. He gave inspiration to his students, to his staff, and to everyone who knew him.

Dr. Keim was one of the first administrators at a great land-grant institution who

**Borden's 38**  
FERTILIZER COMPOUND  
ideal for turf and ornamentals

One application is recommended during a regular and uniform cycle of nitrogen throughout the entire growing season.

- SLOW RELEASE
- WON'T CAKE
- WON'T BURN

**GUARANTEED ANALYSIS**  
NITROGEN 38%  
PHOSPHORUS 18%  
POTASSIUM 18%

**GOLFERS** will quickly appreciate the top condition of greens maintained with Borden's 38. Because its slow-release nitrogen develops the deep root structure needed to reach vital low-level moisture, Borden's 38 also guards against "sun scorch" despite dry spells.

**REVOLUTIONARY NEW NITROGEN FERTILIZER FROM BORDEN—**

# Feed Just Once (at any time) For a Year's Supply!

► **Won't burn—even in summertime — when used as recommended**

► **Releases nitrogen steadily during the entire growing season**

► **Easy to handle, clean, odorless**

► **Ideal for greens, fairways, shrubs, plants**

Greenskeepers everywhere can benefit greatly from new BORDEN'S 38, for this revolutionary slow-release nitrogen fertilizer means better, safer, less troublesome feeding of turfgrass, plants, and flowers.

BORDEN'S 38 enables you to lay down a full season's nitrogen supply in one application. You can apply even during hot weather without fear that it will burn your turfgrass. Tests prove that even three times the normal application rate won't burn. You can apply it direct, or mix it with your topsoil dressing.

BORDEN'S 38 also gives you important savings. It is not water-soluble . . . won't leach or wash away, which means that you save on replacement. You save on storage space. You save time and labor, because fewer applications are needed . . . even in tropical or subtropical areas where it may be necessary to feed twice a year.

Now's the time to order *your* BORDEN'S 38.

Write today for literature and name of your nearest dealer.

**THE Borden COMPANY**

CHEMICAL DIVISION 350 Madison Ave., New York 17, N. Y.



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# The ASSISTANTS' DEPARTMENT

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## Fraser Lists Essentials of Assistant's Training

Leo Fraser, who has come up in golf business through the shop and lesson tee to the presidency of the very successful Atlantic City (N.J.) CC, tells what he considers identifies the good assistant.

First, says Fraser, is loyalty to the nth degree.

The other specifications he doesn't claim to arrange in order of importance because, he says, all of them are equally important.

The assistant should dutifully follow the head professional's policy of operation;

Continue his education along golf lines as well as in allied business matters to include merchandising and planned salesmanship;

Improve his teaching technique;

Be affable and neat;

Handle the professional's money as if it were his own;

Be prompt for all appointments;

Give service;

Open the shop at the appointed time;

See that all repairs and special orders are expeditiously handled;

See that the shop is neat and clean.

### Pro's Duties to Assistant

Fraser emphasizes that loyalty in a pro department must work both ways. The pro must think of his assistant's interest, progress, happiness and prosperity.

The choice of an assistant is something that often isn't given enough attention, Fraser notes. When the pro does get the right young man the pro should:

Start the first day the assistant is on the job to mould the man in such a manner that the finished product some day will be a Class A professional and a credit to the game.

Help by frequent discussion and observation in a way that solidly improves the assistant's teaching technique;

Acquaint the assistant with the funda-

mental ethics of the profession as set forth in the PGA's Code of Ethics;

Recognize the assistant's achievements, encourage him, help him and give him time for playing golf;

Give him definite responsibilities;

Make the assistant's job worthwhile fi-

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### QUESTIONS & ANSWERS

*If you've got some question concerning assistants' training and progress, send them to GOLFDOM, 407 S. Dearborn, Chicago 5, Ill., and we will try to get the right answer from other pros and assistants.*

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nancially. Some professionals give bonuses for excellent work, others give a percentage of the profits, some a percentage of the carts;

Not permit the assistant to gamble for high stakes or to drink with members;

Allow him to play in a certain number of tournaments if the assistant is inclined to be a good golfer and time away from club duties possibly can be arranged;

Instill in the assistant the importance of public relations;

And most certainly impress upon the assistant the importance of creating a desire for people to play golf.

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### Turf Meet at Charleston, W. Va., April 23

An all-day turfgrass meeting is scheduled for April 23 at the Edgewood CC, Charleston, W. Va. Malcolm W. Butterfield, Gen. Manager, Edgewood CC; Stanley Zontek, Supt., White Oak CC, Oak Hill, W. Va.; and Charles K. Hollowell, Mid-Atlantic Director, USGA, Green Section, are arranging the program.

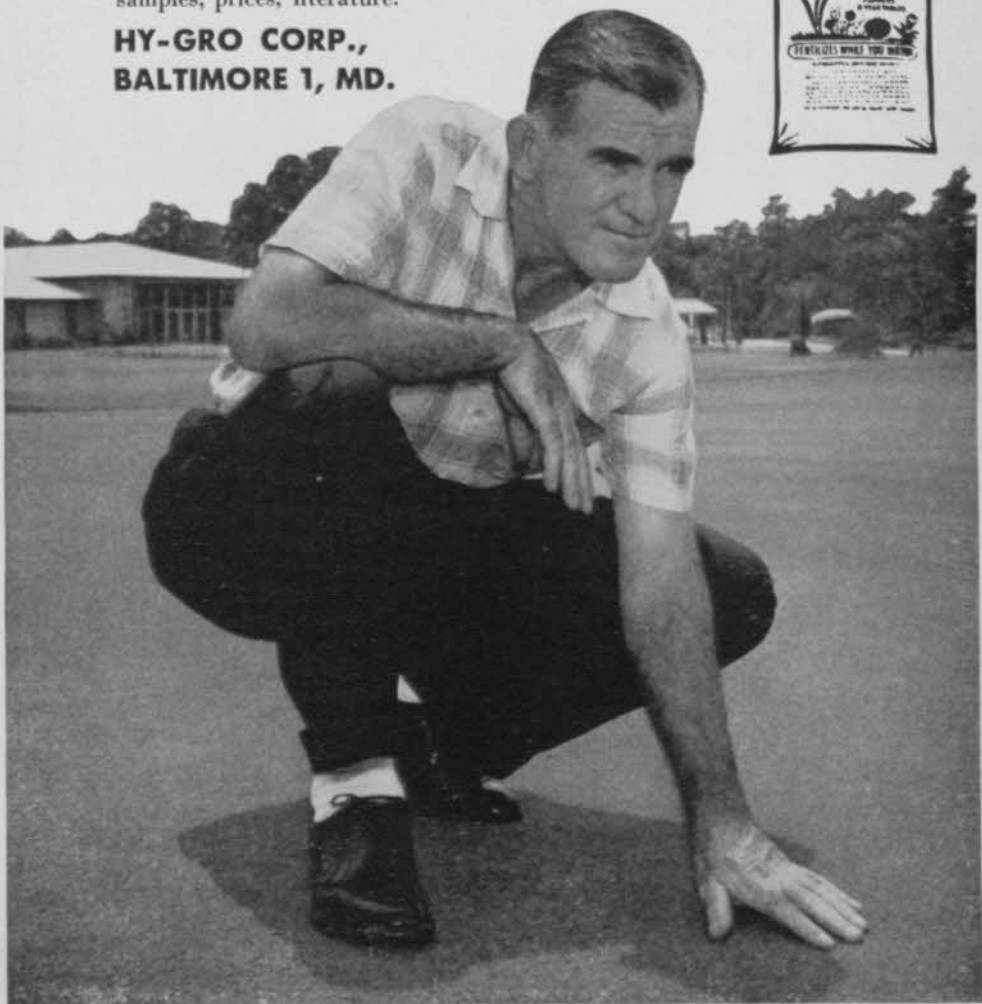


# PAT DEAVY STANDS PAT on HY-GRO Soluble Plant Food!

Popular Grounds and Greens Sup't of Beauclerc Country Club, Jacksonville, tells how he built beautiful course—from woods—in under 2 years!

"Using HY-GRO Soluble Fertilizer on our greens at ratio of 1 pound to 20 gals. of water to 1000 sq. ft. and applying every 10 days, we've made and maintained the finest turf a golfer could play on. HY-GRO is really fine, and won't burn if applied at the above rate. I've tried most of the brands. Where I used HY-GRO, I got best results." Do you have turf problems? Put HY-GRO to work. Write for samples, prices, literature.

**HY-GRO CORP.,  
BALTIMORE 1, MD.**



# Grau Answers Turfgrass Questions

From many courses Dr. Fred V. Grau gets and answers the problems handled in this monthly department of GOLFDOM. Superintendents and club officials can avail themselves of this service without charge or obligation. Address your question to Grau Queries, GOLFDOM, 407 S. Dearborn, Chicago 5, Ill.

**L**AST month we discussed "principles" and their importance in everything we do. Every one should learn the same basic

## Principles Are Important

principles for whatever work they do, but what a variety of results different people achieve from the same starting point! Principles do not restrict imagination; rather they are the foundation from which all of us may build successfully.

In the construction of golf courses every architect should follow the same basic principles for proper construction. Yet, from the same beginnings, human imagination creates the individual differences and characteristics which distinguish the work of various designers.

There are basic principles to be followed in planting greens. Learn these principles and then adapt them to meet your conditions. First of all, a successful green is dependent upon a good base. This means adequate drainage, with subgrade contoured to avoid pockets that hold water.

A good soil mixture and a sufficient depth of soil are basic principles. There should be a minimum of 12 in. of coarse, sandy loam placed over subgrade, topped by 6 in. prepared material containing 60 to 80 percent sand, 6 to 8 percent clay, 12 to 15 percent organic matter, all by volume. Mixing should be done off the site and prepared material hauled to the green. Mixing of materials in place by tilling has not been wholly successful.

The proper soil pH is a basic principle. To the material for the top 6 ins., should be added dolomitic limestone (if needed) to bring soil to a pH value of 6.5 to 7.0.

Adequate fertility is another basic requirement. Fertilizer may be blended into the topping along with limestone. Use

10-10-10 (or equivalent) at 50 lbs. to each 1,000 sq. ft.

An adapted grass is a fundamental consideration. Choose a grass that has proved itself in your area; preferably one you have tried in your nursery under your management. Choose the best possible grass, which usually means one of the improved strains of bent or bermuda.

The proper amount of planting material (or seed) is basic. With the exception of Penncross bent, all the improved strains are planted from stolons. From here on our discussion will relate to principles for planting and establishing stolons.

A minimum of 5 bu. of stolons to 1,000 sq. ft. is required. Use 10 bu. to 1,000 sq. ft. for rapid coverage.

Spread stolons evenly and don't smother them under a heavy topdressing. This is basic procedure. One method of doing this is to scatter the stolons evenly ahead of a rolled steel doormat, unrolling the mat as grass is spread. When the mat is fully unrolled, scatter sandy topdressing over it lightly to cover about half of the grass. This will require about  $\frac{1}{2}$  to  $\frac{3}{4}$  cu. yd. of topdressing to each 1,000 sq. ft. After topdressing is applied, roll the mat and move to the next location.

Firming the seedbed is another basic principle. Roll topdressed stolons with water-ballast roller completely filled.

Do not allow the stolons to dry out. That is a basic principle. Start watering at once, gently, but don't flood. Water lightly and frequently so that grass stays moist. On dry days sprinkling may be needed every hour or two.

Proper mowing is basic. Start mowing at  $\frac{3}{8}$  in. as soon as there is anything to mow. It is a great mistake to let grass get tall and matted before starting to mow. Do not use a grass catcher for the first several mowings.