

## HOW BLOCK SIGNALS WORK

Operation of Ingenious System That Insures the Safety of Railroad Passengers.

Comparatively few people know just what is meant by block signals when they read that a railroad has established the system on its lines. The block is a length of track which, on double track roads, has at its entrance a post and movable arm, and on single track lines one at each end. To say that a line has every inch protected by this system means that the entire line is divided into consecutive blocks. Only one line from Chicago to New York is thus protected, and of the total in the United States, one-third is on the Union and Southern Pacific.

The operation of the block system is simple but absolute. In a few words, it means that a train cannot move from one block into the next until the latter block is empty. As a train moves forward, the signal arm is set to show that the block just left may be entered by the next train following.

When a train enters a block it so affects the energy that is a part of signaling that the semaphore arm remains horizontal until the block is vacated, when the arm automatically drops and points diagonally toward the ground. Therefore, as long as the engineer sees only drooping signals he can keep on going, but the instant he finds the arm stretching out over the track, he must come to a stop, knowing that that block is occupied by another train.

The energy mentioned above is electricity, the current being obtained from a battery near each post. The rails of each block are made as if all of one piece by connecting the joints with wire. The extreme ends are then connected and thus a circuit is formed in which the current flows. When no train is in the block, the mechanism operated by the current pulls the arm down and holds it there. When a train enters the block the wheels and axles, combined with the rails, form a shorter circuit, the energy that held the arm down is withdrawn and up it swings to a horizontal position.

Each block is independent of all other blocks. When the last wheels of a train leave it, the current resumes its flow and the signal arm at the entrance is pulled down to the "proceed" position. But before the hind wheels have finished doing this, the front wheels of the locomotive have entered the next block and caused the arm there to rise to the "stop."

For a single track line the automatic arrangement is the same, but there is a signal at each end of the block. To prevent two trains on a single track line entering a block at the same time from opposite ends, before the entrance to a single track block is reached the train sets a stop signal at the far end of that block, and as it enters it sets the entrance signal to stop just as is done on double track. Half a mile or more before reaching the entrance signal of each block the engineer comes to what is called the "distant," which tells him how the other or "home" signal is set.

As the automatic signal is constructed, it cannot show "go ahead" unless the entire combination of rails, wire, current, magnet, etc., is working perfectly. If a wire parts, a rail breaks, a battery fails, a switch point opens the slightest, the combination fails and the released arm resumes the horizontal position. So, when the engineer sees the stop signal, he knows that there may be a train on the block, an open switch, or a broken rail or signaling apparatus.

At night colored lights are displayed on the same posts. The lamps will burn eight days without replenishing, but are refilled every four or five days. When the home signal is at stop, the engineer sees the flame through a red glass. The caution light on the distant is yellow. A green light means go ahead and is used on both the home and distant signals.

Where two or more lines cross at grade the general plan of semaphore arms for day and colored light for night is the same, but owing to the complications all signals are controlled by levers operated by men from a central station. The crossing and contiguous tracks are governed by the interlocking system. When this is in perfect order and the crossing uncoupled, it displays "stop" to every track approaching the crossing. Any change must be made by the signalman, and to display "proceed" he must first lock all other approaches with the stop signal.

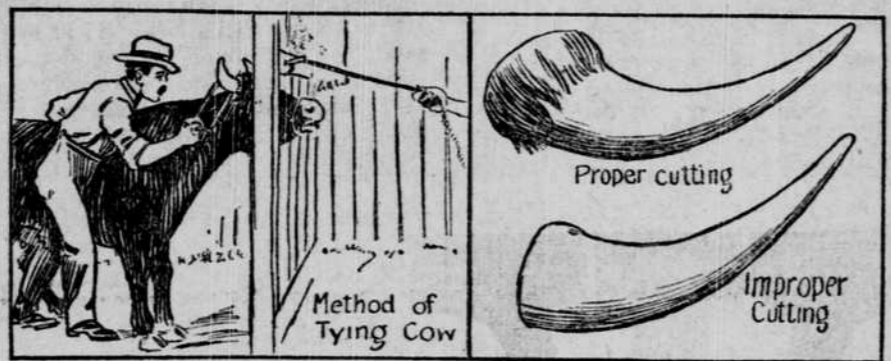
There are now about 11,000 miles of railway equipped with the block system. The only line thus protected every inch from Chicago to California is via the Northwestern, Union and Southern Pacific. One-third of the 11,000 miles of automatic signaling is on the Harriman lines—and the Northwestern has more miles of double track automatic than any other railway.

**Quite a Shock.**  
Bridegroom (expectantly)—Now, my dear father-in-law, I wish to say just a word about my debts—Father-in-law (slapping him on the back)—Did you say debts? Why, my boy, I'll bet my debts exceed yours three to one!—Flegende Blaetter.

**The Producer.**  
"Does your husband play cards for money?" "Judging from practical results," answered young Mrs. Torkins, "I should say not. But all the other men in the game do."

## DEHORNING OF CATTLE IS EASILY PERFORMED

Satisfactorily Done Without Other Apparatus or Instruments Than Strong Clothes-Line and a Sharp Meat Saw.



Method of Dehorning.

The dehorning of cattle can be very satisfactorily performed without other apparatus or instruments than a good strong clothesline and a sharp meat saw, or miter saw with a rigid back. The method of controlling the animal with the clothesline is shown in one of the illustrations. The heavy line is passed around the upper part of the neck and tied in a knot that will not slip, otherwise it will choke the animal. The free end of the rope is carried between the horns, through the stanchion to the front, up over the horizontal stanchion rail, then down underneath the neck and up over the top of the stanchion rail to an assistant, who should hold it firmly. The stanchion is then opened, allowing the animal to withdraw its head, and the rope held tightly is passed once around the muzzle, up over the stanchion rail and through to the front again to the hands of the assistant. This effectually restrains the animal and the dehorning operation can be commenced. If the stanchion rail is too wide to permit of properly securing the lower part as well as the upper part of the animal's head, the turn

of the rope round the muzzle may be omitted and the last lap of the rope carried around the stanchion rail to the front and to the hands of the assistant. Care should be taken that the rope pass each time over the neck of the animal between the horns in such a way as not to interfere with the work of the saw. The rope must be held by an assistant instead of being tied, so that should the animal throw itself off its feet during the operation it can be promptly slackened. This, however, is rarely necessary, for as soon as the head is secured, the operator should be ready, standing at the right shoulder of the animal, to saw off first the right and then the left horn.

The horn should be severed from a quarter to half an inch below where the skin joins the base of the horn, cutting from the back toward the front. If the cut is made too high, an irregular, gnarly growth of horn is very apt to follow.

The worry, pain and cruelty often inflicted by cattle upon their mates before being deprived of their horns is much more to be considered than the pain of the dehorning operation.

## WEEDS SHOW SOIL FERTILITY

Cause the Farmers Greater Loss Than Any Other Factor by Reducing Yields—By Harry Snyder.

The weed crop indicates the condition of the soil as to fertility and previous methods of farming, and is indeed an index of the farming that has been practiced. Where grain crops have been grown extensively weeds, as mustard and wild oats, take such firm possession of the land as to seriously decrease both the yield and quality of the grain. Where crops have been rotated and the conditions have been less favorable for the development of weeds, larger yields have been secured.

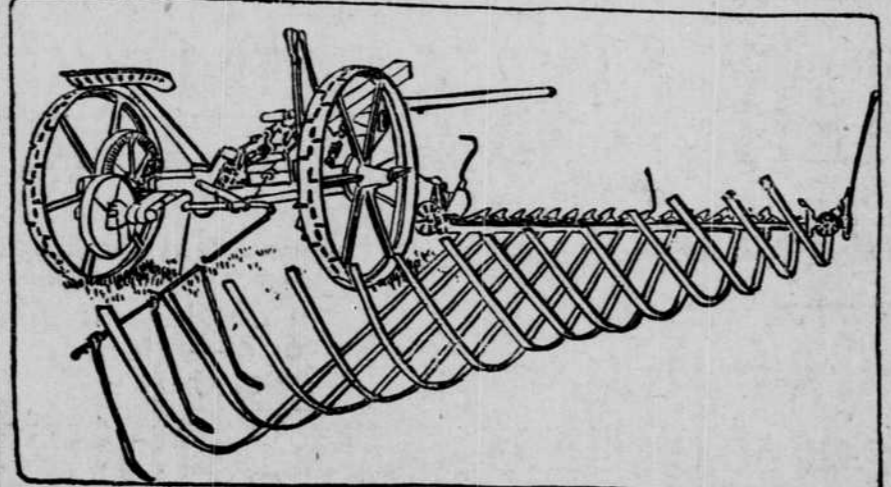
Weeds take from the soil a much larger amount of fertility than is generally conceded. A light grain crop and a heavier weed crop remove from the soil more fertility than a heavy grain crop. The stronger feeding powers of weeds enable them to secure from the soil plant food which would otherwise go to the support of grain crops, the weak feeding cereals being unable to compete with the strong feeding weeds. The best use that can be made of a weed crop, is to plow it under for green manure and make it

produce humus, of which many of our soils stand much in need. In this way weeds can be made to add fertility to the land through the indirect action of the vegetable matter upon the soil.

At the Minnesota experiment station analyses have been made of many of the more common weeds and it was shown that in some grain fields from 20 to 40 pounds and more of nitrogen, 15 to 25 pounds of phosphoric acid and 30 to 50 pounds of potash had been removed from an acre of land by the weeds. This is as much as is removed in a grain crop. The production of weeds is a heavier draft upon the land than the production of heavy grain crops. A weedy farm will get out of condition and run down in fertility faster than a farm that is thoroughly cultivated and upon which large crops are produced.

**How to Feed Young Pigs.**  
Young pigs should be fed regularly several times a day. Keep their troughs sweet and clean, and be particular not to overfeed them. Feed all they will eat up clean within ten minutes. Feed a ration that will grow and develop frame, muscle, bone and a healthy body, without an excess of fat. You will find the by-products of the dairy, orchard, garden and kitchen, with a small addition of wheat middlings, ground wheat or barley, or any food of similar character is what will be required to produce a foundation for future usefulness.

## BUNCHING AND LAYING CLOVER



A Clover Buncher.

Clover seed will be a high, light crop this year owing to the dry weather. Good heavy seed will be scarce and high in price next year. Those having a good stand of clover that will yield one bushel of seed to the acre would do well to save it. One hundred pounds of plaster spread to the acre will be a help in increasing the growth of the clover. Those having a mowing machine and a reaper platform can easily and cheaply save the seed. A light platform of sheet iron may be made to fit the mower. Bolt the platform to the cutter bar, letting the rear end drag on the ground. A man should walk behind the mower with rake to draw the clover on the platform and when full it is pulled off into windrows.

If there is a large growth of clover and little seed, cut when seed is hard and cure as for hay.

The illustration shows a finger-like attachment for bunching and laying the clover out of the way of the horses.

**Ventilating Stables.**  
Horses and cows are in the stable at night or rest. When the weather is warm the atmosphere in close confinement becomes very warm and oppressive, so much so that the animals become very uncomfortable and hence fail to get proper rest. The horse that does not get proper rest is not in a good condition for heavy work the following day, and the cow that does not sleep in a cool, restful place in hot weather will not give a full flow of milk. The temperature of the working or producing animal must be kept normal to give the best results. If there are no windows in your stables, cut out a number now and let light and fresh air come for the health and comfort of the animals.

**Sheep Need Good Care in Fall.**  
If the sheep are left out in the chilly fall rains, coughs and colds may result.

Many an otherwise good shepherd forgets that his sheep relish salt in winter the same as in any other season. Some of the older sheep, and

retain part of the choice lambs for the improvement of your own flock. The best in your flock will be none too good. A poor sheep is as difficult to shape up and fatten as any other poor farm animal. Furnish plenty of proper rations and start the sheep through the winter in good shape. It will pay.

**Feed for Ewes.**  
Oats make a very desirable grain feed for the breeding ewes. After lambing time, an ear of shelled corn may be added to a pint of oats, fed daily. When feeding oats, scatter well over the bottom of the troughs, so the sheep cannot get too much in their mouths at a time. This prevents choking, and insures thorough mastication.

**Sheep on Farm.**  
Farming conditions would be improved if more sheep were kept, as they help to exterminate weeds. But dogs and other objectionable features appear to have driven sheep from most of our farms.

## ADVISES THE BOYS

John D. Rockefeller Tells How to Get a Job.

First, Acquire a Reputation, Then Work Hard, Oil King Tells a Sunday School Class in Cleveland.

Cleveland, O.—You've got to have a reputation before you can get a job and you'll have to work to hold it—that, in brief, is the philosophy of business success held by John D. Rockefeller. He told the children of the Euclid Avenue Baptist church Sunday school recently that a boy doesn't have to be smart to hold a position. All he has to do is to work as hard when the employer is away as when he is present.

He said his first employer investigated his character before hiring him. Mr. Rockefeller was requested to say a few words to the children. He said he was very much pleased with a plan Rev. W. W. Bustard announced by which the different children's committees were to be rewarded for the work they did in obtaining more pupils and raising money.

"It was on September 26, 54 years ago, that I obtained my first position. I was then a boy, like some of you, and the trouble I encountered always makes me remember it. I had made many applications for work, and on that morning I found a place where there was just a little ray of hope. I was told to return after luncheon and they would let me know.

"A few years ago an old gentleman was here. He knew me as a child and had been requested by my employer to tell what he knew of me. I don't say he was the only one they inquired of, but they found out what they wanted to know about me, the same as they do about boys now. Remember, when you are looking for a position, employers will inquire of your acquaintances, especially your pastor and teachers, and so you can see that it is not only proper but profitable to be honest.

"A boy does not of necessity have to be smart in order to hold a position. He must be honest, diligent and sober, and when he is that he will do things as well when no one is looking as when he is being watched. A good many boys and young men obtain good positions but do not hold



Rockefeller's Boyhood Home.

them. Why? They never do their work thoroughly, and set the employer to doing the work they are paid to do. Remember, boys, that is no way to begin."

Mr. Rockefeller's boyhood days were spent on a farm in Cayuga county, New York. The house in which he lived still stands and was visited by the oil king the last time in 1902. During the day the visitor was discussed in every gathering place from the milk station to the postoffice. Then to add to this fact that some sophisticated individual thought he overheard the aged Mr. Rockefeller tip off a party to purchase United States Steel. He promptly traveled about town tipping off natives. The result was that within a few days farmers with plump wads, village officials, school teachers, farm hands, bus drivers, etc., swamped Auburn and Syracuse brokers with orders to buy Steel common.

It was down about 40 at that time, and it looked good to everybody for a big jump just as soon as Mr. Rockefeller got back into the midst of affairs in the metropolis again. But the expected did not happen. United States Steel declined and when it got down in the 30's the holders began to let go.

Tom Lawson's effusions reached Moravia and more stock was cut loose. Only a few hung on and to-day they are happy.

**Could Not Meet in Russia.**  
A member of the dentists' congress recently held in Berlin writes: "Our plans as to St. Petersburg for the gathering in 1914 failed. Not because there was any objection to the city, but because some of the men who might be delegates would either not be admitted or if allowed to enter the city would be uncomfortable while there. Russia is queer about acceding rights of residence to former citizens and to people of certain religious views, and having this in mind London was agreed upon as the next meeting place."

**Japanese Wood for Sleepers.**  
The Atchison railroad is about to experiment at Great Bend, Kan., with cocobolo and Japanese oak as material for sleepers. The wood is so hard that it is almost impossible to drive spikes into it, and screw spikes in lodged holes will be used. It is expected that the sleepers will last from 25 to 30 years. They cost a trifle more than the American oak delivered in California. The reason for experimenting with them is that native oak is becoming scarce, and it is deemed wise to look in time for a substitute.

**Jealousy.**  
"May's new hat is perfectly hideous."  
"It isn't a bit more hideous than mine. You're always saying nice things about May."

## Pretty Tea Gowns



The gown on the left is a charming model of white Ninon and a quantity of white lace. The gown is made up over a closely fitted slip of pale pink satin. A large rose trims the bodice at the front, and there are touches of pale rose velvet ribbon here and there. The gown on the right is a pale green satin, with lace overdress.

## IN FASHION'S LATEST WHIM ALL HAVE THREAD OF BLACK

Kingsome Gown That Would Make Up Handsomely in a Dove Gray Cashmere.

Dove gray cashmere would make up charmingly in this style; a panel is made from shoulders to hem in front, and at the back it is continued as far as the yoke, which is arranged at the top of sides of skirt; the lower part of skirt is plaited and set to yoke, the plaits being stitched down about six inches. Russia braid put on in a

Season's Materials Marked with This Peculiar and Extremely Effective Touch.

One of the odd and effective touches of the season materials is to weave a heavy thread of black through everything. This idea is evolved from homespun, the imported variety that has that flickering black or gray thread playing hide and seek over the surface.

The new dull red basket cloth, which is the color of grapes, and is to be quite fashionable, has this thread of black looping in and out of the weave. Smart top coats for autumn wear outside of the city are of white cloth, with a black thread through it.

A suit or coat of this rough cloth with a black thread is naturally trimmed in black. It looks as though we were coming in for a big season of black—hats, gowns, wraps and accessories.

One hears more of the all black gown in the dressmaking houses than for years past. It is not now advised for economy's sake, but for fashion. All materials contribute to it. It is to be worn for the street, for the house, and quite a good bit for the evening. There is no hint of color being combined with it, but always a touch of white.

Smart house gowns of black have yoke and sleeves of pin-tucked white tulle and then touches of faceted felt. The top coat of black in fur moire or cloth is highly fashionable and the epidemic of black hats is in full sway.

Conservative women feel they are getting their feet on firm ground again when black and white is in first style. They have been pretty much buffeted by sartorial breakers recently and they are quite relieved to be safe again.



When heavy Russian crash, such as is now used for portieres, is too narrow in width, don't be dissuaded from the use of this beautiful colorless material, but just overcast its width to gather after the manner of the Bagdad portiere. You will find no hangings more effective for studio and library use than those soft-toned crash, and the heavy linen overcasting down each seam will render them even more attractive. To do the overcasting use the coarsest of carpet thread or a flax that is sold in skeins.

**Canadian Work.**  
Flax cloth is a curious homespun made in Canada by the women of the country districts. Their city cousins have converted it into attractive fancy pieces for household decoration. It is darned with a fleecy wool for bedspreads, tablecovers and hangings

worker. The mother who never tells her child that her work is nice, but who ever reminds her that it is no more than is expected of her, is not following the right method.

**The Despised Flannel Skirt.**  
It is actually worn again. It is fitted as carefully as a princess frock. It is warranted not to "bunch." The latest is a silk skirt lined with flannel. This gives warmth, and keeps the flannel from riding up when rubbed against an outer skirt. The plain flannel skirt is often made with a carefully fitted hip yoke. Again it is completely circular, fit over the hips and with fullness around the knees. The most usual finish around the bottom is scallops, heavily padded and worked in buttonhole stitch, or crocheted lace. The evening gown with the round neck and short mousquetaire sleeves will be popular. Ribbons have been coming gradually in fashion again.

## A MATTER OF GEOGRAPHY.



"We are now exactly 1,000 feet above the level of the sea."  
"What sea?"  
"The guide-book doesn't say."

**Refuted.**  
"Just think of it! One person in every 37 in England is a pauper!"  
"Why, John," she returned, "it isn't so. I met more than 37 people in London last summer, and there wasn't a pauper in the lot!"

## Nebraska Directory

If you wish to be Cured of Constipation Use

## Uncle Sam Breakfast Food

A delightful food made from wheat and flax—nature's own remedy.

Ask your grocer He Certainly Knows

Do you want the Best Corn Sheller made? If so, write for catalog and price list to: **MARSELLES CORN SHELLER**, JOHN DEERE PLOW CO., OMAHA

**TYPENITERS** ALL MAKES. It is by far the most perfect typewriter. It is simple, reliable, and easy to use. Write for the big bargain list and catalogue. **W. F. Anderson Co., 427 West 10th St., Omaha.**

**Taft's Dental Rooms**, 1517 Douglas St., OMAHA, NEB. Reliable Dentistry at Moderate Prices.

**WELDING** (auto gen) by this process all broken parts of machinery made good as new. Welds cast iron, cast steel, aluminum, copper, brass or any other metal. Expert automobile repairing. **BERTSCHY MOTER CO., Council Bluffs.**

**WANTED** Experienced Salesman to sell fine line advertising calendars, wall maps, pocket knives, pens, pencils, pocketbooks, memo's, mail and clothing in general. Good pay. Write for particulars. **Lincoln Novelty Advertising Co., 1209 S. 1st, Lincoln, Neb.**

The Roof with the Lip. All Nail Heads Protected. **CAREY'S ROOFING**, Mail and Fire Resisting. Ask your dealer or **SUNDERLAND ROOFING & SUPPLY CO.**, Omaha, Neb.

**RUPTURE** Of all varieties cured in a few days without a surgical operation or detention from business. No pay will be accepted until the patient is completely satisfied. Write or call on **FRANK H. WRAY, M. D.**, Room 305 Bee Bldg., Omaha, Neb.

Send for our new 25-page catalog. "The City of Cleanliness." It will tell you the possibilities of **CLEANING AND DYEING**. Ribbons, gloves, furs, neckties, plumes, corsets, slippers, skirts, jackets, waists, flags, vells, overcoats, angora rugs, bath robes, mattresses, blankets, pillows, silk underwear, parasols, leather boots, uniforms, lodge paraphernalia, billiard table covers, lace bedspreads, muslin, fur rugs and mountings, sweaters, coats, lace curtains, fancy vests, fancy work, stand covers, carriage robes, party dresses, opera coats, lace curtains, fancy vests, shawls, lingerie, men's suits, cushions, bear and tiger mats, sashes and hangers, and other things. We have the largest cleaning and dyeing establishment in the West. 10,000 feet of floor space; capacity, 5,000 garments per day. Members, National Association of Cleaners and Dyers. Expressage paid one way to any point in U. S., Kan. or Wis. **J. C. WOOD & CO.**, 1322 N. Street, Lincoln, Nebraska. 1521 Howard Street, Omaha, Nebraska.

**DOCTORS** **Searles & Searles** Specialists for **MEN AND WOMEN** Established in Omaha 25 Years. **14th & Douglas Sts., Dept. A, OMAHA**

## STEEL WOOL SOLE RUBBERS

**Boots and Arctics** Best Made. **Prices the Same**. **AMERICAN HAND SEWED SHOE CO.** Ask your Dealer for Goods with this brand.

**American Hand-Sewed Shoe Co. OMAHA**

**\$20,000.00 FREE IN PIANOS & ORGANS**. Are you going to buy a Piano or Organ? If so, buy from The Bennett Company, Omaha. The Largest Dealer of Pianos and Organs in the West and help you. **SCHOOL, CHURCH, LODGE OR SOCIETY** secure one **FREE** \$20,000 WORTH OF PIANOS, ORGANS and Piano Players given away absolutely free by The Bennett Company. Write now for particulars and if interested secure one of their great Piano books showing clearly the difference between the piano to select from. Pianos shipped everywhere. Sold on easy payments. **The Bennett Company, Omaha**