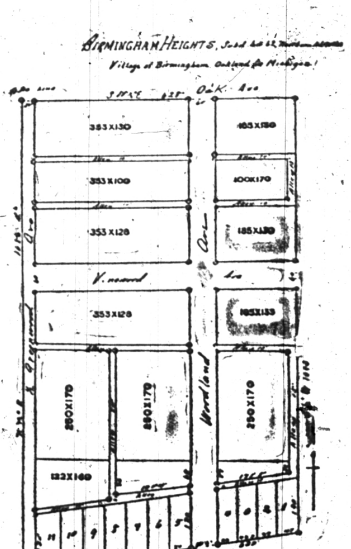
HOME SITES!

If you are planning a Country Home, convenient to the City, let us call your attention to one of the best locations for this purpose between Detroit and Bloomfield Hills. Our new

Birmingham Heights



Subdivision!

Is right in the popular and fashionable district, only a block from Woodward Avenue, with 15-minute electric car service, 10-cent fare, and half an hour ride to city limits.

City Water, Cement Walks, Electric Light, Good Drainage, 600 feet above the Detroit River, and altogether ideal sanitary conditions.

Consider the rapid rise in Birmingham real-estate values for the past three years; no feverish boom, but a steady, reliable increase in values, due to the building of beautiful homes for the better class of home folks. Let us tell you about our easy terms and small payments—then make an investment. You cannot lose.

Short distance from the select private school—Bloomfield Hills Seminary—becoming popular among particular people.

Twelve large building sites, varying in size from 100x169 feet to 250x338 feet; soil a gravelly loam, fine for gardening, just what will appeal to you. Larger than a Village Lot, but small enough to dispense with the services of a care-taker.

Only 12 miles from the Detroit City Limits.

Restricted to Residences.

Numerous Beautiful homes have been built in the immediate vicinity during the past year.

Write us or call for terms and prices.

Whitehead & Mitchell

Birmingham Michigan

New Ideas for Handy Boys

By A. NEELY HALL

Author of "Handicraft for Handy Boys," "The Boy Craftsman," etc.

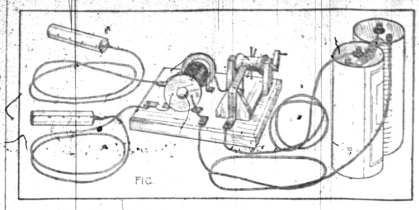


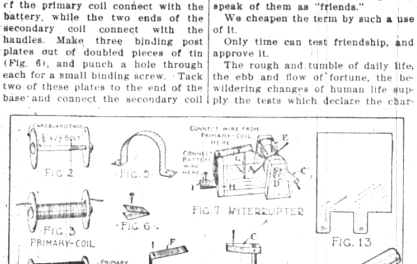
FIG.

A TOY SHOCKING COIL.

The little shocking machine shown in Fig. 1 is a harmless toy with which you can have an endless amount of fun when entertaining friends. It consists of an an induction coil, an interrupter, a pair of handles, and a wet or dry battery. All of these parts are easy for a boy to construct and connect together.

The first part made is the induction coil, which is shown in detail in Figs. 2, 3 and 4. The coil has windings of two sizes of wire upon an iron core. For the core buy a carriage bolt five-sixteenths of an inch in diameter and two and one-half inches long, and for the wire windings get some No. 20 or 24 gauge electric bell insulated copper wire and some No. 30 gauge insulated magnet wire. To keep the wire from slipping off the ends of the bolt core, cut two cardboard ends about one and one-half inches in diameter. Slip one onto the bolt next to the head, and the other next to the nut, as shown in Fig. 2. Three layers of the coarse wire is wound on first, and this first winding forms what is known as the primary coil. Pierce a hole through one cardboard end and stick the wire through it and allow about five inches to project upon the outside; then commence winding the wire upon the core, placing each turn close to the preceding turn. When the opposite end of the bolt has been reached, wind back to the starting point, then work back to the other end again. Cut off the wire so there will be a five-inch projection, and stick the projecting end through a hole in the cardboard end. This completes the primary coil (Fig. 3). Before winding on the small wire, which forms the secondary coil, wrap the primary coil with a layer of bicycle tape. Pierce a small hole through one cardboard end, and stick five inches of the fine magnet wire through it. Then wind on the wire as you did the coarser stuff, being very careful to get it on evenly and smoothly. Wind eleven layers on the coil, and run the end of the eleventh layer out through the cardboard end. Fig. 4 shows the completed induction coil.

Cut a base block five inches wide and seven inches long, bevel the top edges to give it a trim appearance, and mount the induction coil to one side of the center, strapping it in place by means of two tin straps similar to that shown in Fig. 5 from a tin can (Fig. 1). The projecting ends of the primary coil connect with the battery, while the two ends of the secondary coil connect with the handles. Make three binding post plates out of doubled pieces of tin (Fig. 6), and punch a hole through each for a small binding screw. Tack two of these plates to the end of the base and connect the secondary coil wires to them (Fig. 1), and tack the third plate near one end of the induction coil and connect one primary coil wire to it (Fig. 1).



For the shocking handles take two pieces of broom handle three and one-half inches long, and cover each with a piece of tin (Fig. 12). The pattern for the tin covering (Fig. 13) shows how tabs are prepared on the ends and holes punched through them for connecting with the induction coil. The connecting wires should be five or six feet long. Flexible wire is better than bell wire for these, because it is more easily handled in passing the handles around. Tack the tin covering to the pieces of broom handle.

The purpose of the induction coil is to raise the voltage of the battery. The flow of the battery current must be an interrupted one in order to shock, and therefore an interrupter must be inserted between the battery and one of the wires leading to the primary coil of the induction coil. Such an interrupter may be constructed similar to the vibrating armature of an electric bell, but the form shown in Fig. 1, and detailed in Fig. 7, is better suited to our toy machine, and is easier to make and adjust. Cut the base block A one and one-half inches wide and two and one-half inches long. Make the shaft B two and three-quarters inches long and of a diameter equal to the hole in a thread spool, and prepare the crank C to fit the end and drive a brad into it for a handle. Fasten the crank to the shaft with glue, or by driving a small brad through the two. The axle supports D should be prepared as shown in Fig. 9, one and one-fourth inches wide across the bottom, five-eighths inch wide at the top, and one and three-quarter inches high. Bore a hole through each a little below the top large enough so the axle will turn easily, and fasten these supports with brads to the sides of base A. Drive eight brads into a thread spool, spacing them equidistant from one another, and mount this spool upon the axle, first slipping the axle through one support, then through the spool, and then through the other support (E, Fig. 7). Drive the spool brads a trifle into the shaft to hold the spool in position. The projecting arm F (Fig. 7) is a strip of tin cut from a can, and must be long enough so each nail head will strike its end when spool E is revolved. Drive a nail into base A, at G, and after bending the tin strip as shown in Fig. 11, fasten it with brads upon the top of an upright made similar to H (Fig. 10), and nail this upright to the end of base A. The free end of strip F must be bent so it will bear down upon the head of nail G.

The wire from the primary coil which is as yet unconnected should be attached to nail G, and one battery wire should be connected to a binding plate I fastened to the lower end of strip F. Fig. 11 shows how the binding plate is made out of a doubled piece of tin, with a hole punched through it for a small binding screw. This completes the interrupter. Mount it beside the induction coil upon the base block, and connect it with the battery and the induction coil, as shown in Fig. 1. Connect the battery cells in series—that is, the carbon of one to the zinc of the other. Two cells will be enough.

When you turn the crank of the interrupter, each nail in spool E will raise the end of strip G, in passing it, thus breaking the electrical contact. If the strip has been bent properly, it will spring back again into contact with the head of nail G, and each time the contact is made, the person holding the handles will receive a shock. The strength of the shocks can be regulated somewhat by the speed with which the interrupter crank is turned. The shocks are stronger and more distinct when the crank is turned slowly.

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TERM TOO LIGHTLY APPLIED

A Little Thought Will Show Absurdity of Referring to Passing Acquaintance as a "Friend."

Do we not apply the term "friend" too lightly and frequently?

We meet and are introduced to one or more persons, and straightway speak of them as "friends."

We cheapen the term by such a use of it.

Only time can test friendship, and approve it.

The rough and tumble of daily life, the ebb and flow of fortune, the bewildering changes of human life supply the tests which declare the character and worth of our friendships. The loose attachments, the mere surface affinities, the friendship founded on some sordid consideration of advantage, all perish.

They have no inherent power of persistence despite every adverse circumstance. It is curious and not uninstructive to look back over the years and recall how many at different periods we have thought and called friends.

They have passed out of life and we have no real sense of loss. The friends whose love makes all the difference in life lends color and meaning, aim and purpose, are those who remain with us in good or ill.

Luckiest Wedding Days.

May and February were held by the ancient Romans to be the two months in the year which were certain to bring ill luck, while even the church before the time of the Reformation placed a ban upon all marriages contracted between the first Sunday of Advent and Hilary Day, between Septuagesima Sunday and Low Sunday, and between Rogation Sunday and Trinity Sunday. Thus only thirty-two weeks of the year were left by the church for marrying.

As to the best day, if we would believe a tradition handed down by the ancients, any day is certain to bring unbounded happiness if it only be when "the moon is growing."

There are other traditions which, if you are superstitious, it will be well to observe. One of them is that May 14 brings ill luck for all the rest of the year, and if you would be assured of misfortune then select Childermas Day for the day of your wedding. This day is the anniversary of the massacre of the Innocents. A wedding on the last day of the year is also said to be productive of great misfortunes.

REAL ESTATE EXCHANGE

Of WHITEHEAD & MITCHELL

The following is a partial list of Farms, City and Village Lots, and Real Estate generally which we have for sale. As our list is constantly changing, we request that parties will write us if they do not see what they want in this list.

No. 1.
Fine residence practically new, 7 rooms, bath, toilet, furnace, electric light, lot 112 ft. front, 300 ft. deep, good barn, city water, 3 blocks to electric. Terms to suit.

No. 2.
Vacant lot in Buell addition fronting on Woodward and electric. Fine building site cheap.

No. 4.
Vacant lot on Willow avenue, 100 ft. front, 300 ft. deep, city water, fine lot of berries.

No. 5.
One thousand dollars cash and the balance on easy terms will buy 6 acres of excellent land on electric in Royal Oak village. Excellent for platting. 1,200 berries, 34 grapes, pretty little lake from which $250 worth of ice was harvested last season, ten cents and forty minutes to city hall, Detroit. Don't delay.

No. 6.
Here it is! Nice-room two-story cottage just finished, in fine location, lot 56x133, bath, toilet, furnace, electric light, five minutes walk from electric, good neighborhood, high and dry. $2,600. There now!

No. 7.
Delightful Maple avenue residence, 7 rooms, bath, toilet, furnace, electric light, 140 ft. front, 206 ft. deep, 3 blocks from electric, fine locality, price right and terms easy.

No. 8.
Eight rooms, 1 1-2 story cottage, hot water heater, bath, toilet, hot and cold water, barn, lot 40x103, two blocks from electric and $2,600 cash will buy it.

No. 9.
Pine Lake cottage, 1 1-2 story, 4 rooms, lot 90x150, with good barn, one of the finest locations on this most beautiful portion of the lake region of Oakland county. Fine bathing, boating and fishing. Just the place to get rid of that tired feeling and patch up those nerves. Wait a minute, here's the price that will make you think it just fits your pocketbook. Go down in your jeans and buy it for $1,500.

No. 10.
Two and one-half story residence on Maple avenue, 12 rooms, furnace, city water, good barn, electric light, fine shade, about half an acre of land with fruit and the desirable qualities of one of the finest homes in Birmingham. Two blocks from electric. Look it over, come across with a reasonable offer for cash and you'll see us help you get it.

No. 11.
Seven-room bungalow, latest improved, bath, toilet, furnace, hot and cold water, celetric light, good big lot 40x120, nice barn, sewer, no better locality in town, 3 blocks from electric, 2 blocks from school, nice, new, cosy home for $3,800. Take it away on easy terms and be happy.

No. 13.
Modern two-story frame dwelling with all the conveniences in Rochester, Mich., lot 60x120 with good barn, in good residence portion, buildings insured for $2,000, three blocks from electric, and $1,100 above the mortgage will buy it.

No. 14.
Now listen. Prettiest little farm in seven states. Just outside village of Birmingham, 19 acres, 3 blocks from electric, 1-4 acre of berries, 3 buildings including barn, chicken house and fine, modern 7-room dwelling, with city water and all conveniences such as bath, toilet, furnace, electric light. Ideal place for city man with ideas regarding a little farm on the side. And we can assure you that the price and terms won't frighten you if you mean business. No? Well; you just ask Whitehead and see.

No. 15.
Here's another. House and store in pleasant little country village three miles from electric. An acre and a quarter of good land. Six room two-story house with cellar, well, cistern, and barn; all in good shape. Fine chance for some one with small means, to make a good living and something besides in a country trade in rich farming community, and the terms are so easy that they won't worry you and the price is only $1,600. Just scrape together enough to buy a small general stock and there you are.

No. 16.
Right in the central part of the village and valuable for business or residence. Lot 43x80, good comfortable, old-fashioned house, will rent for $20 per month, but bless your heart, the land without any house at all is worth more than we are asking for it. If you're from Missouri, you are just the fellow we want. Come on and we'll show you.

No. 17.
Lot in Campbell's sub-division, 60x120, new house, nice neighborhood, city water, furnace, etc., $2,300. Terms so easy that you can't help pay for it if you just pay a little more than rent would come to. Then you would soon have a home of your own.

No. 19.
Good house and lot on Highland avenue in the hustling village of Highland Park, house insured for 1,500. Will exchange for small farm property or $2,600 will buy it.

No. 20.
Farm of 147 acres in Oakland township, 125 cleared, 15 acres oak timber, house and barn, price $45 per acre, one-half cash, balance on easy terms.

No. 21.
Good farm of 154 acres in Orion township, 70 acres under plow and balance in young growing timber, two miles from Orion village, half mile from D. U. R. house and barn, all kinds of soil. Will exchange for house and lot in Royal Oak or Birmingham, or will sell for $45 per acre on easy terms.

No. 22.
Good cottage on Watkins street, full basement, barn, chicken house, lot 60x178, some fruit trees, wants to sell bad enough to let it go for $1,500.

No. 23.
Fine new brick house, nine rooms on large lot on Pierce street. Bath, toilet, furnace, electric lights, cement walk, two blocks from electric, $2,700 above little mortgage, will land it and you'll have a home as good as any of 'em.

No. 24.
Twenty-five acre farm, 1 1-2 miles from Rochester electric, small house, barn, two sheds, excellent land in high state of cultivation, easy terms, $3,000.

No. 26.
Here's another $2,500 home on Willits near electric, eighty feet front and 103 deep, seven room house, good cellar, beautiful maples shade the premises, and it is true that you couldn't build the house for the price asked. One of the many good things in our list, if not the best.

No. 27.
Forty acres on D. U. R., gravelly loam, good natural drainage, seven fine building sites, flowing well can be obtained where desirable, 17 miles from Detroit, just the place for subdividing into the small farms every one is crazy about just now, and $200 per acre will buy it if you come quick with cash.

No. 28.
Bully little farm of 45 acres, 2 acres timber, 4 acres orchard, 1 1-2 miles from electric, good house and barn, delightful shady location, right among the high priced ones and $125 per acre with small payment cash and balance on land contract if desired. Think it over.

No. 29.
Here's a little farm for your life; 25 acres, extremely fertile garden soil, 2 acres strawberries in bearing, 9-room, 2-story brick house improved, (every convenience), all necessary outbuildings, new green-house, school and church within ten minutes walk, beautiful avenues of maples, one mile from electric. You can't find fault with this lovely place and you won't quarrel over the price when you once go over the premises.

No. 30.
Yep; here's your chicken farm! seven and one-half acres on electric about 20 miles from Detroit, 10 room house, bath, toilet, furnace, grate, electric lights, flowing well, barn, chicken houses, 60 fine fruit trees just coming into bearing and $5,000 will buy it.

No. 31.
Ten minutes walk from electric, cement walk from Woodward, 3 2-3 acres with small buildings, (you would want to build anyhow, and the buildings are not considered in the price,) just outside village limits, finest location, $3,000.

No. 32.
Pretty little place half mile outside the village on electric, fine grounds, best example of landscape gardening with trees, shrubs, etc., 7 1-2 acres right among the high priced Bloomfield Hills district, with River Rouge bordering the premises.

No. 33.
Five acres vacant on Willow avenue, just outside corporation, 15 minutes walk from car, cement walk, fine for platting, will sell all for $600 per acre or any part of it to suit. Will sell lots 60x135 from $2.00 per front foot up, according to location.

No. 34.
Excellent farm of 160 acres on new State road, 20 acres orchard, 15 acres timber, buildings insured for $5,000, only 3 1-2 miles from electric, will sell eighty acres with buildings separately if desired. Farms in this locality have sold within the past six months for $300 per acre cash, but you can buy this one for much less.

No. 37.
Now, here's a farm for $75 per acre and of course you will say it must be a poor one to sell for that, in these times of high prices. Now just to show you how easily you can be mistaken, listen to this: One hundred and sixty acres, fine, productive land in good locality with comfortable buildings, barns rebuilt and a mile of new wire fences, 2 miles from electric and nice country village, 100 acres heavy loam and 80 lighter sandy loam. Pretty little creek runs through the lovely meadows. There; we knew you would be interested. Detroit 15 miles.

No. 38.
If you could hear of a good farm of about 70 acres for $2,500 you'd sit up and begin to reach for things, what? Well, here you are: 10 acres orchard, fair farm house, new cement barn, 1,000 peaches, rolling land, large pit of first class gravel, a little over a mile from electric. Huh! That gravel pit will pay for the whole outfit in two years. Fact.

No. 40.
Southfield farm of 96 acres, new 8-room house, 2 barns and chicken house; all buildings in first class shape, stream runs through middle of farm, 2 acres orchard, no waste land, 3 miles from electric, $90 per acre or will exchange for Birmingham improved.

No. 43.
Sixteen acres in high state of cultivation, good 7-room house which needs but little expenditure to make modern improved, barn and chicken house, wire fences, good drainage, pretty little wood lot six acres, fine old maple, walnut, elm, etc., Birmingham one mile, quarter mile to little River Rouge, ten minutes (auto) to electric. The price is—say, we won't tell you right out in public. If we did everybody would want it at once; but it's right. What? is that so? Well, now you just ask Whitehead.

No. 44.
Seven-room bungalow, vitrified brick veneer, 1 1-2 stories, toilet, bath, Peninsular furnace with hot-water coil, city water, electric light, Cabot shingle stain, all new and up-to-the-minute in every particular, first class construction of A1 material throughout and located in the new Birmingham Heights, 1-2 block from electric on Woodward.

No. 45.
A bully good Troy farm of 120 acres lying on both sides of the Pine line electric, 8-room house in fine shape and five other ample and first class buildings, flowing well furnishes enough water to supply a dozen such farms, best new Page wire fences, 6 acres good orchard, cow barn for 23 head with cement floor and stanchions, school 10 rods, churches and stores 1 mile, 17 acres beautiful woods, hickory and walnut, no waste land, no foul seed, price is low enough to be very attractive and 25 per cent of purchase price will swing it.

No. 46.
Modern two-story home in the very best residence portion of the village, about 1 1-2 acre of land, 12 rooms, 3 toilets, bath, furnace, barn, fruit, everything to make it comfortable and convenient, all buildings compartlypply new. Will exchange for good farm of 100 acres or more, within a mile or two of the electric, either line, or will sell for $7,000 on easy terms.

No. 47.
St. Clair Lake property, 300X300, sheet piling just put in, 65 fine shade trees, buildings, ice house, boat-house with water channel, fish houses, tool shed, building worth $2,000, finest place along the shore for summer resting place. Go and see it and then submit offer.

No. 48
Two story frame dwelling, modern in every particular; bath, toilet, furnace, electric light; built 1911; finished in natural oak; good shade, fine shrubbery; two blocks from electric, in best residence section; lot 50x130; $4,000, terms easy and—well, we dassent print it. Just ask Whitehead.

No. 49
Fine farm of 120 acres just over the county line in Redford township, less than a mile from electric, nine miles from Detroit; 13 acres orchard; three buildings; fair house; barn; rich soil, well drained, good wire fences. Would be cheap at $200 an acre, but—whisper! $125 per acre will buy it. Now don't blame us if this is sold when you get around to ask about it.

No. 50
Thirteen hundred dollars cash will buy a nice home a block from the electric; two stories, eight rooms, bath, toilet, furnace, electric light; barn, city water, cement walks; lot 50x124; good residence neighborhood. The balance of the purchase price can be paid in instalments on long time and easy terms. You couldn't do better than to investigate this.

No. 51
It seems hardly probable, but it is barely possible that you do not see anything in this column to suit you. Well, listen! Just come and pay $25 dollars down and select your lot from those not already sold in Birmingham Heights, and pay the balance in monthly payments on the easiest terms you could ask. City water, electric lights, cement walks, and the most desirable building sites in Beautiful Birmingham. Then build a house to suit your own tastes and be happy. Come on! We'll help you!

No. 52.
One of the very best and most productive farms in this locality. 150 acres; well fenced, no waste land, 6 buildings, 2 houses, larger residence ten rooms, good road, only forty rods from electric, entire farm under high state of cultivation, excellent drainage. 10 miles from Detroit, 3 1-2 from Birmingham. If you want one of the best and cheapest bargains on our list, just ask about this number.

No. 53.
Two-story, modern, frame cottage with barn, All new and every convenience, Lot 42x124, two blocks from electric in fine neighborhood, cement walk, fine shade, $2,700.

No. 54.
Two-story, frame, modern, new and complete with every convenience, nine rooms, insured for $2,000, lot 65x170 on north side of one of our best residence streets, and you can buy it on land contract for $4,600 with small payment down and balance on easy monthly payments.

Remember

That every added subscriber helps to make this paper better for everybody

THE VALUE of well-printed neat-appearing stationery as a means of getting and holding desirable business has been amply demonstrated. Consult us before going elsewhere