

In The Automobile World

Stitches in Time.

During cold weather it is often necessary to crank the engine longer in order to get an explosion. The self-starter, driven by a motor, is overworked and there is an extra drain upon the battery.

The longer evenings also contribute their share in the draining of the battery of its current, and if the engine does not run for a continuous length of time, the battery is liable to become exhausted.

Where storage batteries are used on a car where the generator does not re-charge the battery sufficient to supply the needed current or in those cases where there is no generator, the battery will need re-charging periodically.

The current required for this purpose may be obtained from electric service or from a generator especially installed for the purpose. In the great majority of cases the current is taken from service mains. These carry either direct or alternating current, generally the latter.

Only direct current can be used for charging, and where the service is alternating, the current must be rectified before it can be used. Aside from that, the current must be direct or continuous, it must also be of the proper voltage. A voltage of 110-115 has become practically standard in electric lighting practice, and with this voltage batteries of 42-44 cells in series can be charged to the best advantage. For each cell in series, therefore, there is required a charging voltage of at least 2.65 volts.

The simplest method of recharging a storage battery from direct current lighting mains is by no means of a so-called tap or charging plug which screws into an ordinary lamp socket. The plug is screwed into the socket and the charging cable is connected directly to the battery which is to be charged. The tap is provided with three sockets into which lamps may be screwed, to be connected in parallel and the battery is in series with them all, so that it receives as much current as the three lamps together. As a rule a current tap is arranged for three lamps, and the charging rate is limited by this.

In making connections, care must be taken that the positive terminal of the battery connects with the positive main, as otherwise the battery would become discharged and reversed. A wrong connection will be shown instantly when the switch is closed by the lamps lighting up more brightly than normally, while they burn more dimly than normally if the connections are correctly made. It is however, preferable to determine the polarity of the charging mains in advance. This can be done by inserting the two wires to be connected to the battery into a glass of slightly acidulated water and turning on the current. Gas bubbles will then be observed forming at both electrodes and rising to the surface. The rate of gas development is greater at the negative than at the positive terminal, which can thus be

identified. Another method of determining the polarity of charging mains consists of moistening a strip of red litmus paper, placing the ends of the two wires upon this paper a short distance apart, and then turning on the current. A blue spot will be formed under the negative wire.

Storage batteries should be kept filled to the level of the top of the electrodes with pure, clean water. Better to use distilled water or rain water than has not come in contact with metal containers.

If a motor is missing the very first thing to do is to find out which cylinder is missing. To do this, place the head of a hammer against the spark plug terminal and also touching the cylinder metal. The uneven firing is noticeable in a motor which is missing, and if after touching the hammer head to a plug no difference is noticed in the unevenness, then that cylinder upon which the hammer is resting is faulty.

The next step is to examine the wire leading to the spark plug, and also remove the latter. Note if the porcelain is cracked. Clean it thoroughly in kerosene. Trace the wire from the plug end to the coil, seeing that the insulation is in good order and that the contact points are not loose. Next examine the coils and the master vibrator. See that the vibrator is adjusted properly and that all wires leading from the coil-box are tightly fastened. See that the wires leading to and from the magnet are clean at the contact points and that they are fastened tightly.

After every part of the ignition system has been examined measure the clearance between valves and their stems. Too much clearance at these points will cause the valve to open late and may cause a miss. If the clearance is not enough, the same result occurs. The space between the valve and stem should be just enough to permit of the insertion between the two parts of an ordinary business card or three thicknesses of newspaper. With the valves adjusted properly and the missing continues, then examine the carburetor.

HOW TO DEFLECT GLARE OF HEADLIGHTS Simple Method of Determining if Rays Are Bent Down at Proper Angle.

The problem of the headlights, at least for the time being, and for those who persist in using headlights without dimming or glare eliminating devices, seems to be best met, according to Chairman O. I. Yellott, of the American Automobile Association Legislative Board, by the simple suggestion of the Society of Automobile Engineers that "no beam of reflected light shall rise above 42 inches at a distance of 75 feet." This decision is the outcome of much study and experiments during the last year and adheres closely to the

California plan of bending the lamp brackets in such a way as to divert the rays to the ground, says Mr. Yellott, and continues:

"In compiling an up-to-date uniform motor vehicle and traffic law which is about ready for circulation, the A. A. A. legislative chairman has thus covered the headlights question."

"Glaring Headlights.—It shall be unlawful to use on a vehicle of any kind operated on the public highways of this State any lighting device of over four candle-power equipped with a reflector, unless the same shall be so designed, deflected, or arranged that no portion of the beam or reflected light, when measured 75 feet or more ahead of the lamps, shall rise above 42 inches from the level surface on which the vehicle stands under all conditions of load. Spotlights shall not be used except when projecting their rays directly on the ground and at a distance not exceeding 30 feet in front of the vehicle."

To ascertain when a light is 42 inches from the ground at a distance of 75 feet in front of the car, the following instructions are given:

1. Have the light focused so that the reflected rays will be condensed in solid column as much as possible, and so as to eliminate stray rays as far as possible. To focus the light place the car in front of a building or any perpendicular flat surface of sufficient size at a distance of ten or fifteen feet and by adjusting the area of light as much as possible and make the light from such lamps as nearly uniform as possible. This is the most difficult of the three things necessary to overcome objectionable glare.

"2. Place the machine on the level and measure a distance of 75 feet to the front.

"3. Make a mark on a board, broom handle, or on the coat of an individual 42 inches from the ground and see that the upper circumference of the solid volume of reflected light does not strike above that mark at 75 feet in front of the light. Police officers and others may easily determine the distance from the ground by noting a certain button, pocket, lacer, or any other distance mark on their wearing apparel. By stepping in front of the machine on the level at a distance approximating 75 feet they may easily determine whether or not the lights are properly deflected.

"There are some reflectors that, because of their improper construction (being either too flat or too deep), would make it impossible to secure a condensation of the main rays. In such cases different reflectors will have to be secured.

"The Society of Automobile Engineers has what is known as its Committee on Standards, and a division of the committee is now working on the details of headlights, reflectors, and bulbs, with the object of establishing standards which shall make it easier for manufacturers to supply headlights in the future that will give adequate illumination and at the same time comply with the provision preventing the beam of reflected light rising above 42 inches at 75 feet distance."

HELPFUL HINTS FOR MOTORISTS

Too much grease in the transmission gears is likely to make the gears almost as noisy as too little. It is poor practice to fill transmission cases to the brim in an attempt to silence the noisy growl from the gears. The better way is to fill the case about half way up the gears—unless the manufacturer recommends some other limit.

In electric motors or generators in which graphite brushes are employed particular care should be taken to keep the accumulation of brush-dust away, for, as graphite is a good conductor of electricity, it is possible for a ground or a short-circuit to form with the aid of the dust and perhaps a little moist oil.

Removing insulation from electrical conductors made of fine strands of wire is very easily done if the insulation is set on fire and allowed to burn off to the desired point. The wires will not be injured, and if there is any tendency toward brittleness the heating will remove it and leave the metal soft and pliable.

Female Drivers.

The good woman driver of a motor car never applies brakes swiftly except in an emergency. When drawing up at a street side she cuts off ignition early and allows momentum to carry the car to the stopping place, using the service brake gradually. The good driver thus saves gasoline and wear upon brakes coasting to a stop with the smoothness of operation of an easy start.

A good driver never uses the emergency brake, because she never has emergencies! She sees and avoids the emergency before it arrives; the poor driver rushes into trouble and depends upon quickness in grabbing the emergency lever to save life. More than one accident has followed a futile attempt to find the seldom-used emergency lever in a hurry.

The good driver rounds sharp corners to the right and goes over extremely rough stretches of road or hits unexpected "thank you, ma'ams," with clutch disengaged to save the rear axle mechanism.

The good driver uses the wheel with the least possible motion. She does not drag it suddenly from side to side, but turns it so gradually that passengers are unconscious of the fact. In rounding a corner she commences to straighten the car up before it is halfway around.

Next to being well being convalescent is the most satisfactory condition, and some even seem to prefer it to perfect health.

It is but exactly to one's credit to be a good fellow. There are a lot of good fellows in the penitentiaries.

Love is a disease that sometimes even marriage will not cure.



BRISCOE
The Car with the Half Million Dollar Motor
MADE IN CANADA

\$875
FULLY EQUIPPED

The Car You can Afford to Buy and Use

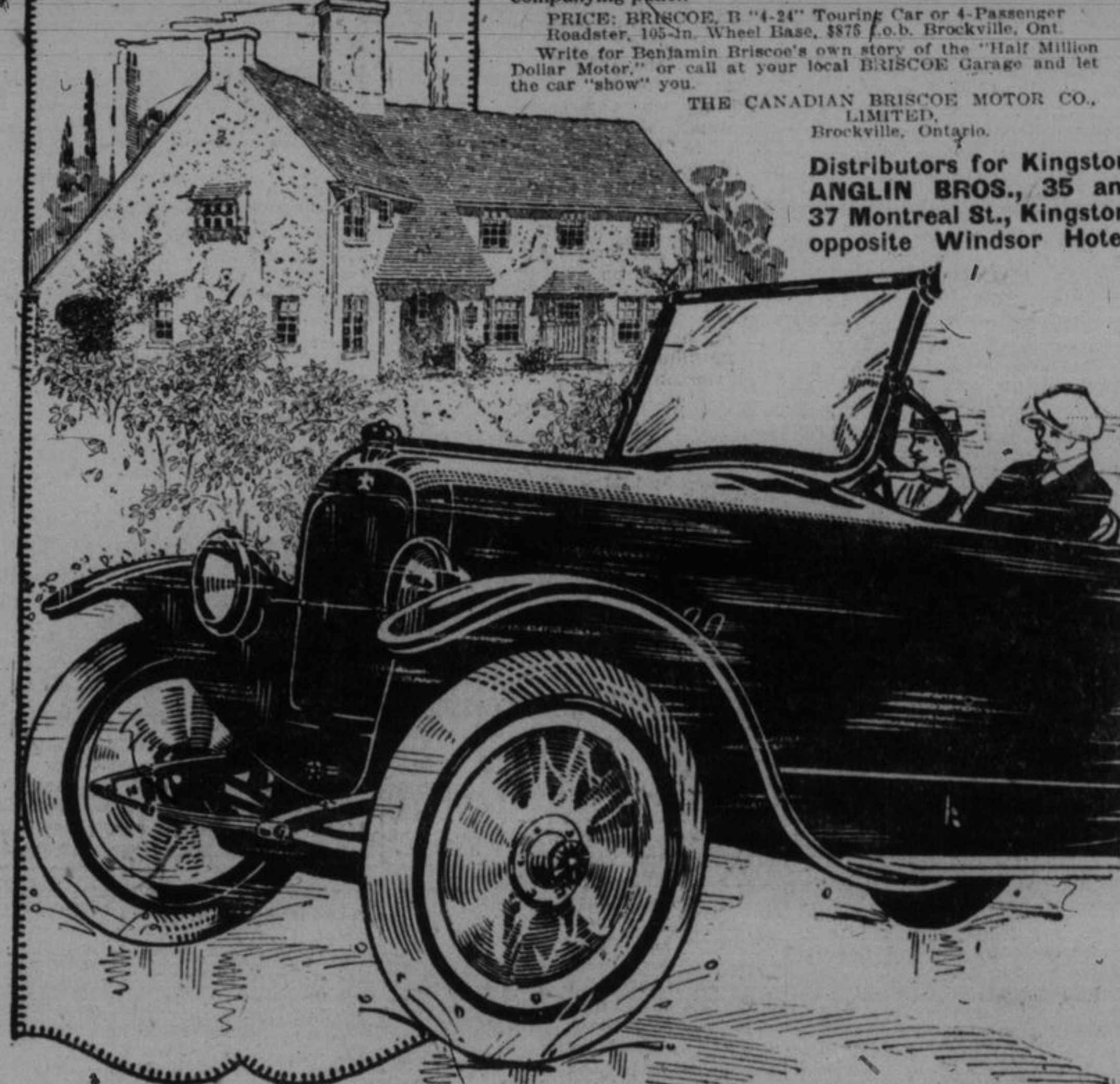
HERE, at last, is a Real Car—roomy, luxurious, artistic—a car of the highest class at a price within reach of the family of moderate means—a light car that is easy on tires—an economical car, making possible 30 to 35 miles to the gallon of gasoline.

A long-stroke motor, with a relatively small bore, means greater economy, because it gets more explosive force out of the gas. The famous BRISCOE motor has a 5 1/2-inch stroke and a 3 1/2-inch bore. That's why it costs less to own a BRISCOE.

The price includes everything—Electric Lighting and Starting System—Speedometer—Gasoline Gauge—Ammeter—Trouble Light Socket—Automatic Switch with Key Lock—Horn—and all other important accessories usually classed as "extras." See abbreviated specifications in accompanying panel.

PRICE: BRISCOE, B "4-24" Touring Car or 4-Passenger Roadster, 105-in. Wheel Base, \$875 f.o.b. Brockville, Ont. Write for Benjamin Briscoe's own story of the "Half Million Dollar Motor," or call at your local BRISCOE Garage and let the car "show" you.

THE CANADIAN BRISCOE MOTOR CO. LIMITED, Brockville, Ontario.



Distributors for Kingston, ANGLIN BROS., 35 and 37 Montreal St., Kingston, opposite Windsor Hotel.

NEWEST NOTES OF SCIENCE

The inventor of a French monoplane has modeled it after a winged maple seed.

Covers have been patented to protect men's collars from being soiled by their overcoats.

Peru has the highest railroad station in the world, 15,865 feet above sea level, at Tello.

All but the blade of a recently patented shovel is made from a single piece of metal tubing.

An English inventor has patented a net for recovering golf balls that may be driven upon water.

Two ovens of the usual kind and a third on the fireless cooker principle feature a new gas range.

Wireless signals along the Baltic sea are used by Russia to transmit weather reports to Petrograd.

It has been discovered that a deaf person can hear disk phonograph records by holding a needle in his teeth and pressing it against them, the sound produced also being audible to other persons nearby, his skull serving as a resonator.

Pressing a button operating a new container for salt or pepper that is claimed to be moisture proof.

An electrical automatic recording target for indoor rifle shooting has been invented by an Englishman.

An attachment for two wheeled hand trucks has been invented that holds bags open as they are being filled.

The cars on a small railroad in Chile, where the winds are dependable, are equipped with sails for propulsion.

Hand operated apparatus has been invented that puts large quantities of butter into regular sized cubes rapidly.

any way and it is predicted that it eventually will revolutionize the industry.

Prospecting for petroleum in Venezuela is being carried on with encouraging success by one American and two English companies.

A patent has been granted a Kansas inventor for a machine that shocks bundles of grain as they fall from a binder automatically.

Tests made by Irish scientists have shown that the wind will carry disease bacteria 200 feet and as high as 60 feet into the air.

A rubber bulb enables air heated by electricity in the handle of a new comb to be forced through its perforated teeth to dry hair.

More than 90 per cent of the alcohol and alcoholic drinks that are made in the Philippines are derived from the sap of a palm tree.

Billiard cues are chalked automatically by a new device which revolves a block of chalk as the tips of cues are pressed against it.

A drinking device patented by a Rhode Island inventor consists of a cup to be placed under a faucet and a telescope tube through which its contents can be drawn into the mouth.

Although color blindness is hereditary, according to a British scientist, it is transmitted to children only by mothers and never by fathers.

To print advertisements upon roadways an inventor has devised a huge rubber stamp to encircle an automobile tire and receive paint from a tank.

An East Indian scientist contends that plants feel pain and he has invented a machine which he claims measures their nerve shocks and reactions.

With a piano keyboard a Kansas musician's musical instrument reproduces the parts of the four violins of an orchestra, including the bass viol.

An aluminum alloy has been invented by an Australian that is said to be as hard as steel, to be non-corrosive, and which can be brazed and soldered.

Because songs will not awaken deafmutes a fire alarm for their institutions has been invented that flashes electric lights in their sleeping rooms.

boards equipped with electro-magnets to which current is directed by foot switches to hold metal T-squares and triangles.

Plate glass invented by a Philadelphia man, made by welding a thin sheet of celluloid between two panes of ordinary glass, is bullet proof and cannot be splintered with powerful blows by a hammer.

Asia is believed to have the largest quantity of coal of any continent, the world's total supply being estimated at 7,357,533,000,000 tons, of which nearly 4,000,000,000,000 are bituminous.

A woman is the patentee of a telephone in which the receiver and transmitter are enclosed within a horn, so that it can be used several

inches away from a person's face without holding in the hand.

A Swiss process for the manufacture of aluminum foil consists of coating sheets of these tal with oil, folding or piling a number of them together and rolling them until they are as thin as desired.

Motion pictures that really talk are the claim of a California inventor who photographs the sound waves, prints the photographs on the films and translates them into sound again as the pictures are shown.

According to a French scientist birthmarks in families not now of good social position indicate that they are of knightly descent, the marks being due to the fact that their possessors' ancestors wore armor.

Leaves on each side of a kitchen table patented by a Baltimore woman can be raised level to double its size or vertical to form a box, the table being mounted on wheels so it can be used to carry heavy loads.

Government scientists in the Philippines are investigating the properties of an oil bearing nut which grows prolifically and from which the natives extracted an illuminant before the introduction of kerosene.

In the motion picture field a recent patent covers the use of a stationary slide to provide a background while the film shows only the actors' motions and can be made in a studio without regard to the scenery.

Tests by the United States bureau of standards have proved that concrete roads expand most in winter and contract most in summer because of increases and decreases in moisture that they contain.

Measuring the current carried from electric wires by streams of water from fire hose, an Italian scientist found that chemical extinguishers were the most dangerous fire-fighting equipment to use around live wires.

Fur Farming Among Alaskans.

Indianapolis News.—Upward of one hundred Alaskans are directly interested in fur farming. There are silver fox farms in thirty-five localities, while on an equal number of islands blue foxes are farmed. The silver fox farms are not producing fur, but pelts sent to market during the last season from the older blue fox farms brought good results. Experiments are being carried on at Washington, Linden, Md., and Chesterfield, N.Y., to determine the best method of feeding, confining and otherwise handling fur bearing animals, especially foxes, minks and martens; to determine the species most suitable for domestication; to produce improved strains by selective breeding; to in-

NO STOMACH PAIN, GAS, INDIGESTION IN FIVE MINUTES

"Pape's Diapepsin" is the Only Real Stomach Regulator Known.

"Really does" put had stomachs in order—"really does" overcome indigestion, dyspepsia, gas, heartburn and sourness in five minutes—that's just that—makes Pape's Diapepsin the largest-selling stomach regulator in the world. If what you eat ferments into stubborn lumps, you belch gas and eructate sour, undigested food and acid; head is dizzy and aches; breath foul; tongue coated; your insides filled with bile and indigestible waste, remember the moment "Pape's Diapepsin" comes in contact with the stomach all such distress vanishes. It's truly astonishing—almost marvelous, and the joy is its harmlessness.

A large fifty-cent case of Pape's Diapepsin will give you a hundred dollars' worth of satisfaction or your druggist hands you your money back. It's worth its weight in gold to men and women who can't get their stomachs regulated. It belongs in your home—should always be kept handy in case of a sick, sour, upset stomach during the day or night. It's the quickest, surest and most harmless stomach regulator in the world.

When You Can't Sleep YOU SHOULD USE Milburn's Heart and Nerve Pills

Sleeplessness is caused by the nervous system becoming deranged. Perhaps too much worry has gotten on your nerves, perhaps you have overworked yourself, or have been excessive in your use of tobacco, but whatever the cause, the nervous system must be built up again before restful sleep can be assured.

Those whose rest is broken into by frightful dreams, nightmares, sinking and smothering sensations, who wake up in the morning as tired as they went to bed, can have their old, peaceful, undisturbed, refreshing sleep back again by using Milburn's Heart and Nerve Pills.

Mrs. John Sloan, Haley Station, Ont., writes: "Over a year ago I was very nervous. I could not sleep at night, and I would faint at the slightest fright. I tried several doctors but they did me practically no good. I noticed your advertisement and immediately tried Dr. Milburn's Heart and Nerve Pills, and I am proud to say they cured me."

Milburn's Heart and Nerve Pills are 50c a box or 3 for \$1.25, at all dealers, or mailed direct on receipt of price by the T. Milburn Co., Limited, Toronto, Ont.

NOT A PARTICLE OF DANDRUFF OR A FALLING HAIR

Save Your Hair! Double Its Beauty In Just a Few Moments.

25-Cent "Danderine" Makes Hair Thick, Glossy, Wavy and Beautiful.

Within ten minutes after an application of Danderine you can not find a single trace of dandruff or falling hair and your scalp will not itch, but what will please you most will be after a few weeks' use, when you see new hair, fine and downy at first—yes—but really new hair—growing all over the scalp.

Danderine is to the hair what fresh showers of rain and sunshine are to vegetation. It goes right to the roots, invigorates and strengthens them. Its exhilarating, stimulating and life-producing properties cause the hair to grow long, strong and beautiful. A little Danderine immediately doubles the beauty of your hair. No difference how dull, faded, brittle and scraggy. Just moisten a cloth with Danderine and carefully draw it through your hair, taking one small strand at a time. The effect is amazing—your hair will be light, fluffy and wavy, and have an appearance of abundance; an incomparable lustre, softness and luxuriance. Get a 25-cent bottle of Knowlton's Danderine from any drug store or toilet counter, and prove that your hair is as pretty and soft as any that it has been neglected or injured by careless treatment—that's all—you surely can have beautiful hair and lots of it if you will just try a little Danderine.

investigate the effects of temperature on fur growth, and to test methods of dressing peltries and of caring for dressed furs.

He Proved It.

During the recitation of a college class in natural philosophy, the professor observed a tall, lanky youth in a rear seat, his head drooping, his body relaxed, his eyes half-closed, and his legs encumbering an adjacent aisle.

"Mr. Fraser," said the professor. "The freshman opened his eyes slowly, but did not change his pose. 'Mr. Fraser, what is work?' " "Everything is work," was the drawing reply.

"Sir," exclaimed the professor, "do you mean to tell me that is a reasonable answer to my question?" "Yes, sir."

"Then I take it that you would like me and the class to believe that this desk is work?" "Yes, sir," replied the youth wearily. "It is woodwork."—The Christian Herald.

Even Break.

Dallas News.—"This world would be a pleasant place if there were not so many fools in it."

"Yes, but it would be more difficult to make a living."

Flattering to the Original

But Imitations Only Disappoint

There are many imitations of this great treatment for coughs, colds, croup, bronchitis and whooping cough. They usually have some sale on the merits of the original, but it should be remembered that they are like it in name only.



This is a fac-simile of the package bearing portrait and signature of A. W. Chase, M.D.