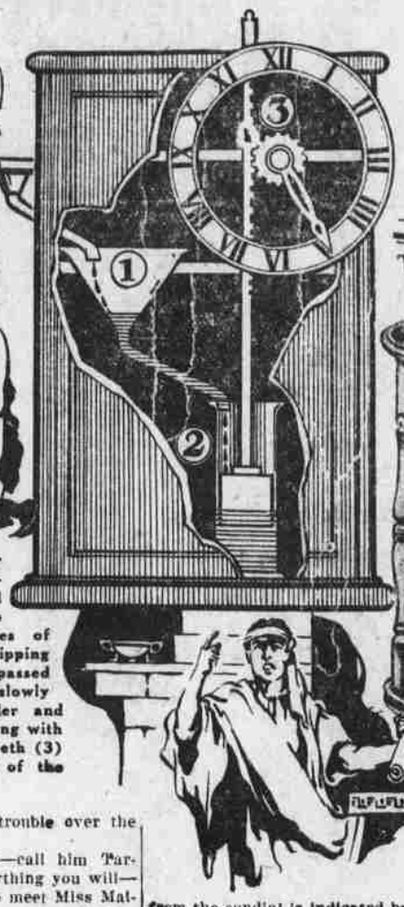
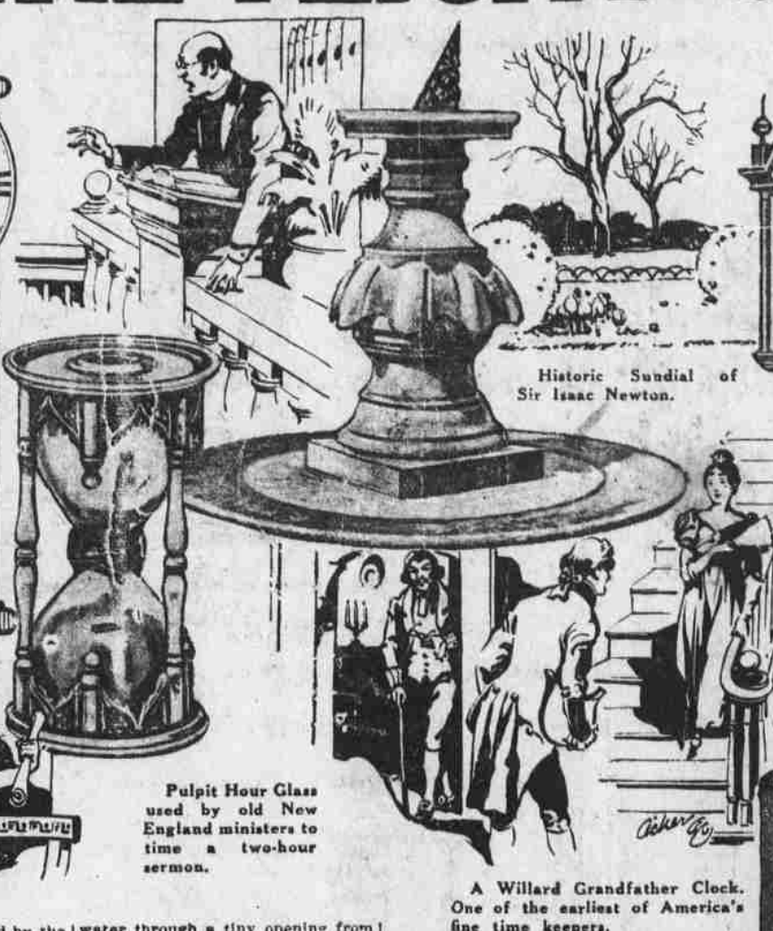
MARKING THE FLIGHT OF TIME

A Natural Sundial — Primitive Man's First Timepiece



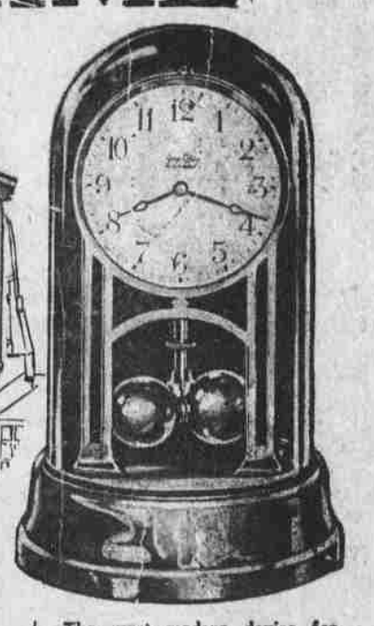
The Clepsydra, or water clock of ancient Greece and Rome, was used to time the speeches of orators. Water dripping into funnel (1) passed to cylinder (2) slowly filling the cylinder and raising float. Rising with float a rod with teeth (3) turned the hand of the clock.



Historic Sundial of Sir Isaac Newton.

Pulpit Hour Glass used by old New England ministers to time a two-hour sermon.

A Willard Grandfather Clock. One of the earliest of America's fine time keepers.



The most modern device for recording time's flight operates on a small battery. It has neither weights nor springs and runs without winding.

TIME-RECORDING has undergone its first revolutionary advance in over six centuries, with the invention of a clock that does not run down. An American is the inventor—the first American to contribute anything fundamental to the science of "telling time."

Time is a miraculous thing—something elemental, baffling. The springs or weights of an ordinary clock were never worthy of its dignity. Now another baffling element has been made to run in the same harness. Electricity, imprisoned in a clock, will "mark time."

There had been until now, roughly, four classes of timepieces, the sundial, the clepsydra, the candle clock and the mechanical clock of springs or weights. The sand glass was but a modified clepsydra, and the burning rope or punk of the Chinese but another type of candle clock.

The electric clock is something new under the sun.

What Time Is It?

History does not record Eve's first remark to Adam—presumably Eve spoke first—but it is probable that she said, "What time is it?" People have been asking it ever since. It is the most popular and important question in the world even now.

No sooner had man appeared on the earth than time began to be important to him.

Then came the trouble over the first "date."

This early chap—call him Tarzan or Ahaz or anything you will—probably wanted to meet Miss Maisie Nutmeg at the corner of Mastodon avenue and Dinosaur street on the following morning, to go on a saber-tooth gathering expedition.

"Meet me here," he said caveman-nishly, "when the sun is three hands high."

Tarzan Has a Hunch

"But," objected Maisie—she was a very intelligent girl—"my hands aren't as broad as yours, and that makes a difference."

Tarzan scratched his bear-greased pompadour uncertainly and grunted. Then he had an important idea.

"I'll tell you," he said, "meet me when the shadow from the mountain just touches the river."

History was more right there, though Tarzan didn't know it. The sundial was invented. It was only a small step from the discovery that shadows moved with the sun to the placing of an upright pole and the location of marks around it at intervals of space to measure periods of time.

That ancient Israel took its time from the sundial is indicated by the record of the miracle in Isaiah, 38:8.

"Behold, I will bring again the shadow of the degrees, which is gone down in the sundial of Ahaz, ten degrees backward. So the sun returned ten degrees, by which degrees it was gone down."

"I count none but the sunny hours," says the inscription on the sundial at Paul's Cross, London. And it was this cheerful fact that put the sundial out of business.

It did very well as long as Tarzans were making dates with Maisie Nutmegs, but the gay community of Babylon discovered the fascinations of night life and right away the sundial wouldn't do.

Night Life in Babylon

The Babylonians had to know when it was midnight or run the risk of tardiness at the Midnight Follies. So the Babylonians invented the clepsydra about 2,700 years ago.

Clepsydra means "thief of water." By regulating the flow of water through a tiny opening from one vessel to another they found they could measure time.

A Long Drink in Rome

Pompey, the Roman, was a business man, and had the business man's contempt for wordiness; so he set up a clepsydra in the Roman Law Court to limit speeches. When an eloquent lawyer talked a quart—or the time it took some such amount of water to run through the clepsydra—he had to stop. Martial, the poet, tells about a wag who heckled a particularly tiresome speaker. This speaker had a habit of moistening his mouth periodically from the Court drinking glass. "It would be a greater relief to the rest of us if you drank from the clepsydra," shouted the wag.

Some of the shyster lawyers used to bribe the attendants to put muddy water into the clepsydra, so that "time ran more slowly," and they made longer speeches. Any man who has fished for sand in a carburetor can appreciate what the same substance would do to a clepsydra.

Alfred the Great is reputed to have invented the candle clock, or candle which burned a given distance in a given time. The Romans had preceded him with the lamp clock, however, and the Chinese had the same idea ahead of the Romans, burning a rope of uniform texture. Any boy can tell time the Chinese way by lighting a twine string and noting by clock how long it takes to consume the first inch. After that—as long as the string lasts—he can dispense with the clock.

King Henry's Poker Session

The origin of the mechanical clock is, like that of so many things, shrouded in mystery. A mechanical clock was installed in St. Paul's, London, in 1286. Westminster Abbey was so accommodated in 1288, and the Cathedral of Canterbury in 1292. The Westminster clock not only kept time but chimed the hours. King Henry VIII, who was a financier as well as a matrimonial plunger, gambled the chimes away. He probably would have lost the Abbey, too, if his opponent could have taken it home.

Eli Terry was the first American clockmaker, but the most famous early American clockmakers were the Willards. All were New Englanders.

The clock which embodies the latest—is it possible to say the last?—word in time-recording is the work of George S. Tiffany of Summit, N. J., an inventor of international reputation. He has been working on electrical clocks since a boy, and in 1900 hit on the principle around which he built the clock, without weights or springs, which runs a year or more without attention. Other "electric" clocks had been built, but these were simply old fashioned clocks which were wound up at intervals by batteries. Tiffany's clock is actually run by a battery—a small dry cell such as are used in flashlights.

The Clock That Is Never Wound

The circuit through an electromagnet is alternately closed and broken by a contact needle on a torsional pendulum. With the closing of the circuit, and the consequent energizing of the magnet, an armature is attracted and lifted into contact with the magnet. The breaking of the circuit allows the armature to drop, under gravity, and this drop revolves a ratchet wheel which is connected with the hands of the clock a short distance. The pendulum does no mechanical work, acting only as a regulator, and is kept in motion by the making and breaking of the circuit. The current consumption is very small and a dry cell or two and three-quarters ampere hours a year. One of these clocks has run two and a half years on one battery. A clock in Mr. Tiffany's home has kept perfect time since 1909.

The first crude clock built by Mr. Tiffany in 1902 is still in existence. It is likely that it will some time have a place in the Smithsonian Institute, along with Howe's sewing machine, Whitney's cotton gin and Langley's airplane, as another revolutionary product of American inventive genius.

MOUNTAIN ROAD WORK SHOWN IN NEW FILM

The most difficult road building in the United States—the construction of good highways through the National Forests of the West—is shown in a new United States Department of Agriculture motion picture, "Highroads and Skyroads." The picture, one reel in length, was made in the western tier of states under the supervision of highway engineers of the Bureau of Public Roads, which is in charge of the federal government's road construction work.

"The old frontier has gone, never to return," says the film at its opening, just preceding a scene showing the grave of Buffalo Bill on Lookout Mountain overlooking Denver. A contrast is drawn between the old prairie schooners and pack trains, of days gone by, and the motor cars of today. Surveying on high mountains and in narrow canyons, blasting, grading, and surfacing are pictured, and at the end some of the finished highway leading over the Continental Divide are thrown on the screen.

The picture is the first of a series dealing with the road building work in national forests. It may be borrowed from the department of agriculture, or prints may be purchased at the manufacturing cost by authorized institutions.

OREGON ROADS

(Continued from page 8.)

Prairie City-Unitey: Mountain road; open and in fair condition.

Unity-Cow Valley: Fair county road.

Cow Valley-Brogan: Excellent graded earth road.

Vale-Jamieson: Macadamized graded earth road.

Jamison-Brogan: Excellent earth road under contract for macadamizing.

Ochoco Highway

Redmond - Prineville: Graveled road; good condition.

Prineville-Beaver Ranger Station-Mitchell; Passable. Prineville to Wheeler County line in good conditon. to Beaver Ranger Station under repair. Beaver Ranger Station to Mitchell, fair dirt road, dangerous for night travel account of washouts and detours.

Crater Lake Highway

Road is open to Crater Lake from Medford on the Pacific Highway and Fort Klamath on The Dalles-California Highway.

Shaniko-Mitchell Highway

Passable for auto traffic but rough onaccount of wash outs.

La Grande-Joseph Highway

La Grande-Island City: Paved.

Island City-Elgin: County road in fair condition.

Elgin-Minam: First nine miles macadam; balance in fair condition.

Minam-Joseph: Macadamibed with exception of 8 mile stretch between Lostine and Enterprise; this strip is rough; take hill road. Road open from La Grande to Wallowa Lake.

Enterprise-Flora: Good macadam.

Baker-Cornucopia Highway

Baker-Halfway: 19 miles macadam, 8 miles graded earth road; balance very rough. Cautious driving necessary on "S" grade 4 miles west of Richland.

Baker-Unity Highway

Baker - Bridgeport: Open; fair mountain road.

Bridgeport - Unity: Good county road.

Grants Pass-Crescent City Highway

(Road to Oregon Caves.)

Grants Pass-Kerby: Good smooth road. From Kerby road is open to Oregon Caves.

Kerby-Waldo-Monument (Oregon Mountain): Rough but dry.

Monument-Crescent City: In good condition.

Bend-Sisters Highway

Open and in good condition; some detours are necessary around construction.

An important road meeting will be held in Weston July 8 to further the construction of the proposed highway over the Blue mountains from Weston to Elgin in Union county.

NATION'S BANKERS TO MEET AT PORTLAND

PORTLAND, Ore., July 8.—(U. P.)—Some of the financial wizards and captains of finance of the future no doubt will be among those present when the twentieth annual convention of the American Institute of Banking assembles its delegates here July 16.

Over a thousand delegates representing a membership of 51,000 enrolled in chapters in every important city in the country are expected to be on hand to swap ideas about banks and banking and exchange views on subjects intimately connected with the nation's financia lsystem.

Speakers of national prominence have been booked to address the convention on financial and industrial topics. Industrial trips have been arranged to acquaint the visitors with the business activities of the northwest, and little jaunts in lighter vein are on the program.

Carter E. Talman, of Richmond, Va., present vice-president of the National Institute will automatically become president to succeed Robert B. Locke, of Detroit, whose term expired in July. Other officers will be chosen by ballot. The convention will conclude its business July 20.

CUSHIONING QUALITIES OF ROAD

Perhaps no stretch of highway in the United States will be watched for its service qualities more than the new Phoenix-Tempe highway in Arizona but recently completed. There being two schools of highway engineers in the United States, one advocating the rigid pavement to withstand the impact shocks of heavy traffic and the other advocating a cushioning pavement to absorb the shocks, both schools will watch the behavior of the new road with great interest. The final three-mile stretch of the Phoenix highway was constructed of asphaltic concrete in both base and surface. It will furnish an interesting comparison with the portland cement concrete road that adjoins it on the east. The asphaltic concrete pavement fits the thory of the engineers who advocate a resilient or shock absorbing pavement and the cement concrete meets the views of those who urge the rigid or resistant type. "Asphaltic concrete base and surface pavements," says the Arizona Republican, "have been in use in the Salt River Valley for eight years—principally in the city of Phoenix—and have demonstrated that the type is successful under local soil, climatic and traffic conditions. There has not been one failure in the several hundred thousand yards of this type laid in the valley.

"Recent tests conducted by the U. S. Bureau of Public Roads, show that impact and not dead load, is the most important factor to be considered in modern highway building. A heavily laden truck travelling at 12 to 15 miles per hour, delivers heavy blows to a pavement surface. Asphaltic concrete roads, because of the shock absorbing qualities given them by the asphalt binder, are able to withstand this constant pounding and will carry the heaviest loads without injury. This high resistance to impact forces, explains the success had with relatively thin pavements of the type under concentrated truck traffic—and accounts, in part, for the constantly increasing popularity of asphaltic concrete."

NOTICE

The **Snubber Spring**, an Oregon Product, has every so-called shock absorber excelled on the market today. This is proven by the many satisfied Automobile owners throughout the state.

Every **Snubber Spring** is fully guaranteed when properly installed. Give them the hardest kind of a test for ten days that you can put them to. If they fall down in this time, return them. Your old springs will be replaced and they will not cost you a cent.

The **Snubber Spring** will do all and more than claimed. They will smooth out the bumps and shocks, making motoring a pleasure over any kind of road. They relieve your motor, motive parts and body of constant jar and strain, increase tire mileage and reduce gas and repair bills.

There is a lot more to tell regarding these springs, but we know you will be interested enough to come and investigate for yourself.

We are county distributors for the **Snubber Spring**, and will be glad to show you the merits of them. Call and look them over.

Round-Up Garage

518 Willow Street — Pendleton, Oregon

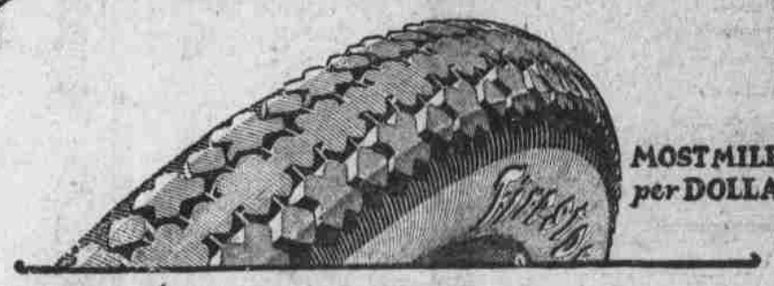
DAUGHTER HAD TO HELP MOTHER

Now Can Do All Her Housework Alone Because Lydia E. Pinkham's Vegetable Compound Helped Her

Jasper, Minn. — "I saw in the paper about Lydia E. Pinkham's Vegetable Compound and took it because I was having such pains in my stomach and through my back that I could not do my work. I had tried other medicines, but none did me the good that your Vegetable Compound did. Now I am able to do all my work alone while before I had my daughter staying at home to do it. I have told a number of friends what it has done for me and give you permission to use my letter as a testimonial."—Mrs. JESSE PETERSEN, Route 1, Jasper, Minn.

There is no better reason for your trying Lydia E. Pinkham's Vegetable Compound than this—it has helped other women. So if you suffer from displacements, irregularities, backache, nervousness or are passing through the Change of Life remember this splendid medicine. What it did for Mrs. Petersen it may do for you.

The Vegetable Compound stands upon a foundation of nearly fifty years of service.



MOST MILES per DOLLAR

Firestone

GUM-DIPPED CORDS

—and Their High Mileage Records

The high mileage records of Firestone Cords continue to emphasize the fact that Firestone methods are different and better. These records, steadily increasing in number and in mileage totals, justify the Firestone contention that there is one best way to build tires.

Among the primary sources of Firestone extra mileage is double gum-dipping—the saturation of the cord plies in a vat of liquid gum—thus coating each cord and virtually eliminating internal heat and friction.

Another is Firestone air bag curing, with its 200 pound pressure, which places every cord accurately and equalizes the tension.

By blending the rubbers of different plantations and types, and by tempering it before mixing, Firestone men add still more mileage.

Many cord tires are good—a few are better—Firestone users say one is best.

Those who have already experienced Firestone mileage, have stopped shopping and experimenting—they have made these cords standard equipment. Investigate your friends' success with Firestone Cords—and buy your next tire accordingly. Come in and get your share of extra mileage.

FABRIC

29 x 4	Oversize	$7.95	30 x 3 $ 8.95
30 x 3½	Oversize	9.95	30 x 3½ 10.65

CORD

30 x 3½ Regular Size	$13.75
30 x 3½ Extra Size	17.50
32 x 4	32.40
32 x 4½	41.90
33 x 5	52.15

GORDON TIRE SHOP
PENLAND BROTHERS
SIMPSON AUTO COMPANY