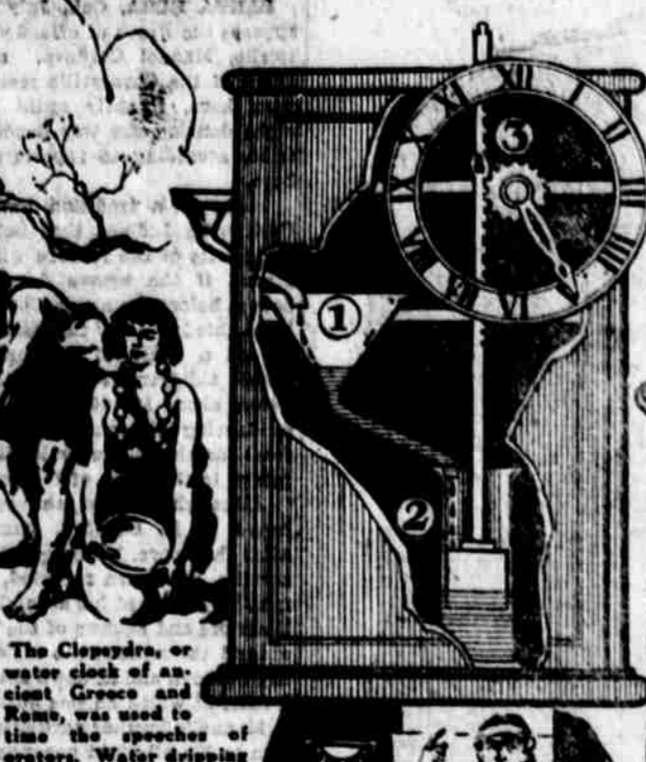


MARKING THE FLIGHT OF TIME

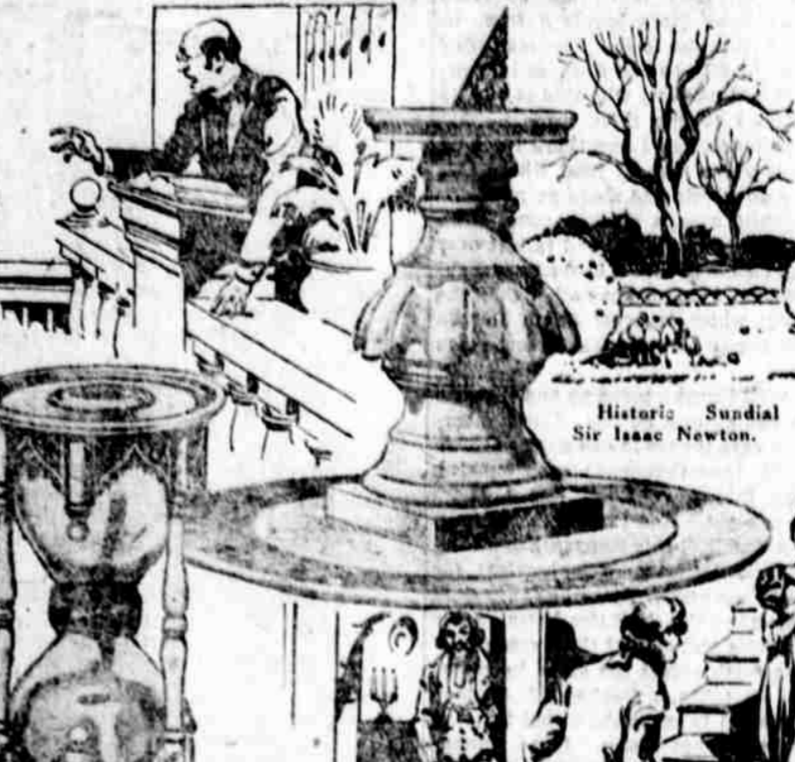


A Natural Sundial—Primitive Man's First Timepiece

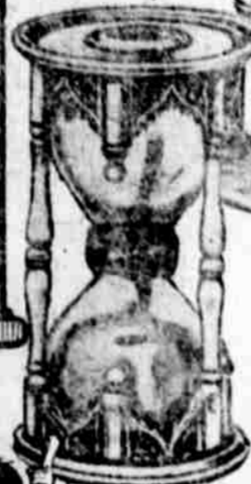
TIME-RECORDING has undergone its first revolutionary advance in over six centuries, with the invention of a clock that does not run down. An American is the inventor—the first American to contribute anything fundamental to the science of "telling time."



The Clepsydra, or water clock of ancient Greece and Rome, was used to time the speeches of orators. Water dripping from funnel (1) passed to cylinder (2) slowly filling the cylinder and raising float. Rising float 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.

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 opening and closing of the circuit. The current consumption is from one and a half to one 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.

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 Malsie 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 emphatically, "when the sun is three hands high."

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

Tarzan scratched his bear-graced 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 does not record Eye's first remark to Adam—presumably Eye spoke first—but it is probable that he 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

from the sundial is indicated by the record of the miracle in Isalah, 38:5.

"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 Malsie Nutmegs, but she was a young lady 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 midday or when the stars were in the sky.

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 so of 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 flowery speaker. This speaker had a habit of moistening his mouth periodically from the Court drinking glass.

Some of the slyer lawyers used to trick the attendants to put muddy water into the clepsydra, so that time ran more slowly, and they made longer speeches. Any man who has looked for sand in a car-burner 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 the 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 financial as well as a matrimonial planner, gambled,

when the chimes away. He probably would have lost the Abbey, too, if his opponent could have taken it home.

Mr. Terry was the first American clockmaker, but the most famous early American clockmaker was 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

CONDENSATION MAY RESULT IN MORE GASOLINE

WASHINGTON, July 17.—Possibility of increasing the output of gasoline by 129,000,000 gallons through more complete condensation of still vapors at the petroleum refineries, was suggested today by the bureau of mines after an investigation by D. B. Dow, the bureau's petroleum engineer.

Dow estimated that 59,000,000 gallons were recovered from uncondensed still vapors at refineries in 1921.

"Application of the system to all refineries would give a possible gasoline recovery by this method of 170,000,000 gallons yearly," the bureau said in a statement.

"The calculations of the bureau of mines are based on results obtained in refineries whose general methods are more efficient than those employed in the hundreds of smaller skimming plants that have no recovery systems. It is assumed that in the less efficient skimming plants, located in sections where the supply of cold water, so essential for condenser use, is scarce, greater recoveries could be made than in the large refineries studied. This should be especially true of Oklahoma, north Texas and Louisiana skimming plants where summer temperatures are high and where cold water is scarce. A survey of these plants, it is believed, would show that their losses in uncondensed still vapors would be much

higher than in the plants where the studies of the bureau of mines were conducted.

"The magnitude of the loss from non-condensation of these vapors has been realized only by few refiners, judging from the number of plants that have recovery systems. The thirteen refineries studied by the bureau of mines are obtaining 128,651 gallons of gasoline daily from uncondensed still vapors. These plants are situated in the various refining centers, other than the Pacific coast, and are running crude representative of all the producing fields east of the Rocky mountains. In addition, several are running Mexican crude. Information from California refineries indicates that on account of the smaller gasoline content of the California crude, there are no recovery plants of importance in that state. The average recovery of gasoline at the refineries investigated by the bureau of mines amounted to four-tenths gallon per barrel of crude oil charged.

"Unless preventive measures are adopted, losses of gasoline from failure to condense still vapors will increase in the future, because crudes are being handled in the field with more and more care to avoid evaporation and will therefore contain much lighter and more volatile fractions than at present.

"Condensation of the vapors formed by heating crude oil is affected in the refinery by leading vapors through coils of pipe submerged in water. On cooling, most of the vapor becomes liquefied, but a certain amount of vapor, due to insufficient time for proper cooling or the fact that its condensing point is lower than the temperature of the water, will remain uncondensed. Also, certain other fractions will not be condensed, for the reason that their liquefaction points are affected by the presence of other hydrocarbons. A small part of this uncondensed vapor is dissolved in the liquid that has condensed.

"Condensation of the vapors com-

ing from the still into liquid is accomplished either by passing them through pipes or shells having large surface exposed to the air or through coils submerged in water.

"Atmospheric temperature is an important factor in the production of gasoline from uncondensed refinery vapors. It is found that during winter months, due to more complete condensation of the vapors, the production of the 'gas' plant will fall off to some extent. An unusual ex-

SEE BEETHOVEN, THEN HIS SONATA



This remarkable photograph of the 'great composer' is from a painting, symbolic of his masterpiece, the 'Fascinating Sonata.' Draw the lids of your eyes close together, glances through the eyelashes and you will see Beethoven. Open the eyes wide and you will see what was in the mind of the musician when he wrote his delightful harmony.

Letters from the People

July 15, 1922.

Editor Herald:—

The undersigned has been reading all kinds of "Durham" in your paper about the highways and byways of Klamath county the last few years, and the latest is from A. A. Soule. I see he is advocating a road along the Klamath river. Well, if that road had been built years ago and later impractical to a real highway no doubt that would have been the best route into this country, and to build it now would probably run into a million dollars. The Grospring road is now well underway so that will have to be finished some day. The only direct inlet from the south, and the nearest, is via Weed and Dorris, so why not try and get that under construction. As for an all-winter road, I should think if there was a good hard surface road it could be traveled almost any time of the year.

I am not advocating this road because I happen to live in this God-forsaken out-of-the-way no-name-on-the-map burg, but any person with half common sense would see at a glance that the Weed-Klamath Falls route is the best to all concerned. There have been hundreds of people here the last couple of years asking the nearest road to Dorris and Weed. When told which way to go they say h—ll, we just came from there. Why in Sam Hill don't they build the road across the swamp and make it thirty miles shorter. There was a good substantial bridge built across the straits of Ady a couple of years ago. It is just like building a bridge between two little islands in the ocean. What is the use of the bridge when you cannot get to it? Therefore I say let us get the Weed-Klamath Falls road built and

DEVELOPER WOULD MAKE 364 DAYS

WASHINGTON, July 17.—Birthdays and holidays would fall on the same week day annually, such confusion would be averted, and millions of dollars spent in compiling calendars would be saved yearly if time were reckoned by a device just perfected by G. E. Faucher of Los Angeles, he claims.

This mechanism, soon to be exhibited before Washington officials in furtherance of efforts to simplify time calculation, divides the year into 364 days, or 13 months of 28 days each.

It consists of an aluminum framework within which astral movements are duplicated in miniature. Propelled by an eight-day motorclock, the earth and moon revolutions are effected by an intricate series of gears, the whole synchronized with mathematical precision. The earth's orbit is divided into 364 equal segments.

Faucher has been checking its performance for months, and declares it flawless. His invention isn't for sale, but will be used for lecture purposes only.

RELIC OF PAST

Mrs. Newmother—I wish I knew what to name the twin boys.

Uncle Whotmore—Name 'em Tom and Jerry and I'll make 'em a present of a fine china mug with their names on it in gold letters.—Houston Post.

NOTHING HIDDEN

Miss Dryden—I think men are horrid. You never see women going about with liquor concealed in their clothing.

Mr. Dryden—No, nor very much else concealed by their clothing.

HER MISTAKE

The Majd—And even after you met your ideal man you were not happy?

The Matron—I made the mistake of marrying him, my dear.

A SWEET POTATO BENTHEART

urnip—Do you, like Miss Yam.

Cucumber—Sure, she's my sweet potato!

E. T. Boatman, who has had a large experience in some of the most up-to-date shoe stores in Portland, Oregon, and who is a gentleman of pleasing personality, is now with J. E. Fenders & Co. in the shoe department.