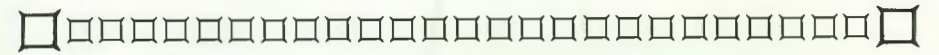


“**Van**”
Speedmeter

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AMA - DETROIT
1916
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Built Like an Elgin Watch
-by Elgin Watchmakers



THE STORY *of* THE INSTRUMENT
WHICH ACCURATELY MEASURES
SPEED AND DISTANCE



ONCE in a generation—rarely more often—a real invention, involving a true and new basic principle, is given to the world by the genius of some genuinely constructive mind.

Each year the tremendous birthrate of patentable “ideas” is equalled only by the number of headstones raised to the dead ambitions of so-called inventors. Were progress not so nicely balanced through the limitations of the human mind, the world probably would achieve in one year all of the scientific wealth which now awaits development at the hands of coming generations.

In recent days we have seen the evolution of the talking machine, the incandescent electric light, the flying machine, the automobile and even the telephone, telegraph and wireless telegraphy. These are REAL inventions. They embody new and basic principles.

Ours is the day of SPEED. Men and women live in a more rapid current of life than ever before. Fast trains bear us to and from our work. The highways and the byways of the country are filled with swiftly moving automobiles. Factory wheels and shafts revolve with continually increasing speed as the efficiency of manufacturing organizations is gradually increased. On every hand SPEED is a ruling word.



The law has come to regulate this speed. Automobiles may travel just so fast and no faster. Our trains are limited to speeds of greatest safety. Factory machinery is limited to a maximum speed dictated by a fair consideration for the safety of the workers operating it.

SPEED must be MEASURED in these days.

It must be measured accurately, for inaccuracy wholly fails to meet the exacting demand of present-day pressure.

The Basic Principle

So, into this world of speed has come a new invention, a real invention, involving an absolute basic principle, as efficient as it is simple—the Van Sicklen Speedmeter.

T. C. Prouty, who conceived this device had in view two prime objects:

*The absolutely accurate measurement of the speed of automobiles.
The reduction of a speed-measuring instrument to its very lowest possible commercial denominator.*

To the average person it would seem that the inventor of the Van Sicklen Speedmeter possessed a vivid imagination coupled with a thorough understanding of certain scientific facts and a marvelous mechanical bent of mind.

Briefly, the Van Sicklen Speedmeter is an instrument which calibrates an air current, and translates the result into miles-per-hour.



Imagine the workings of the old fashioned hour glass—that simple device used by our forefathers for measuring time.

By inverting the hour glass the tiny grains of sand in the upper receptacle are borne downward by the pull of gravity through the aperture between the two compartments. The size of this aperture is calibrated to allow a certain number of grains of sand to pass through in a given time, thus requiring a given number of minutes to elapse before the entire supply of sand passes from the upper cup into the lower one.



FIGURE 1 Phantom View

With the operation of the old fashioned hour glass in mind, it is not difficult to understand the principle involved in the working of the Van Sicklen Speedmeter. Change in your mind's eye, the grains of sand to tiny air particles and you will have a picture of the invisible factor directly involved in the basic principle of the Van Sicklen Speedmeter.



For, as is commonly known, the air is made up of minute particles, each unit as separate and distinct from its fellows as are the sand grains, although not visible to the eye nor recognizable by any of the human senses.

But you cannot fully grasp the operation of this instrument unless you visualize all the parts of its construction. (See illustration Figure 1.) Fortunately they are few and simple.

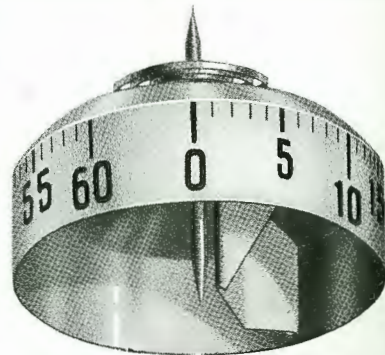


FIGURE 2 Speed Dial

The Mechanism

The Van Sicklen Speedmeter consists of but three factors, vital in its operation. There is an air-circulator consisting of two elongated gears of aluminum, enmeshed and revolving in opposite directions. (See illustration Figure 3). This circulator receives its power from a rotating flexible shaft, thus giving a positive drive the moment the car is placed in motion.

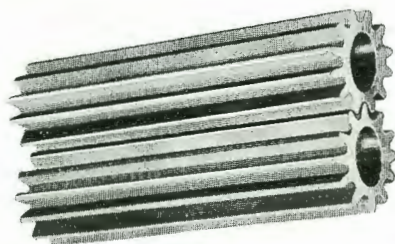
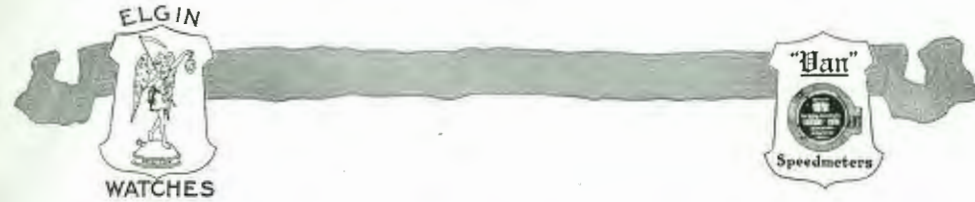


FIGURE 3
Air Circulating Gears

The air-circulator is located in the head of the instrument, housed in a chamber in which there are two openings, one from the outside and away from which the gears rotate, and the other leading into a second chamber in which is pivoted a cup shaped disk fitted on



the inside with a light strip of metal which converts the pivoted part into a simple "vane," similar in operation to the ordinary "weather vane." (See illustration Figure 2.)

As the circulator revolves, the air which occupies the grooves in the gears is forced out by the enmeshment of the oncoming teeth. Unable to return to whence they came, and being forced ahead by the continual arrival of more, the air particles pass through the opening into the dial chamber as a part of the current of air thus generated. (See illustration Figure 4.)

Despite the fact that this current of air is imperceptible to the most delicate human senses even when the instrument records its maximum speed, the movement of the air particles is sufficient to rotate the cup-shaped dial. (See illustration Figure 2.)

The Calibrating Disk

In the dial chamber lies the basic secret of the instrument—the calibrating disk. (See illustration Figure 4.) It is apparent that the size of the aperture through which the air particles pass must be varied throughout all of the speeds maintained by the instrument. In other words, calibrated to allow the required number of air particles to pass



FIGURE 4
Air Cup and Calibrating Ring



through in a given time, as does the sand in the hour glass. The size of this opening is calibrated by the position of the vane in the rotary dial. (See illustration Figure 1.) The markings on the outside of the dial translate the position of the dial into miles-per-hour. Thus the instrument is calibrated for every division on the dial and is the only speedmeter which can be calibrated correctly throughout all of the speeds.

Accuracy Test

Today the Van Sicklen Speedmeter stands as the only instrument which indicates speed-per-hour on a scientifically correct basis. In fact, our own instruments are the only ones upon which we can depend for the shop tests, and in no other speed indicator manufacturing plant is the variation held up to such a high standard as in the factory where the Van Sicklen Speedmeter is made—THE ELGIN NATIONAL WATCH COMPANY plant.

To those who have a practical knowledge of the operating principles of other speed-recording instruments the fact that the Van Sicklen Speedmeter is a product which has been reduced to the lowest possible commercial denominator carries peculiar significance.

Simplicity

For, in the make-up of these instruments there are virtually but three moving parts—the two gears in the air-circulator and the dial. Friction has been reduced to a minimum. The dial is pivoted in jewels of a virtually indestructible nature. The air-

circulator gears are subjected to no strain and are so designed as to enmesh and operate without wear.

The Odometer

The mechanism of this instrument represents an improvement on all known methods. The odometer, which registers trip and total mileage, contains certain mechanical improvements which materially aid its operation and at the same time increase the legibility of the figures fully 100 per cent. (See illustration Figure 1.) All spur gears utilized in revolving the odometer wheels are fitted on the interior of the wheels themselves and are of the Geneva stop type, thus making possible figures fully twice as large as those used on any other speedmeter odometer. The trip odometer reset wheel requires the use of but one finger while the mileage may be altered in either direction to correspond with route map figures. The reset device requires no side movement and is constructed so as to eliminate the necessity of any locking arrangement.

The Transmission Drive

Another form of speedmeter drive preferred by some automobile manufacturers consists of a permanent set of gears installed inside of the transmission, gear ratios being based on transmission shaft revolutions. A flexible shaft connection is made from a member which projects through the top or side of the transmission case.

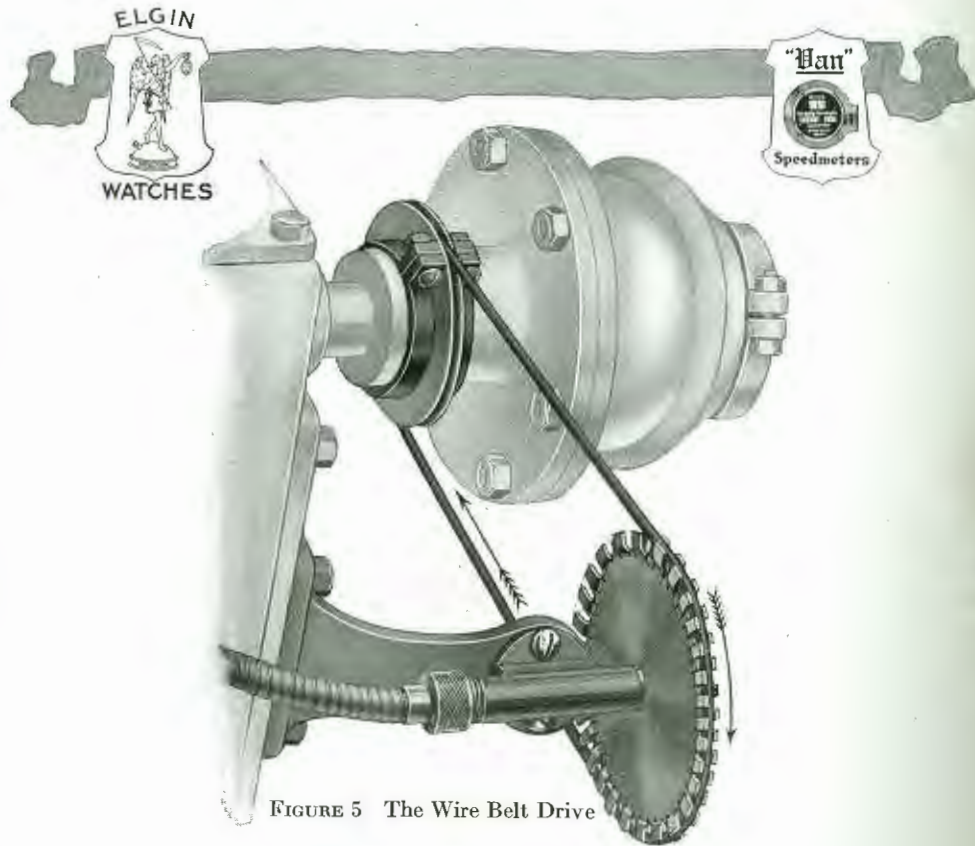


FIGURE 5 The Wire Belt Drive

The Wire Belt Drive

A positive wire belt drive, as positive as a set of gears, has been produced by means of two grooved pulleys. (See illustration Figure 5.) No estimated slippage is provided for in the size of the pulleys. They are exact. Every revolution of the wheels gives the required number of revolutions to the driven pulley. The driving member may be attached to the hub of the universal joint or to the universal housing.

Universal Joint Gear Drive

We also provide the conventional gear and fibre pinion drive, applied direct to universal, and driving through a swivel joint.



The Front Wheel Drive

When the propeller shaft is encased or the transmission is combined with the differential, a front wheel drive may be provided. This drive consists of the customary bracket and



FIGURE 6 The Front Wheel Drive

fibre pinion gear enmeshed with a large metal gear attached to a front wheel. The accompanying illustration, Figure 6 shows this type of drive installed on a Ford.



Quality and Legibility

To the perfect workmanship and unexcelled quality of the material which goes into the making of the Van Sicklen Speedmeter is due, to a large extent, the excellent outward appearance of this instrument. Legibility is the keynote of the construction—for the Van Sicklen Speedmeter may be read as easily from the rear seat of a seven-passenger motor car as from the driver's seat. It is finished perfectly, the case being steel, coated with a heavy black enamel. The dial and the odometer figures are all lithographed directly upon these parts. In fact, this is the only instrument so constructed in this particular.

As to the merits of the instrument in operation:

The Van Sicklen Speedmeter is not affected in operation or appearance by climatical changes. Heat, cold, altitude and varying degrees of humidity have absolutely no effect upon the perfect operation of this instrument. Vibration of the most violent sort causes no fluctuation in its indication. Its readings always are steady—no fluctuations ever occur.

Built Like an Elgin Watch by Elgin Watchmakers

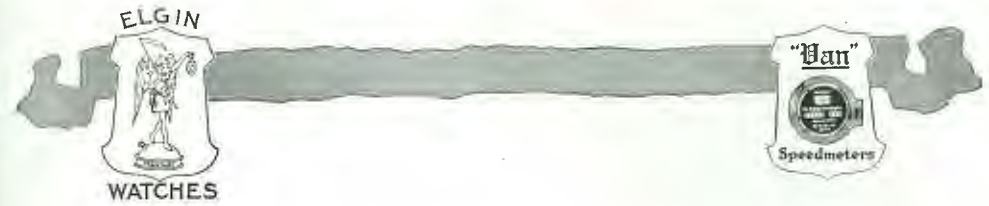
It is built to work correctly. Also it is built to live, for behind it, in its making, there is a reputation of more than half a century of instrument building of the most delicate, most conscientious kind—the sort of instrument building which has made the Elgin National Watch Company the monarch of its field. For the Van Sicklen Speedmeter is made by the Elgin National Watch Company in its mammoth plant, the largest of its kind in the world—at Elgin, Illinois.



Flush Type, Black-Face Nickle Bezel



Flush Type, Black Face, Black Bezel



Bracket Type, Black Face, Brass or Nickle Bezel



Kilometer Instrument, Black Face, Nickle Bezel, Flush Type, also Furnished with Black Bezel.



Acres of the most modern machinery for the making of scientifically perfect parts are available to insure the absolute accuracy of this instrument. The same skill which made the Elgin watch "the universal watch" is making the Van Sicklen Speedmeter the speed indicator of Motordom. It is made non-adjustable and will require no recalibration.

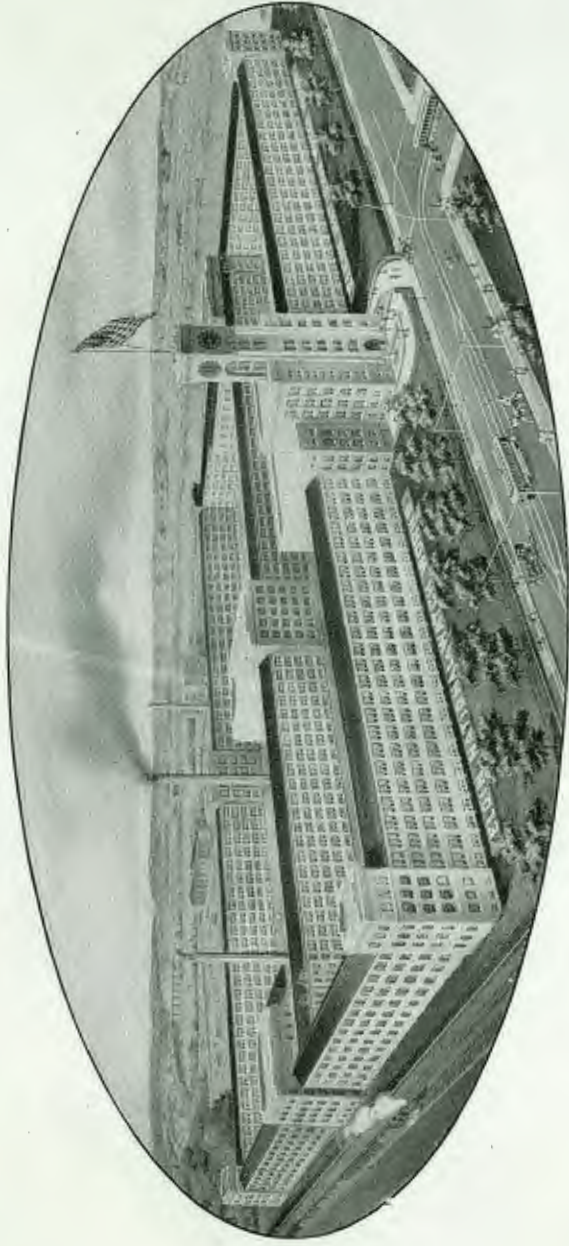
Guarantee

The Van Sicklen Speedmeter is guaranteed for one year against defective material and workmanship provided the speedmeter head has not been opened nor tampered with, and providing transportation charges are prepaid. The driving mechanism also is guaranteed for one year against defective material and workmanship, excepting the fibre pinion gear used on the front wheel drives, and providing transportation charges are prepaid.

Service

Every sales agency representing the manufacturers who regularly equip with Van Sicklen Speedmeters is provided by us with a supply of such parts as may, through accident, wear or imperfections, require replacement, thus insuring "on-the-spot" service to the owner, who may know that, by this system, there is a "Service Station" in every town where his make of car is sold. These dealers are authorized by us to make adjustments provided for under our guarantee. However, if desired, adjustments will be made promptly by the Van Sicklen Company.

THE VAN SICKLEN COMPANY
14 CHICAGO STREET, ELGIN, ILL.



Elgin National Watch Company's Factory

Where the Van Sicklen Speedmeter is made

The Newman-Montroe Co.
Chicago