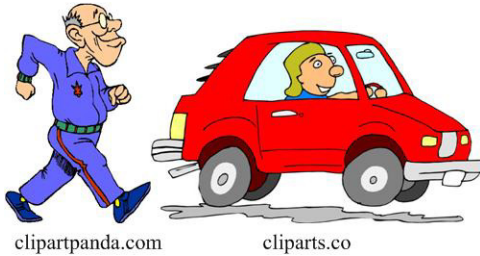# Timing the Car

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This is yet another simple problem from Henry Dudeney ([1]).

57. TIMING THE CAR

"I was walking along the road at three and a half miles an hour," said Mr. Pipkins, "when the car dashed past me and only missed me by a few inches."

"Do you know at what speed it was going?" asked his friend.

"Well, from the moment it passed me to its disappearance round a corner I took twenty-seven steps and walking on reached that corner with one hundred and thirty-five steps more."

"Then, assuming that you walked, and the car ran, each at a uniform rate, we can easily work out the speed."

My Solution

Figure 1 shows the problem situation. The speed of Mr. Pipkins is given by v_P = 3.5 mph and the unknown speed of the car by v_C. T_1 is the time after the car passes Mr. Pipkins and reaches the corner. T_2 is the time Mr. Pipkins reaches the corner, though it will not be needed. Finally, to keep track of the units, let r = Mr. Pipkins's steps per mile.

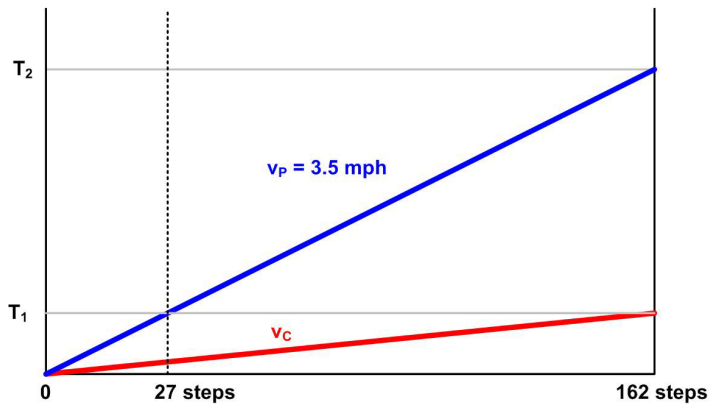**Figure 1**

Then we have the following relations:

$$27 = r\, v_P\, T_1 = r\, 3.5\, T_1$$

$$162 = r\, v_C\, T_1$$

so

$$162/27 = v_C\, /\, 3.5$$

or

$$v_C = (162/27)\,(7/2) = 3\times 7 = \boxed{21 \text{ mph}}$$

(Maybe in 1930 a car going a little over 20 mph is considered to be "dashing".)

Dudeney Solution

Dudeney has a slicker and more direct solution, which is essentially the same computation I did, only less obscure.

As the man can walk 27 steps while the car goes 162, the car is clearly going six times as fast as the man. The man walks 3½ miles an hour: therefore the car was going at 21 miles an hour.

References

[1] Dudeney, Henry Ernest, *536 Puzzles & Curious Problems*, (1930), Martin Gardner, ed., *Scientific American*, Charles Scribner's Sons, New York, 1967. p.16