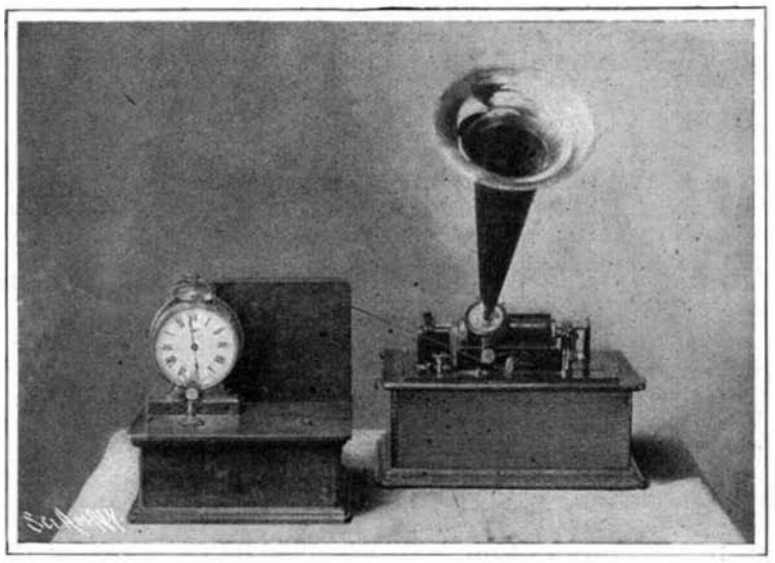
A TIME-CONTROLLED PHONOGRAPH.

A recent article referring to the personality of Mr. Andrew Carnegie stated that the great ironmaster is awakened every morning by the melodious strains of a pipe organ, played by a well-known musician, and from a psychological viewpoint of theory and practice this is much better than to be rudely aroused to the day's activity by the clanging gong of a 98-cent alarm clock. Unfortunately all of us cannot afford the luxury of a private organ and organist, but thanks to the genius of Dr. J. E. Hett, of Berlin, Ontario, the next best thing has been done for a sleepy and long-suffering humanity, and that is a time-controlled phonograph, an arrangement of clock and phonograph, so that at any predetermined time of night or day, but especially in the early morning, sweet sounds may fill the sleeper's room and so awaken him.

Now the sounds that are first impressed upon the brain may be a march by Sousa or a song by Melba or any other musical selection that may be desired, and as it is generally believed that the first thoughts which are induced on awakening by external suggestion cling to a person more or less tenaciously throughout the day, it is obvious that these should be sweet and pleasant instead of harsh and uncomforting. To determine the correctness of the above supposition the doctor commenced a series of experiments, and as the result of numerous investigations upon himself he became convinced of the verity of it, and in the end devised the combination shown in the accompanying illustration.

The mechanism is very simple and consists of a spring which trips a lever attached at one end to an ordinary alarm clock, while at the other end a cord which passes over a pulley is connected to the starting lever of the phonograph. The case contains three ordinary dry-cell batteries, and when the alarm lever of the clock is tripped the phonograph is not only started but a miniature four-volt lamp is also turned on and lighted. The light may, however, be turned on or off at pleasure and the phonograph operated likewise at will.



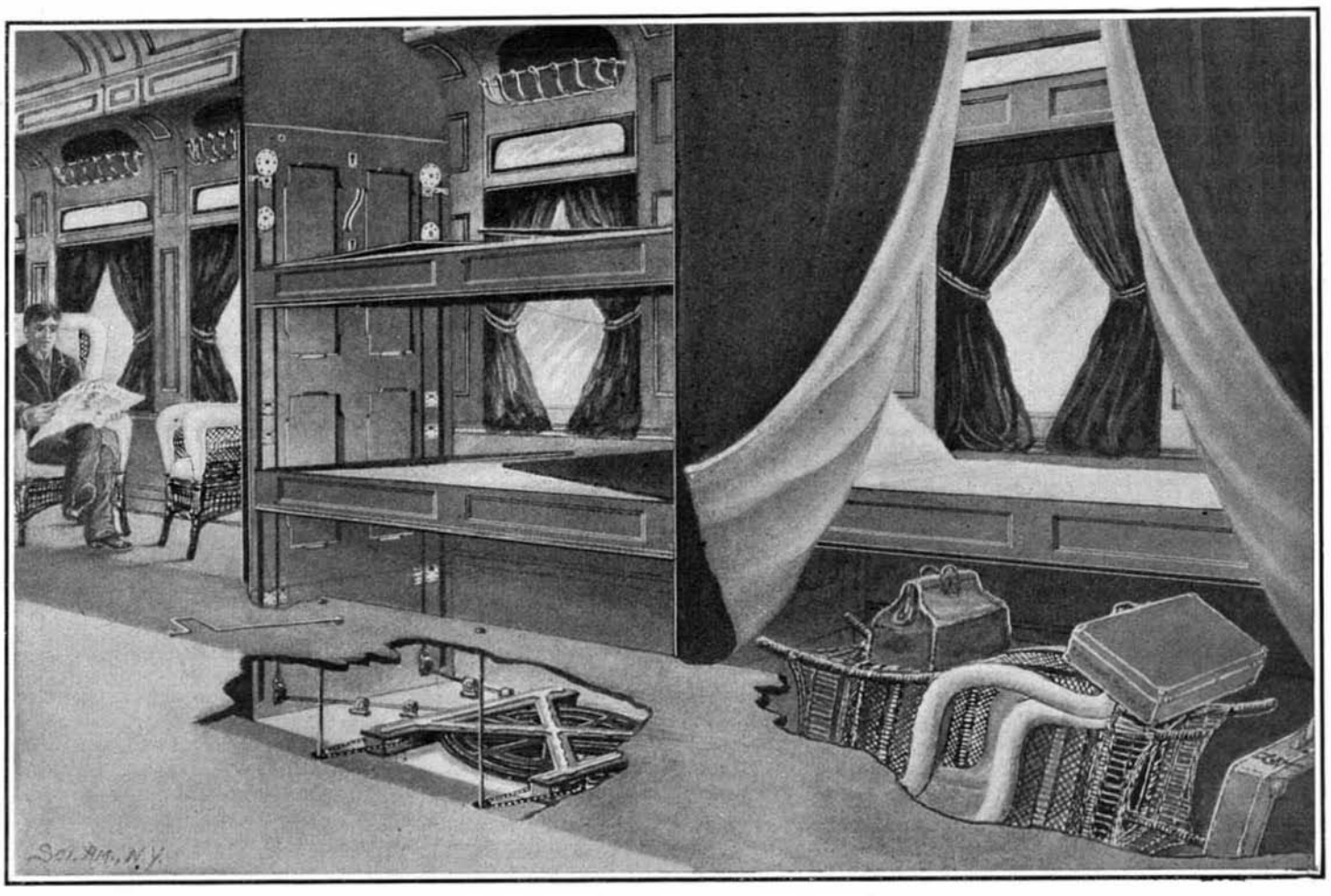
A TIME-CONTROLLED PHONOGRAPH.

A COMBINED SLEEPER AND CHAIR CAR.

Although the sleeping car is an American invention, and we are justly proud of it as such, we have yet to discover the traveler who finds pleasure in the use of one of these cars. There have been many complaints against the discomforts of this mode of travel. The berths are cramped and ill-ventilated by night, and by day the seats are cumbersome and hot. But the traveling public has continued to use these cars simply because nothing better was offered. However, a new car has recently been invented which promises much for the comfort of the traveler. A study of this new car merely emphasizes the discomforts which have so long been endured in other cars. The striking feature of the improved sleeper is the fact that when not in use the berths, both upper and lower, are lowered into wells under the floor of the car. Trap doors close these wells, leaving the entire floor free and unobstructed. Comfortable wicker chairs which occupy the wells when the berths are made up, are then provided for the use of the passengers.

The operation of making up a section occupies but little time. There are two trap doors to each well, one door overlying the other. These doors are hinged at opposite sides and when raised form the side walls of the section. The walls are carried up to the ceiling by means of extension pieces which are set into grooves in the upper edges of the trap doors and are cut to exactly fit the curve and moldings of the ceilings. Each door is provided near the upper end with two pairs of pulleys, one pair for each berth. Light wire cables attached to the berths at opposite sides pass over the pulleys and are carried down to a pair of drums, one for each berth, at the bottom of the well. Our illustration shows the floor of the car partly broken away to reveal these drums. The drums are normally concealed by a false bottom, which is not shown in the illustration. The drums are separately operated through suitable gearing by means of a pair of shafts, whose square ends project into recesses in the car floor. To turn the shafts the porter uses a hand brace of the form shown in the engraving. The berths are thereby lifted to their proper positions. The illustration shows the berths in one of the sections as only partly raised. It will be noticed that each berth is provided with a pair of hinged lids. When the berths are raised to the proper height, these lids are swung up against the walls of the section and serve not only to conceal the pulleys and cables, but to operate latches which enter sockets in the walls and thus firmly lock the berths in position. A cam groove may be seen in the upper end of the trap door, the office of this being to operate a board or slide that closes the gap between the upper berth and the side wall of the car. The lower berth before being locked into place is first raised sufficiently to permit of stowing away the wicker chairs and luggage. Then it is lowered to position and locked, as shown at the right of our engraving. The gap between the lower berth and the edge of the open well is closed by a shutter which slides under the berth. Between the curtains and this shutter is a space 8 inches wide in which suit-cases, satchels, and the like, may be placed without encroaching upon the aisle. An entire section, upper and lower berths, may be made up in from two to three minutes, and the entire car in less than half an hour, so that the passenger is not subjected to those long, wearisome delays to which he has heretofore been accustomed. There is over 6 inches more space between the lower and upper berths than usual, while the clear space above the upper berth provides plenty of room for the occupant to dress and undress. If only one berth of a section is to be occupied, the upper berth may be moved down on to the lower berth and locked in place.

In cars as heretofore made, the bedding, during the daytime, is placed in the upper berth and locked up against the ceiling. Here it must remain all day without ventilation. In the new car, on the other hand, the wells are provided with a ventilating system, so that the bedding is thoroughly aired all day. A novel ventilating system is also provided for the car itself, and due to the arrangement of the berths, larger windows than ordinary are provided. By storing the berths near the trucks, topheaviness of the car is prevented and a much lighter construction is permitted.



A COMBINED SLEEPER AND CHAIR CAR.

Sound-Proof Building Plates.

These bricks or plates are made from a mixture of gypsum, with sawdust, cokedust, or ashes. The following, according to the Bautechnische Zeitschrift, is another effective but more expensive method. An acid or acid salt from a second salt is mixed with the gypsum mass by stirring; the action of the acid forces out the carbonic or hydrochloric acid from this second salt, and these gases in escaping produce pores in the plates. With careful work, the pores in the mass may be distributed so evenly and in such great number that the plates made from it are very light, conduct sound badly, and can be easily nailed. The same result, according to the Allgemeine Chemikerzeitung, may be obtained in a much simpler manner by adding small quantities of carbonates to the gypsum mass. These carbonates and the gypsum suffer mutual decomposition, resulting in the liberation of carbonic acid; the gas escapes slowly and steadily, while the gypsum sets and hardens, acquiring an entirely porous texture without losing any of its durability. Thus at the expense of very little material the plates, while retaining their strength, become lighter. The bicarbonates of the alkalies—sodium carbonate or ammonium bicarbonate—are the best salts to use for the purpose. The effect may be increased by adding sawdust, cokedust, or ashes. For example, 20 parts by weight of sawdust may be mixed with 40 parts by weight of gypsum, and 40 parts by weight of water, in which 1 part by weight of sodium bicarbonate or ammonium carbonate has been dissolved, added to the mixture. The pulp is poured into molds, and can then be left to harden without further attention.

The Prussian government is said to have agreed to carry out the important works involved in providing a canal joining the Moselle and the Saar. The canalization works are, in fact, already in progress on the former river between Remich and Differdange. It is possible that the scheme will come before the Reichstag in the autumn of the present year.