SCIENCE

[Entered at the Post-Office of New York, N.Y., as Second-Class Matter.]

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

SEVENTH YEAR.
VOL. XIV. No. 349.

NEW YORK, OCTOBER 11, 1889.

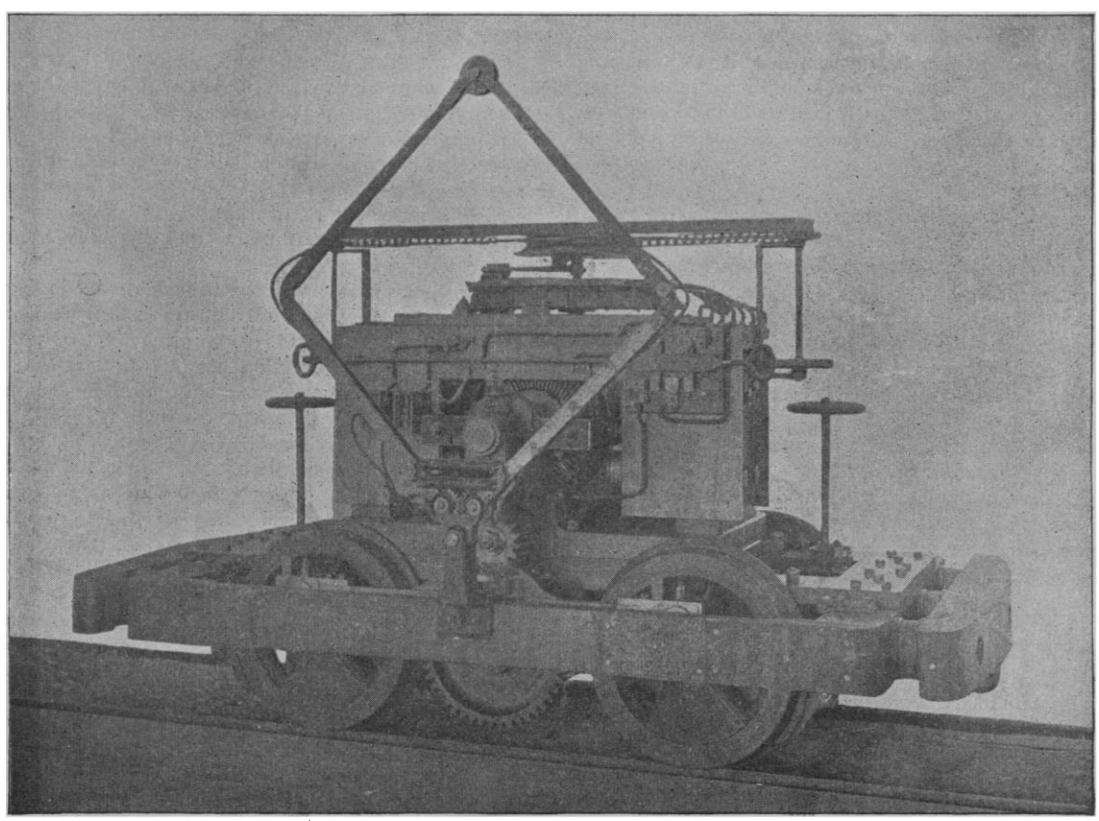
SINGLE COPIES, TEN CENTS.
$3.50 PER YEAR, IN ADVANCE.

ELECTRICITY IN MINING.

THAT the electric current can be easily adapted to mining and engineering operations is a fact which is abundantly attested by mines in which it has already come into general use for both lighting and transmission of power. The contrast between the wire-rope, compressed-air, and other methods, with electrical transmission of power, cannot fail to be in favor of the latter system. Existing water-powers miles away from the mines may be used, and electric motors employed for hoisting, haulage, pumping, ventilating, and many other purposes, with greater ease and economy than could possibly be accomplished by any other method. In fact, it is safe to say that in the near future electricity will displace all other forms of motive power in mining operations where the conditions are at all favorable.

In this connection, it may be mentioned that the Thomson-Houston Electric Company has just completed a mining locomotive for the Hillside Coal Company, Scranton, Penn., which is shown in the accompanying illustration. The machine embodies new features in motor-construction and in general design, and under practical test has shown that it is particularly adapted to the nature of the work required of it. The locomotive is made for operation on a three-foot gauge, is 9 feet 7 inches in length over all, width 5 feet 3 inches, and height 5 feet 6 inches. Although the weight is 10,500 pounds, there is not a pound of it which is not utilized in the construction of the machine; and the tests for traction which have been made have given the most excellent results. The speed is six miles an hour under full load.

The motor used is the type "G" railway motor, 40 horse-power, embodying designs and inventions of Mr. Charles J. Van Depoele. Its motion is transmitted to the wheels by gears and connecting rods. On the top of the machine is placed a rheostat controlled by the wheel shown at each end, and on the side is placed a reversing-switch, which can be operated in the same way from either end.



THOMSON-HOUSTON ELECTRIC LOCOMOTIVE FOR COAL-MINES.

One of the distinctive features is the trolley-arm, which will operate with equal facility in either direction; and its method of construction permits a great variation in the height of the conductor. This is a very important and valuable feature, as in mining-work the conductor is rarely maintained for any length at a constant height. The Thomson-Houston Electric Company has already made in mining operations many applications of its electrical apparatus, which has been found to possess the same characteristics of excellence shown in its well-known lighting systems.