

upon the resistance of the body, and that varies largely with the dryness of the skin. It may be 10,000 ohms when the skin is dry, and 300 ohms when it is moistened by potash, as is the case in executing criminals by electricity. "A current of as much as twenty thousandths of an ampere will produce strong muscular contractions, and a current of two amperes traversing a vital part is certainly fatal." (Thompson.) The ordinary current used in medical practice is from two to ten thousandths of an ampere. The current from a Wimshurst machine is very minute. Taking the average resistance of the human body at 2,500 ohms, a pressure of 500 volts will send a very disagreeable amount of current through a man; 2,000 to 3,000 volts alternating would be certainly fatal, if it traversed the head or spinal column. This effect is due either to the shock upon the nerves or to the destruction of the tissues by burning or electrolysis, the blood being coagulated. In the latter case there is no possible restoration. It is obvious from this that it is the amperes and not the volts which do the injury. The volts only furnish the pressure to cause the current or the amperes to flow.

(9478) H. A. T. asks whether the inside or outside wheels of an automobile have a tendency to lift or rise from the ground when the machine makes a turn or curve. A. The inside wheels.

NEW BOOKS, ETC.

DOMESTIC MANNERS OF AMERICANS. By Frances Trollope.

LIFE OF JESUS. By Ernest Renan.

NATIONAL DOCUMENTS.

STUDY OF WORDS. By Richard C. Trench. Unit Books. Published by Howard Wilford Bell, 259 Fifth Avenue, New York, 1904.

We already have had occasion to comment upon the excellence of Mr. Bell's unit books—books which are sold by the number of pages that they contain, at one cent the unit of 25 pages. The four volumes before us represent most important additions to his admirably selected list.

Trench's "Study of Words," although it does not represent what might be considered modern philological views, has been the basis of many a work of similar character. The recent investigations conducted have disposed rather summarily of many of Trench's etymologies. Still, his book, written in a graceful though academic style, is just as readable today as it was in 1851.

The volume of National Documents is "a collection of state papers so arranged as to illustrate the growth of our country from 1606 to the present day." It includes the first charter of Virginia, 1606; the "Mayflower" contract of 1620; Articles of Confederation of the New England Colonies, 1643; typical early Indian treaties of 1645; Declaration of the First Continental Congress, Declaration of Independence, Articles of Confederation, Treaties, and the Constitution of the United States.

Of Ernest Renan's "Life of Jesus," suffice it to say that in its present form the book makes an attractive volume.

The Unit books are so cheaply and yet so attractively designed, that the success of the enterprise may be considered assured. As we have already stated, we trust that Mr. Bell will publish a few classic scientific works in the series.

THE STEEL SQUARE POCKET BOOK. By Dwight L. Standard. New York: Industrial Publication Company, 1904. 32mo.; pp. 109; 112 diagrams. Price, 50 cents.

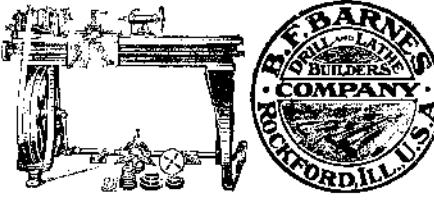
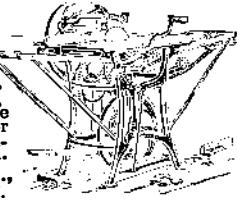
This tiny book was written by one skilled in the art of carpentry, for the use of carpenters and mechanics who have to do with the square in their daily work. It is brimful of all sorts of problems met in practical work, and the solution of these problems is made clear by numerous diagrams.

INDEX OF INVENTIONS
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AND EACH BEARING THAT DATE
[See note at end of list about copies of these patents.]

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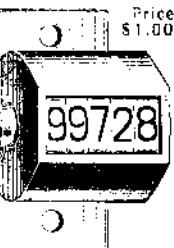
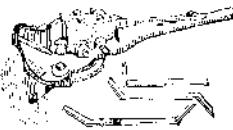
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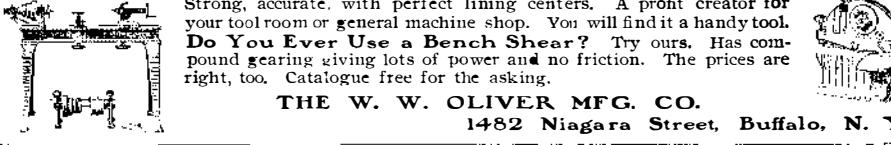
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