

(9) S. D. writes: I have a basement which I use in making ice cream; have a good deal of water and ice about, and heavy tubs and barrels, and I wish to put in a floor of cement or asphalt, or something of the kind. A. Asphalt, coal tar, and sand makes the best floor for such purposes. Melt the asphalt and coal tar equal parts in a large kettle. Heat the sand on a large iron pan, and mix 1 part asphalt and tar to 4 parts sand, hot, and spread quickly.

(10) W. C. M. writes: I built a dynamo machine three times larger than the one explained in SUPPLEMENT, No. 161. I wound the fields in 8 layers of No. 16 double wound cotton wire, the armature with No. 18 single wound. By connecting a brush and a field together, and running the remaining brush and field to the lamp, I cannot get a current strong enough to get the carbon in a 16 candle power incandescent lamp red. By connecting a brush and field and the other brush and field together, and then running two lines from them to the lamp, the current is just sufficient to get the carbon red in the lamp; but by connecting the brushes and fields together in this way produces too much sparking, and that burns the brushes and commutator up. Would it do to wind the field and armature with smaller wire? If so, what number would you recommend? Would it make any difference in decreasing the width of the commutator from $\frac{1}{4}$ to $\frac{1}{2}$ inch? Should I not get one 16 candle power incandescent lamp out of the machine described? What is the trouble with my machine? A. Have you tried connecting two lamps in parallel circuit, so as to reduce the resistance of your external circuit, and cause some of the current to pass through the lamps, and less through the field magnet? Probably your machine would run two or three lamps connected in parallel circuit better than it could run one lamp, as your machine is probably incapable of producing a current which will overcome the resistance of a single 16 candle power lamp. We would not advise you to wind your machine with finer wire. If you should not succeed in operating two 16 candle power lamps with your machine, try a larger number of smaller lamps connected in parallel circuit. From your description we think there is no trouble with your machine.

(11) E. N. H. says: Metallic railway ties are about to be experimented with on the Maine Central Railway, and the Boston and Maine Railroad has had a section laid with steel ties in use for the past six months.

(12) H. L. G. asks if a simple and practical apparatus for detecting and showing the degree of vitiation of air contained in apartments has ever been presented to the public. A. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 259, illustrated.

(13) N. T. asks how to put up matches to stand a damp climate. A. In moist climates, like England, less phosphorus and more chlorate is used, which imparts a snapping and flaming quality. The following is an illustration of the English composition for tipping:

Fine glue.....	2	parts.
Water.....	4	"
Phosphorus.....	$\frac{1}{16}$ to $\frac{1}{8}$	"
Potassium chlorate.....	4	to 5 "
Powdered glass.....	3	to 4 "

Red or white lead or smalt, sufficient to color. The glue, broken in small pieces, is soaked in water till soft, added to the water, and dissolved by means of a water bath. The vessel is removed from the fire and the phosphorus is gradually added, the mixture being constantly agitated with a suitable stirrer. When a uniform emulsion is obtained, the other substances are mixed in one after the other, in the order in which they are named above, and the stirring is continued until the mixture is nearly cold. The best qualities of matches have their tips protected by a thin coat of copal varnish.

(14) G. S.—People losing their hearing generally lose the faculty of intelligent speech, though many retain considerable facility of expression from their memory of lingual effort and observation of the lips of others.

(15) D. McK. writes: I have a small coal-burning stove in my dining room in which I burn coke. I am told that it is dangerous without the best of ventilation, as the deadliest of gases are generated from the coke. A. Your coke stove is all right if you have a stovepipe as used for burning coal. Good coke is healthier than poor coal.

(16) J. F.—The slight variation in the tables as given by different authors in stating the latent and sensible heat of steam arises from the use of original formulas of different investigators on the properties of steam. The tables of any one author are sufficient for all practical purposes. We recommend Nystrom's Mechanics' and Engineers' Pocket Book, last revised edition, 1885, \$3.50, which we can furnish.

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February 9, 1886,

AND EACH BEARING THAT DATE.

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Type writing machine, W. H. Slocum.....	\$35,972
Type writing machine, T. D. Worrall.....	\$35,609
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Urinal, T. W. Mann.....	\$35,601
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Vehicle spring, J. W. Patterson.....	\$35,953
Vehicle spring, S. G. Smith.....	\$35,645
Vehicle stake, C. A. Gould.....	\$35,918
Velocipede, T. B. Jeffery.....	\$35,590
Ventilator. See House ventilator.....	
Ventilator, B. Scaries.....	\$35,963
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Washing machine, C. C. Maxwell.....	\$35,945
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Watch stem winding and setting attachment, H. Abbott.....	\$35,783
Watch stem winding and setting mechanism, H. Abbott.....	\$35,782
Watch winding indicator, A. G. Wiseman.....	\$35,666
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Weighing machine recorder, P. Everitt.....	\$36,043
Wheel. See Car wheel. Propeller wheel. Water wheel.....	
Wheel, R. Scheidler.....	\$35,964
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Whip rack, J. A. McPherson.....	\$35,765
Winding fabrics, machine for, H. Winterwerber.....	\$35,870
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Windmills, automatic water service system for, C. G. Frushour.....	\$35,807
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Wringer, J. W. Weiser.....	\$35,981

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Carpet, D. G. Melville.....	16,510
Easel, F. H. Tobias.....	16,511
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Range, D. S. Richardson.....	16,518
Sash fastener, Huttig, Sr., & Bast.....	16,507
Spoons, etc., handle for, C. Casper.....	16,506
Trunk iron, J. H. Alexander.....	16,505
Type, font of, J. Guillemin.....	16,514
Type, font of, C. E. Heyer.....	16,516
Type, font of printing, H. Ihlenburg.....	16,508

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Awning stripes—a woven cotton fabric, Gary Manufacturing Company.....	13,005
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Barekes and paraisins, W. Openhym & Sons.....	13,013
Cashmeres, W. Openhym & Sons.....	13,016
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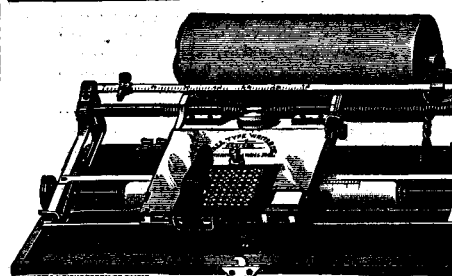
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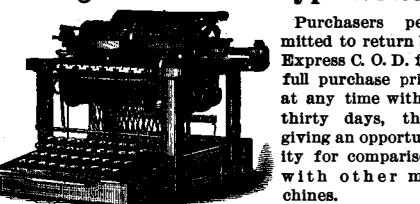
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