

opening and then transversely out of the latter, which completely releases the hose material from both members.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

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The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan.

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Inquiry No. 3394.—For makers of electric motors from 1 to 4 horse power.

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Inquiry No. 3400.—For machinery for making cords and tassels.

Inquiry No. 3401.—For manufacturers of engraving machinery for button making.



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Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

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Minerals sent for examination should be distinctly marked or labeled.

(8743) G. L. S. asks: Will you kindly tell me if I hold a strong horseshoe magnet near a copper wire, say within a half inch, and then pass a powerful current of electricity through the copper wire, will there be any attraction between the wire and the magnet?

If I made the magnet stationary, and then hold the wire very close to it, and slack enough for it to readily reach the magnet when the current is sent through it, would they move toward each other, or would there be no change of position at all? If they do attract each other, how strong a magnet, also how strong a current, will be needed to pull this wire say a distance of an inch or a little less? A. If a coil of wire carrying a current of electricity is brought near a powerful magnet, one end of coil will be attracted toward the magnet and the other end will be repelled from it. This is because the coil is itself a magnet and behaves as a magnet does. A straight wire will be very slightly affected by even a powerful magnet. It will be twisted around till its field of force lies with the lines parallel and in the same direction as that of the magnet. It will then move toward the magnet, but not with much force. The energy of a single wire is not great enough to cause it to do so.

(8744) G. O. V. asks: Will you please let me know what century or year, and where, the Romans first made the day to begin at 12 o'clock and end the next night at 12 o'clock? A minister told me some time ago that he guessed they did it in the fourth century. I want to know sure. A. We think you have been incorrectly advised as to the practice of the Romans in beginning the day at midnight. They did not begin to do this in the fourth century, since they seem always to have begun the day at the middle of the night. Varro, a learned Roman of the time of Cicero, wrote a book which has not come down to us, but which has been quoted by several authors whose works we have. The title of the book was "Concerning Human Affairs." One of the chapters was upon "Days." This chapter is quoted in the "Saturnalia" of Macrobius, Book I., Chap. 3, as also by Gellius in his "Attic Nights": "Men who are born in the 24 hours from midnight to the next midnight are said to have been born upon the same day." By which words it is evident, Macrobius says, "that they divided the observation of the day so that he who was born after sunset and before midnight, that should be his birthday in which that night began; on the contrary, he who was born in the six later hours of the night should be considered to be born on that day which followed that night." And this, so far as the authorities go, was always the practice of the Romans. The Babylonians reckoned from sunrise to sunrise (Isidorus, "Orig." V. 30), while the Athenians and the Hebrews reckoned from sunset to sunset (Gellius, "Attic Nights," III., 2.) "The same Varro in the same book has written," says Gellius, "the Athenians observe differently, in that they say that all the time intervening from one sunset to the succeeding sunset is one day."

(8745) Y. M. C. asks: Please give recipe for solution to oxidize nickel. A. To oxidize nickel, place the article for a short time in a dilute solution of potassium sulphide, sodium sulphide, or ammonium sulphide.

(8746) L. T. says: We have a number of kerosene barrels filled with water on top of our buildings, to be used in case of fire, and during the winter are troubled considerably by the water freezing and bursting of barrels, although we put in one or two pails of salt as a preventive. We have been informed that people were in the habit of standing a piece of 2x4 pine on end in a barrel of rain water to prevent the bursting of the barrel. Would like to know the best preservative to use for preserving the barrels against the effect of exposure to the sun and elements. A. If the barrels are open in one end, there should be no bursting by freezing, as the expansion is not hindered. There would be no use in putting in a piece of pine wood. Salt is of use, but will not prevent freezing in extremely cold weather. Paint with asphalt to preserve the barrels against the effect of sun and rain; with good asphalt the life of such a barrel becomes almost indefinite.

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