

simple that it seems preferable to all others for such operations as the preparation of nitrate of silver from old coins, etc. Any accompanying gold remains behind during the treatment of the metal or alloy with nitric acid, chloride of silver, produced by the impurities [HC] in the nitric acid is taken up by the ammoniacal solution like the copper, and is also reduced to the metallic state; and whatever other metal is not left behind, oxidized by the nitric acid, is separated as hydrate (lead bismuth), on treating with ammonia. Any arseniate which may have passed into the ammoniacal solution, is not decomposed by the copper.

SCIENCE AND OTHER NOTES.

A poor Jewish watchmaker, of Kisheny, in Russia, has just completed after two years labour, an ingenious clock, which at certain hours of the day plays the national anthem, and gives a mimic representation of the coronation ceremony. When the hour arrives two doors fly open, disclosing a model of the Cathedral of the Assumption at Moscow, where the Czars are crowned. Then the gates of the cathedral swing back, and within appears the Metropolitan of Moscow surrounded by dignitaries of the church in gorgeous robes. The Emperor and Empress enter and are sprinkled with holy water, thereupon the Emperor takes a golden crown from the Metropolitan and places it on his own head, and a second crown upon the head of the Empress, and the doors of the cathedral close. The maker of this ingenious toy will present it to their Imperial Majesties immediately after the coronation, provided, of course, that the police are sure it contains no dynamite.

THE VOLTA PRIZE COMPETITION OF 50,000 FRANCS.—The French Department of Public Works has recently communicated to the President of the Academy of Sciences the conditions of the Volta prize to be competed for in 1887. After a general explanation of the importance of the Voltaic column, follow the five articles for competition: 1st, the prize of 50,000 francs, established by resolution dated June 11, 1882, will be given as a reward to the author of a discovery making electricity suitable to be adapted in an economical manner to the following uses: As source of heat, light, chemical operation, mechanical force, as means for sending despatches, or for the treatment of sickness. 2nd, Scientific men of all nations are admitted to competition. 3rd, competitive documents will be received up to June 30, 1887. 4th, a committee, to be nominated by the Secretary of Public Works, will test the discoveries of each competitor, and decide to whom the prize shall be awarded.

INTERNATIONAL MERIDIAN.—As is well known, the U. S. Government has proposed a uniform international meridian in a diplomatic circular addressed to the several civilized nations. A very great service would be rendered both to shipping interests and geographical science by the universal adoption of this measure. But it is, unhappily, to be feared that petty national jealousies will also in this case thwart the proposal. While Germany would undoubtedly sacrifice its ancient, almost obsolete, meridian of Ferro for a more modern sensible one, the case is more doubtful already with France, whether they would

patiently resign the meridian of "Paris," and when we come to England the case is still more dubious. London papers already claim that Great Britain, as the first commercial, marine and colonial power, should under all circumstances have the exclusive right of giving the deciding vote. This, when practically interpreted, means nothing less than that England retains its Greenwich meridian also for the future, and all other nations adopt it without further cavil.

EARTH MAGNETISM.—The magnetism of the earth is still an unsolved problem. Professors Ayrton and Perry lately published an hypothesis that the earth was loaded with static electricity, which, by reason of the revolution of the earth, operated like a circulating current and magnetized its core. This hypothesis, however, suffered a sad blow by the mathematical criticism of Professor Rowland, who explained that the charge necessary for the surface would also be strong enough to send a spark from the earth to the moon. Another theory is based upon the presence of an electric current in the air surrounding the earth. Proceeding from the idea of M. Edlund, that an electric current is nothing else than a current of ether, which flows in the revolution, and that electro-static effects were due to the rarification and condensation of the air, M. Selim Lemstrom sought to produce such an ether current in a mechanical way. If a double tube of paper is set into rotation with a core of soft iron, this will become magnetized, as proven by two fine astatic needles. Upon reversing the rotation, also the magnetic poles will reverse. M. Lemstrom deduces therefrom the relative motion of the ether in the rotating tube to be the cause of polarity. If the tube were stationary, and the core revolve, a similar effect would be obtained.

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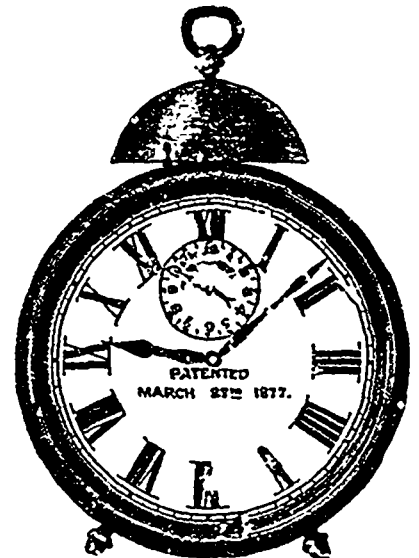
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