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Table listing contents of the supplement with page numbers, including sections like 'I. ASTRONOMY', 'II. ELECTRICITY', 'III. ENGINEERING', etc.

REMOVAL OF SNOW FROM STREETS.

The difficulty of cleaning the streets not only is perennial, but it is one that becomes more disagreeable, and yet more imperative, with the increase of traffic and the growth of population. The streets of New York are frequently choked by the throngs of vehicles even in the best of weather, and of course a heavy fall of snow makes matters worse.

The expense of carting away the snow has been variously estimated to range from seventy-five cents to one dollar per cartload; but even at fifty cents per cartload it is manifest that to properly clear the streets would cost enormously. Take, for example, one street block 200 feet long and say 50 feet wide, having a surface area of 10,000 square feet.

The use of steam has often been suggested, and we have described in our columns various forms of steam apparatus, but they have generally failed to give satisfaction, in part because they are not sufficiently expeditious, and in part because they were too expensive. In New York, Lockport, and other cities where steam distributing companies have laid mains, attempts have been made to melt off the snow by turning upon it live steam.

Recently, Mr. Charles E. Emery, C.E., Chief Engineer of the N. Y. Steam Company, has employed a novel apparatus with such success that it bids fair to solve the problem. While it is probable that it can be operated more expeditiously and economically by using steam taken from underground supply pipes, its use is not limited to this supply. Any locomotive or movable boiler could be employed. All that is needed is to keep the steam in contact with the snow without letting a great portion of it escape before touching the snow. For this purpose a broad, light, rough, and strong sled, with openwork runners, is fitted with a short pipe passing through the top of the sled, having a hose coupling at its upper end.

To carry out such an undertaking, even where there are steam mains already laid, would call for a considerable outlay. Steam plugs, like fire hydrants, would be needed on every corner, and each melting would require about 100 to 125 feet of steam hose, capable of sustaining a pressure of certainly over 40 pounds to the square inch, and preferably 80.

A GOOD RULE—DOUBT MUST BE RESOLVED IN FAVOR OF THE INVENTOR.

The question is sometimes asked why it is that the examiners of the Patent Office are so liberal in the allowance of patents, especially in simple things. The answer is obvious. It is clearly their duty, under the law, to exercise the greatest degree of liberality toward the inventor, and to do everything in their power to facilitate him in securing his invention by patent.

inventor is a man who supplies the country with new and valuable forms of industry; by means of his new inventions he enables the public to save time and money in the performance of labors, and he supplies the people with all manner of comforts and conveniences.

Many of them were in the habit of officially acting against the inventor by finding flaws in his devices, and rejecting if the thing was simple, or if there was doubt of novelty or reality of invention. They used to act upon the idea that their chief duty was to refuse patents. This was all wrong.

Doubt should in every case be resolved in the inventor's favor. A recent trial before Judge Cox in the U. S. Court, Indiana, well illustrates this.

This was an action in equity based upon letters patent No. 273,023, granted to Orlando W. Butler and Thomas W. Kelley, February 27, 1883, for an improvement in paper for cards and circulars. The purpose of the invention was to supersede the expensive and cumbersome method of pasting separate cards upon wedding invitations and similar papers by substituting therefor a card having two or more folds upon which the desired number of panels to represent cards are embossed or pressed out.

The defenses were lack of novelty and invention, and that the complainants are not joint inventors.

Judge Cox said the proof demonstrated that the field in which the complainants operated was at best a narrow one, and the question arises, Is the patent, though it cannot be defeated for want of novelty, void for lack of invention? To this question it is by no means easy to give an entirely satisfactory answer. Each case must depend upon its own facts and circumstances.

The whole matter is well illustrated by a question and answer, quoted with approval upon the defendants' brief. One of the complainants was asked if he thought that prior to October, 1880, persons of ordinary skill in the art would have been unable to produce representations of cards by embossing upon paper, and the answer was: "If they happened to think of it; probably they would not."

After giving the subject the best thought of which I am capable, I am convinced that to relegate these complainants to the condition of mere skilled workmen would be to do them a grave injustice. In the light of the present the idea of substituting hard rubber for other material as a plate for holding artificial teeth, or of providing tubular kerosene lanterns with an irreversible current of air by means of deflectors, seems