

Scientific American.

MUNN & CO., Editors and Proprietors.
PUBLISHED WEEKLY AT
NO. 37 PARK ROW, NEW YORK.

O. D. MUNN. A. E. BEACH.

TERMS.

One copy, one year..... \$3 00
One copy, six months..... 1 50
CLUB RATES { Ten copies, one year, each \$2 50..... 25 00
{ Over ten copies, same rate, each..... 2 50

VOLUME XXX, No. 10. [NEW SERIES.] Twenty-ninth Year.

NEW YORK, SATURDAY, MARCH 7, 1874.

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PROPOSED LAW FOR CASTINGS.

Mr. Sumner has introduced the following bill (No. 119) into the Senate:

Be it enacted, etc. That no person shall counterfeit or make a facsimile of any metal casting, by using such casting as a pattern in molding, unless by the written consent of the owner or producer of the original pattern from which the casting was made; and any person who shall counterfeit or make a facsimile of any metal casting, either in whole or in part, by the means aforesaid, without the consent of the owner, shall be liable to such producer or owner of the original pattern in the amount of the ordinary wholesale profits upon the articles so produced, recoverable, with costs, by bill in equity, in any circuit court of the United States, and the court may restrain by injunction, and may order that all counterfeit metal patterns, and the metal products therefrom, shall be delivered to the complainant or be destroyed by the marshal, and may pass such further orders and decrees as may be meet in the premises.

"This has been read twice, ordered to be printed, and referred to the committee on patents. We hope it will rest there. The patent laws already provide in the most comprehensive manner for the protection of original work; and if Congress goes further still and attempts to establish an espionage over the details of every man's shop, the result can only be injurious to manufacturers of all kinds of castings. No doubt injustice is now done enterprising men by imitators who make use of designs which have cost a great deal of money to get up. But if there is no invention in these designs, we do not see how the Government can interfere to prevent it; and we decidedly think that it ought not to interfere. The effect of espionage, such as this bill would call forth, is to be seen in the scandals which the operations of revenue informers have lately produced in some of the best known business houses in this country. There is a loud outcry against the continuation of laws which permit cases of such undoubted injustice to be increased in number, and we doubt if this bill would receive the support of the manufacturing community. We have pointed to the notorious 'revenue cases' as an example of what would be the probable result of passing this law, and we will add that the firms which have suffered most seriously by the operations of informers are not those small and weak concerns which might be supposed to be the surest victims of the law, but they are among the most prominent and powerful houses in the country. The bill under consideration is probably the work of some 'leading' manufacturers, who think to protect themselves against piracy. Unless this law forms an exception to others of its kind, it is precisely the leading ing men among manufacturers who would probably feel its rigors."—*Engineering and Mining Journal.*

The foregoing remarks seem to us well founded, and to the protest of our cotemporary we can add our own against such unnecessary tinkering with the protective power of the Government. The above measure virtually prevents a farmer from re-casting his plowpoint; it prevents the printer from duplicating his type pages by electrotyping or stereotyping. We might continue and cite other instances where the sole effect of the law will be simply oppression and a retardation of industry, in lieu of a furtherance of its best interests. The act is a legitimate outgrowth of the misconception regarding the nature of our patent laws, which is now so prevalent, and which seems even to have extended to the eminent senator from Massachusetts. As we have repeatedly urged, our patent system is not devised for the purpose of compelling the community to pour their cash into the pockets of one class of individuals or manufacturers. Nothing is further from the spirit of our patent laws. To encourage industry and to promote the progress of the useful arts,

to open new fields of employment in which all the people may freely enter, and thus to lead to greater material prosperity for the whole nation, is the sole aim of the existing statutes, and the substantiality of this foundation is proved by the results of their operation during the past.

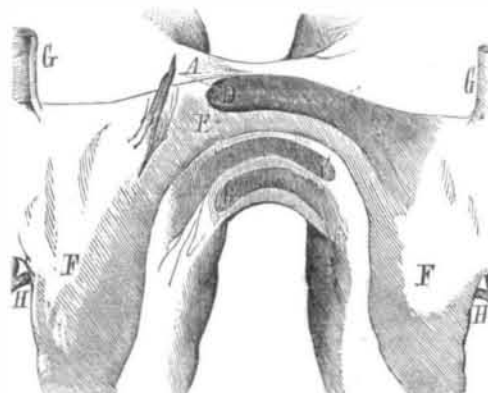
A man's best efforts are owing to his country, in entire abnegation of self and without fee or reward; so indeed are his goods and even his life. But while the people may, in times of need, take the latter and benefit by them, they have no means, however pressing the necessity, of forcing a person to invent; while, on the other hand, there are not many individuals who will give their time, labor, and ideas voluntarily, to the country, out of deference either to principle or patriotism, considered apart from other motives. Hence a stronger incentive is necessary; and this, out of expediency pure and simple, the law supplies in granting a limited monopoly. It cannot force people to invent, but it can bribe them; it can induce the individual to benefit the entire nation, by giving him a little extra emolument for himself; in brief, it uses the offer of a protected right, for a certain period, merely as a bait to produce inventions which are to be the free property of the public. The amounts realized by individuals for new ideas, though in some cases large, are insignificantly small in comparison with the value of the benefits conferred upon mankind by the origination.

Just so long as the notion is held that certain special manufacturers are the object of the solicitude of our system, and not the people, so long will such enactments as that of Mr. Sumner periodically make their appearance. If a manufacturer makes a casting of some new device, or casts something that has never been cast before, or even casts in an original and peculiar manner, he can submit his ideas to the proper authorities, have them passed upon, and, if they are suitable, obtain a patent which protects him in their enjoyment. Here there is evidently, for the reasons above given, an advantage gained for the community. But, under Mr. Sumner's law, any man is to be secured in perpetuity in the right of any mere casting, not because it is specially beneficial or useful to the people, but simply because he wants the Government to help fill his pockets by bolstering him up in a monopoly against everybody else. There is neither justice, expediency, nor reason in the measure.

THE AUTOPSY ON THE SIAMESE TWINS.

The report of the autopsy on the bodies of the Siamese twins has been made public through the *New York Times*; and so far as the dissection has progressed, it reveals some remarkable and unlooked-for conditions in the physical constitution of the strange phenomenon.

The feature of greatest interest is connected with the ligament, which is about four inches long and eight inches in circumference, and a section of which is shown in the annexed diagram. There is a union at the two ensiform cartilages, which are joined at a point very near the median line of the band (dotted lines, A). Eng's process was much the more robust of the two, though neither cartilage was ossified. Besides this were three very curious pouches, the lower one of which, B, is only separated from the skin by a very delicate layer of tissue, and passes from the abdomen of Chang, and is lost in the duplicature of the suspensory liga-



ment of the liver of Eng. Above this is a second and similar pouch, C, belonging to Eng, and between this and the under surface of the ensiform conjunction, A, is the third and largest pouch, D, also prolonged from Chang's abdomen until it fairly reaches the peritoneal cavity of Eng, but is not continuous with it. Thus Chang had two pouches and Eng one. At E was found a connecting band between the livers, through which the plaster injection, used to fill the vessels, passed freely from the portal vein of Chang into the body of Eng. It is believed that the large upper pouch, D, belonging to Chang was once filled with true liver tissue, which at maturity became smaller, and ultimately left an empty space. At E is shown the connection between the livers, F F, and at G and H, the *vena cava* and portal vein of each body.

Chang's side of the band—on the right of our engraving—is the weakest, doubtless owing to the fact of his having been almost a constant invalid. Eng's portion is, however, well nourished and healthy. The peritoneum, it is found, is unquestionably prolonged into the ligament. Without entering further into the technical details of the dissection, the general result seems to point to the fact that a division of the twins would have been a very dangerous, if not fatal, operation. The two portal circulations were connected, and the peritoneal processes extended across the ligament, thus presenting great difficulties to the use of the knife.

Chang, it is believed, died of an attack of cerebral paralysis, and Eng of fright. The position of the hearts has not

yet been determined; and a further report, regarding these organs as well as the lungs, will probably complete the investigation.

THE INDUSTRIAL USES OF BISULPHIDE OF CARBON.

Up to the year 1850, the sole industrial application of bisulphide of carbon was in the vulcanization and dissolution of caoutchouc; but since later invention has found means of producing the material at low price, it has been applied to a multiplicity of uses in a large number of the arts. The extraction of oils from grains, the wholesale removal of fatty matter from wool, the treatment of spices to obtain the same insoluble form, the fabrication of prussiate of potash by the Gélés process, and of sulphocyanide of ammonium for the preparation of the toys called Pharaoh's serpents, the purification of crude paraffin, the manufacture of liquid fire for incendiary projectiles, and as a means of destruction of vermin, are a few of the principal employments of bisulphide of carbon, many of which have already been fully explained in these columns.

As respects magnitude, however, and future influence upon manufactures, its adaptation to the utilization of waste residues is of major importance, and is fast forming the groundwork of a new and distinct industry. The credit of first extracting the fatty matters from these refuse products, is due to M. Deiss, of Belgium, and by the aid of the bisulphide, the former are obtained in quantities sufficient to serve for lubrication of machinery or the fabrication of soaps and candles.

In order to show the rapidly increasing value of this useful substance, we have gathered from foreign contemporaries quite a number of its most recent as well as most important applications, and are thus enabled to present a fair view of the various refuse matters, in connection with which it is now employed. In the manufacture of fatty acids, brown compact deposits are precipitated. These, mixed with sawdust in order to facilitate the action of the bisulphide, and treated with the latter yield, up to twenty per cent of acids, which otherwise would go to waste. The pasty mass of metal filings, dirt, grease, etc., taken from car and wagon axles, is first treated with hot sulphuric acid, then with bisulphide, and, lastly, washed and dried. This isolates the grease in a saponified state. Cotton waste, employed in or about machinery, is freed from its grease by bisulphide and is again available for use. Residues of the manufacture of beeswax, which formerly found no sale except as manure, selling at about two dollars a hundred weight in France, are now subjected to the action of bisulphide and an excellent yellow wax is extracted; the final residue is still useful as a fertilizer.

Sawdust which has served to filter oils purified by sulphuric acid yields after pressure 15 per cent of oil; again, 50 per cent of oil is obtained from the muddy deposits due to the mingling of oils with sulphuric acid. These are washed in boiling water, dried, mixed with sawdust, and lastly treated with bisulphide. Balls of oleaginous grain, when they cannot be used as food for cattle, yield fatty matters; and their residue is an excellent fertilizer, as it contains large proportions of nitrogenized substances and phosphates. Bisulphide is also used to extract the grease from olives after they have been pressed, and from residues of tallow and suet after melting and pressure, also from the residues of the manufacture of cocoa. Bone fragments, when treated with bisulphide at 104° Fah., yield 12 per cent of grease, they are subsequently unfit for the manufacture of gelatin, but answer excellently for the fabrication of bone black. The cleanings of wool cards, when acted upon by bisulphide, give about 30 per cent of fatty substances, utilizable for the manufacture of soaps.

It is evident from the great number of waste products, and the abundance of some of them, that a very considerable amount of greasy and oleaginous matter can be returned to the various industries through the new processes involving the use of bisulphide. The material has also been successfully employed in the scouring of wool and in the extraction of bitumen from schists and bituminiferous sandstones. In the latter case, the quantity of bitumen obtained is from 4 to 5 per cent superior to that furnished by distillation, which only gives in all from 7 to 8 per cent. MM. VanHaecht, Emile, & Co., of Belgium, exhibited in the Vienna Exposition a number of improved machines for carrying on these processes, and in which all species of fatty residues could be treated. The price of manufacture does not exceed, for certain purposes, \$2.40 per ton; about half a ton per hour can be treated. The loss of bisulphide is reduced to barely 1/2 per cent.

TELEGRAPHIC PROGRESS IN 1873.

A submarine cable has been extended along the eastern coast of South America, uniting Para, Pernambuco, Bahia, and Rio. The inauguration of this line was celebrated in the presence of the Emperor of Brazil, on the 23d of last December. In a short time, the wire will be prolonged to Montevideo, and then both American continents, from Canada to the south of Brazil, will be in telegraphic connection with Europe. A fourth cable was successfully laid between England and the United States during the month of July. In Africa, owing to the Ashantee war undertaken by Great Britain, the telegraph has been introduced to a limited extent. In Australia, considerable progress has been made in erecting lines between Queensland and the western portion of the continent. It is proposed to connect New Zealand and Australia with a double cable, also extending from Queensland to India.

The use of the duplex system has become wide both in England and in our own country. We note a curious inven-