The Paper Dummy Patent Invalid.

Fifteen years ago the Patent Office granted a patent to Brock for dress dummies made of papier mache, intended to take the place of the wire frames used for exhibiting dresses, clothing, etc. The improved dummies being smooth, made the dresses and clothes look better. This has proved to be a most valuable patent; the owners were making lots of money out of it, and did not relish the idea of having anybody interfere with their rights. So they brought suit against several infringing parties, and the case was decided not long ago by Judge Wallace, in the United States Circuit Court, adversely to the patent. He holds that the patent is invalid, because paper dummies were used in making up wax figures prior to the grant of the patent. Inasmuch as the wire dummies did not contain the paper or papier mache shell, and the lay figures did not contain head piece, shaft braces, or base of the patented device, they were not anticipations of it. The proofs show that the patented dummy has commended itself to the public interested in such devices. It is a better model of the human figure, and because of the continuous surface of the shell clothing can be made to fit more accurately upon it than upon the interstitial frame or shell of the wire dummy; but the patent cannot be sustained because the device is destitute of patentable novelty. If the substitution of the paper or papier mache for the wire of the shell or frame was obviously practicable, the patentee was not an inventor. If mechanics skilled in the particular department of construction could have seen at a glance the feasibility of the change, then, although the device may have been mechanically new, it was not intellectually novel. The paper which was substituted for the wire had been used to make the shell of a figure in imitation of the human body, and the figures in which it was thus used had been employed for displaying clothing. The displaying of clothing was not the primary purpose for which these lay figures were intended; but that use was not only suggested, but was very obviously one of the ends in view. Not only, therefore, had the material that the patentee substituted for the wire been employed, as he employed it, to make the shell or frame of a figure resembling the human body, but it had also been applied to perform the same office. The new application of an old material to a cognate use will not generally support a patent, but here it was employed in the same use. The bill in the several cases was dismissed.

Large Freight Steamer.

The new freight steamer City of Fall River, of the Fall River Line, which made her first trip recently, is the largest freight steamer in the country. Her capacity equals the combined capacity of the Bristol and the Providence. It is asserted that in her design and build, in propelling power, and other essential features she is a new departure in steamboat building. Her hull, built at Chelsea, Mass., is of oak and hackmatack, with oak plankings, clamps, and stringers. Her dimensions are 273 feet over all, 42 feet 4 inches beam, 17 feet of hold, and she registers 2,533 gross tons. She has three watertight bulkheads. Her machinery was constructed at the North River Iron Works. The engine is a compound vertical beam engine, with surface condenser. The two cylinders, 68 inches and 44 inches in diameter, are so arranged that either can be used alone. The boilers are of steel, one-half inch thick, with a tested pressure of 150 pounds per square inch, although her working pressure is intended to be but 80 pounds.

She has feathering paddle wheels, invented about fifty years ago, but not generally used except in Southern waters. They are 25 feet 6 inches in diameter, and there are twelve paddles to each wheel. Her speed on her trial trip was 17·3 knots per hour and her average speed in all kinds of weather, it is claimed, will be not less than 15·9 knots an hour. The estimated cost of the steamer is $250,000. She is commanded by Captain Thomas Collins.

THE Cincinnati *Price Current* estimates that a year ago a barrel of pork was equal in value to 2⅞ barrels of family flour, while at present prices it is the equivalent of 3⅝ barrels. That is, pork is now twenty-five per cent higher, as compared with flour, than a year ago. When meat is high and bread low, more bread and less meat will be eaten. At a very low estimate the increase in flour consumption in this country alone, thus produced, is equivalent to over ten million bushels for the current year.

IMPROVEMENT IN CUTTER HEADS.

We give engravings of several forms of improved cutters and cutter heads, used in matching, moulding, and other wood working machines. These heads possess many advantages over the old fashioned heads having movable bits, among which are, the facility with which they may be adjusted, and the certainty of always having them accurately in position, the uniformity of the work done by them, and their freedom from the danger of the cutters flying from the machine.

These heads within five years have found their way into almost every mill in the country, upon their own merits. The cutters in the tongue are arranged in two series, viz., upper and lower cutters, which cut alternately, each pair completing a full cut across the edge of the lumber—producing either tongue or groove. A second peculiarity, and one of great importance, is that of slanting the cutters, by securing them to seats alternately arranged and alternately inclined, thus giving the clearance at the side, so that no part of the cutter comes in contact with the lumber but the cutting edge; this insures light and easy running.

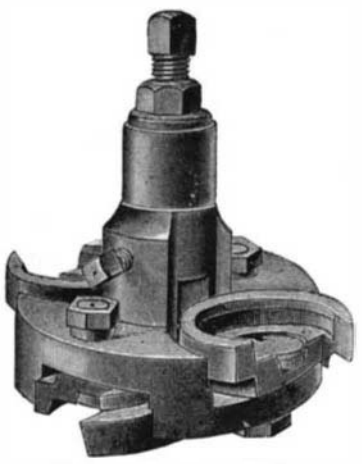


Fig. 1.—TONGUE HEAD

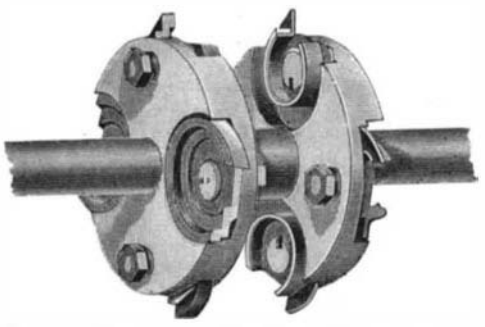


Fig. 2.—HEADS FOR BOX BOARD MATCHING.

Fig. 3.—GROOVE HEAD.

Fig. 4 shows the position of one of the cutters and side clearance when in the cut, and the outline of the cutter that is to follow and complete the full pattern. The engraving shows the latest improvements in the placement of two of the cutters below and two above the flange, thus adapting the heads to any expansion or change of tongue and groove.

The amount of service one set of these cutters will render is very great, the outer circle measuring from 4½ to 7 inches, all of which is tool cutting edge, and being fastened upon their centers, are, as they wear away, brought around until the entire circle is used up.

The cutter is held by bolt and nut, which when drawn up cannot move the cutter, as the parts in contact therewith are stationary, the bolt being slotted to fit a key in the head. The cutters thus fastened are secured to their seats on their large, flat sides, and work through the hardest knots and at the fastest feed without moving. The knife edges of the cutters are slanted to produce a draw cut, and will not chip up or break out knots. The chip started at the tongue is cut outward, while the groove cutters start the chip at the outer edge of the board and cut inward, leaving the corners full and free from checks, the points of the cutters working the offset having the lead, thus producing a tongue and groove of a uniform size and shape that will always fit.

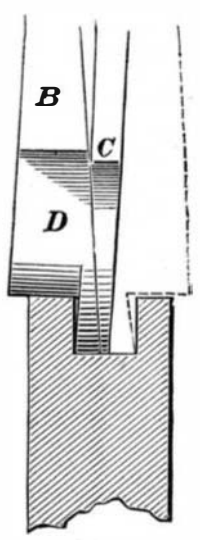


Fig 4

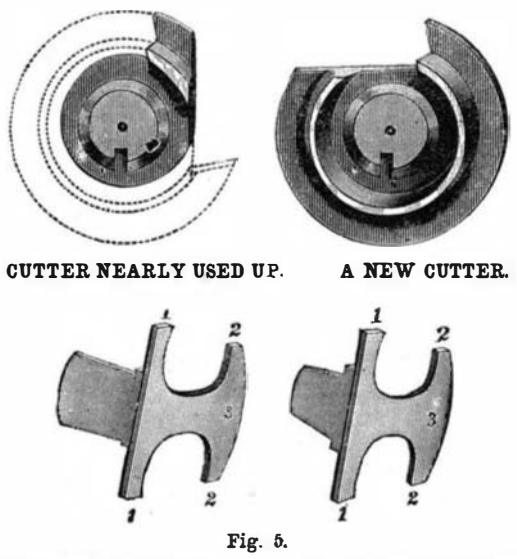


Fig. 5.

GAUGE FOR TONGUE HEAD. GAUGE FOR GROOVE HEAD.

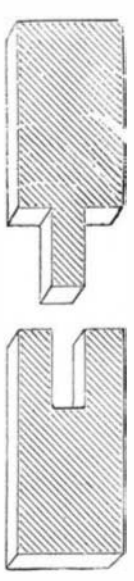


Fig. 6.

Each head is furnished with a gauge (Fig. 5) for setting the cutters, carefully fitted to their slanted edges, showing the angle at which to file them; keep the cutters fitted thereto, and the head will remain full size. The arms, 1, 1, fit over the round part of the nut that holds the bit. The arms, 2, 2, will pass down by the side of the head, and the point, 3, will rest on the outer circle of the head. With the gauge in this position, the face of bit must fit up against the face of gauge.

Fig. 2 represents a set of matching heads, applied to mandrels for matching box boards. They make a neat, clean joint, as shown in Fig. 6. These heads are made in a variety of other forms for moulding, for sash, for ship laps, jointing, and so on. Further particulars in regard to this useful invention may be obtained by addressing Messrs. Shimer & Company, Milton, Pa.

Flint Lock Guns.

One of the most important of Birmingham industries is the gun trade. A very large number of shot guns go to America from here every year. Many fine fowling pieces are included, but still most of the guns are of a very cheap kind. A strange branch of the gun business here, says Consul King, is the manufacture of guns for the east and west coasts of Africa. These weapons are still made in great numbers, and usually have very long bright barrels and old fashioned flint locks. It seems that the natives of the African coasts and interior prefer flint to percussion locks, because of the difficulty of procuring caps. The guns for this trade are very cheap, some selling as low as five or six shillings apiece at wholesale; but every barrel has to be tested at the government proof house, the same as if intended for the finest of hammerless breech-loaders.

Panic.

The *Lancet* says it is not much use asserting that assemblies of sane persons ought not to become victims of panic, but, in truth, unless the nervous system of man could be reconstructed on a principle which would necessarily deprive it of some of its most excellent qualities, it is impossible that there will not always be a tendency to impart and receive this impression, which so powerfully affects the mind and body that judgment is for the time suspended, and the limbs either refuse to act or act impulsively or under the control of the emotional part of the being. Discipline is the only remedy for a tendency to panic. What is needed to cure the tendency to panics in assemblies is the discipline of crowds.

Inventors and Inventions.

Invention is, in every instance, says Mr. Edward Gibbon Swann in a recent address in London, the result of two things: first, of the sagacity which has discerned a *want;* secondly, of the resolute effort to *supply that want,* whether it be to obviate or overcome an existing difficulty or to furnish a totally new condition to certain phases of life or of industry. "*Necessity* is the mother of invention," in the broad sense of the axiom. It is *not,* in all instances, so as regards individual examples. It has frequently happened that important inventions have been brought about by what we might call the *hobbies of leisure.* Nevertheless, there is always a far greater probability (and consequently a greater frequency of occurrence) that a naturally ingenious person with a practical insight into certain particular applications of skill—but goaded by the need and perhaps the sufferings of his surroundings and himself—finds his only solace in the elaboration of an idea, and that that idea finds expression in the solution of some problem, whether scientific or purely mechanical, or both. In fact, he blossoms into an inventor, and yields seed in an invention.

General Wolseley on Alcohol.

Replying to a deputation of the Blackburn Temperance Mission at the residence of Major-General Fielden on the 18th instant, he said that he had always employed the opportunities afforded him to impress the necessity of temperance on those under his command. In the Red River expedition, against the advice even of the medical men who accompanied the troops, he decided that no spirituous liquors should be taken with the force; and yet no men ever did harder work or behaved better than those on that expedition. In South Africa his personal body guard consisted almost exclusively of temperance men; and there too the doctors, who had predicted all manner of ills from the absence of grog, had absolutely nothing to do. In Egypt, again, the doctors told him that it was very necessary the men should have grog, and he was obliged, owing to the great pressure put on him, to allow it occasionally; but it was given in very small quantities and rarely, and yet the troops in Egypt were admirable in their behavior. He had long held that drink was the great source of crime, disobedience, and other evils in the army.

SILK production is said to be in the following proportions: Italy, 37 per cent; China, 36; France, 8; East India (Bengal), 7; Japan, 6; Spain, 2; Persia and the Levant, 4.

Plagues and Pestilences.

At a recent meeting of the members of the Statistical Society, London, Mr. Cornelius Walford read a paper on the "Chronology of Plagues and Pestilences, as Affecting Human, Animal, and Vegetable Life." The facts collected by Mr. Walford are interesting, as showing the superstition of the people in all ages of the world's history.

The view that plagues and pestilences are judgments dated from the earliest Pagan times, and students of the classics will remember the plague supposed to have been caused in Attica by the gods as a punishment for the slaughter of a sacred bear; that in Thessaly by Apollo on account of disrespect shown; a plague at Sicyon caused by Apollo and Artemis for the same reason; and the plague in Samaria given in Josephus as the punishment of idolatry. In the Iliad, Homer describes the plague which prostrated the Greek camp from the wrath of Apollo at an insult offered to Chryses, his high priest. A similar plague was inflicted by Apollo at Corina, on account of Hyppolatus killing his prophet. Delphi, we are told, suffered a plague and famine as punishment for the ill treatment of Æsop. In Rome a dreadful plague raged, which the sibylline books proved to have been caused by the incontinence of a vestal virgin, who strangled herself to avoid being buried alive.

Scripture records recount five instances of plagues inflicted by God as direct punishment for discontent and murmurings among His chosen people. Coming to profane history, we learn, A.D. 665, over-population caused a dearth of food in Ireland, which prepared the people for a severe infliction of plague, which had broken out in England the year before. Rufini tells us that the joy of the English at the victory of Cressy, in 1347, and the surrender of Calais the year after, induced such unbridled excess and debauchery that God, not permitting these disorders to go long unpunished, inflicted the plague, which, after traversing Asia and Europe, raged with such fury in London that 50,000 persons were buried in the churchyard of the Charterhouse alone. The belief in these direct judgments remained down to very modern times.

That earthquakes are the more potent of the terrestrial causes of plagues and pestilences had the support of Scripture authority, notably in the fourteenth chapter of Zechariah and the seventeenth of St. Luke, verse 2. Thucydides mentions a plague, associated with serious earthquakes, preventing the annual invasion of Attica, and the famous Black Death of 1348 was preceded by fearful earthquakes and fiery meteors of portentous aspect. A violent earthquake in Central Germany heralded the third appearance of the sweating sickness and epidemic encephalitis, in 1517, and of that epidemic in Holland at the same time, which physicians now believe to have been diphtheria. The great eruption of Mount Hecla, in 1783, when a river of lava twelve miles wide flowed in six weeks a distance of sixty miles into the sea, drying up twelve rivers and destroying twenty-one villages, was followed by diseases of a most peculiar and inveterate kind.

In the same year there were most destructive earthquakes in Italy and Messina, and terrible pestilences prevailed in Central Europe, due, as is supposed, mainly to the vapors or exhalations. Great destruction of life has been attributed at different times to mephitic vapors not due to earthquakes. In the year 140 B.C., the Roman army in Algeria are said to have fallen victims to mephitic vapors generated by themselves for the destruction of the inhabitants, and in A.D. 168 a plague at Rome, preceded by a still more destructive plague in Asia, was supposed to have had its origin in foul airs from a small box which a Roman soldier had opened at the capture of Seleucia.

Our own annals tell of a marvelous visitation of rain and thunder in 1223, by which the congregation of the church of Barnwell, near Cambridge, were sorely tried. "Such flashes of lightning entered the church that each man thought it had been set on fire; and such a filthie stench arose withal that manie of the company fell sick thereof and hardly escaped death." The plague of 1345-49, which is said to have begun in China, "from the vapors proceeding from a certain fiery body which fell from the atmosphere, or was eructated from the earth," caused awful mortality. In Florence, 100,000 people died; in London, 59,000 are said to have died in a single week; while 100,000 perished in Venice, 90,000 in Lubeck, and 200,000 in Spain.

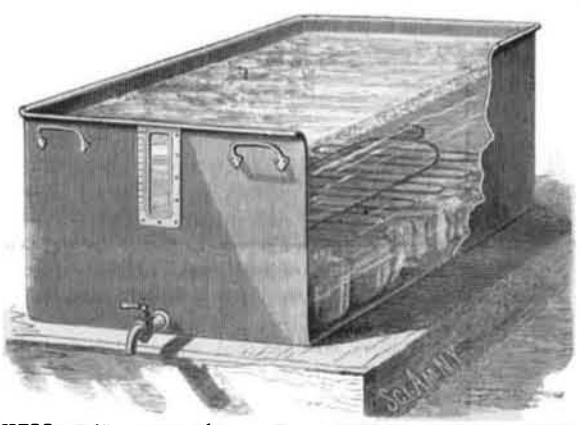
One of the modern theories ascribes pestilence to cosmic dust composed of iron, nickel, cobalt, and other substances. This receives some support from the Jewish writer Philo, who, in A.D. 92, describes a "loimic" pestilence arising from clouds of dust, which produced severe and intractable ulceration of the skin, both of men and animals In A.D. 593, during a pestilence in Rome, the air was charged with a mist or cosmic dust which induced violent sneezing, which gave rise to the expression "*Dominus tecum*" to a sneezer, a practice not yet extinct. A haze or "dry fog" has been frequently noted as accompanying cholera visitations. Such a haze, which was of a pale blue shade, and possessed of peculiar drying properties, and of a marked and indescribable odor, was very prevalent in the year of convulsions just a century ago, and its dispersion in 1783 was attended with violent thunderstorms. It is thought that this haze may be associated with the powerful agents which seem to pervade the air after volcanic and earthquake eruptions, and on scientific grounds it seems clear that some diseases may be so occasioned.

During plagues and pestilences popular superstition has frequently suggested poisoning the waters as the cause. Different sects were thus led to accuse each other, and this and other malpractices, and the mortality arising from disease was swelled by slaughter. At Mentz 12,000 Jews fell victims to the populace on suspicion of having poisoned the wells of the city. In Milan, in 1630, when a severe visitation of plague occurred, there was a popular belief that the disease was propagated by people who anointed the walls of the houses with a poison fatal to all who touched it, and many unfortunates who were suspected lost their lives; while the house of a barber named Mora, who was accused of preparing the poison, was pulled down, and a column, known as the "Column of Infamy," was erected on the site, where it remained until 1778.

Drought, both in ancient and modern times, has been too intimately connected with diseases of unusual severity to leave much doubt of their being in some way connected. Pestilence has been caused not unfrequently by the decaying bodies of locusts and animals perishing during an epizootic visitation, as well as by decaying vegetable substances. Under all the other heads some very curious and interesting facts were collected and stated, and a complete enumeration was given of all the authenticated cases of plagues that have afflicted humanity, and of the legislative means taken for mitigating their effect; the author suggesting, at the conclusion of his paper, that there still remained to be treated the "Periodicity of Plague Visitations," the "Spontaneous Origin of Disease," and "Pestilential Cyclones."—*English Mechanic.*

IMPROVED METHOD OF RAISING CREAM FROM MILK.

Milk is mainly composed of cream, caseine, sugar, some neutral salts, and water, as is well known. Caseine is coagulated by the application of heat. Cream is the oily or unctuous element, and, like all oleaginous matter, hardens on being cooled. Hence in dairying processes cheese is made by heating the milk, butter by cooling it. It is a well known fact that rapid cooling of milk hastens the formation and increases the quantity of the cream, and the fresher and sweeter the milk, and the quicker and more thoroughly the cream is "raised" or concreted from it, the better in



KELLOGG'S APPARATUS FOR RAISING CREAM FROM MILK.

quantity and quality will be the butter produced, and the more valuable will be the skimmed milk for cheese making or other use.

The engraving shows an apparatus for the rapid refrigeration of milk to facilitate the concretion of cream, and thus increase the quantity and quality from a given bulk of milk. In this apparatus ice is applied to milk in a convenient and effectual manner.

This is accomplished by filling the vat to about one-fourth its depth with clean, pure ice, in as large cakes or pieces and as compactly placed as may be. This bulk of ice will give the requisite proportion of ice to milk—that is, about ten pounds of ice to forty pounds of milk—when the vat or vessel is filled up. The specific gravity of ice being less than that of milk, it will naturally float, and so mingle with and impede the rising and formation of the cream on the surface. For this reason the ice is confined by bars or grating to the bottom of the vat or vessel before filling with milk. The cream, being quickly and thoroughly extracted, rises and forms evenly on the surface, leaving a fresh and sweet residuum of "skim milk."

The cream may be removed in about forty minutes after the setting, and the skim-milk then drawn from the vat, when no material part of the ice will have melted, and the water from the melting ice neither mingles with the cream at all, nor with the skim-mik in quantity to perceptibly affect its value for any purpose.

It is claimed that this process greatly increases the yield of butter, and it permits of taking the milk to the dairy before it becomes sour, and the milk will yield the same amount of cream as though fresh drawn from the cow. The process is said to work equally well in all climates.

This invention has been patented by Mr. Henry W. Kellogg, of Ripon, Wis.

The Power of Homœopathy.

At the recent meeting of the Medical Society of the State of New York, a spicy discussion took place concerning that section of the code of ethics, adopted last year by the American Medical Association, which allows allopathic or orthodox physicians to hold consultations with homœopathic doctors. There seemed at one time to be a strong disposition on the part of some members of the State Society to secede from the American Association, unless the latter will repeal or expunge the objectionable rule. It would seem from the proceedings of these learned medicals that homœopathy, mild and harmless as it is upon ordinary sick people in general, has a most extraordinary effect upon the cerebral organs of certain New York doctors. We give a few disconnected abstracts from the speeches:

Dr. H. R. Hopkins of Buffalo, said: To maintain that one may refuse to consult with another because he does not like him is absurd. The practice under the old code may be fairly expressed by putting it in this way: "That no consultation shall be held with regularly licensed physicians who hold eclectic or homœopathic views." The people have created this society, and also eclectic and homœopathic societies. When this society assumes that its members may not meet regularly licensed physicians in consultation, it makes itself ridiculous.

Dr. H. D. Didama, of Syracuse: A consultation is a fraud, where no good can possibly come to the patient, when physicians consent to consult with persons who differ from them as light does from darkness. Those gentlemen who support the new code, will they tell me how any possible good can come to the patient by consulting with a man who believes that an ordinary dose—five grains of quinine—should be diluted in twenty-eight hogsheads of water, of which solution one drop should be given as a dose? Dr. Roosa knows that the homœopath would not give a dose containing any appreciable quantity of medicine. We claim that we give something, and they give practically nothing.

Dr. Thomas F. Rochester, of Buffalo: I rise with the full consciousness of the importance of this question. The American Association has been called a junketing association, a Rip Van Winkle association. What is this word "progress"? It is a good deal like the Irishman's definition of a retrograde movement—"an advance backward." What are we to gain by the first clause of this new code? It says we may go into consultation with homœopaths or others. Thus we have started down from our plane to meet them; they don't come up to meet us. What do we expect when we do go to them? We meet, we talk, we don't agree in therapeutics or diagnosis, but the people are satisfied. We cannot do this without degrading ourselves, and I cannot see any possible advantage to result. We cannot reform homœopathy. It is impossible for anything of this kind to take place.

Dr. C. R. Agnew, of New York: This is a very serious moment in the history of this society. These gentlemen, amiable as they may be, are endeavoring to lead this society not only to the edge of an abyss, but down into an abyss. Adopt the resolutions, repeal the present code and re-enact the old one, and you put this society in opposition to the policy of the State, and you attempt to coerce the members of this society into an attitude in which no person who is capable of construing the laws will agree with them.

Dr. Hutchison: I am ready to step into the abyss, and consider it the proudest moment of my life. I desire to read a petition which has been circulated in the city of New York, and which I have been requested to present here. The petition has only been circulated for a short time, or there would have been more names on it, but it contains already one hundred and two names; among them are the names of such men as Alonzo Clark, Austin Flint, and others of like character. The petition opposes the new code. I desire also to read a letter from Dr. Sayre. (The letter was explanatory of the circumstances of the consultation with the homœopath.)

Dr. William P. Seymour, of Troy: I think it a damning shame that a specialist should be the only man to stand up here and defend the practice of ages. It seems as if no one could get the floor here unless he was in favor of the new code. I have a telegram here from Dr. Lewis Sayre. I do not mean to mince matters. I agree with the statement that we are on the verge of an abyss, but I believe that, if anybody goes into it, it will be those who flaunt the flag of philanthropy. They have talked law till I am sick. They have talked law as if we were made for law. Good God! the laws were made for us.

The telegram from Dr. Sayre being called for, he read a dispatch stating that Dr. Sayre was confined to his bed; also a dispatch from Dr. Sayre to the effect that he had met in consultation a Dr. Baldwin, but there was nothing to indicate that Dr. Baldwin was a homœopath, and he did not know he was one till afterward.

After further talk in the same general style, the discussion of the innocent globule of homœopathic milk sugar contained in the code was postponed for one year.

A Remarkable Vein of Natural Gas.

For several months drilling has been in progress for natural gas at Hills Station, on the West Pennsylvania Road, some nineteen miles distant from Pittsburg, Pa., on the line of Allegheny River. A plate glass manufactory is under construction at that point, under the management of J. B. Ford, formerly of the New Albany Works at Indiana. Between $2,000,000 and $3,000,000 will be invested in the plant. February 13, when the drillers had reached a depth of 1,170 feet, a remarkable vein of gas was struck. The vapor immediately ignited, burning down the shanty and derrick. The drillers barely escaped with their lives. The strike caused great excitement, and the parties interested in the works are delighted, as it will, they think, make them independent with respect to fuel for melting and annealing purposes.