Scientific American.

(Trans ated from the Official Reports upon the Exposition.) THE VEGETABLE FIBERS AT THE UNIVERSAL EXPOSI-TION VIENNA.

BY PROFE OR DR. JULIUS WIESNER. Number II.

displayed two East Indian fibers, up to the present time quite unknown to European commerce. We refer to the yercum fiber and the jetee fiber, which, so far as tenacity is concerned, throw all the vegetable textile fibers with which we are acquainted into the shade. The first is the fibrous bark of i bax species is white, or only slightly colored. All of the calatropis gigantea, and the latter that of Marsdenia tenacissum a. A comparative estimate of strength is afforded by the following example: A jute cord of given size will support, say 140 lbs., while a cord of jetee fiber of the same diameter will support a weight of 248 lbs., the ratio of strength being very nearly as one to two. For the manufacture of ropes and cordage needing great tenacity, the above named fibers are therefore deserving of high recommendation.

The fiber sunn, finally, is worthy of some attention on the part of our hemp and coarse flax manufacturers. This is a very strong fibrous material obtained for many years in India from the crotalaria juncea, extensively cultivated in India, Java, and Borneo. Since its first introduction to European manufacturers, which occurred at the Paris Exposition in 1867, the sunn has been to some extent employed in England. The appearance of this material is not very prepossessing, the commercial product resembling tow more than anything else. This is, however, to be attributed to the method of its preparation. By the employment of a more complete mode of separation, the fiber could be much improved in fineness and homogeneity. Strength and great ability to withstand alternations of wet and dry are its chief characteristics.

In one qualification-namely, its want of hygroscopic properties-the sunn surpasses every known fiber; and whereas the last named raw materials are able to absorb from 16 to 22 per ceut of moisture from the air (and some are known thattake up as much as 40 to 50 percent by weight of moisture when exposed to a damp atmosphere), the summ, under ordinary circumstances, contains only 5to 6 per cent of water, and can absorb, from an atmosphere charged with moisture, only 10 to 11 per cent. As these raw products are sold by weight, and no account is taken of the weight of moisture absorbed therein, this property of the sunn is worthy of consideration.

The colonial exhibits were likewise rich in their display of manilla hemp and cocoanut fiber; to these, however, it is unnecessary to do more than simply refer, inasmuch as our manufacturers are already sufficiently familiar with their qualities. The material called pite, the fiber of certain agavo, has been introduced in Vienna within the past few years under the name of fibris, and so largely employed, in the manufacture of brushes and the like, that it may be of interest to name the countries that make exhibits of the raw material. These are: Martinique (agave Mexicana) Guadeloupe (a. Ame icana and a. faltida), Guiana, Brazil, Venezuela (the exhibit of this country, called cocuisa fiber is closely allied to the pite; it is the product of Fourcroya gigantea), India, Mauritius, Réunion, Algeria and others. Central and South America, however, are the chief producers of this fiber. The piassara of Brazil, with which we are already familiar, was likewise well represented at the Exposition.

Before passing over to the consideration of the vegetable silk and wool, and of the vegetable horsehair displayed at this exhibition, it will be well to enumerate some of those vegetable textile materials, thus far entirely unknown to It attains alength of 8 or 9 inches, and in appearance, elasticity commerce, but which are largely utilized in their native and tenacity approaches so closely to the genuine horsehair countries, and may in time play an important role in our that an ordinary observer will scarcely be able to distinguish textile industries. In this enumeration belongs the bark fiber of numerous species of hibiscus (h. cannabinus, tiliaceus, sabdariffa, etc., found and utilized chiefly in India); the genuine aloes and ananas fibers; and the racoa orvacoua, consisting of the leaf fibers of the pandanus, and produced chiefly in Réunion, Mauritius, and the French colonies.

The so-called vegetable silk, the seed tufts of numerous asclepiadacce and apocynacce, were happily not so strongly represented as at the recent Paris Exposition. At that time the French colonies presented such a quantity and variety of these products that one was tempted to regard them as wares of much importance.

In spite, however, of the heauty and eminent luster of these silks of the vegetable world, their technical value is very small. The fiber is both weak and brittle, and there-

was nowhere exhibited save as an article shown in practice to be an excellent substitute for mattrass filling. This fine family bombacece. Of these raw materials we noticed the following varieties on exhibition: paina limpa, from Brazil (seed tufts of bombax heptaphyllum and b. ceiba); the kabok, from the Dutch colonies (obtained from eri) dendron an fratuo-

In the English colonial exhibit. furthermore, there were | sum); the Edrédon végétale, from the West Indian French colonies, called also patte de livire (from Ochronia lago pus); Venezuela exhibited, under the name of laine végétale, the wool of both O. lagapus and B. cumunensis. The wool of O. lagapus is brown, while that of the several bomvegetable wools above enumerated consist of a delicate, not brittle fiber, which forms when in bulk a soft, elastic mass, well adapted for the purpose to which it is applied (see above).

> In Holland, the kapok is very largely introduced; and in Germany, likewise, the wooly product of eriodendron an fraetuosum, under the name of vegetable down, has recently been introduced. The statement.occasionally met with in books. that these vegetable wools, either alone or in mixture with cotton, could be satisfactorily made into woven fabrics-upon which point, I have on a former occasion expressed my doubts on account of the weakness of the fibers-appears to be quite erroneous; at all events, no such goods were at the Exposition, nor were any of the exhibitors aware that this result had ever been accomplished; in addition to which, all the exhibits were entered as bedding materials.

fibers, generally characterized as vegetable horsehair (crin nervousness.) végétale), are deserving of notice. The desirability of securing a cheap substitute for the expensive horsehair, which should possess similar properties, and resemble it closely enough to be mistaken for it on cursory observation, has long been felt in several important branches of industry. In Austria and Germany, the leaves of carex brizöides, brought into the market from Upper Austria and certain quarters of the Grand Duchy of Baden, is used in enormous quantities as a substitute for horsehair. The material in question is but slightly elastic and not very durable, and affords only an indifferently good substitute.

The crin & Afrique (called also crin Aversing) of the French, the split leaves of the dwarf palm (chamacrops humilis), is a far superior article for this purpose, and it is now being imported into Europe from Algeria in large quantities. The same material has lately been broughtinto the Vienna market for bedding, and colored black (the natural color of the product is green); it is known by the name of Afrik, and is employed for a great variety of uses. 'I'he introduction of the crin d'afrique has unquestionably been of great utility to numerous industries. Despite its excellent qualities, how. ever, the leaf of the dwarf palm is by no means the best substitute for horsehair with which we are acquainted. Of far greater value for this purpose, inasmuch as they possess the properties of horsehair to a much higher degree, are to be mentioned the three fibers ejoo, pitool, and caragate. The cjoo fiber, called also gomuti fiber, is the product of a very common sugar palm of India (arenga saccharifera), and occurs in the form of a black horsehair-like mass, growing on the stems where the leaves have been attached. This fiber remains behind when the leaves fall off. The black fiber kitool has a similar origin. It is derived from the palm species, caryota mitis (Réunion) and c. urens (India, Ceylon). The best substitute for horsehair, however. is without question the fiber *caragate*, called also tree hair. This fiber is a portion of the aerial roots of a parasitic plant (bromelincea) infesting certain trees, and occurring in Tropical America. the difference. By burning one of the fibers, however, its vegetable character may be readily established by the ab. sence of the characteristic odor of burning horn, which accompanies the combustion of horsehair and similar animal matters. The following very essential difference between the two materials, which is observable upon close inspection, will serve to distinguish them apart quite readily: The horsehair consists of one single fiber throughout its length, while the caragate consists of a succession of branched fibers. At the present time Guiana is perhaps the most important producer of this valuable material, and the only objectionable feature incident to its introduction is found in the fact that dealers employing it cannot resist the temptation of repre-

senting their goods as being made of the genuine article. The coarse fibers were represented at the Exposition by

Nature of Nerve Force.

In one of Jean Paul Richter's novels-if our memory material consists of the seed tufts of several trees of the serves us rightly, in that one called Der Comet---the hero is said to have had, when a boy, a peculiar light visible around his head when in a darkened room, something like the aureole or nimbus with which the old painters used to represent divine or saintly personages. Richter, who in such matters faithfully followed the extraordinary in Nature, gives, as his wont is, various references to medical works wherein such a phenomenon is mentioned. There is indeed no question of the correctness of such observations. But the explanation of the phenomena has been insufficient.

Dr. Brown-Séquard, in a recent lecture, quotes an analogous phenomenon. He remarks that there are animals which are phosphorescent, and which are so under an act of their wills, so far as we can judge, and under the influence of the nervous system; so that light also can be evolved as a transformation of nervous force. There are cases of consumption in which light has come from the lungs. The fact has been pointed out by Sir Henry Marsh and other physicians. The light appears not only at the head of the patient, but it may be radiated in the room. It has been considered that the light was only a peculiar effect of the mucus that came from the lungs of the patient. Dr. Brown-Séquard continues : -"It is not likely that this is the case, because mucus in greater quantity is evolved, and all sorts of mucus, from the chests of the people, every day, without any such phenomenon. I have read the history of each individual case of the kind, so far as I have been able to get it, and in every one In addition to the above, a number of coarse vegetable of the cases, the patient, I find, was in a terrible state of

> If this were shown beyond a peradventure, our theories of nerve force would undergo material alterations, as it would at once come into the category of the forms of motion, and be seen to be a correlate of light, heat, etc. To this investigation seems tending, but no one can aver that it has been proven.-Medical and Surgical Reporter.

DECISIONS OF THE COURTS.

United States Circuit Court,--Eastern District of Pennsyivania.

PATENT LOGONOTIVE TRUCK.—THE LOCOMOTIVE ENGINE SAFETY IRUCK COMPANY D8. THE PENNBYLVANIA RAILROAD COMPANY.

The patent is and to have reasonable that it. February 11, 1923 was for the phot truck of a locomotive engine, resting on a bolster, and connected with it by a king bolt, on which it oscillated; the bolster being suspended from the trock frame by links diverging outwardly, so it at when the regular moved laterally in passing a curve it was raised on that side, and its Welkbittended to bring it back to its normal position. This arrangement was found to have been previously in use upon railroad cars; but in applying it to the pilot track of an engine, the operation and ef-fect of it were held to be essentially different and useful, and the patent was sustained.

fect of it were bield to be essentially different and useful, and the Patent was sustained. It appeared that a pliot truck had been previously patented in which the engine rested upon. Shwabolited to, a curved block, which mored on either shift in a curved slot in the truck frame, so that the engine would calliste around a point in rear of the truck which was the center of the curves. Either thek ing bolt or the ourved block might be made to rest on inclined planes, so that lateral movement would raise the engine, and it would tend to settle back. Though these devices were regarded as the edulvalents of those des ribed in the plantin's patent, it was never their which which was the on the king bolt. Imperfect and crude descriptions of an invention imparted to others are no evidence of an Miention to abandon t. Neither is the use of an inveficion for the purposes of experiment, though

superiest anucrue descriptions of an invention imparted to others are no evidence of an Mienio no abandan t. Neither is the use of an invention for the purposes of experiment, though made in public from necessity in a patent, although it takes place more in two years before the application. The combination claimed by Alba F. Smith, and described in his specifi-cation, was a patentiable invention. The invention had not been anticl-for was not not by the network.

There is no sufficient evidence that the patentee abandoned the invention The patent is not invalid because the invention was in public use, or on , with the allowance of the inventor, more than two years before his ap-

188 le este, with the show and e or the inventor, inder than two years before in a application for the patent. The only question that remains is whether the defendants have been guilty of infringement. In regard to this there is no controversy. An infringe-is very clearly proved. I whall, the efore, order the injunction prayed for in the bill, and de order an account. etc. Chartee M. Keders and Chartee F. Bicks, for complainants. J. R. S. Labrobe and ChaRmun Biddle, for respondents.]

United States Circuit Court .--- Southern District of Ohio.

(October Term, A. D. 1873 .- Rehearing October Term, A. D. 1874.) PATENT BARING OVEN.-HOBBA BALL 78. GEORGE K. WITHINGTON AND O. M. LANGDON.-BAME 2.8. JOHN BALLIE.

EMMONSAND SWING, J. J.: OPINION OF THE COURT.

ENMONS, J .:

EXMONS. J.: The bills charge infringement of letters patent granted to complainant September 28, 1826, for an "Improvement in Ovens," relasued October 12, 1869, and, a second time, June 14, 1870, and extended for seven years from September 23, 1870. By skreement of counsel, both cases were argued together, and the decl-sion to be delivered governaboth. The relasued patent, upon which the bills are founded, contains three claims, but the first, which is as follows, is the only one in controversy: 1. One or more swinging bread holders, suspended from the arms or end plates of a rotating reel, in combination with a furnaces arminged and con-nected that the product of combustion with a sub into or through the charber within which the bread holders move. We prefer to rest to bls indement solely upon the ground that the original plates of likely and the total bread chamber. We asy the direct ap-plication of likely because we thus constructhe words " product of combu-tion." The eolid significance which we can give to that part of the claim is that the relevent from the fire must be radiated directly into the baking chamber. The relevent paient, as we construct it, claims a device which will accom-

fore poorly adapted for woven fabrics. And unfortunately trial purposes. In this connection, the seed tufts of Bettermontea (East Indies) appear not to have received the attention that the material deserves, inasmuch as its comparatively greater strength would appear to render it more adaptable for utilization than those previously named.

The vegetable silk appears to be far better adapted for the manufacture of artificial flowers and similar artistic workin which direction it has been considerably employed-than for textile uses. It has likewise been suggested as a substitute for down in filling bolsters, pillows, and the like; but for this use, the brittleness of the fiber will be likely to prove a serious objection. The samples of this product at the were placed in the most flattering light.

the esparto fiber, and another obtained from Spanish cane, by these are the varieties that might be placed in the market in mechanical disintegration. Ropes, cords, etc., made from the nnlimited quantities: the seed tufts, for example, of asclepias last named material, were amongst the novelties of the Exgigantee and curassautica, that are least valuable for indus- position, having been exhibited for the first time. Ropes, and the like of the esparto formed one of the features of the Paris Exposition of 1867, and their reappearance at Vienna demands no special notice in this report.

Permanence of Vital Power.

In clearing away the refuse from the ancient silver mines of Laurium, in Greece, a large number of seeds of a papaveracea of the glaucium genus were found, which must have been buried there for at least fifteen hundred years. Exposed to the beneficent influence of the sun's rays, they rapidly took root, flourished, budded, and blossomed, their yellow corollas being beautiful in the extreme. This interesting Exposition were almost exclusively from the French colonies; flower, unknown to modern science, is particularly and and in the published catalogue of their exhibits its merits frequently described in the writings of Pliny and Dioscorides, and is thus again resuscitated, after having disappeared from More modest in its pretentions was the vegetable wool It the surface of the globe for more than fifteen centuries.

chamber. The releaued patent, as we construe it, claims a device which will accom-plab this esuit. The infringementis said to depend upon the fact that the defendant's apparatus applies the ''products of combustion "directly to the baking chamber, and that, as the releaue claims this feature, there is an in-fringement. That it does so is entirely clear: all the '' products of combus-tion ''which ascend at all move upward and around the swinging bread-budgers'

If ingement. That it does so is entrely clear: all the "products of combustion" which ascend at all move upward and around the swinging breading of ders.
There is no proof, nor is thereany suggestion from counsel, that there is a king of bread. Conceding, which we much doubt—that there are what maybe called two principles in a legal sense in the application of breats we can draw the line between them only as follows:
There is no proof, nor is thereany suggestion from counsel, that there is a baking of bread. Conceding, which we much doubt—that there are what a maybe called two principles in a legal sense in the application of beatto the tree sense what maybe called two principles in a legal sense in the suplication of beatto the tree is the sense of the sense the set of the sense of the sense. The other here the sense of the sense of the sense. The sense the sense of the sense of the sense of the sense. The sense the sense of the sense of the sense. The sense the sense of the sense of the sense. The sense the sense sense is the sense of the sense. The sense the sense sense and mode sense of the sense. The sense the sense sense and se cut off from the sense the sense sense and mode sense. The sense the sense sense is no the sense sense is an out of the sense sense is an out of the sense sense sense is a sense. The sense the sense sense sense is a sense of the sense sense and secularity from the sense the sense sense and secularity from the sense the sense sense and secularity from the sense sense and secularity from the sense the sense

heat, he would have abandoned his own in the hellef that it was worthless. We do not think the case one where a beneficial idea has been appropriated

heat, he would have abandoned his own in the hellef that it was worthless. We do not think the case one where a beneficial idea has been appropriated by another in a different form. The complation of heat employed by the defendants. It may be said the claim necessarily uses the terms "product of combus-tion" in a sense other than that imputed to them by the court, as they were used in reference to a device in which the direct maintain of ins's from the firs was impossible, necessarily they must have contemplated something else; what this something else is is not stated. The court is asked to presume there is some unknown "product of combustion" beside heat, which can be conveyed through the apertures in the side walls upon the bread. It is argued, if the court will but imagine some such improved inclusion to combustion, then the original device embodied a mode in which it might be to the result. If the court will but imagine some such improved inclusion to the combustion, then the original device such of no such and as the original patent provided no mode for its application, the subsequent claim for it is void. Aithough our indement goes upon another strond, and we have not.

or comound with the process is the next evolve, and, as the original patent provided no mode for its application, the subsequent claim for it is void. Aithough our judgment goes upon another ground, and we have not, herefore, fully considered whether the patent for this combination is void hecause no invention is involved in making it, still suchs our strong impres-sion. We apprehend the new mode, which dispenses with smoke hues and separating walls surrounding the baking chamher, depends far more upon the inodern use of fuel, which can, without injury, be consumed directly bemanth the dough, than in any discovery on the part of the complainant or any one else in the application or law of a new principle of heat to baking. But, however this may be, previous patents had. In express terms, pointed out the node and claimed as a benefit the direct application of heat to a baking chamber. The attention of those engaged in this department of industry had been directly challenged to this subject, and, what we deem somewhat ma-terial upon the mere question of invention, they had combined afurnace and chamber for the direct application of heat with an endiess chain or apparatus for moving the bread over the dre. The reel is an old and familiar device. We should feel that we were carrying the doctrine which protects slight in-ventions to the last limit, if we were to hold the combination of the reel and furnace in this case involved invention. We have no disposition to the last this species of property of it due protection. When a meritorious invention is presented, every disposition is feature to notion whatever that he had in-cluded in his device what is claim ed in the relevet, but because nouvinned that only had the patenter no notion whatever that he had in-cluded in his device what is claim ed in the relevet. The bill will be dismissed with costs. [A. S. Finker and John E. Entreh, for complainant. Externet Boyd, for defendants.]

NEW BOOKS AND PUBLICATIONS.

MANUAL OF DETERMINATIVE MINERALOGY, WITH AN INTRODUCTION ON BLOWPIPE ANALYSIS. By George J. Brush, Professorof Mineralogy in the Sheffield Scientific School. Price \$3. New York city : John Wiley & Son, 15 Astor Place.

Professor Brush and Professor S. W. Johnson have for many years had con trol of one of the most important of our technical schools; and the Sbeffield students are well grounded in the methods described in this volume, the greater part of which was compiled, some time ago, especially for their usc. It is a work of the greatest practical value, and the classification is very exact and descriptive, and yet simple and clear. Although much has lately been written on the subject of blowpipe analysis, it is not probable that the branch of study is nearly exhausted; and Professor Brush's treatise carries it down to the latest date, exemplifying the processes with well executed illustrations. We recommend this work to the attention of the scientific world.

A NEW TREATISE ON THE ELEMENTS OF MECHANICS, BOTABLISHING Strict Precision in the Meaning of Mechanical Terms. Accompanled with an Appendix on Duodenal Arithmetic and Metrology. By John W. Nystrom, C. E. Philadelphia ; Porter and Coates, 822 Chestnut street.

Mr. Nystrom has published a work which is likely to be of value to engli neers and students of mechanical physics. It contains numerous problems in statics and dynamics, many of which are new to Science, and are solved with clearness and originality. Most of the solutions are illustrated by diagrams. The treatise is exhaustive, and contains the author's researches into the statical condition of the heavenly bodies. The appendix contains some remarkable speculation as to the use of systems of numeration with other bases than 10, such as the duodenal (base 12) and the senidenal (base 16); but the disadvantage of making a change in a matter of such everyday usage is fapgreater than anything that can be Rained by a more symmetrical method, especially when (as we recently showed in the case of the French meter) the supposed improvement is merely theoretical.

BOOK-KEEPING SIMPLIFIED : THE DOUBLE ENTRY SYSTEM BRIEFLY,

Clearly, and Concisely Explained. By D. B. Waggener, Price \$1 in clotb, 75 cents in boards. Philadelphia; D. B. Waggener & Co.

This is a neat and useful little work, written with clearness and illustrated with specimen pages of the various account books,

Inventions Patented in England by Americans. [Complied from the Commissioners of Patents' Journal.]

From December 19 to December 24, 1874, inclusive.

BOILER FUBNACE .- W. C. Ford, Brooklyn, N. Y CAN.-F. D. Brodhead, Boston, Mass. LIFE PRESERVING BULWARE. - R. W. Newbery, New York city. NEEDLE .- H. M. Jenkins et al., New York city PUMP CYLINDER, ETC.-G. F. Blake, Boston, Mass. Bebings.-R. Vose, New York city. STEAM BOILES .- W. C. Ford, Brooklyn, N. Y.

SURGICAL NEEDLE .- H. M. Jenkins, New York city. VAULT LIGHT COVER .- J. T. Foley et al., New York city,

Becent American and Foreign Latents.

Improved Sulky Harrow.

David Saigeon, Wattsburg, Pa.-The harrow is made in three sections, each section being formed of three S-shaped parallel bars, connected by cross bars. The S-bars are secured to each other, at their points of intersection, by the shanks of the harrow teeth, which pass through holes in the said bars, and are secured in place by nut screwed upon their upper ends. The nut of the central tooth of the next to the rear cross bars of each section is made with a loop, to which is secured a chain. The other ends of the three chains are so connected that all the sections may be controlled by a lever at the driver's seat. There are also devices whereby the point of draft attachment may be adjusted as required, and also whereby the sections are allowed to conform to irregularities in the ground.

Improved Range,

Edwin O. Brinckerhoff, New York city.-The invention consists in the combination of the circulation and exit flues in connection with an elevated boller, to adapt it to be heated by the products of combustion as they pass from the range to the chimney; in the arrangement of the circulation and exit flues in connection with the elevated oven to adapt it to be heated by the products of combustion, as they pass from the range to the chimney; in the arrangement of the circulation and exit flucs of the elevated ovens, in connection with each other, to enable the products of combustion to be conducted around both or either; in the arrangement of the base dampers, in connection with the base flues of the elevated boller. to enable the direction of the products of combustion around the boller and ovens to be controlled as desired; in the arrangement of the top dampers in connection with the exit flues to enable the direction of the products of compustion through said flues to be controlled as

Improved Grain Weighing Apparatus.

William N. Julian and Joseph H. Bussert, Tarlton, Obio.-There is a platform for the bag to rest on, and a ring for holding the mouth of the bag. They are suspended from the short arm of a scale beam, so as to have a slight rising and falling motion, and the platform is jointed to the frame. By suitable construction, when the receiving hopper on the scale beam goes down, the spout will be closed, and weight goes down it will be opened, so that the grain may be continuously spouted into the hopper while the filled bags are removed and empty ones put on, and the beam is caused to work a rock lever by a rod and arm, to turn a system of registering disks. Improved Safety Guard for Wagons and Carriages.

Thomas Joyce, New York city.-This is a metal frame secured break or a wheel be crushed in, or otherwise break down, the guards will come in contact with the ground and slide along it, those riding, and enabling the wagon to be drawn home or to the tree, or by a link to the car. repair shop without trouble.

Improved Horse Hay Rake,

Joshua Evered, Hopewell, N. Y .-- In this wheeled horse hay rake the plvoted wire teeth are elevated by a lifting bar. The teeth slide through the staples, and turn on a fixed rod, while the bar makes a quarter revolution around the axle as a center, until the driver disengrages pawls and ratchets by reversing a lever, when the teeth and lifting bar resume their former position.

Improved Wheel for Vehicles.

William M. Hoffman, Topton, Pa.-A wedge-shaped and notched metallic key is applied to the end of the spoke at a point near the side facing a beveled cushioning block, and is forced into the spoke end on the driving in the spoke by resting on the iron axle box. When the spoke is set completely in the hub mortise a sufficient portion of the spoke end is carried sideways to lock or bind with the beveled block, so that a perfectly secure fastening of the spokes is produced, while at the same time, by the wooden cushioning side blocks, a certain degree of elasticity is obtained.

Improved Car Coupling,

John C. Sauserman and George W. Anthony, Newport, Pa.-The coupling link is formed in the shape of an arrow, with spear-shaped head and wider slotted rear part, that is coupled by a strong vertical pin, passing through perforations of the drawhead whenever it is desired that the link shall project farenough to couple with the adjoining drawhead. The retention of the link in this position is rounded-off jaws of vertical leverframes, which are firmly pres against the link by strong springs. The entering spear head of the link strikes against the jaws, forces them sideways till the head has passed the same, when they lock firmly on the link and couple the same.

Improved Press.

Benjamin J. Day, Evansville, Ind.-The follower has a couple of bars sliding forward and backward horizontally under the feeding and regulating the position of the wings or sails. hopper and in the press case. The bars have a toothed rack, with which the driving shaft gears. The said shaft is geared to the main driver in order to work the follower forward and quickly, to utilize it for a beater, and also to apply great force for compressing the besten bay. There is a head to the case, constructed in sections to admit of fastening the hoops after the bale is pressed and before it is released. The said sections are hinged to the case, and provided with weighted catches to hold them closed, and to automatically fasten them. The invention also e nsists of a fork, which closes over the opening through which the hay is put into the pressing case when the pressing begins, to hold the loose hay with which the hopper may be filled during the pressing, until the follower goes back behind it. Comb bars are combined with the follower and the press case, to prevent the matters to be pressed from gathering he tween the follower and the top of the press case. Lastly, a straining device is combined with the block uttached to the baling band and the press head.

Improved Cutter Head,

Benjamin Pearson and Horace W. Pears n, Newburyport, Mass.-This invention consists of a rotary cutter, in which two blades are arranged side by side, and separated by a disk of thin metal projecting from the face of other disks, all so contrived that the cutters may be used for cutting the gains in the end of the felly for the ferrule by which they are connected. The disk of thin metal between the cutters runs against the ends of the felly, to gage the cutters to the felly lengthwise, and the disks from which the cutters project serve to regulate the depth of the cut.

Improved Method of Forming Metal Seams.

Mortimer M. Camp, New Haven, Conn.-This is a method of uniting or seaming the edges of a shell or pipe by means of a prooved flexible metal bar, the edges being inserted in the grooves and the metal clamped or compressed thereon.

Improved Portable Cover for Vapor Bathing.

Frank Leslie, New York city.-This cover is a tube made of any suitable kind of flexible material, tapering from the base upward, and having a boop at the ends to expand the tube to the proper di ameter, and one or more intermediate hoops or bands to keep the cover expanded when in use, and allow it to collapse after the manner of a Chinese lantern, to enable it to be compressed and carried in a trunk or bar by travelers, and be used as occasion may require. The head of the bather isprotruded through the aperture, and leathor, serving as a collar, is drawn tightly around the neck. Straps set upon the shoulders of the bather, and serve to relieve the neck of the bather of the weight of the cover. The vapor is generated within the cover by means of a suitable apparatus.

Improved Egg Carrier.

Wendelln Weis, St. Paul, Minn.-This invention consists of securely interlocking strips, forming the cells for the eggs, in connection ninged and protecting top partition applied thereto. The hinged top part folds readily over the folded-up cell strips, so that the same in the guide recess in upward direction until it assumes a not more space for return shipment is required than heretofore.

Improved Strainer.

John Lipman and Martin Friedberg, Toledo, O.--This is a concave perforated, or reticulated, strainer, having a rim fitting closely to the interior circumference of the tumbler or other vessel, and fastening spring books for retaining the strainer firmly thereon. The device prevents the pieces of lemon or other substances from being carried into the mouth, and admits, therefore, the more convenient drinking of iced beverages.

Improved Attachment for Whiffletrees,

Richard Mansfield, New York city.-This improved mode of attaching whiffletrees is designed for street cars, in which the strain is mainlythrown on the staples or clevis connecting thewhiffletrees to the draft eyes of the sway bar or car, so as to cause their rapid wearto the axle near each hub, and suitably braced. Should the axle itug out. It consists of a clevis attached by a cross bolt and nut to a receased clip or band encircling the whiffletree or sway bar, to be connected by a detachable draft eye, attached by a screw nut through preventing the wagon body from dropping so low as to throw out a square perforation of the socket bolt, to the ends of the whiffle-

Improved Steam Cylinder Lubricator.

Joseph Kukelkorn, Brooklyn, N. Y.-This is an improved lubricator for steam cylinders, which consists in a reservoir with a central tubular stem, surrounded by a sleeve of the cover or top part. The sleeve is provided with an adjustable screw plug, having air channels for conveying a greater or smaller quantity of oil to the stem, or interrupting the supply of oil altogether. Agrooved steam-acted valve and stationary bottom plug of the lubricator are provided, so that any required quantity may be fed in connection with the stroke of the piston.

Improved Wall Paper Striping Machine.

Jacob J. Janeway, New Brunswick, N. J.-This improved machine for striping paper hangings is so constructed as to enable the paper passing through the machine to be readily clamped and release without stopping the machine, and will heat and partially dry the middle part of the paper, so that the work may be done more rapidly, and so that the paper may dry evenly when hung upon the rack, thus adapting the machine to be run by power.

Improved Ice Receptacle for Corpse Preservers,

Friedrich Wesemann, Brooklyn, N. Y.-The ice receptacle is applied on ordinary corpse preservers by means of detachable supporting slide pieces and projecting lugs. The cover serves for the preserver and for the ice receptacle, being made in one piece, with a central smaller lid for inserting the ice into the ice box. As the cold air descends from the ice receptacle and setties on the corpse, secured by means of its concaved rear end, which rests against a it causes the rapid and complete cooling of the same along every second lighter pin. The middle part of the link is acted upon by the part, and not at special parts only, keeping the body thereby in a perfect state of preservation.

Improved Windmill.

Thomas J. Ingels and Millard F. Ingels, Atchison, Kap.-In this invention a supplementary pivoted vane is so connected with the revolving wings or sails as to throw them out of the wind when the latter is too violent. There is an arrangement of parts, whereby a single-toothed bar connects with and operates devices for adjusting

Improved Water Closet Apparatus,

Archibald McGilchrist, New York city .-- This is an improved water closet apparatns, so constructed as to render the use of a trap unnecessary, and at the same time to prevent any unpleasant odor from escaping through the pipe. It shuts off the water automatically and guards against an overflow, while allowing a sufficient amount of water to flow in after the valve has been closed. When a ball valve is raised, the contents of the basin and case will flow of through the sewer pipe. As the water lowers in the case, a float contained in a separate case sinks and opens a small valve, allowing the water to flow into an upper valve chamber. The arrangement of the valves is such as to cause the water to flow into a siphon-shaped pipe, and through it into the basin. When the ball is lowered into place, the water rises in the case, raises the float, and shuts off the water pressure.

Improved Serubbing Brush and Mop Holder.

Michael Bigler, Marr, Pa.-This invention consists in conjoining two scrubbing brushes by a plate having a median neck which is grasped by a pair of gripper jaws that may be detached and used to hold the mop rag.

Improved Hemp Dressing Machine,

George Davis, Elizabeth, N. J.-For automatically varying the motion of the delivering rollers according to the quantity of material passing, the shaft has cone pulleys, which are geared with corresponding reverse cone pulleys on the driving shaft by an independent belt for each. The pulleys have loose belts with which tighteners are arranged to act alternately, the tighteners being on a rock shaft, which is held by a weighted lever when the hemp is running light so that the belts of the two smaller pulleys run loose, and the motion is given by the largest pulley; but when the quantity increases and ruises the upper roller, levers connected to it raise the weighted lever, which first tightens the belt of the smaller pulleys in succession, giving a faster motion. By the diminution of the quantity passing through the rollers the weighted lever falls, and the reverse results are obtained.

Improved Car Coupling.

Thomas L. Shaw, Laurinburgh, assignor to himself and Hugh G. Fladger, Liesville, N. C .- The top part of the driwhead is provided with a central vertical guide recess, which is concentric to a round ateral pin, and extended slightly into the interior bottom part, for the purpose of admitting a tumbler. The tumbler swings with its concave part around the pin, and serves as a support for the raised coupling pin, when resting in nearly vertical position on the bottom part of the drawhead. The pin drops into the usual top and bottom perforations of the drawhead, and is guided along avertical concave front recess of the tumbler guide pin. The book extension of the tumbler projects from below into the recess of the guide pin, and retains thereby the pin in raised position ready for coupling. The ntering link strikes the lower front nart of the tumbler, and nearly horizontal direction, closing completely the upper part of the recess. The coupling pin is raised for unconpling by hand, and causes, by the withdrawal of the link, the instant forward sliding of the tumbler, until the same assumes a nearly vertical position on the bottom part of the drawhead, and supports on its forward projecting hook end the pin in raised position, ready for coupling automatically on the entrance of the link.

Improved Harvester.

George Foster, Clarksville, Neb .--- The essential feature in this device consists in an arrangement of knives, flugers, and endless bands, whereby the grass, after being cut, is deposited at the inner side of the platform in the rear of the drive wheels, so as to be out of the place to place. way of the machine at its next round.

Improved Railroad Switch Signal.

Hiram Corrad, York, Pa.-This is a railroad signal consisting of one or more torpedoes, which are moved upon the rail by the switch meebenlsm.

Sugar Cane Stubble Digger and Cultivator.

Henry Von Phul, Jr., and James Mallon, Holly Wood, La.-This is an improved stubble digger and cultivator, which can be readily adjusted to the width of rows, and to different depths. It consists of rotating disks, with pivoted curved prongs or teeth, being placed loosely on lateral shafts, which turn in suitable side bearings, being adjustable therewith in vertical direction on the supporting frame by crank-shaft, rack, and lever mechanism.

Improved Sulky Plow.

John A. Kueedler, Grant, Pa.-This is an arrangement of cranks wherehy by operating a lever the driver can lower and raise the forward ends of the plow beams to cause the plows to work deeper or shallower in the ground, or to cause them to run out of the ground. By operating another lever, the plows may be raised from the ground, and held suspended while turning, and while passing from

Improved Wagon.

Jacob Becker, Jr., Seymour, Ind.-This invention relates to nove means whereby the rear wheels of a vehicle may be made to track with the front wheels while turning, as well as at other times, but yet they are not permitted to make too short and abrupt a turn.

Improved Brick and Tile Machine.

Hiram L. Huntington, Keyport, N. J.-In this improved brick and tile machine, there is a series of contracted throats radiating from the axis of the mud-mixing shaft below the mixer, through which throats the mud or clay is forced into receivers by pushers, which, in foreing it through, press it sufficiently for the bricks and tiles. When a receiver full of clay has been pushed out, a wire cutter rises up in front of the mouth of the throat and separates the mass in the receiver from the remaining portion; then the bottom of the receiver rises and carries the pressed clay against a series of cutters extending across the receivers, and separating the clay into bricks, which are then removed, the receiver bottom goes down, and the pusher goes back, ready for another operation. Each set of apparatus is operated in succession, and all the moving parts are worked directly from the extension of the mixing shaft below the mirer.