# THE VEOETABLE FIBERS AT THE UNIVEBSAL EXPOBI TION VIENNA. 

by profe or dr. julutis mirgner.

In the English colonial exhibit. furthermore, there wer dirplayed 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, sofar as tenacity is conceraed, throw all the vegetable textile fibers with which we are acquainted into the shade. The first is the fibrous bark of caletropis gigantea, and the latter that of Marsdenia tenacisalma. A comparative estimate of strength is afforded by the following example: A jute cord of given size wih support, ay 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 na
The tiber 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 wunn has been to some extent employed in Eng. land. The appearance of this material is not very prepossessing, the commercial rroduct 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 im. proved 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 pro-perties-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 the known thattake up as much as 40 to 50 percent by weight of troisture when exposed to a damp atmosphere), the sum, ander ordinary circumstances,contains only 5 to 6 per cent of مater, and can absorb, from an atmosphere charged with moistnire, 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, inasmush as our manufacturers are already sufficiently familiar with their qualities. 'The material called pite, the fiber of certainagavo', has been introduced in Vienna within the past few years under the name of fibris, and so largely employed, in the manufacture of bruahes and the like, that it may be of inerest to name the countries that make exhibits of the raw material. These are: Martinique (agave Mexicann) Guadeloupe (a. Anve icana and a. faltida),Guiana, Brazil, Venezuela (the pxhibit of this country, called cocuisa fiber is closely allied to the pite; it is the product of Fourcroya giganten), 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 representedat 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 commerce, but which are largely utilized in their native countries, and may in time play an important rolē in our textile industries. In this enumeration belongs the bark
fiber of numerous species of hibiscus ( $h$. camabinus,tiliaceus, fiber of numerous species of hibiscus ( $\mu$. cammabinus,tiliaceus,
sabdariffa, etc., found and utilized chiefly in India); the genusabdariffa, etc., found and utilized chiefly in India); the genu-
ine aloes and ananas fibers; and the racou orvacoun, 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 apocynacep, 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 techuical value is very small. The fiber is both weak and brittle, and therefore poorly adapted for woven fabrics. And unfortunately these are the varieties that might be placed in the market in nnlimited quantities: the seed tufts,for example, of asclepins giganten and curasarctica, that are least valuable for industrial purposes. In this connection, the seed tufts of Berelmontea (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 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 Exposition were almost exclusively from the French colonies; and in the published catalogue of their exhibits its merits were placed in the most flattering light.
was nowhere exhibited sare as an article shown in practice to be an excellent substitute for mattrass filling. This fine material consists of the seed tufts of several trees of the family bombaceck. 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 frattosum); the Edrédon végétale, from the West Indian French colonies, called also patte de licire (from Ohironia lagopus); Venezuela exhibited, under the name of laine régétale, the wool of both $O$. lagapus and $\boldsymbol{B}$. cumunensis. The wool of $O$. lagapus is brown, while that of the several bombax species is white, or only slightly- colored. All of the vegetable wools above enumerated consist of a delicate, not brittle fiber, which forns when in bulk a soft, elastic mass, well adapted for the purpose to whirh it is applied (see bove)
In Holland, the kapos is very largely introduced; and in Germany, likewise, the wooly product of eriodendron an frae tuasum, under the name of vegetable down, has recontly bee 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 doabts on account of the weakness of the fibers-appears to be quit erroneous; at all events, no such goods were at the Exposi tion, nor were any of the exhibitors aware that this result had ever been accomplished; in addition to which,all the ex hibits were entered as bedding materials.
In addition to the above, a number of coarse vegetable fibers, generally characterized as vegetable horsehair (crin dégétale), a re deservingof notice. The desirability of securing a cheap substitute for the expensive horsehair, which should possess similar ptoperties, and resemble it closely enough to be mistakè for it on cursory observation, has long beeth felt in several important branches of industry. In Austria and Germany, the leaves of carex brizöides, brough into the market from Cpper Austria and certain quarters of the Grand Duchy of Baden, is ased in eiromnous quantitie as a substitnte for horsehair. The material in question is
but slightly elastic and not very darable, and affords only but slightly elastic and to $\begin{aligned} & \text { ver } \\ & \text { an indifferently } y \text { god subtitute. }\end{aligned}$.
The crind Afitutue (ctalled atso crin Aversing) of the French the split leaves of the enarf paln'(chimacrops humilis), is far superior articte for this yaniose, and it is now being im ported into Europe from Algetia in large quantities. The same material has lately been broughtinto the Vienna mar ket for bedding,'and colored black (the natural color of the product is green); it is known by the name of Afrik, and is em ploved for a great variety of uses. 'Ihe introduction of the
crin d'njrique has unquestionably been of great utility to crin dajrique 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 sub stitute for horsehair with which we are acquainted. Of far greater value for this purpose, inasmuch as they posses the properties of horsehair to a much higher degree, are to be mentioned the three tibers ejoo,pitool, and caragate. The ijoo fiber, called also gomuti fiber, is the product of a very common sugar palm of India (arenga saccharifera), and occur in the form of a black horsehair-like mass, growing on the stems where the leaves have been attached. This fiber re
mains behind when the leaves fall off. The black fiber ditool 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 ques tion the fiber caragatc, called also tree hair. This fiber is a portion of the aerial roots of a parasitic plant (bromelincea) nfesting certain trees, and occurring in Tropical America. It attains a lengthof 8 or 9 inches,and in appearance,elasticity and tenacity approaches so closely to the genuine horsehai hat an ordinary observer will scarcely be able to distinguis the difference. By burning one of the fibers, however, its
vegetable character may be readily established by the ab. vegetable character may be readily established by the ab
sence of the characteristic odor of burning horn, which ac companies the combustion of horsehair and similar anima matters. The following very essential difference between the two materials, which is observable upon close inspection, will serve to distinguish them apart quite readily: 'l'he horsehair consists of one single fiber throughout its length, while the caragate consists of a succession of branched fibers. A he present time Guians is perhaps the most important pro ducer 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 repr senting their goods as being made of the genuine article. The coarse fibers were represented at the Exposition by the eaparto fiber, and another obtained from Spanish cane, by mechanical disintegration. Ropes, cords, etc.,made from the 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 Greace, a large number of seeds of a papaver acea of the glaucium genus were found, which must hav o 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 Hower, unknown to modera science, is particularly and frequently described in the writings of Pliny and Dioscorides, and is thus again resuscitated, after having disappeared fro the surface of the globe for more than fifteen centuries.

In one of Jean Paul Richter's novels-if our memory erves 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 analog ous 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 trans. formation of nervous force. There are cases of consump tion 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, bu $t$ 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 reater quantity is evolved, and all sorts of mucus, from the chests of the people, every day, without any such phenome on. I have read the history of each individual case of the kind, so farasi have been able to gea it, and in every one of the cases, the patient, I find, was in a terrible state of屚
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 in vestigation seems tending, but no one can aver that it has been proven.-Medical and Surgical Reporter.

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United Statem Circait Court.--Eastern District of Pennsyivania.

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trol of one of the mubi lmportant of our technical achools; and the Sbctild students are well krounded in the methodn described in this rolume, the Sudents are well grounded in the method described in thls rolume, the
greater part of which was complit, some time azo, espectally for their usc.
It la a work or the greatest practical value, and the claselfacation Is very exact and descriptive, and yet simple and clear. Altheugh much has lately been
written on the subject of blowplpe analyaig, it is not probable that the branch written on the subject of blowplpe analyals, it Is not probable that the branch
of study is nearly exhausted; and Professor Bruen's treatise carrles it down to the latest dateiexemplifylig the processes with wellexecuted illu
We recommend this work to the attention of the aclenticc world.
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panted with an Appendix on Duodenal Arithmetic and
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and Coates, 820
Mr. NSatrom hay publithed a work which is likely to be of value to enkl-
neers add students of mechanical physices. It contalne numerous probleme In atatice and dynamics, many of whtchare new to sclence, and are solved
with clearness and originally. Most of the soluctons are tluastrated by dta. the statical conditlon of the hearenly bodies. The appendix contalns some remarkable speculation as to the use of systems of numeration with other
bases than 10 , buch as the duodenal (base 12) and the the dlsadvantage of maklog a change in a matter of such everyday usage is
fazgreater than anything that can be Raltied by a more symmetrical method, fapgreater than anything that can be Ratned by a more symmetrical method,
espectally when (as we recently showed to the case of the French meter) the
supposed tmprovement ts merely theorctical.

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with specimen pagee of the varlous account booke.
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Can.-F. D. Brodhead, Boaston, Masa





## zecent Guterican and fareign zatentg.

## Improved Sulky Harrow.

David Saigeon, Wattsburg, Pa.-The harrow is made in three ecctiona, each section being formed of three S-9haped parallel bars, con-
nected by cross bars. The S-bars are secured to each other, at their nected by cross bars. The S-bars are secured to each other, at their
points of intersection, by the shanks of the harrow teeth, which pas points of intersection, by the shanks of the secured in place by nuts
through holes in the sald bars, and are next to the rear crosy bars of each section is made with a loop, to next to the rear crosy 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 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 driver's seat. There are also devices whereby the point of draft
attachment may be adjusted as required, and also whereby the sea Hons 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 bustion as they pass from the range to the chimney; in the arrame bustion as they pass from the range to the chimney; in the arragge-
ment of the circulation and exit fues in connection with the elevated oven to adapt it to be beated by the products of combustion, us they pass from the range to the chimney; in the arrangement of 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 con-
ducted around both or either; in the arrangement of the base dampers, in connection with the base flues of the elevated bollar, to enable the direction of the products of combustion around the boiler
and ovens to $\mathrm{b}=$ controlled as desired; in the arrangementof the top and ovens to $b:$ controlled as desired; in the arrangementof tie top
dampers in conncction with the exit flues to enable the direction of
the products of con justion through said flues to be controlled as deatred.

Improved Harvester.
feorge Foxtcr, Clarksville, Neb.-The essential feature in this de whereby the grase after being cut, is deposited at the inner side of the piatform in the rear of the drive wheels, so as to be out of the way of the machine at its next round.

Improved Railroad switeh signal.
Hiram Corrad, Yors, Pa.-This is a railroad signal conslsting of
one or more torpedoes, whicb are moved upon the rall by the awitch meebesism.

## Improved Graln Welghing Apparatus.

Wiliam $N$. Julian and Joseph H. Bussert, Tariton, Obio.-Tbere is a platiorm for the bag to rest on, and a ring for holding the mouth oo as to bave a slight rising and falling motion, and the platform is Jointed to the frame. By sulta ble construction, when the recelving
$\mathbf{b}_{\text {opper on }}$ the scale beam goes down, tbe spout will be closed, and $h_{\text {opper }}$ on the scale beam goes down, tbe spout will be closed, and
when the welght goes down it will be opened, so that the grain may be continuousl $y$ spouted inte the hopper while the filled bags are
removed and empty ones put on, and the beam is caused to work rock lever by a rod and arm, to turn a system of registering disks. Improved Safety Guard for Wagons and Carrlages. Thomas Joyce, New York city.-This is a metal frame secured thomas Joyce, New York city.-This is a metal frame secured
to the axle near each hub, and sultably braced. Should the axle break or a wheel be crushed lin, or otherwise break down, the preventing the wagon body from dropping so low as to throw out those riding, and enabling
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 the plvoted wire teeth are elevated by a lifting bar. The teeth slige 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 diseagsee pawls and ratchets by reversing a lever, when the

Improved Wheel for
William M. Hoffman, Topton, $\mathrm{Pa}-\mathrm{A}$ wedge-shaped and notched
metallic key is applied to the end of side facing a beveled cusbloning 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 elastcity 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 cal pin, passing through perforations of the drawhead wheng vertical pin, passing through perforations of the dra whead wheneverit is
desired that the link shall profect farenough to couple with the adJoining drawhead. The retention of the link in this position is
secured by means of its concaved rear end, which rests astinat a secured by means of its concaved rear end, which rests against a
second lighter pin. The middle part of the link is acted uponby the rounded-off Jaws of vertical leverframes, which are flrmly pressed
arainst the link by strong springs. The entering spear head of the 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 trmly on the link and couple the same.

Improved Press.
Benjamin J. Day, Evansville, Ind.-The follower twes a couple of 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 beaten bay. There is a head to the case, constructed in sections to admit of fastening the hoops after the bale is presed and before it is released. The sald sections are hinged to the case, and provided
with weighted catches to hold them closed, and to aut with weighted catches to hold them closed, and to automatically
fasten them. The Invention also e nsiits of a fork, which cloge over the opening through which the hay is put into the pressing case when the pressing leesins, to hold the loose hay with which the hopper may be $\mathrm{fll}_{\mathrm{ed}}$ 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 be
tween the follower and the top of the piescase. Lastly, a straining tween the follower and the top of the press case. Lastly, a straining
deoflee is combined with the block uttached to the baling band and device is combined with the block uttachell to the
the press head.
Improved cutter Head.
Benjamin Pearsan and Horace W. Peary n, Newburyport, Masy.This invention consists of a rotary cutter, in which two blades are ing from the face of other disks, all to contrivell that the cutters may be used for cuttang 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 cuttery to the felly lengthwise, and the disks from which the cutters project

Improved MLethod of Forming Metal Seamm.
Mort!mer M. Camp, New Haven, Conn.-This is a method of unit ins or ceaming the edges of a shell or pipe by means of a krooved
flextble metal har, the edgee being inserted in the grooves and the flexible metal thar, the edges belng inse
metal clamped or compresed thereon.

Improved Portable Cover for Vapor Bathing.
Fank LeBlie, New York city.-Thls cover is a tube made of an and having a hoop at the ends to expand the tube to the proper diameter, and one or more intermediate hoops or bands to keep the cover expanded when in use, and allow it to collapse ufter the manin a trunk or bag by traveler's, and be used as occasion may require. The head of the bather isprotruded through the aperture, and leather, 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 welght of the cover. The vapor is generatcd within bather of the weight of the corcr. The vap.
the cover by means of a suitable apparatus.

Improved Ega Carrier.
Wendelln Weis, St. Paul, Minn.-This invention consistsuf secure
Iy interlocking strips, forming the cells for the esge, in connection ly interlocking strips, forming the cells for the exss, in connection
with a hinged and proteoting top partition applied thereto. The hinged top part folds readily over the folded-up celi strips, so that not more space for return shipment is required than heretofore.

Sugar Cane Stubble Dlgger and Cultivator. Henry Von Phul, Jr., and James Mallon, Holly Wood, La.-Tbis is an improved stubble dirger and cultivator, which can be readily ad-
Justed to the width of rows, and to diferent depths. It consists of rotating disks, with plivoted 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 adjustable therewith in vertical direction o
by crank-shaft rack, and lever mechanism.

Improved Sulky Plow.
John A. Kueedler, Grant, Pa.-This is an arrangement of cranks wherehy by operatina a lever the driver can lower and raise the forward ends of the plow beams to cause the plows to work deeper or
whallower 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 turaing, and while passing from place to place.

## Improved Wagon.

Jacob Becker, Jr., Seymour, Ind.-This invention relatey to nove means whereby the rear wheels of a vebicle 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 Stralner.
perforated, or reticulated, stralner, having a rim fitting closely to the interior circumference of the tumbler or other vessel, and fag-
tening spring hooks for retaining the stralner fr-mly thereon. The device prevents the pieces of lemon or other substances from being carried into the mouth, and admite, therefore, the more convenient

## Improved Attachment for Whifiletrees.

Richard Mansfield, New York city:-This improved mode of attach ing whiffletrees is designed for street cars, in which the strain is
mainlythrown on the staples or clevis connecting thew hiffletrees to the draft eyes of the sway bar or car, so as to cause their rapid wearlug out. It consists of a clevis attached by a cross bolt and nut to a receased cllp or band encircling the whiffletree or sway bar, to be connected by a detachabledraft eye, attached by a screw nut through
a square perforation of the socket bolt, to the ends of the whiffea square perforation of the socket boit, to the ends of the whiffle-

Improved Steam CyIfnder Lubricator
Jogeph Kukelkorn, Brooklyn, N. Y.-Thls is an improved lubrica-
or for steam cylinders, wblch consists in a reservoir with a cential tubular stem, surrounded by a sleeve of the cover or top part. The sleeve is prorided with an adjustable screw plug, having air chanor interrupting the supply of oil altogether. A grooved steam-acted aive and stationary bottom plug of the lubricator are provided so that any required quantsty may be fed in connection with the troke 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 tbe paper without stopping the machine, and will heat and partsally dry the middle part of the paper, so that the work may be done more rap-
idly, and so that the paper may dry evenly when hung upon the Idly, and so that the paper may dry evenly when b
rack, thusadapting the machine to be run by power.
Improved Ice Receptacie for Corpse Preservers. Friedrich Wesemann, Brooklyn, N. Y.-The ice receptacle is applied on ordinary corpse preservers by means of detachable sup-
porting silde pleces and projecting lugs. The cover serves for the porting sinde pleces and projecting lugs. The cover serves for the a central smaller lid for inserting the ice Into the ice box. As the cold air descends from the ice receptaole and setties on the corpes, it causes the rapid and complete cooling of the same along every part, and not at special parts only, keeping the body thereby in a

Thomas J. Ingels and Millard F. Ingels, Atchison, Kav.-In thly invention a supplementary pivoted sane is so connected with the revolving wings or salls as to throw them out of the wind when the latteris too violent. There is an arrangement of parta, whereby a
single-toothed bar connects with and operates devices for adjusting

## Improved Water Closet Apparatus.

Archibald McGilchrist, New York clty.--This is an improved water closet apparatns, so constructed as to render the use of a trap unne-
cessary, and at the same time to prevent any unpleasant odor from acaping through the pipe. It shuts off the water automatically and guardsagainst an overfow, while allowing a sufficient amount 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 How of valve is raised, the contents of the basin and case will How of
through the sewer pipe. As the water lowersin \& hecase, a foatconthrough the sewer plpe. As the water lowersin the case, a float con-
tained in a separate case sinks und opens a small valve, allowing the tained in a separate case sinks und 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 fow Into a siphon-shaped pipe, and through it into the basin. When the ball is lowered into place, the wate
water pressure.
Improved Serubbing Brash and NLOP Holder.
Michael Bigler, Marr, Pa.-Thls 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.
Impro

## Improved Hemp Dressing Maehine.

George Davis, Eliza beth, N. J.-For automatically varying the motion of the delivering rollers according to the quantity of material ponding reverse cone pulleys on the driving shaft by an Independent belt for each. The pulleys have loose belts with which tlebteneis are arranged to act alternately, the tighteners being on a rock shaft, which is held by a weighted lever when the hemp is running motion is given by the largest pulley; but when the quantity increases and ralses the upper roller, levers connected to it ralse the weighted lever, which first tightens the belt of the smaller pulleys in succession, giving a faster motion. By the diminution of the quan-
tity passing through the rollers the weighted lever falls. and the reverse results are obtained.

Improved Car Couplling.
Thomas L. Shaw, Laurinburgh, assignor to himself and Hugh G. Fladger, Lilesville, N. C. -The top part of the drawhead is provided lateral pin, and extended slightly intos 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 ralsed coupling pin, when resting in nerarly verticul position on the bottom
part of the drawhead. The onid drops into the usual top and bottom perforations of the drawhead, and is guided ulonga vertical concave front recess of the tumbler guide pin. The hook 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 entering link strikes thelower front part of the tumbler, and carries the same in the guide recess in upward direction until it assumes a nearly horizontal direction, closturg 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 slding of the tumbler, untill the same assumes a nearly vertical position on the bottom part of the drawhead, and supports on itt forward projecting
hook end the pin in raised position, ready for coupling automaticaliy rance of the link.
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 whlcb 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 rese and carries the pressed clay agalnst a series of wire 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 apthe pusher goes back, ready for another operation. Each set of ap-
poras is operated in suceaslon, and all the moving parts are
worke dind the extension of the miding shaft below the worked
mirrer.

