ENGINEERING INVENTIONS

An apparatus for raising water has been patented by Mr. Thomas Arthur, of Bangor, Pa. The invention consists in a combination of tanks, sinhons mverted siphons, water pipes, air pipes, levers, floats valves, and a stop cock, whereby the withdrawal of air from the initial siphons successively will cause a con tinuous raising of water.

A car coupling has been patented by Mr. Luther B. Owen, of Cedartown, Ga. The coupling pin, by means of a system of levers and rods, is made capa ble of being manipulated from the ends and sides of the car, while a bail may be operated from either side of car to control the coupling link without going in between the cars.

A driving belt has been patented by Mr. Gilman Jaquith, of Maysville, Ky. It consists of a single strip of cotton cloth folded repeatedly, with the warp running in the direction of the length of the band, and ends doubled upon itself for connection by a clip or hook shaped fastening, the whole stitched together to unite the folds and prevent raveling.

A compensator for wire ropes or cables has been patented by Mr. Richard B. Ireland, of Trenton N.J. It consists in a wheel or roller carrying the rope and combined with the operating lever in such manner that normally the wheel is free, and is locked up by the movement of the lever, making an automatic and positive mechanism to allow for the expansion and contraction of wire ropes or cables.

AGRICULTURAL INVENTIONS.

A plow has been patented by Mr. Douald M McAlpine, of Savannah, Ga. This invention covers a novel construction whereby a short beam can be used and the draught attachment can be readily adjusted as the character of the soil may require.

A harrow has been patented by Mr. Phillip Hense, of Dyersville, Iowa. This harrow can be formed of one, two, or three sections, as may be desired, the invention covering a novel combination and construction of parts, to facilitate the operating and controlling of harrows and promote their durability.

A combined gang and subsoil plow has been patented by Mr. William S. Haven, of Shreveport, La. This invention covers a novel construction of a donble plow which may be drawn through old ridges, turning the soil into furrows previously formed, so new ridges can be readily completed. and the labor of preparing land for the next crop greatly lessened.

A combined seed planter and cultivator has been patented by Mr. Thomas B. Shannon, of Huntsville, Tex. The construction is such that when the machine is to be used for cultivating plants the hopper and its attachments can be removed, or the clutches can be thrown out of gear with the wheels to prevent the seed dropping appliances from operating.

An attachment for cultivators has been patented by Mr. Frederick Albrecht, of Ohio. Ill. It is made with a clamp secured to the standard of the cultivator, and holding the arm of a crank rod, to the other end of which is secured a blade by a hook bolt, so the blade will be secured to the standard, and can be readily adjusted.

A plow attachment has been patented by Mr. William P. Brown, of Zanesville, O. The invention provides an adjustable connection that will allow the shovels to be made unusually long, so that as they wear away they may be set lower, also allowing one shovel to be set higher than the other, where plants to be cultivated are ou different levels, with other novel features.

MISCELLANEOUS INVENTIONS.

A metallic cap for corks has been patented by Mr. Alfred L. Bernardin, of Evansville, Ind. The cap has, in addition to an open ended slot, elevations or nodules upon its upper surface, to effectually hold the binding wire thereon, and thus bind the cap upon the stoppers or corks

A machine for cutting glass has been patented by Mr. Price C. Claffin, of Stevens Point, Wis, A bed is mounted to be revolved on a suitable frame, with a guide arm to project radially over the bed, a cutter holder for the cutting tool being fixed in a slot in the guide arm, with other novel features.

A churn power has been patented by Mr. Fredrick F. Williams, of Salado, Texas. A vertically movable carriage has a drum with a rope wound on it, the upper end being secured, and from the drum a wheel on the carriage is operated by gearing, the wheel being connected with the dasher staff.

A combined folding chair and bath tub has been patented by Scott J. Beach and Sarah A. Beach, of Norfolk, Conn. This invention covers novel details and combinations of parts for an apparatus which can be adjusted for use as a large or small chair, a large or

cone shaped projection on its belly to which the car is fastened, the balloon being calculated to ascend an descend obliquely.

A bag fastener and holder has been patentd by Mr. John W. Rickart, of Quincy, Iil. This inbe accidentally detached when the bag is closed, the contents tending to tighten the fastening, and the hooks forming means of suspending the bag when open.

A device for suspending hogs has been patented by Mr. William G. Reed, of Avon, Ind. The object is to take hogs from the scalding tub or bristling table and hang them for further work, for which a special construction is provided, intended to be especially useful on farms and by country butchers doing a mail business

An apparatus for tanning hides has been paented by Mr. Emile de Solminihac, of Lorient, France. A skeleton drum or cylinder is provided, upon the cir-cumference of which the hides or skins are held and terial through the pores of the hide or skin.

A dynamo electric machine has been paented by Mr. Elisha B. Cutton, of Kingsbridge, N. Y. It is constructed with the parts of the field magnet that receive the wire tapered from the pole pieces to the yoke, to make a sufficiently strong field with less iron and less wire, and consequently a lower resistance and maller percentage of power than are now used

A wheel for vehicles has been patented by Mr. Alonzo E. Butler, of Leipsic, O. The invention covers a novel construction and combination of the ble wheel, in which the spokes can be readily tightened or taken out.

A still for the manufacture of brandy has been patented by Mr. John M. Foy, of San Francisco, Cal. The heater is made in one with the still, the bottom of the latter being souble or with a jacket, and there are several novel features enabling the operations to be carried on rapidly, and avoiding the delays usually necessary for charging and discharging.

A device for sharpening machine knives has been patented by Mr. Robert O. Owen, of Lynchburg, Va. This invention covers a peculiar construction and arrangement of a sharpening disk or wheel mounted in a frame and arranged in relation to miserable invalids. the machine knife so as to be adjusted to or from the same while the latter is in motion.

Minch, and Frank Minch, of Newark, N. J. This inventioncovers various novel details of construction order, one, two, or more series of powder, stars, etc., as d'estred.

A churning device has been patented by Mr. Alexauder Cairns, of Mount Hope, Wis. In combination with a block adapted to be coupled to a pivot is a revolving churn box, a shaft connected with the block by a nniversal joint, and a transverse shaft connected by gearing with the shaft connected with the block, the transverse shaft having crankhandles at its ends

A bone black drier has been patented by Mr. Edward P. Eastwick, of New York city. This invention covers a novel construction for applying currents of air to absorb and carry off the moisture the bone black contains, and to oxidize the organic matter therein. A bone black kiln has also been patented by the same inventor for reburning and revivifying bone black, and especially adapted fornse insugar refining. A marine record preserver has been patented by Mr. Duncan Sinclair, of Wai-Nui Omata, Wellington, New Zealand. It is constructed with outer and inner cases connected at their open lower ends by an annular plate, and having a cork filling and separable tube attached at its lower end to a cap plate screwing into the annular bottom plate, for preserving re cords of ships lost at sea, etc A polarized telegraphic relay has been pa-

ented by Mr. Wirt B. Harvey, of Memphis, Tenn. Combined with a swinging armature, having one end held hetween the two poles of a magnet, is a coll held opposite theother end of the armature, the coll having a core part screw threaded, so by turning the core and the coil thereon the coil cau be adjusted a greater or ess distance from the end of the armature.

An axle gauge has been patented by Mr. Hector McQuarry, of Allandale, Ontario, Canada. The object of this invention is to provide a simple, readily adjustable, and reliable tool for bending the arms of vehicle axles downward to give the proper "set" to cause the wheels to travel on a plumb spoke, and forward to give the proper "gather" to the wheels, for a novel construction is provided.

Special.

LIFE IN SIAM.

In 1841 a young man, named Jno. H. Chandler, feltitto vention provides for peculiarly constructed hooking ap-be his duty to goto Burmah and join in the work of Bap-pliances, so the hooks of the fastening are not liable to tist missions in that country. The name of Chandler is Church; and on this gentleman and his accomplished wife has fallen a just share of the honorwhich follows devoted toll. Mr. Chandler at first went only as a lay missionary, but subsequently entered the ministry as a regularly ordained clergyman. He brought to the work the skill of a mechanical engineer and a thorough mas tery of the arts of printing and type-founding. He was soon transferred to Slam, and made his home at Bangkok, the capitol of the kingdom. Here his ready facility for acquiring the language made him both use-ful and busy. He wrote several religious and scientific works in Slamese, and rendered himself valuable to the king and his court as translator of important documents. His wife, formerly Miss Crossman, of Utica, N Y., made herself eminently useful in connection with the work of the mission. Both in Burmah and Siam she stretched, secured by clips, centrifugal action being was at the head of schools for the natives, and in later utilized for causing the penetration of the tanning ma- years she had at Bangkok a school for the children of the pobles and princes.

One of the almost inevitable results of mission work is the breaking down of the bealth of those engaged in it And this is especially the case in such a debilitating climate as that of Siam. This breaking down generally comes after a short term of service. The Rev. Mr. Chandler and his wife were no exceptions, in this re-spect, to the ordinary lot of missionaries. Their labors had been arduous and various. Mr. Chandler had served with the Foreign Missionary Society fill 1856. Then he was occupied with various evangelical and literary duties, until in 1859 he became U.S. Consul at Bangkok covers a novel construction and combination of the He was also tutor to the present King of Slam, whose hub, rim, and spokes, and manner of attaching and full name is Ohra Bard Somdech Paramindar Maha adjusting the spokes, making a light, cheap, and dura-Chulajongkorn Chub Chi Chow Chow Yuhua. The official title of this monarch is simply " Chulaiongkorn."

The undermining of Mr. Chandler's health went on gradually for years, until in 1372 he entirely broke down. In Bangkok he received medical treatment, and also on hls way to this country and back again in 1876. But the effect of all this was rather to Patch up than to cure. If was not until 1860 that he and his wife began to experience substantial relief. But we will let them tell their own story, which will be found exceedingly interesting Recently a correspondent of one of cur daily papers visited them at their home in Camden, N. J., at which place they have been residing since their return from Siam. He found them hearty and cheerful PeoPle, con-siderably past middle life, and giving no indication, either in appearance or manner, of ever having been

The Rev. Mr. Chandler, conversing freely about his experience, said, substantially :

An apparatus for making Roman candles siam with somewhat improved health, intending to stay has been patented by Messrs. Otto A. Minch, Hermann; six years. Such was my condition, however, and that of Minch, and Frank Minch, of Newark, N. J. This in- 'my wife, that we were compelled to return in three. I was a complete wreck. My lung weakness was so great that whereby the clay, powder, stars, and combustible com- for months at a time i could not write or read. The nerves position can be introduced into the cases in regular of my stomach were totally demoralized. My food would order, one, two, or more series of Dowder, stars, etc., not digest. I had to lay aside all my teaching and missionarylador. I required an attendant all the time, and was unable to do eithermental or physical work. My sleep was broken and unsatisfactory. I was also troubled with pal-pitation of the heart, with diabetes and with an obstinate catarrh of ten years' standing. Altogether I was a very verysickman. "While thus a sufferer, the Rev. Dr. MacFarland, a

Presbyterian missionary at Bangkok, called my atten-tion to 'Compound Oxygen.' He had tried it for indigestion and general debility, and had found it verybene

"While I was on my way home I found myself in a very critical condition, and almost gave up the hope of recovering health. On reaching Philadelphia I consulted Drs. Starkey & Palen, and at once began the use of Compound Oxygen. It acted like a charm. Very soon I felt signs of returning strength. In the matter of diament went on gradually, but surely. I became so that I could eat with requirity and realized joyny food. In time my old symptoms of wretchedness and weariness passed

away, and I was myself again." "To what extent are you able to perform such labors as you formerly could?" was asked.

"You may judge of my strength and health when I tell you that I was with the Slamese Embassy in New York and Washington a few months ago, traveling with them and going about as freely and energetically as any of them. Compound Oxygen has so recruited my sys em that the unusual exercise of travel had no unpleas ant effect on me; nor was I in any respect the worse for my journey. Ithink [amnowable to endurealmost as severe tabor as at any period of my life." Mrs. Chandler, who seemed to be in excellenthealth,

then cheerfully gaveher experience. She said in substance:

"Frommy early sighted 1 had been ambitious to at-tain the highest degree of knowledge and of usefulness. I wanted to go as a missionary to some heathen country, and Ilabored to be prepared for it. My gift for the a quisition of languages proved of great service tome First, I assisted in a missionary school in Burmah; then I taught schools of the native Siamese; I had, among others, the brother of the Dresent king under my care and a number of the children of the nobility, to whom I taught the English language. I also did much translating. So arduous were my labors that my health, which had for some time been failing, broke down in 1873. I had been of buoyant spirit, but mun erves were exhausted. and Isankdown. Vitality gave out. Endurance failed. I gave upall mywork. I was solow that on arriving in this country in 1876 no physician would give me any encouragement. When 1 returned to Siam, it was with only par tially restored health. I broke down again, and formonths absolutely helpless. Iwasnervous to a frightful extent. avas and, in spite of the most earnest endeavors, could not obtain satisfactory sleep. We could not see our way clear to leave Bangkok until 1880. When I began to pack. I was afraid I could not go through such a heavy undertaking. In the midst of this terrible state of de-pression and dejection Dr. MacFarland handed my hushand one of the Starkey & Palen' booksabout Com pound Oxygen. It seemed tome that this must be a heneficial remedy. On the homeward voyage I improved a little. "On arriving here I at once sought Starkey & Palen, procured a *home treatment* and faithfully followed the directions. Has it done me good? Look at me now. I am restored to my old good health. There could have been no severer test than in my case."

have done forthem with Compound Oxygen. Considering the remedy completely adapted to their ca similar ones, they have no hesitation in making their recovery known, for the benefit of the great arm of invalids who are seeking relief and who may be happy in thus finding it. A "Treatuse on Compound Oxygen." containing a his

tory of the discovery and mode of action of this remarkable currentive agent. and a large record of surprising cures in (consumption. Catarrh, Neuraigia, Bronchitis, Asthma, etc., and a wide range of diseases, will be sent free. Address DRS. STARKEY & PALEN, 1109 and 1111 Girard Street, Philadelphia.

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small cot, or a large or small bath tub.

A lady's bicycle has been patented by Mr. Louis P. Valiquet, of New York city. It is constructed with a frame suspended from and below the axles, in such manner that it can be conveniently used by ladies and is further designed to promote efficiency in the application of power to bicycles.

A tile ditcher has been patented by Mr. Oscar Booth, of Creston, Iowa. It is mounted on wheels to move over the ground to dig trenches for laying tiles or drain pipes, and is intended to cut a trench to any required depth at one operation, to raise the earth, and to carry it some distance to one side of the trench,

A fire escape has been patented by Mr. Augustus H. Terwilliger, of Newburg, N. Y. It is adapted to be built into the wall of a building, and to be closed when not in use by a sliding shield or cover, and is also calculated to facilitate the entrance of fire men to different stories of a building in case of fire.

A wedge shaped air balloon has been pa tented by Mr. George Wellner, of Brunn, Austria-Hungary. It has a vertical edge at the front end and a transverse edge at the rear end, with an inverted

A printing press has been patented by Mr. l'homas Forknall, of Manchester, Eng. The invention onsists in a ring or circular plate held in place on the yoke by screws and having its outer circular edgescrew threaded, on which plate a ring nut is screwed, to facilitate the adjusting of the platen according to the thickness of the paper, as by turning the ring nut the platen will be pressed a greater or less distance from the yoke,

A photographic camera has been patented by Mr. Walter Clark, of New York city. It combines an adjustable lens with a device for holding and exposing the sensitive plate, a focusing glass in the top or side of the camera box, a reflector, adjustable into or out of line with the lens, for throwing the image on the focusing glass and afterward exposing the sensitive plate. with other novelfeatures. The same inventor has also obtained another patent for a camera that does not require the plate holder to be removed to obtain a focus. and which bas shutters for instantaneous photograph ing, operated automatically by the lens holder, forfield work, the camera being fitted in a case or bag of novel construction and arrangement.

In concluding a very pleasant conversation, the Rev. Mr. Chandler and his excellent lady both remarked that withgratitude to God for their restoration, they are at all times free to speak of what Drs. Starkey & Palen ' York.