REGENTLY PATENTED INVENTIONS.

## Engineering

Motor Vehicle.-Henry W. Heaton Oneyville, R. I. This is a four-wheeled vehicle, in which
oil or gas may be used to actuate the motor, the vehicle oil or gas may be used to actuate the motor, the vehicle being easily started, stopped and steered. The motor comprises a revoluble combustion chamber fastened on a
main driving shaft, between which and the rear axle main driving shaft, between which and the rear axle
is a transmitting device, cylinders opening into the combustion chamber, and there being an interme diate mechanism between the pistons of the cylinders and a series of gear wheels rolling off on a fixed gear wheel. In the combustion chamber is an electric igniting device,
chamber.
Desulphurizing matte or Other Furnace Products.- James L. Wells, El Paso, Texas An apparatus for reducing low grade matte and othe furnace products, producing high grade matte or metal in by this inventor. The furnace is provided with the usual stack, having a water jacket;'and tuyeres are arranged on opposite sides to open into the molten metal, the tuyeres being connected with an air hlast with a high pressure which a longitudinally divided plug a tubular shell, in which a longitudinally divided plug having recesses in it sections forms a longtuainal bore, the sections also hav-
ing abutting projections engaping a corresponding reces of the shell to prevent the plug from turning.

## Electrical.

Lock Circuit Closer. - Charles E. Pierce, New York City. In an electric alarm to be opeoor, according to this invention, a frame piece is en ployed carrying two normally disconnected contact points and a lever movable to engage them and thus close
the circuit, the device being placed in such position that he circuit, the device being placed in such position that eccesive pressure is applied to ber lieck when door is sprung by a jimmy or otherwise. Several forms of the device are shown in the patent.

## Bicycles, Etc.

Handle Bar - Henry W. Heaton Ineyville, R. I. To reduce to a minimum the trausmia of the bicycle, in riding over rough places, is the objeet of this invention, according to which a clamp engage the handle bar and the handle bar stem has a head made in sections inclosing the clamp, there being an elastic material between the clamp and the head and means fo drawing the head sections together and clamping the several parts firmly in place, the elastic material taking
up the vibrations of the stem. By having the surface of the handle bar roughened, a very firm contact is obtained hetween the elastic material and the handle bar, prevent ing possible turning of the latter in the head.
Differential Bicycle Gear.-Guy readily and conveniently change from a high gear to ow gear, and vice versa, this invention comprises principally a hollow drive wheel hub provided with differential gear wheels, a double gear wheel being laterally slidabie
to Imesh with either of the hub gear wheels, while a driven sprocket wheel is in gear with the double gear wheel to rotate the latter within the hub and permit its
lateral movement. The entire device for transmitting motion to the drive wheel is completely inclosed within the hollow hub, and is thus thoroughly protected from dust and other impurities, and is not liable to get out of
Derdachable Carrier for Bicycles. -William M. Tegart, Moosomin, Canada. To facilitate carrying a camera, baggage, etc., on a bicycle, this in entor has devised a carrier which may be conveniently ack frame adapted to be clamped to the steering head, and a supporting bracket or bottom frame formed of two sections having a hinged and sliding connection with each other, the inner section being hinged to the back frame. The device is not in the way of the handle bar or he fork for the front whee, directly above which th load is supported.

## Agricultural.

Reaping Machine. - Mihail Alexanresec, Bucharest, Roumania. This is a machine adap grasps the corn to be cut, bends it down and conveys oo the knives, the cutter bar having motion imparted thereto from the axle. The corn falls upon an endless apron passing over rollers rotated from the axle and is conveyed onto a rack where it collects until it falls to the ground, when the rack is moved inward.

## Miscellaneous

Race Starting Machine. - Victor Carandini, Calcutta, India. According to this invention a fence or barrier is mounted transversely to the track, in connection with means for raising and lowering it quickly, so that upon raising the barrier the horses may pass.
The barrier is formed of two bars with flexible connections and slight independent movement, there being a restraining device for each bar and means tending to lift the bars, while a flexible connection is capable of tripping the restraining device for the second bar when the
tirst bars moves upon being released. The barrier inoves upward on the drawing of a cord by the
Necktie Fastener. - Gustave Selowsky, New York City. This is a simple and inexpensive device to be applied to any neckstrap necktie, and
which can be quickly and accurately adjusted to fit the tie to any size of neck. It comprises hook and eye straps and a connecting device having at one end a loop embracing the hook strap and at the ritherend a hook to engage the eye of the eye strap. Note.-Copies of any of the above patents will be
furnished by Munn \& Co. for 10 cents each. Mlease
send name of the patentee, title of invention, and date send name of
of this paper.

## Business and Personal.

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Yankee Notions. Waterbury Button Co., Waterb's, Handle \& Spoke Mchy. Ober Lathe Co.,Chagrin Falls, O Inventions developed. models and experimental Charles Crook, 144 Centre St., New York.
Canadian Patent No. 50,683 , on
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Ihe Garvin Machine Co., Spring and Varick Sts., N. Y. Concrete Houses - cheaper than brick, superior The celeorated "Hornsby-Akroyd" Patent Safety $\mathrm{O}_{\mathrm{i}}$ Engine is built by the De La Verglue Refrigerating Ma
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IINTS TO CORRESPONDENTS no attention will be paid thereto. This is for oui
formation erenates ato former pubtication.
artices or answers should ive date of paper and page or number of question.
uirines not answerd in reasonable time sholld
erepated : correspondents will bear in mind that some answerk require not a little research, and.
though we endeavor to reply to thl either by letter
or in this department. each must take his turn Buyers wisbing to purchase any article not advertise housee manufe winting or carrying the same ecial Written In (ormation same. matters of
personal rather than general interest cannot be
expected without remuneration. Scientific American Supplements referreo
tomay be had at the ontice
Books referrio to promptiy supplied on receipt of Minerals sent for examination should be distinctly
marked or labelec.
(7242) E. E. S. asks : Will the gal vano meter, described in "Experimental Science," show how many volts and amperes of a current, with proper scales? If will, will you give me proper instructions how
to make proper scales? A. The tangent galvanometer of "Experimental Science" will measure amperes; but no permanent scale reaching amperes could be attached oo it. Any change in the strength of the needle would change the value of one ampere on the scale. Any good lext book of electricity or of physice will explain the easily unless you have a knowledge of trigonometry easily unless you have a knowledge of trigonometry. To
measure volts with a galvanometer, you require with a large number of ohms resistance. The DeprezD'Arsonval galvanometer, of "Experimental Science,"
las hardly resistance enough-150 ohms. Here the scale is an ordinary scale. If you have olle volt and can find how far the spot of light moves for it, you can then measure volts. The Daniell's cell gives nearly 1.1 volts. All
voltmeters and ammeters are graduated where va'ts and mperes are at hand with which to mate the atotion You may be unable to do it. All voltmeters and amme ters with scales reading volts and amperes directly are made without magnetic needles, since these easuly value of a given deflection on a scale.
(7243) W. F. R. ask : Is there any di rect way, that is, by means of converters and the like, of changing an alternating current into a continueus one
A. The only way to traneform an alternating current into a direct current is to run a motor with the alternating current, and with this motor drive a direct current dynamo, which will give the voltage and amperes required and called a motor dynamo.
(7244) H. C. C. writes: Please explain doubtful if there be a nitrate of gold. If there be, it is an nnstable compound which is reduced at once to oxide
of gold or to metallic gold. Fuming nitric acid will dissolve fine gold leaf, but even by shaking the solution with water, the precipitation of gold oxide takes place.
(7245) E. Y. M. writes : I am makine the tangent galvanometer described in "Experimental Sci ence." Please inform me what size and kind of wire also length, to use for the different coils of same? A
For the coils of the tangent galvanometer asdescribed in For the coils of the tangent galvanometer. as described in
"Experimentai Science," use No. $\% 7 \mathrm{Am}$. wire "Experimentai Science," use No. \$7 Am. wire gag
copper wire (cotton-covered magnet wire will answer)

| Oums. Ft. In. | Bed bottom Bed bottom |
| :---: | :---: |
| For coil b.... 1.... ....... ..... 19 5 | Tinkham. |
| For coil c. .. 9............... .. 174 | Bea, foldin |
| For coil d.... $40 . . . . . . . . . . . . . . . . . . ~ 776$ | Bell, pola |
| For coil e.... 100................... 1940 |  |
| Total |  |
| Total | Bicycle, v . Er |
| weight required is a little more than $13 / 4 \mathrm{lb}$. | Bicycle coasting |
| 46) J. G. B. asks: What is the differ- | Bicycle ha Bicycle |
| etween an incandescent light of 100 volts, 16 |  |
| wer, at $3_{\mathrm{T}}^{\mathrm{I}}$ watts per | Bic |
| age and candle power but of $21 / 2$ watts per can | Bicycle wheel, G. H |
| difference in horse power | Boat, Ice breakiug. |
| in the lamp or light. Why not use $21 / 2$ watt | Boiler. See |
| ${ }^{3}{ }_{\text {\% }}^{6}$ watt. because there could be |  |
| horse power? A. You can light |  |
|  |  |



at any higher rate of power, bat you will barn your
lampso out a greatdeal faster than the decrases of power
at 216 watts will balance

| Box. See Junction box. Miter box. Step box. Box fastener, J. W. \& C. A. Myers................. <br> Box fastener, J. W. \& Pitney. <br> Bracket. See Curtain pole bracket. Fan motor <br> Brake. See Elevator brake. Wagon brake. <br> Brake and fender, combrned, $N$. Bucket, pick up, R. B. Patton.. <br>  <br> Burner. See Altmosperic burner. Gäa burner. <br> Incandescent burner. Oil burner. <br> Cabinet, E. Bamberger....... Caisson air lock, S. Mattson. <br> Cake or food turner, kriddle, Ci. . Fowler. <br> Calculating machine. H. M. Minnis <br> Can. See Sheet metal can. <br> Canceling device, check, J. M. Willbur. <br> Car' bolster, C. E. Bauer. Hi. Pearson....... <br> Car coupling, C. W. Gillespie. <br> Car coupling, E. F. McMurtrey. <br> Car coupling, E. L. Rickson..... <br> Car door fastening, mine, F. C. Hockensmith. <br> Car driving gear, motor, F. Kramer <br> Car, furniture, A. C. Mather <br> Car platform truss, T. L. Mckeen. <br> Cars, etc., differential speed and reversing gear Carpet motor and tram, G. G. M. Hardingham Carriage fan attachmen t, baby, Penick $\ddot{i}$ Nö $a$. Carriaye, foldink baby, J. A. Crandall. <br> Carriage spring gear, J. H. Caffrey |
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|  |  | (7248) W. M. M. asks: Is there any chemical that will cause the silver on an electric print it, but it will not remain away. I want something that will be permanent. These prints are those which are print when treated with solution of chloride of lime is due to the fact that the chloride of lime changes the silver of the print into chloride of silver, which is white nd does not show. To prevent this from turning black Prepare the following bath

Water, distilied
.50 parts.
Cyanide of potash
Soak the print in this for 15 minutes. Wash for one hour in running water and dry. In other words, treat
the print as you would any photographic print in fixing, washing and drying. Hyposulphite of soda, 1 in 8 of water, will dissolve the chloride of silver, but is not so powerful as the cyanide. It must never be forgotten that
cyanides are most violent poisons, and great care must be exercised in their use, lest they get into the system by mouth or through a cut in the skin
(7249, V. W. writes: In your SuppleMENT there is a description of a wimshurst electrical machine, with direntions to make it, and in the direchock bottle. and I do not know where to procure these, cannot get them here and do not know to whom to send for them. Will you please inform me as to the closest point here that I can get them; also give name of dealer? I am making one of these machines and would like to have the bottle at once. A. All the glass parts of a Wimsinfst or similar electric machine. and all glass apparatus so be charged with electricity, should be free
from leau. Glass which contains no lead is "crown" glass. It is impossible to recognize this glass bs its appearance. The best you can do is to get a good window glass for the plates. To test the botles for the Leyden jars, wash them and dry them thoroughly. When cold. rub them with a dry and warm silk handkerchief or other piece of silk. A suitable bottle will show strong signs of electricity, crackting or even yielding a venient if these bottles have a wide mouth. You need not be particular to get "hock" bottle; any bottle which will stand test as above is good. A greenish buttle is likely to prove to be of good glass for electrical uses.

TO INVENTORS


## INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted NOVEMBER 16, 1897 ,

## AND EACH BEARING THAT DATE.

ISee note at end of list about copies of these patents.]



$\qquad$
Awn
Awn
Bak
Bale
Bale
Bar
Bat
Bea
Bed
Bed


at $21 / 2$ watts will balance. It is more economical to con-
snme three or more watts per candle than to consume the carbon filament so fast and thus shorten the life of the lamp. It is the interest of the lighting company to
prolong the life of the lamp, butit is the interest of the user to obtain a large amount of light. There must be a watts per candle.
(7247) W. H. F. writes: I have come If you put a drop of water on this substance of acides. mmediately. Will you please tell me the name of this substance and how it is made? A. We cannot tell the natne of a substance we have never seen simply by
knowing one property of it. If a drop of water be put on potassium, it will be decomposed and the gas which results will be set on fire. So also sodium will set fire to drop of hot water. Botb these metals are soft, silvery color when freshly cut, and are kept under kerose
 593,752

 593,872
593.65
59365
5937
593,974
593



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## E.



