RECENTLY PATENTED INVENTIONS. Bicycle-Contrivances.
bicycle.-Henry F. Henderson, Ames, Colo. The bicycle is driven by a chainless gear, the novel fea-
ture of the invention being found in the use of a fls-wheel connected with the center of a drıving hub on the rear wheel. When motion is imparted to the pedal-shaft the driving-hub will be rotated in a backward direction, carrying the fly-wheel; at the same time the wheelclaims that when the bicycle is once started, the filywheel being in rapid rotation, will steady the bicycle and aid in carrying the pedale over dead centers, thus relieving
the rider of much strain.

## Railway-Appliances.

CAR.-John M. Jones, Sedalia, Mo. The purpose of this invention is to provide a system of bracing rail-way-cars which will render the floor more secure and which will, therefore, tend to strengthen the whole rods anchored at the transoms of the car Struts project down from the middle-beame and carry the trissods. Stanchions are mounted on the transome, and truss-rods are supported on the stanchions and anchored at their outer ends to the end-sille of the car and at
their inner ends to the middle-beams directly at the at their
their in
struts.

GRAIN-DOOR FOR FREIGHT CARS.-Edward W. Morten, Farmersville, Tex. Adjacent to the dooropening of the car are twn track beams. A grain-door
is provided, formed in two sections, arranged one above the other, the upper section bearing on the lower section the other, the upper section bearing on the lower section, and the lower section bearing on the sill of the car Ween the sections of the door are closed over upon the other and are in engagement with the track-beams,
the inclined upper and lower surfaces of the trackbeams and battens will force the door inwardly to a firm engagement with yielding strips, in the nature of weather strips, thus effectnally preventing any grain from working out of the car when the door is closed.

## Miscellaneous Inventions.

PRINTING ATTACHMENT FOR ROLL-HOLD-Ers.-Gustave H. Schubert, La Porte, Cal. This invention provides an attachment for rolls of wrapping.
paper, by mesns of which it will be possible to print the paper, by mes ns of which it will be possible to print the
paper with an advertisement or other matter as the paper is unwound from the roll. An arm is attached to the rame of the roll-paper carrier and pressed by a spring toward the roll of paper. The arm carries an inking and an impression roller, thelater bearing al ways against the paper, so that as the paper is unwound from the roll COFFEE-POT. - Archibald Angus, Manhattan, New York city. The purpose of the invention is to con struct a coffee-pot so that its parts may be readily de-
tached from one another for cleaning purposes. The tached from one another for cleaning purposes. The lower member each provided with a hole adapted to register and to receive an arm upon the percolator by which the percolator is suspended. This construction is especially adapted for use with earthenware pots, as it is not necessary to use rivets.
TRANSOM-LIFTER.-George Bicrellautupt, Man hattan, New York city. This transom-lifter is arranged to lock a sky-light or sash or to swing it open for the escape of persons when the building is on fire. The
lifter comprises a guideway on the transom, in which puideway friction-rollers on a lever travel. A sliding, spring-pressed catch on the lever engages the guideway nected with the lever and catch permits the catch and be given to the
WASHING AND ClEANING DEVICE.-Thomas In this washing and cleaning device a reservoir is mounted, having a partition extending from the upper end of the reservoir downward to form two compartments
in communication with each other at the bottom, one of the compartments having a discharge-opening at of upper end. The arrangement is such that the water is
discharged by the operator, giving a quick jerk in discharged by the operator, giving a quick jerk in
downward direction to the device. A rubber-scraper and felt washer are provided, both projecting a suitable distance from their holders and standing at an angle to each other and at anglc to the handle of the device, in order that they may be applied at the properangle to
folding UMBrelia -Frank g. Grove and Frank E. Stover, Luray, Va. The insention provides
an improved locking connection between the telescopic an improved locking connection bet ween the telescopic
or sliding members of a rib empioged in folding umbrellas. The locking device serves materially to members of a rih connect, especially when the umbrella members of a rih connect, especially when the umbrellais
opened. Although it be impossible to move the members of the rib upon one another when locked, they can, nev ertheless, be freely operated when the umbrella is closed The cover of the umbrella when stretched, will, by fles-
ing the ribs, bind the locking device so as to prevent its ing the ribs, bind the locking device so as to prevent ite accidental displacement.
COMBINATION-TOOL - Wilford A. HAuger Pax, Mo. The tool comprises a handle-bar in one end of which a headed stock is adjnetably held, ha ing a ratch eted head adapted to engage a pipe. A chisel is adjust
ably mounted on the handle-bar and is movable toward ably mounted on the handle-bar and is movable towar and from the stock. The tool can be employed as a
holt-holder. in screwing or unecrewing a nut, as a wirestretcher, as a pipe-wrench, or as a nail-puller.
TRAP.-John 1). Olinger, Fincaetle, Ky. This or small game, which trap may be easily set rand which or small game, which trap may be easily set and which,
when sprung, will securely hold the captive. It is impossible for the captured animal to release itself by means of its teeth. The trap is so coustructed that a touch upon the trigger will he sufficient to cause the sliding jaw to be immediately released and forced to a retaining engage
ROD OR FIXTURE FOR SASH-CURTAINS. Frank Perry, Brooklyn, New York city. The fixture asgag receiving-arm provided with a notch, which arm
engertical bore of a head, A horizontal bore
communicates with the vertical bore; and an invisible to the fixture, by engagement with the notch in the

COMPRESSED-AIR WATER-ELEVATOR - WIL liam H. Shaffner. Louisiana, Mo. In this water-elevating apparatus a tank or chamber is provided having a pressure. and an outlet and eupplied with and held closed by the interior presurein the elevator. A air-valve commands the air-outlet; and a connection be tween the water-valve and the air-valve actuates the airtank automaticalls tank automatically receives a charge of water and auto-
matically regulates the escape of air when water is enter the tank or chamber.
Trousers Clasp.-Avediss B. Herald, 946 New York Avenue, Washington, N. W., D. C. This novel clasp is designed to be used on trousers wrapped around the leg of the wearer by bicyclists who seek to avoid the danger of loose trousers. The trousers having been
folded as usual, the clasp is applied, the bate-section of folded as usual, the clasp is applied, the baue-section of
the clasp fitting within the trousers-leg and the clamping the clasp fitting within the tronsers-leg and the clamping eection of the clasp in the lonp formed by the fold an
securing the fold by its tension toward the
'fhill for Vehicles.-Charles A. Ray. Bridgeater. S. D. This thill is so constructed that while th cross-bar when moved rearwardly may be disengaged
from the couplings, it is impossible to disconnect the drection whe forward tension or draft on the crose-bas will but tend to hold it the more firmly in the couplings. In order to prevent the cross-bar's being accidentally detached from the thills should it be struck by the hoof of an animal. Set-screws are passed through the lower faces of the coupling
work-box.-Emma Benton, Butte, Mont. This work-basketfor holding buttons. spool-thread, scissors, on which the basket rests and by which it $i$ Outwardly-overhanging spool-holders are supported by the central compartment or body portion and are at tached to the upper portion thereof. The spool-holder so as to leave a space beneath the spool-holders. Th spool-holders have openings in the bottoms thereo through which may be passed the thread from the folding-coop.-Carl h. Thomsen and Herman J. M. JÖrgensen, Memp hie. Tenn. To provide a light,
imple coop especially adapted for poultry and capable mple coop especially adapted for poultry and capable is the purpose of the present invention. The coop is so made that there are no parte to be removed, undone way moved in order to for or misplaced. In its construction, the coop consist practically of three parts: a bottom section, a top secion, and a connecting link section, the top section being folding go cart.-Elisé Depersenaire, Mauhattan, New York city. The go cart has sides connected
to move toward and from each other, to which handlebars are bars are joined. A transverse bar extends between the When the wehicle is folded the cranserse bar forms handle. The cart may be extended rigidly into operative position or folided compactly when not in use.
Water-Wheel-Patrick Henretty, Mankato, inn. The water-wheel comprises pulleys provided at used consists of a series of buckets equally flared on both sides of a central line and provided at their juncture with eyes. Through the overlapping eyes of adoining buckets a shaft is passed, provided alongside of pulleys. Links connect adjacent shafts outside the

## Deaigns.

CIGAR BOX LID HOLDER. - Alex Ander W. grelle, Logansport, Ind. The leading feature of the design consiets of a U-shaped clip having one of its langes provided with an extension bent outwardly in its ension.
Wall-paper.-Harry Wearne, Rixheim, Germany. The papers which form the subjects of the three
present designs are decorated with flowers of various inde tastefully combined in panels.
INCANDESCENT-LAMP SOCKET. - RUDOLPH Meyer, Brooklyn, New York city. The socket is made contacts.
Note.-Copies of any of these patents will be furnished by Munu \& Co. for ten cents each. Mease state of this paper.

## NEW BOOKS ETC.

Die Eisenkonstruktionen der In-
Genieur- Hochbauten. Ein Lebr
buch zum Giebrauch an technisclien
Hochschulen und in der Praxis. Von Prof. Max Fuerster. Erste Lieferung. With 174 illustrations and 1 plate.
Leipsic: Wilhelm Englemann. 1899.
Leipsic : Wilhelm Englemann. 1899.
Small quarto. Pp. 112. Price, paper

## Sm $\$ 2$.

Most German text books on iron framed structureshave long outlived their usefulness; a new work in which the principles of modera engineering are concisely and yet The book which lies before ns comes from the pen of a man evidently well qualifed to fill the wants of German students. He has written a test book which is characterized by a carefulness of preparation and clearness of
demonstration which we find almost invariably in the worke of German scientists. We trust that the remaining installments of Prof. Forester's book will at least equal the first part. A feature of the book which de-
eerves especial mention is the bibliography which conerves especial mention is the bibliography which con-
cludes each chapter.

Business and Personal.
The charge for insertion under this head is one Dolar
line for line for each insertion; about eioht words to a line
ddvertisements must be received at pubbication office as early as Thursday morning to appear in the follow ing week's issue.
arine Iron Works. Chicago. Catalogue fre.
U. S." Metal Polish. Indianapolis. Samples frwe. Yankee Notions. W aterbury Button Co., Waterb'y, C Pocket Folding Umbreila s. Grove \& Stover, Luray, Va Handle \& Spoke Mchy. Ober Mfg. Co., 10 Bell St.,
Chagrin Falls, $\mathbf{O}$. an
Machine Work of every description. Jobbing and re Frrach Mo., 14 J. N. Ferracute Machine Co., Bridgeton. N. J., U.S.A. Ful
ine of Presses, Dies, and other Sheet Metal Machinery Machinery for R.K. contractors, mines, and quar ew or 2d-hand. Write for list. Willis Shaw, Chicago. The celebrated "Hornsog-Akroyd" Patent Safety Oil
Engine is built by the De La Vergne Refrigerating MaEngine is built by the De La Vergne Refrigerating Ma
chine Company. Foct of East 138 th Street, New York. The best book for electricians and beginners in elec ricity is "Experimental Science," by Geo. M. Hopkins
By mail. 84. Munn \& Co.. publishers, 3bl Broadway, N. Y. OT Send for new and complete catalogue of Scientifi and other Books for sale by Mu
New York. Free on application.

## 班

HINTS TU CORRESPONDENTS
Yames and Address must accompany all letter
or no attention will be paid thereto. This is for on
information and not for publication. eferences to former articlea or answers should
give aate of paper and page or number of question. oe repeated: correspondents will bear in mind tha thougg we ende require to rot a a little research, all either by
or in this aepartment. each must take his turn
or in this aepartment. each must take his tura.
Hy $\begin{aligned} & \text { ers } \\ & \text { in our } \\ & \text { inhng to to purchase any articie not advertised }\end{aligned}$
hounse will be furnighed with addresses of


co may be had at the office. Priee 10 cents each.
Books referred to promptiy supplied on receipt of
price.
merals ent for examination shonld be distinctly
marked or labelea.
(7780) F. C. S. asks for a process to prevent sweet cider from souring. A. When the cide
has reached the flavor required, add 1 to 2 tumblers of grated horseradish to each barrel of cider.
(7781) J. Z. asks: Can an open circuit battery be used on an induction coll as well as a closed circuit battery, and what is the difference? A. An open circuit battery can be used in running an inducton coil
for a time. A closed circuit cell is one which will fur for a time. A closed circuit cell is one which will fur-
nish its current indefinitely or till its materials are used up. An open circuit cell must be allowed to rest ver frequently. This the cell gets in running the coil to a extent, since
alternately.
(7782) J. B. writes : Seeing in your most valuable paper an article headed "Eyesight of Chil-
dren," I have long wondered why all writers, including dren, Thave long wondered why all writers, including
the celebrated " $W$ ebster's Unabridged," use the word at all, unless to distinguish between foresightand hindsight. Why not say "my sight is poor" instead of my "ey sight, etc."? Is there any juetifable grammatical reaso
for it? A. If our esteemed correspondent can induc people to abandon the use of the very old word "eye-
sight." the dictionaries will then mark it " obsolete" or drop it out. 'Till that time it must be inserted, since the as they are used. The people make a as they are used. The people make a language, the dic
tionariesrecord that ueage. The fault lies with the peo p:e, if any fault is to be found. If disposed to he critical with our correspondent, we should ask why he includes "Webster's Unabridged" as a writer. A dictionar canuot be called a writer.
(7783) C. K. asks (1) how to harden the horseshoe magnets for the D'Arsonval galvanometer de
scribed in "Experimental Science." A. Heat the end of the steel re 1 hot for about one inch in length, and cool by plunging vertically into water. 2. How to compound
lines, I mean about the north and south poles? A. Mark lines, I mean about the north and south poles? A. Mark
the separate magnets so as to recognize the north poles. Place all the magnets with their similar poles together They are equiva
all the magnets.
(7784) C. A. S. asks: Given two bodies of same eize but of unequal weight (decidedly unequal) like spheres or cars, started with same initial velocity
down an inclined plane, which will have the greater locity, which will reach the bottom quicker, and which will travel quicker on a plane surface at foot of incline? A. The best answer to this inquiry is, try it and see. The behavior of the balls on nearly three centuries ago. relatively as if they were falling vertically. The air and other friction will retard the lighter body more than the
(7785) R. E. H. asks : 1. Can you give directions for making the so-called moist water colors?
A. Dry colors, mixed with gum tragacanth, will remain A. Dry colors, mixed with gum tragacanth, wilh remain
moist as desired. 2. In photography exposure tables it is stated that the amount of light depends on the altitude of the sun at the time of exposure; then in the body of
the table 1 second is given for March 20 , June 20, noon, is 2 secnnds; while those from September 20 to March 20 appear to be correct, if in direct proportion to altitude of sun, those from March 20 to Septem-
ber 20 appear to be too short. The sun's altitude at noo June 20 is 1.2 to be too short. The sun's altitude at noon should be 0.8 for June 20 to 1 for March 20. The difference between 0.8 and 0.2 seems to me too great for cor-
rect exposure. Where can I find a table that is correct?
A. You do not give the latitude; but, taking the degree of latitude New York city is located in as a standard,
we think the light values given ure substantially correct. Comparing the ahove values with Lieut. W. Very's tables, found on page 201 of "The Scovill Encyclopedic Dictionary of Photography," we find only a slight variation. At noon in March, hc advises 1 second; April. 1 second; May, 0.5 second; June, 0.3 second; July, 8 second; August, 0.5 second; September, 0.5 second; Dc-
tober, 1 second; November, 1.5 second; December, 17 (7786) S. C. asks for process of reclaiming gold from a gold toning-powder containing boras and tion $A$. Disoble the powder water, tion of eulphate of iron. which will precipitate the gold
down in the form of a black powder. The solution id then poured or decanted of and the powder washed and then dried. The powder may now be re-dissolved with nitro-muriatic acid, evaporated and re-dissolved once or twice, when chloride of gold, free from acid, will result. See Scientific American Supplement, No. 377.

## TO INVENTORS. <br>  <br> INDEX OF INVENTIONS

 United States were Issued for the Week Ending DECEIBER 26, 1899,

## AND EACH BEARINGTHATDATE.

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


