guideways for a holder in the form of a plate provided with a slot, jaws, and a tongue. The holder is slipped longitudinally to engage the button so that the jaws clutch the edge of the button and prevent an up-and-down movement thereof and of the belt. The tongue locks the button and holder together to prevent longitudinal movement of the holder, but allows the holder to move longitudinally with the button on its guideways

SYRUP-JAR.-JOHN ORMEROD, Brooklyn, New York city. This invention provides a pivoted or drop syrupjar especially adapted for use on soda-water fountains The jar is pivoted at its fancet so that it may be moved inward and outward with the least possible exertion. The center of gravity is so placed that when the jars are in an upright position they will not be liable to drop down.

RUBBER COMPOUND. - JOSEPH C. PETMECKY. Austin, Tex. This compound for repairing pneumatic tires consists of pure rubber dissolved in a quick-drying solvent, ground and slightly vulcanized rubber, and cotton fibers, the whole being thoroughly mixed together in proper proportions.

DUMPING-VEHICLE.-THOMAS HILL, Jersey City, N. J. The object of this invention is to protect the vehicle when it comes into contact with the ground from the usual sudden blow. To accomplish this object, the inventor provides a compensating curved upper bearing partially overhanging the lower curved bearing on the vehicle-frame. A rolling-shaft is attached to the body, the ends of which shaft are adapted to revolve or slide in the upwardly-curved bearings, so that while the body is in the act of dumping and changing its center of gravity on the lower curved portion of the frame, it will travel up the overhanging portion above and prevent the possibility of the body's sliding on the lower curved portion of the frame and striking the ground with a sudden jar.

STYLE OF MANUFACTURED TOBACCO .- WIL LIAM A. FRETWELL, South Boston, Va. The present invention is designed to enable the tobacco-grower to market his tobacco without the need of a manufacturer's plant and the expense and tedious operation ordinarily incurred. The inventor omits the stemming, the alternate drying and drawing of the moisture of the lumps, and the pressing. Instead, after the tobacco is dipped and flavored, it is at once completely dried while the stems are still intact, and then ordered by steam or dampness. The leaves are ther folded and wrapped into neat packages.

JUG CARRIER.-FREDERICK O. BALCH. Neillsville. Wis. The carrier is composed of a band adjustable so that it can be clasped upon jug-necks of different sizes. Hanger-rods are connected with the band, one of the rods having a sliding connection with the band whereby it may be adjusted to correspond with the adjustment of the band.

DEVICE FOR OPENING OR CLOSING GATES. PATRICK C. and ANTHONY J. GIBBONS, Edina, Mo The improvements in gates provided by these inventors are concerned chiefly with means for opening and closing a gate at a distance. The means consist primarily in peculiarly-constructed hinges on which the gate is mounted to swing so that its free end may be tilted upward, swung into open position, and subsequently back into closed position.

WINDMILL.-ORED OLSSON, Ord, Neb. This wind mill has no rudder. The wheel itself acts as a rudder. being mounted behind the pivot upon which it swings A peculiar manner of connecting the blades is employed, to swing their edges to the wind. A governor is provided which controls the speed by automatically shifting the vanes. The parts of the mill are all made of iron, so that they will not readily wear out or break, the gen eral construction being also such that any blacksmith can substitute new parts for those which have been worn out or broken.

COMBINATION ARTICLE FOR HOUSEHOLD USE.-CHARLES E. McLaughlin and Elmer H. Will-IAMS, Kanawha City, W. Va. The combined article com prises a step-ladder, an ironing-board, and a clothes-rack. the various parts being so constructed and arranged that they may be compactly folded together when not in use and easily and quickly arranged in proper position when required for use

BOWLING-ALLEY LIGHT AND PIN-INDICATOR. -GUSTAVE BURKHARDT, Chicago, Ill. This appliance for reflecting the light and indicating the set of pins on bowling-alleys has its reflector-walls so arranged relatively to the light that the rays can be positively concentrated within a desired radius and the burner held invisible. Thereflector has a supplemental portion or triangular pin set face, with light-openings for numerals correspond ing in number and arranged with the set of the pips of the alley, so that the bowler can see how every pin is numbered

APPARATUS FOR CONTROLLING HORSES.-ALEXANDER WHELAN, Washington, D. C. The apparatus consists essentially of a band adapted to inclose the legs of a horse. The band is suspended by lines from a frame forming a support and provided with individual guides for the lines by which the band is suspended. By operating certain mechanism in the carriage or wagon. the band can be lowered to embrace the legs of the horse so that he cannot run away.

## Business and Personal.

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price. (Minerals sent for examination should be distinctly marked or labeled.

(7677) M. B. writes: 1. I have made the Wehnelt's electrolytic current breaker described in Sci-ENTIFIC AMERICAN and SUPPLEMENT of April 15. I used platinum wire of several different sizes (20, 22, 26) with the invariable result that the wire was destroyed, before my coil had been in operation ten minutes: I varied the distance between platinum wire and lead plate and the strength of the acid, with same result. The current used was the 52 volt alternating, and a one ampere fuse in circuit was intact. Can you tell me where the fault lies? A. The platinum wires were probably destroyed by heat, melted. They were too fine for the purpose. 2. What is the insulating material used in the Wydts-Rochefort transformer described in the SUPPLE-MENT of January 7. 1899, or what easily procurable oil or fluid will answer the same purpose? A. We do not know the material used as an insulating paste. Parad oil would serve the same purpose.

(7678) J. K. asks: 1. In series wou dynamo, is the resistance of field magnet same as that armature? Is it in shunt wound ? A. The field w ing of a dynamo is based upon the magnetic flux nee in the machine, 2. How long at one time will ten H sen cells connected in series run a motor? A. Till sulphuric acid has formed all the sulphate of zinc it c in other words, till the liquid is exhausted. The required for this depends on the external resistance. How long will the large plunge battery run the sin electric motor described in "Experimental Science"? Perhaps 6 hours, but not in a continuous service. have one Leclanche and three carbon cylinder batte connected in series. They produce only a very slight rent. Are they polarized? If so, how could I rem them? A. Probably polarized. Rest is the cure,

(7679) W. J. P. asks: 1. What is best kind of battery to use with a Ruhmkorff coil, in der to get the largest possible spark from coil ? A. potassium bichroinate battery is, on the whole, the primary battery for use with an induction coil. A convenient form is described in SCIENTIFIC AMERICA SUPPLEMENT, No. 792, price 10 cents. 2. How would you connect two Ruhmkorff coils up to get a combined effect, or can it be done, one coil having a condenser and the other not? I have tried various connections but I could not make it work properly. A. Two coils should be joined in series to use them together, but this is a case where two are not twice as good as one. 3. My coil is insulated by a 1/8 inch Fullerboard tube between primary and secondary and by paraffined bond paper between each layer of silk C wire of secondary. The edge of the paper between layers being turned up at opposite sides to prevent any possibility of the high tension wires of each layer getting together. With this insulation how large a current could I use without injury to coil? A. You tell nothing about your coil which can help toward an answer to your question. The primary will carry any current which does not overheat it, and that can be guarded against by trying it with the hand. Begin with a small current and increase slowly till you realize maximum effects for the coil. (7680) M. S. L. asks: What is the best way to exhibit lantern slides (or other transparencies). without a lantern. I mean by placing a large number in a Cat frame with diffusing media between the slides and source of illumination, to use with or without magnifying lenses ? A. Transparencies, including lantern slides are exhibited in a frame by diffusing the light through ground glass. If you have not the ground glass, you can Car make one by careful and patient work, by rubbing a Careful plate of glass with fine sand and a piece of wood. An Case.

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United States were Issued for the Week Ending JUNE 13, 1899,			
		AND EACH BEARIN	NG THAT DATE.
		[See note at end of list about	copies of these patents.]
Advertising apparatus, H. Wo Advertising wagon, L. L. Corn Agitating apparatus, C. S. Wh Air compressing and cooling a Alarm. See Burglar alarm. Alarm mechanism for bank cells, Wybro & Danley Annealing wire or rods. appa cally, J. H. Preston	ell		
Automobile, J. Schnepf Axle cap, vehicle wheel, J. Da			
Back pedaling brake, C. O. Bar Back pedaling brake, V. E. De	nes		
Bag, R. M. Ellis			
Bag holder, E. D. Hoag Bag holder, L. Kleiber	626,701 626,788		
Battery. See Storage battery. Bearing, roller, A. F. Warren.	197 099		
Dealting, roner, A. F. Wallell.			

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ellent substitute can be made with starch as follows : into 3 fluid ounces of water, 35 grains of starch, and	Cash register, J. W. Whitney
olve the starch by boiling. Then let it cool. Pour a able quantity of the solution upon the glass, and ead it over the glass. Lay the glass level to dry.	Caster, S. H. Raymond. 577,032 Cellulesetetracetate, making, Weber & Cross. 577,031 Chalker, line, J. J. Gavin. 577,057 Chandelier, H. J. Hewitt. 524,007 Checkrein book or fastener, J. Mealey. 527,005 Chopper. See Cotton chopper.
NEW BOOKS, ETC.	Chopper. See Cotton chopper. Chuck for V shank drills, drill, C. O. Muehlberg. <b>25</b> ,841 Churn, A. J. Slonecker. Cigat bunch moulding or pressing apparatus, A. Woolf. W J. J. State St
ARS AND TELESCOPES. A New Hand Book of Popular Astronomy. By	Cigar Holder, H. H. Coller.
David P. Todd. Boston: Little, Brown & Company. 1899. Pp. 419.	Clamp. See Ventcle Clamp. Clay cutting machine, H. B. Camp
12mo. Illustrated. Price \$2. he volume before us is founded on the ninth edition	Conveyer attachment for blast or suction pipes, neumatic Miller & Nilander
Jynn's Celestial Motions. The former book already ered the ground thoroughly. Dr. Todd has however ritten the book and has made it one of the most	Cooler. See Beer cooler. Milk cooler. Copying press, B. Phelps
resting and valuable books which has ever appeared the subject. We note with pleasure the fact that	Cotton aborron and cultivator combined P 1
time-honored and fossilized cuts of astronomical in- iments have been entirely displaced by modern illus-	Coubing: See Brake pipe coupling. Pipe coupling.       Coupling. See Brake pipe coupling. Pipe coupling.         Cover, cooking utensil. J. B. Gurney
ions. There are many portraits of varying excellence xecution introduced through the book, adding greatly ts interest. We do not know of any book which is	Cultivator, C. D. Carter
vell adapted to give the average reader and the stu- t such a readable and practical knowledge of as-	Cupboard or refrigerator, window, V. F. Lutz \$25,917 Curtain fixture, E. Gabel
nomy and astronomical methods as this volume, giv- a welcome relief from the time-honored and inex- ssibly dry methods of presenting the subject that	Curtain for refrigerator, window, v. r. Lutz. 23, Si Curtain support, B. Bannon. 227,041 Cycle, C. Lippens. 228,706 Cycle support, Witte & Luick. 228,800 Dental appliance, C. J. Underwood. 226,737 Digger. See Post hole digger. Display rack for measuring goods, M. Burton. 27,045 Display rack for measuring goods, M. Burton. 27,045
et a horror of the science.	Display rack, necktie, L. J. Burdick. 22,782 Door check, N. A. Chase. 23,894 Draught rigging, E. C. Washburn. 22,881 Drill. See Grain drill. 22,881
DIE VERÄNDERUNGEN UND FORT- SCHRITTE IN MILITÄRWESEN. Ueber-	Dye and making same, black sulfur, Fuchs & Gussman
blick der Entwicklung von 1874–1898, Erste Theil: Berichte über das Heer- wesen der Einzelnen Staaten, Ber-	Konig
lin : Ernst S. Mittler und Sohn. 1899. Pp. xxxix, 546. Large octavo. Price	Dye and making same, disazo, Schoil & Hess.       C26,913         Dyramo, self regulating, M. Moskowitz.       C26,713         Electric cable, W. S. Smith.       C26,936         Electric meter: E. S. Halsey.       C26,835         Electric moter, E. S. Halsey.       C26,835         Electric moter, R. Lundell.       C26,708         Electric motor, R. Lundell.       C26,708
paper \$3.10. on Löbell's annual reports have long been recognized	for. J. H. Nagle
the most authoritative reference-books on military irs. In the accuracy and trustworthiness of their permation they constitute a worthy companion to	Electrical switch, P. Medary
assey's Annuals. The present issue is a "jubilee ame," in which the development of the world's armies ing the last twenty-five years has been described. The	ely
nges which have taken place during this period, the v methods which have been adopted, and the experi-	bustion chambers of internal combustion, P. F. Maccallun
e which has been gained in war, have all been care- y noted. This last volume will occupy an important ition, for upon it will be based all future reports.	Induive initias to: A. B. wilson
EPORT OF THE UNITED STATES COAST AND GEODETIC SURVEY FOR YEAR	Evaporator, brine, T. Craney, 628,971 Excavating machine operated by traction, J. W. & E. A. Scott. 628,725 Extractor. See Bolt extractor. 628,725 Eveletting machine, J. Pusey. 628,722
1897. Washington, 1899. Pp. 784. Maps and charts.	Fastening, separable, W. G. Crimini,
'hisiannual report gives an account of the work done in ious sections of the country up to June, 1897. Some the reports give illustrations of recording apparetus	Stewart Fertilizer distributer attachment for cultivaters, W. A. Sears, Jr
measuring the height and duration of tides, others cribe the recent photographic surveying instruments	Filter, M. Cusick. 628,877 Filter, J. A. Maignen. 627,070 Filter and cleaner, W. B. Benham. 627,071 Filter and cleaner, W. B. Benham. 627,071 Filter, pressure, G. Eberhard. 622,891 Firearm stock, A. Harson. 622,885
I their use. They are commended for topographical rk. Still another report deals with the subject of ac-	Firearm stock, A. Hanson
ately measuring the Great Salt Lake basin base line.	Fire extinguisher, W. E. Forster
l includes photographs of the apparatus used, con- acted in such a way as to secure measurements	Fire exchape device, G. Kirschenhofer. 628.802 Fire exchape device, G. Kirschenhofer. 628.812 Fire extinguisher, Cary & Saarbach. 628.683 Fire extinguisher, W.E. Forster. 628.683 Fire resting window, G. Hayes. 628.698 Fish book, T. A. Schlaebitz. 627.015 Fishing. collapsible snag hook for H. Slotter.
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## Designs.

TERMINAL MEMBER FOR EXERCISING MA-CHINES. -- EZRA R. GOODRIDGE, Manhattan, New York city. This design provides a unique terminal member for exercising machines, by means of which the cords can be effectively secured in place.

VISIBLE PITCH MUSIC-STAFF - ALBERT R PAR sons, Garden City, N. Y. The leading feature of this design consists of variously-spaced parallel lines, certain of which are heavy and continuous, others of which are light and continuous, and still others of which consist of dots. Of the dotted lines, certain are nearer to the full (ines above them than to the full lines below them; and certain are nearer to the full lines below them than to the full lines above them.

NOTE.-Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.