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COMBINATIONAL TELEGRAPH INSTRU-MENT .- F. GONZÁLEZ-BARBOSA, Panama, Panama. The invention relates to communication by wire, and more particularly to the production of a combinational instrument which may be used at will as a key, a sounder, a repeater, or a commutator. The invention also has reference to a system of wiring whereby this instrument may be connected for use in various relations. The apparatus is suitable for both open and closed circuits.

Of Interest to Farmers.

COTTON CHOPPER AND CULTIVATOR. J. A. BARTLETT, W. S. DOWNS and J. B. TILL-MAN, Dardanelle, Ark. In this patent the invention relates to agricultural implements, and especially to the class of cultivators. The object of the inventors is the provision of an implement of simple construction intended for the purpose of chopping or thinning cotton in the field, the invention adapting itself readily to be applied to an ordinary cultivator as an attachment.

ANIMAL-FEEDER .- P. E. HOWARD, Hitchcock, Oklahoma, and C. F. Howard, Deep-water, Mo. The invention refers to improvements in devices for supplying feed to animals particularly hogs, an object being to provide a feeder adapted to supply shelled corn, bran, meal, or other food to a trough from which animals feed and so arranged that the flow of meal to the trough may be adjusted for the food it contains.

to, Wis. One purpose of this inventor is to chines, benders and presest, complete for makers of punch matter in the cost of construction of stalls S."; also for the present address of the Chahal Boiler and to provide each stall with an adjustable and to provide each stall with an adjustable front bar placed far enough back to touch in front of the withers when the cow is eating from the floor or a low manger and to touch the lower part of the throat when the head is above the bar, such cross-bar being also placed so far back as to render it necessary for the cow to swing her head to the right or left crosswise of the stall when changing from one position to the other.

Of General Interest.

DIE.-G. KEPPER, New York, N. Y. In this instance the invention of Mr. Kepper has reference to an improved apparatus for stamping articles from flat metal stock. It is especially intended for stamping in high relief images and the like on metal plates or disks for jewelry or for various other purposes.

CONSTRUCTION OF FALSE BEAMS, INTERIOR CORNICES, OR THE LIKE.-W. NIELSON, New York, N. Y. The object here is to provide certain improvements in the construction of false beams for ceilings, interior cornices, and like structures employed for embellishing the appearance of a room, the arrangement being such that the structure is fireproof, can be given any ornamental shape, can be readily placed and secured in position on the ceiling or wall, and cheaply manufactured.

PORTABLE DARK ROOM .- E. L. HALL, New York, N. Y. The purpose in this invention is to provide a collapsible dark room, one which can be compactly and flatly folded and conveniently carried in a dress-suit case, for example, and quickly and readily set up and braced in said set-up position. Further to provide sleeves at the ends of the device con-transmitter. structed of pliable material and arranged to fold into the body of the device when it is chinery, castings best quality gray iron. Select pat collapsed and so that when the arms of the terns, and let us quote prices. Frontier Iron Works, operator are introduced the hands are free, vet a light-tight connection obtained between the arms of the operator and the sleeves.

Hardware.

DOOR-BRACE .- F. DAHLUND, Esmond, N. D. The object here is to provide a brace for trapdoors, such as used in cellars and other places. arranged to permit of conveniently swinging the door upward into an open position and to automatically hold it therein. It is easily adjusted to suit different sizes of doors, as well as the weight thereof.

WRENCH .-- W. V. GAGE, Omaha, Neb. Mr.

Pertaining to Vehicles.

FELLY-JOINT .-- J. B. HIGGINBOTHAM, Norman, Cleveland County, O. T. In this instance the invention relates to an improved device for connecting the sections of a wheel-felly so that the necessary tension may be exerted on said sections to draw them forcibly together and produce a rigid, self-sustaining felly, which with the addition of the tire encircling it forms a most secure and durable structure.

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 the paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY,-You will find inquiries for certain classes of articles numbered in consecutive order. If you manu-facture these goods write us at once and we will send you the name and address of the party desir-ing the information. In every case it is neces-sary to give the number of the inquiry. MUNN & CO.

Marine Iron Works. Chicago. Catalogue free

Inquiry No. 6318.-For manufacturers of mud guards or fenders made of paper or similar substance, for use on automobiles.

AUTOS.-Duryea Power Co., Reading, Pa.

Inquiry No. 6319.-For manufacturers of wall paper printing machinery.

For hoistingengines. J. S. Mundy, Newark, N. J.

Inquiry No. 6320.-For manufacturers of or dealers in shot tower machinery.

"U.S." Metal Polish. Indianapolis. Samples free.

Perforated Metals. Harrington & King Perforating Co., Chicago.

Inquiry No. 6322.—For makers of glass paper weights and other novelties of a like kind. Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St.,

Chagrin Falls, O.

Inquiry No. 6323.—For makers of aluminium pin trays, also other aluminium novelties. Adding, multiplying and dividing machine, all in one.

Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 6324.-Wanted, the address of the following concerns: Eclipse Gun Co., Laclede Arms Co., Royal Gun Works, Burgess Gun Mfs. Co. Sawmill machinery and outfits manufactured by the

Lane Mfg. Co.. Box 13, Montpelier, Vt.

Inquiry No. 6325.-For manufacturers of potters' wheels and general machinery for manufacturing porcelain.

Robert W. Hunt & Co. bureau of consultation, chemical and physical tests and inspection. The Rookery, Chicago.

Inquiry No. 6326.—For manufacturers and ex-orters of bungs for kegs, barrels, etc., also for shoe

We manufacture tripoli stones of all dimensions, disc, cylinders, etc., samples free. Seneca Filter Co., Seneca, Mo.

Inquiry No. 6327.-For machinery for boring and filling brushes in general for scrubbing, store and household use.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company. Foot of East 138th Street, New York.

Inquiry No. 6328.--For parties engaged in manu-facturing Indian clubs, balls, etc., from cork. Any metal, sheet, band, rod, bar, wire; cut, bent

crimped punched, stamped, shaped, embossed, lettered. Dies made. Metal Stamping Co., Niagara Falls, N.Y. Inquiry No. 6329.—For the present address of the Brown Cochran Carbonic Gas Machine Co.

I have every facility for manufacturing and market-ing hardware and housefurnishing specialties. Wm.

McDonald, 190 Main St., East Rochester, N. Y.

We manufacture gasoline motor and high-grade ma-

Buffalo, N. Y. Inquiry No. 6331.-For makers of gasoline ma.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machine ery and tools. Quadriza Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 6332 .- For makers of electric ther

The SCIENTIFIC AMERICAN SUPPLEMENT is publishing a practical series of illustrated articles on experimental electro-chemistry by N. Monroe Hopkins Inquiry No. 6:333.—For the manufacturer of the Ideal Shine Cabinet for blacking shoes.

Drawings, Estimates, Tools, Dies, Sheet, Wire and

Rod Specialties (all metals). Stamping, Spinning, Turning and Screw Work. Tin Plating, Nickel Plating, Bronzing, etc. The W. S. Burn Mfg. Co.,



HINTS TO CORRESPONDENTS. nes and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication. Names

References to former articles or answers should give date of paper and page or number of question.

letter or in this department, each must take FORGE PRACTICE. By John Lord Bacon. his turn.

Buyers wishing to purchase any article not adver-tised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

(9509) R. W. M. says: Has not electricity been used long enough as energizing force for running machinery and power plants, so that machinery and power plants thus worked, operated, energized, and installed should be expressed by a different word than "electrify" and its derivations? The com-mon meaning of "electrify" is "to thrill," technical meaning "to charge with electricity." Now what is wanted is a word meaning "to work, operate, energize with or by electricity," and it is not hard to find it in the Greek [Seenote at end of list about copies of these patents.] compound "electron" and "ergon," the latter being well anglicized in the word "en-ergy" and its derivations. Am I not right, thinking that a machine would run longer, stronger, and steadier electrigized than it would if only electrified, that is, simply charged with elec-tricity? A. It is all right to make a new Anima word as a name for a new thing or fact. People will use it or not, however, as they Assay choose. "Electrigize" does not suggest its Augur derivation from "ergon" and "elektron," the Autom two Greek words, since the essential letter "r" of ergon does not appear in it. We hardly think people will take to the proper form of the derivative, which should be "electrigize." It has an awkward sound.

(9510) C. S. asks: 1. I have a small induction coil. Length between end pieces 3 Bait 1 Baling inches; core, % inch thick. Primary, three layers No. 18. Secondary, 5 ounces No. 30. Condenser, twenty sheets tinfoil 3 x 3 inches. Condenser, twenty spects thick but will not Bearin This coil gives powerful shocks, but will not Bearin spark at the secondary. The vibrator does Bearin Bearin Bearin Bearin Bearin Bearin not buzz good. Is the core too small? I use one dry cell. Is it possible to work it with a telephone generator, thus doing away Beet t with the vibrator? A. Your little coil may give a spark ¼ inch long if you put on more battery. Two or three cells of dry battery will be required for it, since dry cells are Blast very weak affairs. The vibrator will work Block more forcibly if more current is given to it. Boilt a Boilt a more forcibly if more current is given to a Belt a The core is not magnetized strongly enough Beek, Bl to make the vibrator move far and fast enough to break the circuit quickly. 2. How can you tell the proper amount of zinc sulphate and blue vitriol in a Crowfoot cell without a hydroraced, and there F. Brake Brazing undissolved in the bottom of the jar on the icopper plates. No zinc sulphate need be put into the cell at first. Put only water round the zinc at the top of the jar, and short-circuit the cell. Zinc sulphate will and the cell be meter? A. The copper sulphate solution in a twelve hours. 3. Why is it that two Crowfoot cells will not ring a bell? A. Two Crowfoot cells will ring a bell whose resistance is low. If the resistance is high, more cells will be required to send current enough through the bell to ring it. 4. Is the powdered carbon that is packed around the carbon stick in a dry cell fit to use over again? A. The powder in a dry cell should not be used again. It is a mixture of carbon and manganese dioxide, and is rendered useless by the running of the Car If it were only carbon, it might be used cell. for any length of time.

NEW BOOKS, ETC.

WIRE AND WIRELESS TELEGRAPHY. By Edwin B. Moore. Springfield, Vt.: Springfield Reporter Publishing Company, 1904. 12mo.; pp. 38. Price, 50 cents.

This little pamphlet was written by a boy of sixteen years of age. In it he endeavors to give a brief but intelligible description of the science and mystery of the electrical telegraph, its practical applications and developments. The book is illustrated with a number of cuts, and is an interesting résume of the subject.

New York: John Wiley & Sons, 1904. London: Chapman & Hall, Ltd. 12mo.; pp. 257; 272 figures. Price, \$1.50.

This book is intended for the aid of students in shop work. It contains many practical il-lustrations of methods employed in all kinds of forging, welding, tempering, etc., as well as an interesting chapter on the metallurgy of minerals sent for examination should be distinctly iron and steel, which is illustrated with cuts marked or labeled. The book will be found a practical aid to beginners in the working of iron.

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quiries net answered in reasonable time should be repeated: correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by In

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sizes and thicknesses without the use of complicated adjusting devices and with a corresponding simplicity and cheapness of construction. Inquiry No. 6336.—For makers of pocket cigar in ary reciprocating slide-valve engine of the forexhausting a glass tube. Inquiry No. 6337.—For an air pump to be used by hand for exhausting a glass tube. Inquiry No. 6337.—For makers of railroad tri- cycles or hand cars	erate upon nuts and bolt-heads of different	Inquiry No. 6335.—For information as to supply		Cartridge. W. Ulrich 777,319
pincarea adjusting devices and with a corresponding simplicity and cheapness of construction.Inquiry No. 6336For makers of pocket cigar(unce to compress air summent to optimal or full and optimal or full and optimal op	sizes and thicknesses without the use of com-	purities.	ders of a given size (say 3 x 6) would be re-	
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Machines and Mechanical Devices.Inquiry No. 632 SFor makers of railroad tri- cycles or hand cars.Carrying load at 200 revolutions per minute, compressors to maintain pressure of 100 pounds?Const. Note: Antistance, Combined, Carrying Const. Carrying load at 200 revolutions per minute, compressors to maintain pressure of 100 pounds?Const. Note: Antistance, Combined, Carrying Carrying load at 200 revolutions per minute, compressor cylinders could be (b) How many compressor cylinders could be to to ut by reducing pressure to 50 pounds?Const. Note: Antistance, Combined, Carrying Carrying load at 200 revolutions per minute, compressor cylinders could be compressor cylinders and colliging and cars.Const. Rais carrying load at 200 revolutions per minute, compressor cylinders could be compressor cylinders could be compressor cylinders could be compressor cylinders and colliging and heating the drum, thus preventing injury to the cableInduity const. Carse could be compressor cylinders and colliging and heating the drum, thus preventing injury to the cableInduity const. Carse could be compressor cylinders and colliging and heating the drum, thus preventing injury to the cableInduity const. Carse could be compressor cylinders and colliging and heating the drum thus pre				Chair bottom weaving tool, H. C. Dean. 777,608
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MACHINE FOR LAYING CABLES ON WINDING-DRUMS.—A. F. WHEATON, Menlo, Wash. This invention relates to improvements in mechanism for laying cables on the winding- drums of logging-engines, hoisting-engines, and the like, the object being to provide an auto- matically-controlled device by means of which he cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cableInquiry No. 6349.—For makers of reversed from the cable will be placed on the drum in even layers while moving in ginury to the cableInquiry No. 6344.—For makers of reversed from the cable will be placed on the drum in even layers while moving in ginury to the cableW. A. G. yon HeidenstamW. A. G. yon HeidenstamT77,415 Check row chain, H. W. Warren		Inquiry No. 63?8For makers of railroad tri-		Charring wood refuse, etc., apparatus for.
MACHING FOR DATING CADDES ON WINDIG-DRUNS.—A. F. WHEATON, Menlo, Wash. This invention relates to improvements in mechanism for laying cables on the winding- drums of logging-engines, hoisting-engines, and the like the object being to provide an auto- matically-controlled device by means of which he drum, thus preventing injury to the cableScudierScudierScudierT77,149 Check row chain, H. W. Warren T77,458 T77,460Mush. This invention relates to improvements in mechanism for laying cables on the winding- drums of logging-engines, hoisting-engines, and the like the object being to provide an auto- matically-controlled device by means of which he cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cableScudier777,149 Stating pressive compression of alter having cooled to atmos- pheric temperature. If used at the temper- ature of compression, the loss may be 50 per cent, or require twice as many compression or require twice as many compression for, W. R. CunninghamScudier T77,084 Check row chain, H. W. Warren T77,084 Check row chain, H. W. Warren T77,084 <td>Machines and Mechanical Devices,</td> <td></td> <td></td> <td>W. A. G. von Heidenstam 777,415</td>	Machines and Mechanical Devices,			W. A. G. von Heidenstam 777,415
WINDING-DRUMS.—A. F. WHEATON, Menlo, Wash. This invention relates to improvements in mechanism for laying cables on the winding- drums of logging-engines, hoisting-engines, and 	MACHINE FOR LAYING CABLES ON	Inquiry No. 6339For machinery for making	cut out by reducing pressure to 50 pounds? A.	
Wash. This invention relates to improvements in mechanism for laying cables on the winding- drums of logging-engines, hoisting-engines, and the like the object being to provide an auto- matically-controlled device by means of while the cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cableInquiry No. 6340For makers of square copper target of square copper target of square copper air depends upon its use while hot from the compressor or after having cooled to atmos- pheric temperature. If used at the temper- ature of compression, the loss may be 50 per cent, or require twice as many compression for, W. R. Cunningham	WINDING-DRUMS. A. F. WHEATON, Menlo,		The loss by the transmission of compressed	Check row chain H W Warran 777 458
in mechanism for laying cables on the winding drums of logging-engines, hoisting-engines, and the like, the object being to provide an auto- matically-controlled device by means of which the cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cable		Induiry No. D.3 du For makers of square copper	air depends upon its use while hot from the	
drums of logging-engines, hoisting-engines, and the like, the object being to provide an auto- matically-controlled device by means of which the cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cable				Chuck for holding articles to be dressed,
the like, the object being to provide an auto- matically-controlled device by means of which the cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cable				Krastin & Quigley 777,111
the drum, thus preventing injury to the cable will be pre				
matically-controlled device by means of which scientific toys. the cable will be placed on the drum in even layers while moving in either direction along the drum, thus preventing injury to the cable burner and novelties in gas and oillighting and heating the drum.	the like, the object being to provide an auto-	Inquiry No. 6342For makers of mechanical and	ature of compression, the loss may be 50 per	
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layers while moving in either direction along individual interval and the set of three times as many will be required to keep the drum, thus preventing injury to the cable burner and novelties in g as and ollighting and heating interval and the set of t	the cable will be placed on the drum in even	Inquiry No. 6343For makers of stationery spe-	cylinders as motor cylinders. If used cold,	for, W. R. Cunningbam 777,081
the drum, thus preventing injury to the cable ing as and oil lighting and heating in the air supply. The same relation of cylin- Cock, cylinder, C. B. Alvis	-	cipitica	three times as many will be required to keep	
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