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### RECENTLY PATENTED INVENTIONS. Engineering.

LOCOMOTIVE TRUCK SPRING HANGER. -Charles Linstrom, Vicksburg, Miss. This hanger has two forks for engagement with the pivots of equalizing bars, the inner members of the forks being rigidly connected with each other, and the forks being adapted to receive the equalizing bars. Each leaf spring extends between two equalizing bars on each side of the truck, and the scat in each hanger is at the center, so that the load is well distributed, and it is not possible to force the springs out of their proper position by heavy shocks or

## Railway Appliances.

CAR COUPLING.—Frederick D. Crandall, Sturgeon Bay, Wis. This invention relates to improvements in car couplings of the rotary head type having thin jaws, the coupling being adapted to couple automatically with another similar coupling whether the drawheads are aligned with each other or not, while the uncoupling may be readily effected from either side of the car. The improvement may also be used to couple with cars having the ordinary link and pin coupling.

## Electrical.

TELEPHONE BELL.—Richard D. Har- See note at end of list about copies of these patents. rigan, Leadville, Col. This invention provides a simple and quick-acting device whereby the bell will continue to be sounded after the main circuit shall have been opened or cut out, at the main office or elsewhere, and also to ring a bell at a distance from the telephone. An auxiliary circuit is provided, which may be omitted or employed alone, the main object being to set a bell in operation after the first ringing of the telephone bell

ELECTRIC SWITCH.—Charles G. Bergquist, Chicago, Ill. This is a simple and compact device for attachment to electric fixtures, having the appearance of a gas key, and adapted to turn the electricity on or off as one turns a gas key. An insulated switch arm is carried by a revoluble tubular shaft, two contacts receiving the vires, a ratchet wheel being attached to the tubular shaft and a pawl attached to the support engaging the teeth of the ratchet wheel. A spherical casing is held around the switch by caps screwei into its body, a key passing into the casing screwing into the tubular shaft of the switch.

ELECTRICAL HAIR CUTTER AND SINGER.—Frank M. Bell, New York City. An electrically heated wire or bar, according to this improvement, is practically utilized for cutting and singeing the bair. In a comb provided with a handle are insulated electric conductors, and there are adjustable studs in the comb and comb handle between which is strained a wire or bar of platinum or other refractory material, there being also electrical connections and a buttonforclosing and breaking the circuit. By pressing the button the circuit is completed through the wire, heating it sufficiently to burn the bair in contact with it.

## Mechanical,

SHEET METAL GAGE.-Elbridge G Paull, Fairhaven, Mass. This improvement comprises a rigid or main frame part with jaw, an upright and a lever handle, a compound lever consisting of a jaw with tappet arm and a handle connected together by a spring, and pivoted within the rigid or main frame part, while a piv oted index hand is acted upon by a tappet arm, there being a circular graduated scale, and a spring throwing the lever handles apart. Variations in the hand pressure on the levers make no appreciable difference in the bite or pinch of the jaws, and the gage enables measures to be taken with great exactness and uniformity.



### HINTS TO CORRESPONDENTS.

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

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

Inquiries not 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 letter or in this department, each must take his turn.

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Books referred to promptly supplied on receipt of price.

Ninerals sent for examination should be distinctly

price.

Minerals sent for examination should be distinctly marked or labeled.

(6841) H. De W. asks: 1. What kind of steel should be used to make a permanent magnet ? Please give commercial name of steel. A. Tool steel of good quality. 2. To what degree of hardness should the steel be tempered, so that it will retain the magnetism? Should the heating be done by coal, wood or other fire?

A. Straw color in a clear fire. 3. What is the best means of magnetizing the steel, to give it the strongest mag netic effect? A. By a magnetizing coil moved from end to end 4. Will plating with gold, silver, or nickel diminish the attracting or "sticking" of the magnets? A. Almost imperceptibly. 5. Would the application of "mannocitin" lessen the attracting power or adhesion of the magnets? A. Almost imperceptibly, if thin. 6. Will the strength of permanent magnets be impaired by constant contact with the human body? A. No. 7. Do the variations of temperature have any effect upon permanent magnets, and if so, what? A. Increase of temperature tends to lower intensity. There is a certain amount of "trade secrets" involved in the making of magnets. When a particular brand of steel is found best, it is often not disclosed. Information on making perma nent magnets will be found in Scientific American SUPPLEMENT, No. 318, and information on the effect of temperature on same in Scientific American, No. 4. Very exhaustive articles on magnetism, the construction of magnets and electro-magnets, their physics, etc., will be found in Supplement, Nos. 777, 778, 779, 780, 781, 784, 785, 786, 787, 788 and 789.

(6842) J. L. asks how to braze a band saw. A. Scarf the saw ends to match with a lap of 1/4 inch, for small saws, up to 3/4 inch, for large size. The scarf should not be brought to a sharp edge; it is liable to burn. Bind together with fine iron binding wire, with the laps wet with a paste of borax and waterground on a piece of slate or rough glass. Pin the blade, laid straight, on a large piece of charcoal, ground flat, with a reces excavated under the scarf so as to allow a blowpipe flame to pass under the saw blade. Place a piece of brass or, preferably, silver solder or coin on the upper edge of the lap, with enough ground borax to flow the brazing Heat with a blowpipe under and above the blade until the solder flows, when it will draw entirely through the lap. When cold, file to an even thickness.

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UZ.	Railway switch, J. Cbristiansen. Railway switch, J. L. Dodge Railway switch, E. B. Entwisle Railway system, underground, A. G. Heinie Railway trains, electric signal for, E. J. Devine Recorder. See Time recorder. Reel. See Finishing reel. Register. See Cash register. Regulator. See Feed water regulator. Pressure	
98 14	regulator. Relay, F. E. Chapman	. 558,672
04 68 34	regulator. Relay, F. E. C'bapman. Rheostat or beater, electric, H. W. Leonard. Riveter, bydraulic, V. Schonbach Rock boring machine, R. Meyer. Rocker, Boenning & Gilson. Rocking chair, S. E. Blake. Roller. See Spring roller. Rulling machine, paper, L. S. Bigelow.	. 558,559 . 558,850
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57 185	Roller. See Spring roller. Ruling machine paper I. S. Rigelow	558.764
01 29	Sash fastener, L. S. Bacbe	558,757 558,781
53	Scale, self registering, J. Campbell	558,630 558,494
13 97	Screw cutting machine, C. W. Bloemker Seal, car. L. J. Genett	. 558,713 . 558,554
321 7 <b>01</b>	Seaming machine, sheet metal, J. P. Luckett Seed cleaning machine, cotton, J. J. Faulkner	. 558,735 . 558.680
737	See d drill, H. Schimpff	. 558,526 . 558,679
94	Sewing machine, F. H. Richards	. 558,663 . 558,832
193 354 365	Shafting straightening and polishing machine, P.	. 558,664
78	Medart. Snarpening machine, H. K. Wheeler. Spaving knife, W. H. Mohr. Sbeet metal, machine for making curved moulding and embossing, C. J. Colling.	. 558,916
571	Sheet metal, machine for making curved moulding and embossing C. I. Colling	558 679
59		
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522 841	Sprinkler, B. H. Sanders	
37 <b>1</b>	Sprinkler, B. H. Sanders. Stable floor, C. D. Smith Steam boiler, O. Jones.	. 558.574 . 558.918
595	Sprinkier, B. H. Sanders. St able floor, C. D. Smith Steam boiler, O. Jones Steam boiler, J. A. Mumford Steam coupling, J. C. Mitchell	. 558.57 . 558.918 . 558.698 . 558.698
595 520 834	Sprinkier, B. H. Sanders. Stable floor, C. D. Smith Steam boiler, O. Jones. Steam boiler, J. A. Mumford Steam coupling, J. C. Mitchell. Steam generator, J. G. Cooper Steam sbovel, J. Campbell	. 558,574 . 558,918 . 558,698 . 558,698 . 558,779 . 558,63
595 520 834 169 627	Sprinkier, B. H. Sanders. Stable floor, C. D. Smith Steam boiler, O. Jones. Steam boiler, J. A. Mumford Steam coupling, J. C. Mitchell. Steam generator, J. G. Cooper Steam shovel, J. Campbell & Kelley. Steam shovel, D. H. Kelley.	. 558.574 . 558.918 . 558.698 . 558,696 . 558,779 . 558,63 . 558,890
695 520 834 169 627 810	Sprinkier, B. H. Sanders. Stable floor, C. D. Smith. Steam boiler, J. A. Mumford. Steam boiler, J. A. Mumford. Steam coupling, J. C. Mitchell. Steam generator, J. G. Cooper. 568.778 Steam shovel, J. Campbell & Kelley. Steam shovel, Campbell & Kelley. Steam shovel, D. H. Kelley. Steam shovel, D. H. Kelley. Steering gear, controlling valve apparatus for W. R. G. Hay.	558,574 558,918 558,698 558,698 558,63 558,898 558,908
595 520 834 169 627 810 487 754	Stable floor, C. D. Smith.  Steam boiler, O. Jones.  Steam boiler, J. A. Mumford.  Steam coupling, J. C. Mitchell.  Steam generator. J. G. Cooper	558.577 558.918 558.698 558.698 558.779 558.899 558.890 568.587 568.587 558.567
695 520 834 469 627 810 487 754 498 842	Stocking foot pattern, J. W. Ricker Stone dressing tool, S. H. Pickering Stone sawing apparatus, G. F. Clark Stoner See Rottle stoner.	. 558,56 . 558,739 . 558,48
595 520 834 169 627 810	Stocking foot pattern, J. W. Ricker Stone dressing tool, S. H. Pickering Stone sawing apparatus, G. F. Clark Stoner See Rottle stoner.	. 558,56 . 558,739 . 558,48
595 520 834 469 627 810 487 754 498 842 486	Stocking foot pattern, J. W. Ricker.  Stone dressing tool, S. H. Pickering.  Stone sawing apparatus. G. F. Clark.  Stopper. See Bottle stopper.  Stove, combined fuel and gas, W. D. Soutbard.  Stove, cooking, F. Will.	. 558,563 . 558,739 . 558,483 . 558,618 . 558,626
695 520 834 469 627 810 487 754 498 842 486	Stocking foot pattern, J. W. Ricker.  Stone dressing tool, S. H. Pickering.  Stone sawing apparatus. G. F. Clark.  Stopper. See Bottle stopper.  Stove, combined fuel and gas, W. D. Soutbard.  Stove, cooking, F. Will.	. 558,563 . 558,739 . 558,483 . 558,618 . 558,626
595 520 834 469 627 810 487 754 498 842 486 610 777 665 714	Stocking foot pattern, J. W. Ricker.  Stone dressing tool, S. H. Pickering.  Stone sawing apparatus. G. F. Clark.  Stopper. See Bottle stopper.  Stove, combined fuel and gas, W. D. Soutbard.  Stove, cooking, F. Will.	. 558,563 . 558,739 . 558,483 . 558,618 . 558,626
595 520 834 469 627 810 487 754 488 842 486 610 777 665 714 819 616	Stocking foot pattern, J. W. Ricker. Stone dressing tool, S. H. Pickering. Stone sawing apparatus, G. F. Clark. Stoper. See Bottle stopper. Stove, combined fuel and gas, W. D. Soutbard Stove, cooking, F. Will. Stove lid lifters, etc., device for suspending, J. F. Kersteter. Stove or range, C. B. Gregory. Stoveopie thimble. Schiml & Schwanengel. Stove truck, W. H. Neeb. Strainer for coffee ports etc., J. A. McClellan. Strainer, hop, G. Schacke. Strap.	. 558,563 . 558,618 . 558,618 . 558,626 . 558,803 . 558,563 . 558,563 . 558,563 . 558,573
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695 520 834 469 627 810 487 754 498 842	Stocking foot Pattern, J. W. Ricker. Stone dressing tool, S. H. Pickering. Stone sawing apparatus, G. F. Clark. Stopen. See Bottle stopper. Stove, cooking, F. Will. Stove, cooking, F. Will. Stove lid lifters, etc., device for suspending. J. F. Kersteter Stove or range. C. B. Gregory. Stovepipe thimble. Schiml & Schwanengel Stove truck, W. H. Neeb. Strainer for coffee pots etc., J. A. McClellan Strainer for coffee pots etc., J. A. McClellan Strainer hop, G. Schacke. Strap. See Kicking strap. Straw stacking attachment. F. W. Robinson Street sweeper, C. B. Brooks et al. Stretcher, folding. R. A. Dunn. Suint, separating constituents of, M. Ekenberg. Swaging round articles, machine for, W. H. Dayton. Switch. See Contact switch. Railway switch.	558,562 558,616 558,616 558,616 558,616 558,801 558,511 558,511 558,712 558,738 558,788
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695 520 834 469 627 810 487 751 488 486 610 777 665 771 481 961 677 765 775 775 775 775 775	Stocking foot pattern, J. W. Ricker. Stone dressing tool, S. H. Pickering. Stone sawing apparatus G. F. Clark. Stoper. See Bottle stopper. Stove, combined fuel and gas, W. D. Soutbard Stove, cooking, F. Will. Stove lid lifters, etc., device for suspending, J. F. Kersteter. Stove or range, C. B. Gregory. Stoveopie thimble. Schiml & Schwanengel. Stove truck, W. H. Neeb. Strainer for coffee ports etc., J. A. McClellan. Strainer, hop, G. Schacke. Strap. See Kicking strap. Straw stacking attachment. F. W. Robinson. Streets weeper, C. B. Brooks et al. Stretcber, folding, R. A. Dunn. Suint, separating constituents of, M. Ekenberg. Swaging round articles, machine for, W. H. Dayton. Switch. See Contact switch. Railway switch. Swivel coupling, B. Henley. Syringe, F. de Backer. Tank. See Oil supply tank. Teaseling machine, E. Gessner.	558.562 558.481 558.481 558.628 558.628 558.81 558.50 558.51 558.575 558.78 558.78 558.78 558.78 558.78

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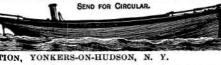
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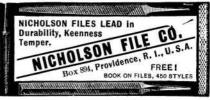
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