

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

THIRD-RAIL SUPPORT.—L. STEINBERGER, New York, N. Y. In regard to this improvement, it will be understood that in using third-rails in connection with electric lines it is desirable to allow for various motions of the rail member, and especially for temporary disconnection as between the rail-insulator and the supporting member which normally engages the same. It is also essential to provide for allowing the rail to rock slightly in lateral direction and for the rail to rock slightly in a plane coincident with its general length. In other words, to provide for certain amount of flexibility in the rail-section, so that the section adjusts itself under varying conditions, thus insuring more perfect contact with trolley shoe.

Hardware.

TUBE EXPANDING, BEADING, AND CUTTING TOOL.—H. G. LYKKE, Grafton, N. D. The object of this invention is to provide novel details of construction for a tool which adapts it for convenient and reliable service, facilitates the exchange of parts to effect the expansion, beading or cutting off of a flue or tube while in place, and affords a simple practical implement at a moderate cost.

LEVEL AND PLUMB.—A. J. PATTERSON, Huntsville, Ala. This improvement comprises a stock recessed for the bob, and in the recess cross-pins for stopping the bob in different positions and above the recess a curved graduated face, the stock being also provided with a transverse opening for use in indicating a vertical line, the bob having laterally-projecting pivot-pins and indicating pointer and arm, and the weight below the same, the weight provided on its under side with shoulders to engage with stop-pins in recess, and screws turned through opposite sides of the stock into the recesses therein, and provided in their inner ends with sockets extending lengthwise and of uniform diameter, and adapted to receive pivot-pin on the bob or pendulum.

Machines and Mechanical Devices.

MUSIC-LEAF TURNER.—L. S. MILLER, New York, N. Y. This invention relates to improvements in devices for turning sheets or leaves of music, the object being to provide a device that may be easily adapted to a piano or similar instrument or to a music-rack and by means of which the leaves of music may be consecutively turned without interfering with a person's playing.

PROSPECTOR ORE-BREAKER.—A. C. CALKINS, Los Angeles, Cal. This breaker operates with a compound motion in causing the jaws when the handle lever is oscillated to alternately approach and recede from each other and also an up-and-down rubbing motion of one jaw upon the other that produces with a light construction a very powerful crushing effect. By connecting a ball to the right-angular extension of the lever increased motion is obtained for the front jaw, and at the same time the powerful effect of a toggle is made available whenever the ball and centers fall into line. Means prevent the lever falling too far outwardly when released.

MIXING MACHINE.—E. L. RANSOME, New York, N. Y. The chief object in view in this case is to produce a construction which may be used to good advantage both as a continuously-acting mixer or as a batch-mixer without alteration of either of its parts. A further object is to equip the machine with means which operate to intermingle the materials thoroughly and rapidly; furthermore, to provide for the rapid discharge of materials when desired, and, furthermore, to provide reversible driving means for rotating the revoluble drum in one direction or the other.

BELT GUIDE AND SHIFTER.—W. P. RUTH and W. H. JONES, Downs, Kan. The invention refers to a belt holder and shifter designed especially for use in traction and other agricultural engines, but capable of use in other connections. By means of their invention the belt may be held true on the pulley during the operation of the engine, and the shifter may be operated to throw the belt off of the pulley instantly and at any time during the operation of the apparatus.

Of General Interest.

PIPE BAND AND FASTENING.—A. W. HIGHT, Ballard, Wash. The invention is designed especially for holding together the staves of stove-piping—that is to say, of piping formed of wooden staves laid longitudinally and bound together. The invention is, however, useful in various other connections. For example, it may be used to advantage on water tanks and the like. The invention resides in certain peculiar constructions of the fastening and in the form and arrangement of the band which coats with the shoe.

VIOLIN.—J. A. HECKENBACH, Chicago, Ill. The object of the improvement is the provision of a new violin, violoncello, or similar stringed musical instrument which is simple and durable in construction and arranged to insure the production of a full, sweet, and mellow tone when the instrument is played.

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.

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READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. MUNN & CO.

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Inquiry No. 5643.—For makers of flower and plant pots from earth and fertilizer.

Inquiry No. 5644.—For castings for a steam engine bore about 2 inches, stroke about 3 inches.

Inquiry No. 5645.—For makers of bone and pearl backs for collar buttons.

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Inquiry No. 5648.—For parties manufacturing Ferris wheels.

Inquiry No. 5649.—For the present address of Cook's Patent Bow Facing Car Co.

Inquiry No. 5650.—For the address of Baker's Patent Bow Facing Car Co.

Inquiry No. 5651.—For the address of Allen's Patent Bow Facing Car Co.

Inquiry No. 5652.—For a small thickening machine that will plane and thickness short lengths of teak.

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Inquiry No. 5654.—For makers of shoe-polishing devices, such as motor brushes, etc.

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Inquiry No. 5661.—For makers of musical instrument novelties, for use of drummers, show men, etc.

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Inquiry No. 5671.—For the makers of the pneumatic saw with which two men can cut through a 5-foot log in five minutes.

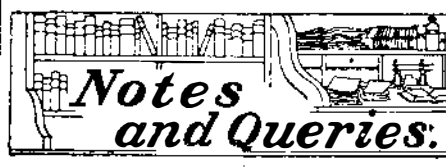
Inquiry No. 5672.—For makers of portable houses.

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Inquiry No. 5675.—For parties handling a complete line of miniature yacht fittings.

Inquiry No. 5676.—For a motor to saw wood.



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. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying 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. Minerals sent for examination should be distinctly marked or labeled.

(9411) J. G. W. wishes to know: 1. Whether a perfectly round iron ball two inches in diameter will attain greater momentum, or velocity, in rolling down an incline fifty feet long, with a fall of four feet, than it would, at the moment of stopping, if dropped four feet? A. The momentum of an iron ball rolling down an incline is the same theoretically as when falling the same height, save the rolling friction, which somewhat lessens the actual momentum. 2. If there is no difference, why would not a hydraulic ram operate as well if the water was supplied through a perpendicular pipe, instead of down an incline, as is always recommended? A. The conditions as to the pipe of a hydrant, i. e., ram, are quite different. For a given height, the weight of water moving in a long inclined pipe is much greater than in a vertical pipe of the same height; and the momentum of the moving mass is due to its weight and velocity. Momentum is the force that drives the ram.

(9412) W. H. S. says: Would you kindly give me a little information through your paper or otherwise, as to the practicability of using gas taken from a gas well, storing it in a strong receiver compressed to a safe pressure, for transportation purposes, and used in a gas engine. Possibly this matter has been tried and it may not be practical, but I have not heard of it. What amount of gas could be stored in a receptacle, say 12 x 60 inches, and what pressure would it be advisable to use for transportation? I presume that a great deal would depend on the cost of transportation. I understand that compressed air is being used for power and air is being stored in strong cylinders; gas would have much more power to the cubic foot and cost very little at the well and a cylinder should not cost much for transportation. A. The principal difficulty in using compressed natural gas for power purposes as in explosive motors, is the cost of compressing to the pressure required to make it available and convenient for transportation. It has been shown that to compress 100 cubic feet of gas to 1,000 pounds pressure per square inch by the four-stage or cheapest method requires 31 horsepower, and to 2,000 pounds pressure 38 horsepower. A cylinder of the size you describe, of 4 cubic feet capacity, will hold at 1,000 pounds pressure 257 cubic feet of free gas, costing over 79 horse-power to compress it. With a liberal allowance of 15 cubic feet of free gas per horse-power in an explosive motor, it will be seen that but 17 horse-power is available from an expenditure of 79 horse-power for compressing the gas.

(9413) A. D. says: It is a well-known fact that during spawning season fish will traverse vast distances and overcome natural and artificial barriers in their endeavor to reach shallow water and quiet streams where to deposit their eggs. One claimed that salmon could (with great effort, it is true) mount to the top of falling water, provided the volume of water was large enough to admit of free, unrestrained action. He had seen photographs of such feats and it was his opinion that with gigantic effort some could even succeed in swimming up Niagara Falls. This was looked upon as a good "fish story." Could you inform us whether any fish (say salmon) could perform such a marvelous feat? It would seem possible that as fish can swim against very strong currents they could also mount in such a large volume of water as comes over the American Falls. This, although almost vertical, does not seem to rush with such great velocity until the great mass of water has fallen some distance. After the first mighty effort it would require to get a start, why could they not reach the top of the Falls? You need not publish all I have written, but will satisfy us if you answer the query substantially but directly. A. The theoretical velocity of the water at the foot of Niagara Falls is not far from 100 feet a second. Its real velocity is probably quite a little less than this owing to the resistance of the air. It doesn't seem to us at all probable that even the strongest salmon could rush into such a mass of water with a velocity sufficiently great to enable it to rise any distance above the water in the river below. Of course, also the mass of falling water

plunges far below the water in the basin at the foot of the falls before it entirely loses its downward motion. The length usually assigned to the water in the basin is about 180 feet. The difficulties of the case are such that we should think it extremely unlikely that any fish could ever rise to the top of Niagara Falls.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending June 14, 1904

AND EACH BEARING THAT DATE

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

Table listing inventions with patent numbers. Includes items like Addressing machine, Adjustable wrench, Advertising device, Agricultural implement, Air ship, Alarm signal, Amusement device, Anchor, Animal exterminator, Annealing and tempering forms of metal, Arch plate and shield, Attaching and detaching device, Auger, Bag filling machine, Baking pan, Baking rack, Baling press, Baling press division block setter, Baling press feeding mechanism, Barber shops, Basin, Battery, Bed bottom, Bed, folding, Belting and making same, Belting apparatus, Bicycle attachment, Binder, Block signal system, Boat ventilator, Bobbin, Boiler cleaning apparatus, Boiler furnace for burning wet material, Boiler tube ferrule, Book holder, Book, investment and savings, Bookcase, Bookcase, sectional, Bottle, Bottle, non-refillable, Bottle, non-refillable, Bottle stopper, Bottle stopper and sprinkler combined, Bottle washing machine, Boxes, Brace and suspensory, Brake, Brake apparatus, Brake beam, Brake rigging for trucks, Brake shoe, Brick cutter, Bridge, Strauss & Collins, Bridge, truss, Broiler holder, Broom corn combing machine, Buckle, Buckle, H. W. Luhrmann, Bulletin board, Burning wet and slowly-combustible fuel, Cabinet, Calculating machine, Calculating machine registering mechanism, Calipers, Can, Can spout, Car, Car, Voynow & Taylor, Car coupling, Car indicator, automatic street, Car, railway scoop, Car sill, Car stake, Car structure, Car traction device, Car ventilation, Car wheel, Car wheel, railway passenger, Carburer for motor cars, Carburer, internal combustion engine, Carbureting apparatus, Carbureting lamp, Carriages beneath hatches, Cart, combined box and barrel, Caster, Caster, anti-friction, Centrifugal separator, Cervical director, Chain, detachable link, Chair, Chairs, etc. spring for rocking, Chuck, drill, Churn and butter worker combined, Chute, delivery, Cigars, etc., machine for applying bands or labels to, Clothes line, adjustable, Clothes pin, Clutch, magnetic, Coal drill, Coat, F. Terramorse, Cock, stop and waste, Cocoa beans, etc., combined machine for nibbling, grading, and winnowing, Coil, reactance, Compass attachment, Concrete construction, reinforced, Condenser, injector, Connector, Controlling device, Cooker, steam, Cooking and heating apparatus, Corn binder spring extension, Corn huskers and shredders, self feeder for, Corn husking machine.

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