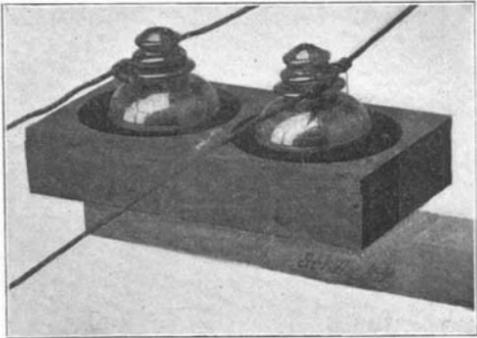




INSULATOR FOR LINES CARRYING CURRENTS OF HIGH VOLTAGE.

BY W. R. GREENWOOD.

Tests made near Santa Monica, Cal., have demonstrated the utility of a device designed to maintain the insulation of long-distance high-voltage electric currents. The United Electric Gas and Power Company, from its central power house located at Santa Monica,



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supplies current for lighting and power purposes to Long Beach, San Pedro, Terminal Island and Redondo. The total length of the circuit is forty-five miles. The current is generated by direct-connected units at a pressure of 2300 volts. By means of transformers this pressure is raised to 22,000 volts and transmitted over the circuit to the different towns, and by means of step-down transformers it is lowered again to 2300 volts.

Ever since the installation of this system eighteen months ago the company has experienced the greatest difficulty in keeping the current from "slopping over" and burning off the pins. That is on account of fogs along the coast. The insulators used are of the types known as "No. 1 Provo" and "Lock," both of 60,000-volt glass. It was found that the leakage was not due to any fault of the insulation of the glass, but to the action of the fog. This was demonstrated by the fact that the line worked perfectly in wet weather. In dry weather dust would accumulate under the bell. In time of fog the damp atmosphere as it moved past the insulator would deposit moisture with the dust and form a sort of paste, which appeared to establish a good conductor for the high-tension currents to flash across. Within a short time the pin would be burnt off. The wire, dropping on to the cross arm, would burn it off and, in almost all cases, would next swing in against the pole and burn it off.

After having tried almost every conceivable scheme to overcome this serious trouble the company hit upon the novel device for housing or fencing in the pin and glass. The new arrangement, which has been shown by tests to have completely overcome the leakage and to have thereby prevented the burning off of the pins, is a box made of 1-inch wood 12 inches square and 4 inches thick. The box has on its upper side a round

hole 10 inches in diameter. The device is placed so that the 7-inch bell of the insulator projects down a little into the hole. The box is previously treated with gas tar and has holes in its bottom sufficient for drainage. By preserving the static condition of the air under the bell of the insulator the deposit of moisture there is prevented.

Incidentally the box protects the insulator from damage by shot or other missiles.

The model of the device was perfected by Superintendent J. J. Davis, of the United Electric Gas and Power Company. The company, satisfied as to its utility, is installing the boxes along its transmission line and already has about ten miles of the circuit so equipped.

STOCK AND POULTRY-FEEDING DEVICE.

A very ingenious device for feeding stock and poultry has recently been invented by Mr. Zachariah Xevers, of Santa Cruz, Cal. Briefly the device consists of a hopper or magazine from which feed is automatically discharged by action of a bait-box operated by an animal in its effort to reach the bait.

Our illustration shows the device as adapted for the use of poultry. A hopper for the grain is supported on legs at a suitable distance from the ground. An elongated opening, *E*, is formed in the bottom of this hopper. This opening is covered by a hood, *B*, at the upper end of which a swing rod, *A*, is pivoted. The swing rod passes downward through the opening, *E*, and supports the bait-box, *L*, near the ground. A slide, *F*, is secured to the rod, *A*, and is adapted to slide in the guides, *N*, in the bottom of the hopper. This slide normally closes an opening through which the feed falls when the device is operated. The bait-box, *L*, is provided with two cups, *M*, in which grain is placed. A wire netting covers each cup, the mesh of which is too small to permit the extraction of the grain. Assuming that the flock of fowls surround the bait-box, being called by the male bird of the flock, as the grain is protected by the screen covers, the fowls, and particularly the rooster, will peck at the covered grain, and the male bird may possibly hop upon the bait-box to scratch over the grain. It will be seen that the natural efforts of the fowls to get at the food held in the bait-box will impart a swinging movement thereto. The pendulum motion given to the rod, *A*, by the efforts of the fowl will move the slide, *F*, back and forth, consequently opening and closing the aperture in the hopper bottom, and permitting the food to drop into the chute, *G*, and thence to the ground. An agitator, *D*, fastened to the rod, *A*, serves to prevent the feed from packing. A regulator, *C*, is employed for regulating the amount of discharge at each oscillation. This can be secured at any desired position on the rod, *A*, by tightening the thumb screw, *K*. It is evident that by sliding this regulator toward the hopper, the length of the oscillation will be diminished, being checked by the prongs which engage the bottom of the hopper.

For pigs, rabbits or other animals, the cup, *P*, is used in place of the bait-box, *L*. This cup is slipped onto the end of the rod, *A*, and is fastened by bolt, *T*, which passes through the rod and both walls of the cup. The size of the cup prevents the bait from being reached, and in its effort to get the food, the animal will cause the oscillation of rod, *A*, and the discharge of a suitable amount of feed from the hopper above.

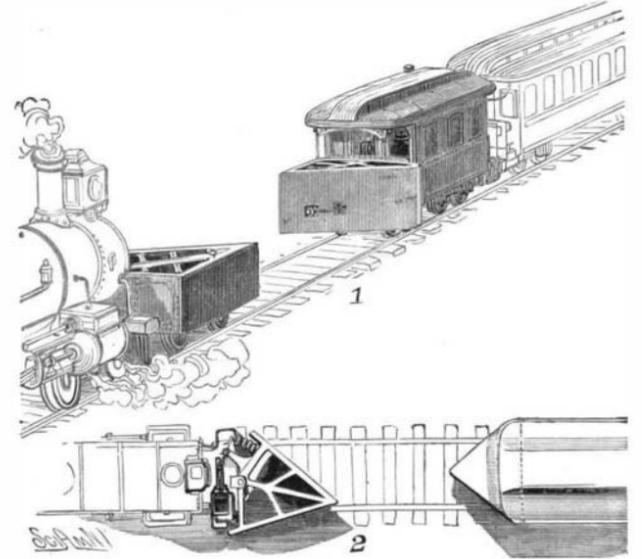
ANTI-TELESCOPING TRAIN GUARD.

In railroad accidents the most serious loss of life usually results from the telescoping of trains. Such accidents are continually occurring, and the list of killed and injured is always appalling. We are familiar also with other forms of accidents in which the locomotives leap onto the tops of passenger cars, crushing and grinding them and their occupants. Of much less serious importance are accidents caused by the derailment of a train. In such cases the locomotive and cars merely bump along the ties until their momentum is exhausted, or at worst the train may be overturned. Obviously, then, if some device were invented whereby derailment could always be substituted for the telescoping or crushing of trains, such a device would greatly lessen the danger of railway travel. Aside from this, cars or locomotives if derailed suffer ordinarily but slight injury, and can be easily righted and repaired, while if telescoped or crushed they are a dead loss to the railroad company.

We illustrate herewith two inventions of Mr. Weldon B. Heyburn, of Wallace, Idaho, which are adapted to accomplish this very result. In the first form it will be seen that the locomotive is provided with a heavy pilot having vertical faces, and that the front face is diagonally disposed entirely across the track. The pilot is preferably supported on trucks, so as to relieve the engine of its extra weight. In case of a head-on collision between two locomotives thus equipped, these diagonal faces would cause a sidewise shift of the engine, which would effectually avoid telescoping or "rearing." As a protection against rear-

the rear car of the train, or better yet, a special car might be built according to the design illustrated, in which the guard has a permanent jointed connection with the car. Some suitable coupling attachment such as shown could be provided for use in drilling or switching this car about.

It will occur to some of our readers perhaps that this arrangement of guards might in some instances cause disastrous results, such as throwing a train down a steep embankment. In order to overcome this difficulty, Mr. Heyburn has devised the second arrangement, which is shown in plan view. Here it will be noticed that the guard is provided with a V-

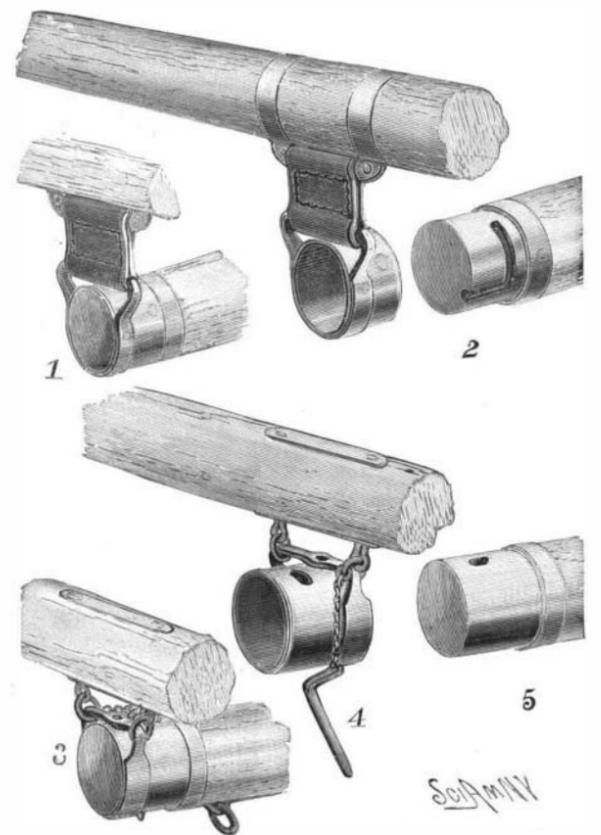


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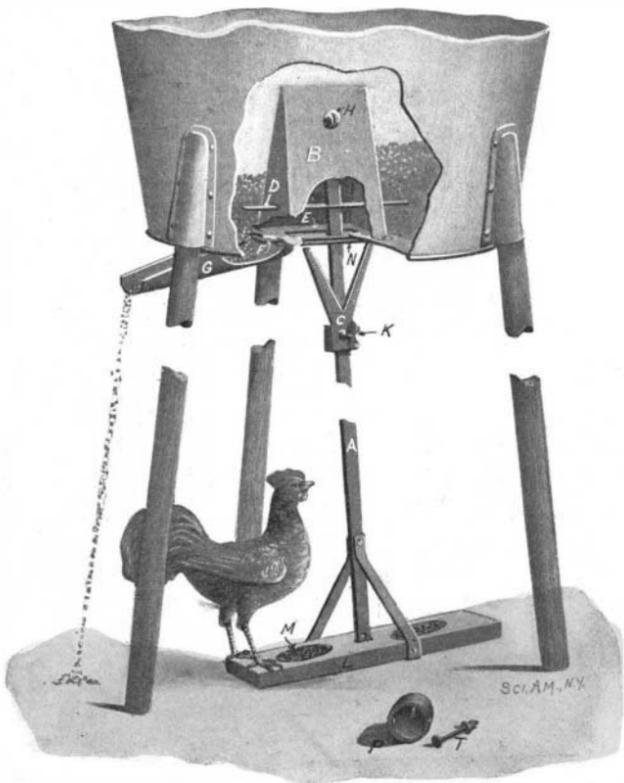
shaped impact surface, and that the guard on the locomotive is capable of adjustment to the one side or the other. Normally this pilot or guard will be held, by strong coil springs, with its point midway of the track. A cylinder on the locomotive, which is shown in section, is provided with a piston connected to an arm on the pilot. This piston may be operated by steam, but will preferably be operated from the compressed-air system of the train. Suitable connections are provided, whereby the engineer may admit the compressed air to one side or the other of the piston-head, so that in event of an impending collision he may quickly swing the pilot to one side or the other, thus choosing the most favorable side for the derailment.

NECK-YOKE ATTACHMENT.

An improved method of securing a neck-yoke to the tongue of a vehicle has recently been invented by Mr. David M. Luse, of Chinook, Mont. Briefly stated, the invention provides in connection with a neck-yoke a sleeve to fit and be secured on the tip end of the vehicle tongue. This coupling-sleeve is provided at its front end with a brace-band spaced at its upper side away from the sleeve, to receive devices which connect it with the neck-yoke. Two constructions are illustrated; that in Figs. 1 and 2 is adapted specially for buggies, while the other figures illustrate a form preferably used on wagon tongues. In Fig. 1 the parts are assembled, while in Fig. 2 the tongue is shown



NECK YOKE ATTACHMENT.



AN INGENIOUS POULTRY-FEEDING DEVICE.

Legal Notes.

disconnected from the coupling device. The neck-yoke is provided with a cross-bar to which the coupling-sleeve is secured by means of a strap connecting the cross-bar with the brace-band of the sleeve. By connecting the strap directly with the brace-ring, the coupling-sleeve is relieved in a great measure of the strain and may be made light and present a neat appearance, as is desired in buggies. It will be seen that the end of the tongue is tipped with a thimble shouldered near the rear end. This thimble is provided with a bayonet slot adapted to receive the pin in the coupling-sleeve and lock the same to the buggy tongue; this is readily accomplished by slipping the coupling-sleeve onto the tongue and then partially turning it. When the parts are so connected, there is no projection of the pole beyond the neck-yoke connection. Thus are avoided the difficulties resulting from the catching of the check-reins over the end of the pole and numerous other annoyances which are commonly experienced with the ordinary neck-yoke connection. At the same time the pole is provided with a neat, attractive, safe and noiseless neck-yoke, as desired for use on carriages.

The second form of this attachment is shown assembled in Fig. 3. This construction is stronger and better adapted for heavy work. The coupling-sleeve is fastened to the neck-yoke by chains, and is secured to the wagon tongue by a pin which passes through openings in the sleeve and the tongue. The openings in the coupling-sleeve may be seen in Fig. 4, in which the attachment is swung around to better show their locations. It will be noticed that by withdrawing the pin the neck-yoke can be readily detached from the pole without removing the neck-yoke from the team.

Brief Notes Concerning Patents.

Among the recent deaths of note is that of William S. Post, who was well known among the manufacturers of mechanical appliances in Boston, Mass., where he lived and worked. Among the more important of his inventions was a refrigerator car, a down-draft furnace and the Post combustion boiler.

A means for automatically inserting a fuse in an electric circuit has been recently patented by James T. Watson, of Scranton, Pa. It is a magazine fuse holder, and the number of fuses available is only limited by the size of the box which incases the apparatus. When the fuse blows the holder drops by its own weight, allowing the next holder to fall into place, thereby closing the circuit again.

A graphophone in which several records are employed is the invention of E. P. Felt, of Elida, Minn. The stylus and reproducer are disengaged from operative connection with the records at the terminal of the latter in an automatic manner, and returned to a starting position. A motor device for controlling these operations is equipped with certain co-operating devices, which are proportioned and arranged to carry out the several steps.

A patent has recently been granted for a combined phonograph and illustrating device, by means of which a series of pictures representing the subject matter of a phonograph record can be exhibited as the sound is reproduced. A series of pictures are mounted on a carrier, and are arranged to travel in succession, and displayed in a path focused with reference to stereoscopic eyeglasses. The carrier is automatically actuated from a moving part of the phonograph.

Authorization has been given by Congress to Patent Commissioner Allen to make an addition of forty clerks and examiners to the corps now employed in his department. This will greatly facilitate the work of this important department, and will enable the Commissioner to keep abreast of the applications. For many years the department has been far behind in the examination of applications, but under the last administration and the present one much has been done to bring the work up to date. At present, however, the force is 10,000 applications behind, but it is hoped to dispose of these by working overtime. The new positions will be filled by civil service examinations.

Sir Howard Grubb, the well-known English astronomical engineer, in conjunction with Mr. A. T. Lawson, of London, has invented a new improved gun sight for large guns and rifles. In this invention the mounting comprises a sight-carrying device that is pivoted to a suitable support, or carrier, attached to the gun or its cradle or mounting, and is adapted, together with the sight carried thereby, to be raised and lowered in a vertical plane about the pivot as a center by a cam. In connection with the latter is a wheel or drum bearing a scale of ranges or degrees, or both, the arrangement being such that the sight-carrying device will at all times hold the sight in a steady manner both laterally and vertically. By rotating the cam the sight-carrying device with sight can be easily and accurately adjusted in a vertical direction to suit requirement. The sight-carrying device and the sighting device may be made, if necessary, as one article.

DAMAGES FOR INFRINGEMENT.—In the case of *Coddington vs. Propfe et al.* (112 Fed. Rep. 1016), a suit for infringement of a patent on sealing wax, the question of how to estimate the damages brought out an interesting point. Defendant had used the patented composition in connection with a string, selling the waxed strings for a finished product, and contended that the damages should not be based on the value of the finished product, but rather on the value of the amount of composition used separate and apart from the string. The string device had once borne a patent, but this had expired. The opinion of the court so far as it covered this point is as follows: "It may be that during the life of the patent, had the defendant used the string device of that patentee and the wax composition of this one, the profits would have had to be apportioned. But the wax string has now gone into common use, and does not necessarily contribute anything to the salable value because of its original patented character. It is like a hundred other things which have originated in the same way, and now have a standing in the market only by reason of some new and special feature added to them. The marketable commodity in the present instance is distinctively the waxed string of which the thread has no value by itself, but derives its whole character and value from the wax which covers it. The purchaser buys it for the wax, and not for the wick or thread on which it is strung, just as he would buy it in sticks or cakes or any other form which suited him. The case therefore falls, in my judgment, within the rule, which is abundantly sustained by the authorities, that where, but for the patented feature, an article made and sold by the infringer would not be a salable commodity, the complainant is entitled to the whole profits obtained from its use."

THE LEGAL STANDING OF AN UNADJUDICATED PATENT.—A corporation, owner of a patent, brought suit against another corporation for infringement. The defendant denied validity and pleaded prior use and anticipation, but before trial purchased the stock of complainant and took an assignment of the patent. A person who had owned one share of the stock in the complainant corporation, and who was at the time of the institution of the suit employed by it as superintendent, obtained a patent for a similar article after the sale of the stock; and a new corporation was formed to manufacture thereunder, in which he became a stockholder and an investor. The assignee of the early patent commenced suit against him and the new corporation for infringement. On these facts, the Circuit Court of Appeals for the Fourth District decided (113 Fed. Rep. 629) that the patent never having been adjudicated, the former suit secured no ground warranting the granting of a preliminary injunction against the defendant.

USE OF CHRISTIAN NAME.—Holding as a basis for its opinion that the surname Smith does not identify an individual in a New England town, the United States Circuit Court for the District of Connecticut (112 Fed. Rep. 998) refused to restrain Welcome A. Smith from using his name on labels for soap manufactured for him, at the suit of Lever Brothers, Limited, Boston Works, who had expended large amounts of money in advertising another soap designated as "Welcome" soap, the word being registered as a trade-mark. The court, however, held that the use by defendant of the word "Welcome," segregated from the surname, or in larger type or letters than the surname, or so located as to admit the inference that the soap is "Welcome" soap, manufactured by A. Smith, should be restrained.

COMMON-LAW RIGHT IN A TRADE-MARK.—The common law right to the exclusive use of a word, symbol, or device as a trade-mark is not given merely by its adoption as such. The mark must also have been used for such a length of time, and under such circumstances, as to identify the firm in connection with which it is used to the trade. This common-law right was thoroughly discussed in *Macmahan Pharmacal Company vs. Denver Chemical Manufacturing Company* (113 Fed. Rep. 468).

A pharmacist in New York city for twenty years made and sold a liquid preparation for use by dentists under the name of "Macmahan's Concentrated (or saturated) Tincture, Aconite, with Iodine." After that time he was succeeded by a corporation which continued to make and sell the preparation, adding to the designation on the labels the word "Antiphlogistine." On cards and circulars it was described by the name "Macmahan's Antiphlogistine," but such cards or circulars were not shown to have been distributed to any extent, and the preparation was not advertised in any other manner. In ten years the company made but

362 sales, to 98 different customers, almost exclusively dentists, who purchased for their own use. The article was not known in the market generally, nor even to pharmacists in the city. It was therefore held, that the company did not have an exclusive right to the use of the word "Antiphlogistine," as a trade-mark, and especially against another company which had adopted it, without knowledge of such use of a trade-mark, to designate a plastic preparation, which was adapted to the use of dentists and intended for external application, and which, during a number of years, it had advertised extensively, and in which it had built up an extensive trade.

SACCHARIN DECISION IN ENGLAND.—In an action brought for an injunction to restrain the infringement of five patents, which covered all known methods of making pure saccharin, the plaintiffs were unable to prove which of the patents had been infringed. The evidence showed that the infringing articles complained of consisted of pure saccharin; that pure saccharin could not be produced by the use of the processes described in an expired patent for saccharin upon which the defendant relied; and that one of the patents sued upon must have been infringed.

It was held that an injunction and inquiry as to damages should be granted, but that the injunction should be limited to the period covered by the oldest of the five unexpired patents. The plaintiffs were awarded the costs of both actions; but, although they held a certificate of validity of one of the patents, the Judge, as the only issue in the actions was infringement, certified for party and party costs only.

DOCTRINE OF EQUIVALENTS IN INFRINGEMENTS.—In the matter of *Lepper vs. Randall* the Circuit Court of Appeals reversed the decision of the lower court, on the ground that a patentee is not to be denied protection commensurate with the scope of his actual and distinctly described invention by wholly excluding him from the benefit of the doctrine of equivalents, even as against one who has made only such changes as are palpably colorable and of such character as to show that they were studied evasions of the particular devices described in the patent. The patent in question was granted to Merritt and Lepper, for a hand reaper. One of the claims covered a reaper and "fastening devices on the back thereof." The claim was held to be infringed by a reaper in all respects identical with the patented article, with the exception that the fastenings are straps and buckles.

PROPOSED EXTENSION OF THE BOWERS DREDGING MACHINE PATENT.—A bill has been presented to the House of Representatives by Mr. Metcalf, the object of which is to extend Alfonso Bowers' patent for a dredging machine. If there is any patent ever issued by the United States that should not be extended, it is this very one. Time and time again Bowers amended his case in the patent office. For years he was a thorn in the side of the Patent Office examiners. When the patent finally did issue with a bewildering number of claims, probably no one knew what it covered except the inventor himself. These claims have been a source of annoyance to the makers and users of dredging machinery ever since they were issued. Justly or unjustly they cover about everything that is valuable in dredging machinery of this particular type. It is trusted that Congress will not permit this bill to pass.

ACCOUNTING FOR DAMAGES IN INFRINGEMENT SUITS.—In the case of the *Regina Music Box Company vs. F. G. Otto Sons* (114 Fed. Rep. 505) it appeared, on an accounting for damages for the manufacture and sale by defendants of the infringing music boxes, that the patent was the foundation patent for the class of automatic instruments which it described and claimed. The complainant had a monopoly and was able to supply the boxes sold by defendants. "It is to be assumed," said the Court, "that but for the infringement all the instruments sold by defendants would have been purchased from complainant, and this presumption is not overcome by evidence showing that some of them were supplied on orders from customers who dealt exclusively with defendants."

UNFAIR COMPETITION.—Where the attempt is made so closely to imitate a competing article as to confuse and deceive purchasers, the courts will not be nice in limiting the scope of the relief granted because some of the imitations if practised singly and without fraudulent intent might not constitute unfair competition; and, when unfair competition has been found, the courts should not give their approval in advance to any suggested or proposed changes, leaving to the defendant the responsibility of deciding for himself what changes are necessary to avoid further infringement. (112 Fed. Rep. 1000.)