

RECENT AMERICAN PATENTS.

An improved device for exhibiting diamonds and other precious stones to purchasers, to enable them to judge of their effect when worn, has been patented by Mr. Leon P. Jeanne, of New York city. It consists of a clamp of peculiar shape, provided with notched arms and claws, for holding the gem, and an ear wire or hook.

Mr. F. D. Thurman, of Atlanta, Ga., has patented an improved harness for horses. It consists in a rigid yoke open at the bottom and closed or bent over at the top, connected with the shaft, and provided with tugs and a girth or belly band for holding the yoke and shafts down to their places.

A bottle stopper, especially designed for bottles containing beer, mineral waters, and other effervescing liquids, has been patented by Mr. W. H. G. Savage, of Kingston, Ontario, Canada. A cam pivoted to the stopper and to a rigid standard serves to hold the stopper in place and to release it when required.

Messrs. A. A. Moore and Robert Cameron, of Trinidad, Col., have patented an improved fastening for horse collars, to take the place of the usual leather strap and buckle. It consists in a hinged metal strap attached to one part of the collar, and arranged to engage pins on a buckle plate on the other side of the collar.

An improved sleeping car berth has been patented by Mr. Frederick C. Hills, of Sioux City, Iowa. The object of the invention is to furnish a guard for preventing sleepers from rolling out of the upper berths of cars and vessels, and to prevent the berths from shutting up should the car be overturned.

An improved gauge for applying lace to goods for trimming ladies' dresses, and for other purposes, has been patented by Mr. Joseph A. Denais, of Jersey City, N. J. It consists in a combination of U-shaped plates and sponge holders with a base plate.

An automatic device for filling drinking troughs for cattle from ponds and shallow wells, has been patented by Mr. W. L. Lankford, of Mirabile, Mo. It consists of a pipe leading from the pond to the trough, having a valve at the upper end, and a stem running through the pipe and pivoted to a float in the trough. The flow of water is controlled by the float.

Mr. George J. Record, of Conneaut, Ohio, has patented an improved casing or jacket for butter packages and other vessels, which may be removed and put on when required, the object being to keep the package neat and clean, and to protect it from injury.

An improved apparatus for evaporating and calcining alkaline solutions has been patented by Mr. H. L. Orrman, of Berlin Falls, N. H. It is designed for recovering the caustic soda contained in the alkaline solution or waste liquor from the chemical treatment of wood in the manufacture of wood pulp.

Mr. Edwin V. Heaford, of Covington, Ky., has patented an improvement in adjustable pattern plates for draughting garments. It contains the outlines of the garment and the details of the seams and various parts. To produce a perfect fitting draught, it is only necessary to adjust the pattern to the person and then lay it on a piece of paper and mark it out.

An improved honey knife, for uncapping comb cells, has been patented by Mr. Oliver J. Hetherington, of East Saginaw, and Tracy F. Bingham, of Abronja, Mich. It consists of a honey knife having a flange or cap arrester upon its rear edge.

Mr. Samuel Hower, of Cressona, Pa., has patented a box or cabinet for post office use, for facilitating the work of stamping letters and canceling stamps in small post offices. It consists of a small box or cabinet of suitable dimensions, to lie upon a post office table, divided into a number of compartments, and containing canceling stamps, tickets, etc.

An improvement in heels for boots and shoes has been patented by Mr. Benjamin Bradshaw, of New York city. It consists of a plate provided with a male screw attached to the sole of a boot or shoe, and a plate having a female screw attached to the heel. A heel attached by this device may be easily removed and replaced.

An improvement in mash tubs, for holding and mixing the mash, has been patented by Mr. Gottlieb Young, of Columbia, Pa. It consists in the peculiar construction and arrangement of stirring devices, and a false bottom, which facilitates drawing off the liquor.

Mr. Wm. L. Pitts, of Cerro Gordo, Ill., has patented an improved device for holding swine, which consists of tongs having V-shaped jaws, one of the jaws being provided with a round-headed pin, which enters the cavity between the sides of the animal's lower jaw and prevents the tongs from slipping.

An improvement in refrigerators, patented by Mr. Joseph P. Ast, of Staunton, Va., which consists in combining with the outer case of the refrigerator and the ice box, a series of separated parallel strips, which give direction to the circulating currents and strengthen the ice box.

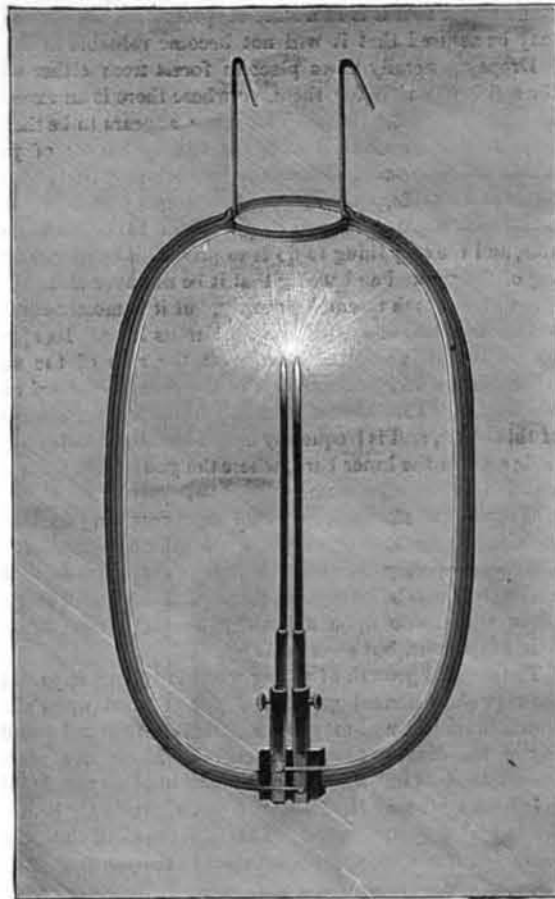
An improvement in artificial pivot teeth has been patented by Mr. J. W. Holt, of Goldsborough, N. C. It consists in providing each tooth with a metal tube set into it when moulded, and burned in when the tooth is baked. The object of the invention is to provide a pivot hole of sufficient depth and size to admit of using a strong pivot.

An improved cam for stamp mills, patented by Mr. James Scott, of Denver, Col., is constructed so that the hub may

be keyed to the shaft independently of the cam arms. This arrangement admits of adjusting the cam arms, and renders it easy to detach either of the cam arms and replace it with a new one, without interfering with the other.

NEW ELECTRIC LAMP.

M. Jamin surrounds two nearly parallel carbon sticks with an elliptical coil of wire, through which passes the current which gives the light. This lamp is shown in the annexed engraving, which we take from *La Nature*; the coil, being in the same vertical plane as the carbon rods, is arranged so that the current through it is in the same direction as that which flows through the latter, producing the arc at their extremities. In virtue, therefore, of the law that currents in the same direction attract and those in opposite directions repel each other, the currents through the upper portion of the coil will attract the arc, and those through the lower portion will repel it. The lateral currents also, by reason of their tendency to deflect the arc into parallelism, aid in repelling the latter to the extremities of the carbons. So powerful is this effect of repulsion that, if the number of turns of wire in the coil be too great, the arc, if caused to pass between the lower portions of the carbon rods, will move upward with great velocity, and the light becomes extinguished, owing to the arc being too strongly attracted in the direction of the extremities of the carbons. With this apparatus the arc becomes strongly curved; and it is stated that the light evolved is very considerably augmented by its use, owing to the carbons being no longer consumed lateral-

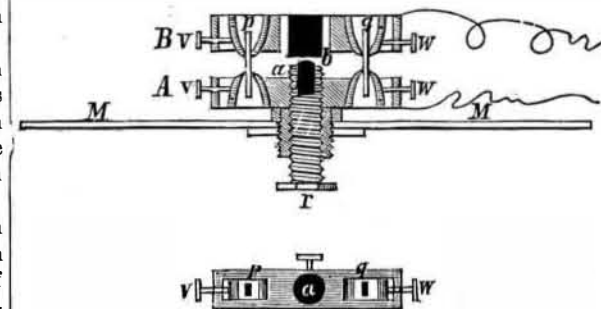


M. JAMIN'S ELECTRIC LAMP.

ly, so as to shade the light. By using this apparatus, also, the lamp may be inverted, without any danger of the arc quitting the extreme ends of the carbon rods. These appear to be important advantages gained in the solution of one of the main questions in connection with electric lighting.

LUEDTGE'S UNIVERSAL TELEPHONE.

Dr. Luedtge, of Berlin, whose microphone, or, as he calls it, universal telephone, was patented January 12, 1878, some time before the microphone notes of Hughes and Edison were published, has lately improved his instrument to such a degree that it will probably answer all reasonable demands for telephonic conversation. The disagreeable sounds that are heard in other microphones have been avoided, and



Figs. 1 and 2.—LUEDTGE'S TELEPHONE.

words spoken into the transmitter are reproduced so clearly and so loud that it can be heard best a short distance from the receiver, which is an ordinary Bell telephone. With it a healthy ear might be injured. If, however, persons that do not hear well place the receiver near the ear they are able to hear much better than with other similar instruments.

Words have been plainly transmitted by this apparatus

through a distance of 186 miles. A special signal is not necessary. If a Bell telephone and a Luedtge microphone are brought in connection, a clear, deep, and impressive tone, somewhat like the tone of a fog horn, which can be heard for quite a distance, is perceived at the transmitting as well as at the receiving station.

The essential part of the instrument is the connection between the two electric conducting bodies, *a* and *b*, Fig. 1 (pre-

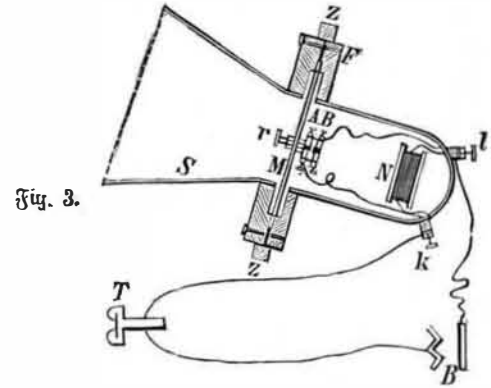


Fig. 3.—LUEDTGE'S TELEPHONE.

ferably of iron, platina, or carbon). One of the pieces, *b*, is level at the contact surface, but the other, *a*, is rounded. The electric current passes through this contact, and the variations in the electrical resistance at this point, while speaking, cause the vibrations of the membrane in the receiving telephone.

A peculiarity of Luedtge's construction is that both of the contact pieces are united to a support fastened to the middle of the membrane, *M*, so that both vibrate with the membrane. The contact piece, *a*, rests in a rectangular brass frame, *A*. The contact piece, *b*, is supported in a similar manner by the frame, *B*. The two frames, *A* and *B*, are connected to each other by means of the strips of caoutchouc, *p* and *q*. Caoutchouc is a poor conductor of tone vibrations. The tone vibrations transmitted to the membrane, *M*, are received by the contact piece, *a*, unimpaird and with their entire power, but to affect the contact piece, *b*, they must pass the rubber strips, *p* and *q*. By this contrivance their intensity is materially decreased or modified, and there is a difference in the vibrations of *a* and *b*.

The small screws, *v* and *w*, serve to regulate the compression of the caoutchouc strips, *p* and *q*.

Fig. 2 is a transverse section of the complete apparatus. *S* is the tone receiver, *M* a wooden diaphragm, *F* the casing of the same, *Z Z* pivots for hanging the apparatus in bearings. *A* and *B* are the contact frames; *R* is a screw for partially regulating the contact by moving one of the contact pieces; *k* and *l* screws for fastening the wires; *B* is the battery; *T* the receiving telephone; and *N* a resistance coil.

To adjust the apparatus very carefully it is turned on its horizontal axis. The susceptibility of the apparatus is so great that the small change on the pressure that *B* produces on *A* in turning the apparatus is sufficient to regulate the contact.—*Deutsche Industrie Zeitung*.

A Gopher Trap Wanted.

The California ground squirrel, commonly known as the gopher, is a most industrious and audacious forager, and though he seems very innocent, is a veritable pest. He consumes an inordinate quantity of grain, and does a vast amount of mischief to gardens and orchards. He and high farming are declared to be absolutely incompatible, and the Golden State is greatly concerned as to the best manner of exterminating him. Poison has been tried, and has proved effective on many squirrels; but they are so cunning that they refuse to swallow it after one season, unless it be offered in a new form. Strychnine, arsenic, and phosphorus have been tried, and now other mortal agents must be adopted to get rid of the aggressive rodents. It is estimated that their damage to the wheat crop alone was last season nearly \$1,000,000, and to gardens and orchards fully \$500,000 more.

Here would seem to be a good chance for some clever inventor to make a good thing for himself and a better for the State. A wide-awake California boy, after proper study of "gopher" habits, ought to be able to outwit the little pests. A successful gopher trap would be worth a small gold mine.

Destruction of Passaic Fish.

For some weeks a fatal disease has prevailed among the fish of the Passaic river (N. J.) and its tributaries. The trouble was at once charged to poisonous dyes discharged into the stream from silk-factories. The fish warden of Passaic county is of a different opinion, attributing the fatality to certain poisonous vegetable matter which had grown with unusual luxuriance during the late heated spell. This happened at an unusual season, just after the fish had been spawning, and when they had not strength to withstand the injurious effect of the water. The disease is described as a fungous growth on the surface of the fish, beginning at the tail and causing the scales to decay and become loose. In eight or ten days the trouble reached the head, and the fish died. Suckers were first attacked, then catfish, roach, chub, sunfish, perch, and pickerel. Persons eating the fish were attacked with cramps and purging. Fish Warden Roe does not think the sewage has anything to do with the disease. The epidemic is about over in the Passaic River, but is extending to the tributary streams and lakes.