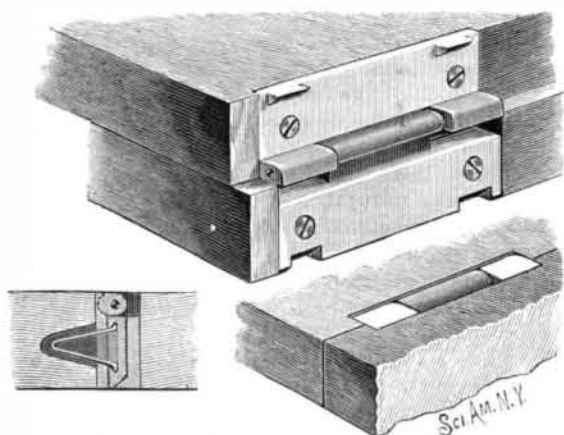


**AN IMPROVEMENT IN FLUSH HINGES.**

The illustration represents a hinge which will not project in either direction beyond the sides of the parts of the cover to which it is applied, the hinge being shown in open and closed position, and one figure representing a sectional view. The invention forms the subject of a patent issued to Mr. Jonathan D. Davis, of No. 12 Elias Street, Bridgeport, Conn. The angled



DAVIS' IMPROVED HINGE.

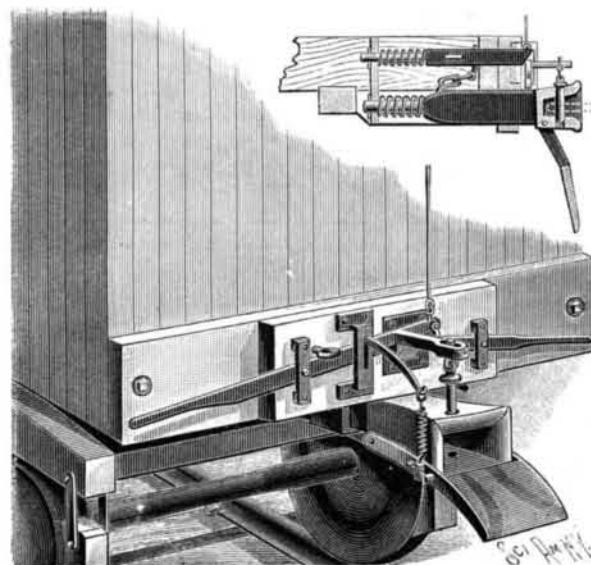
plate forming one-half of the hinge is cut away on opposite edges to form ears, opposite which are outwardly projecting beveled legs fitting notches in the other half of the hinge, while on a pintle passing through the ears is pivoted one edge of a sliding plate, the body of which is received and slides freely in a mortise in the other half of the hinge. The sliding plate and a portion of the hinge behind it are mortised, and a part of the wood is likewise cut away, sufficient to receive a V-shaped spring, which bears against one-half of the hinge and against the sliding plate to draw the latter into the mortise.

As the cover is opened the plate is drawn out against the pressure of the spring, and when the cover is being closed the spring draws it into place, the lugs fitting in the notches preventing longitudinal movement of one part of the hinge upon the other. When the hinge is used on covers that naturally lie in a horizontal position, the spring may be omitted.

**AN IMPROVED CAR COUPLING.**

The illustration represents a car coupling for which a patent has been allowed Mr. William Bentley, of Lethbridge, Northwest Territory, Canada, the patent being for an improvement on a former patented invention of the same inventor. The coupling is automatic in its operation, and its construction is designed to be strong and inexpensive, having no delicate parts likely to get out of order, while the pin is fast to the car and cannot get lost. The body of the drawhead is supported to slide a limited distance between the frame timbers of the car, a guide bar extension carrying a spiral spring permitting it to yield under pressure. Above the drawhead is a sliding latch bar, around the inner end of which is a spiral spring, as shown in the sectional view, the latch bar being projected forward in the path of a pin-lifting lever pivoted on the end of the car, to be conveniently manipulated from the side. An apron designed to facilitate the entrance of an approaching coupling link is pivoted to the forward portion of the drawhead, the apron being yieldingly sustained in proper position by a spiral spring, dependent from the outer end of a rocking bar pivotally supported in the car frame above the pin-lifting lever, and projecting outwardly through a slotted guide plate embracing the lever.

The latter has a forwardly projecting arm connected with the coupling pin by a clevis, the arm

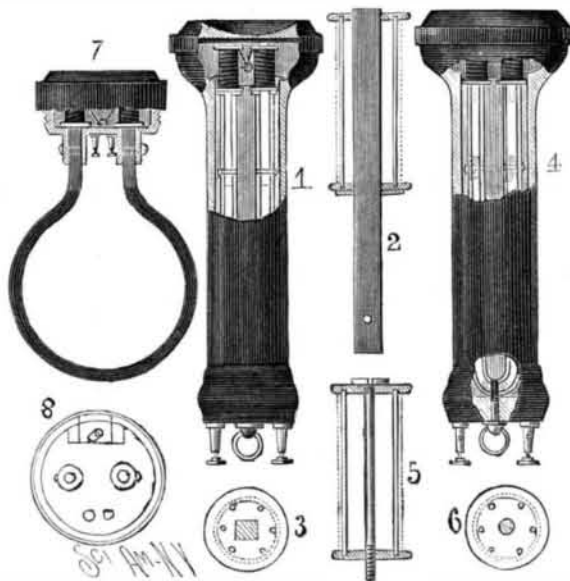


BENTLEY'S IMPROVED CAR COUPLING.

being slotted and the clevis bolted loosely on a slide block to facilitate free motion of the pin. When the pin and apron are in raised position to allow the entrance of an approaching coupling link, as shown in the illustration, the pin-lifting lever rests upon the latch bar, which is so connected with the drawhead as to be moved inward when the drawhead is similarly moved as two cars come together, thereby releasing the lever and allowing the pin to drop to effect the coupling. The latch bar may also be drawn inwardly by means of a pull bar connected with it and projecting over the pin-lifting lever, and connected by a link to this lever is a tripping lever, adapted to be operated from the opposite side of the car for uncoupling and simultaneously raising the lever and apron into position for recoupling. A rod extending to the car roof is also connected with the pin-lifting lever, for the manipulation of the device from this position. As the coupling is effected the apron drops freely out of the way, and the springs on the latch bar as well as on the drawhead form cushions to diminish the shock of the coming together of the cars.

**AN IMPROVED RECEIVING TELEPHONE.**

The illustration represents a simple and effective receiving telephone to be used in connection with a microphone, Fig. 1 showing a longitudinal section and Fig. 4 a slight modification, while Fig. 2 shows a sectional detail of the polar extremity of one of the magnets and the skeleton of the bobbin, Fig. 5 being another section of the skeleton of the bobbin and polar extension, and Figs. 3 and 6 being transverse views. A compound U-shaped magnet is secured in the telephone handle by screws passing through the end of the handle and into the bend of the magnet, the opposite end of the handle being formed into an externally threaded cell which receives the ear piece, in which is an iron diaphragm, near the polar extremity of the U-shaped magnet, but not in contact with it. Between the outer members of the compound magnet are slightly projecting pole pieces of soft iron which



NORIEGA'S TELEPHONE.

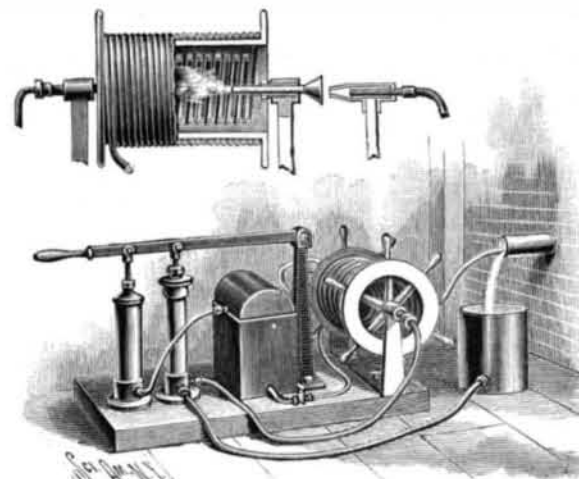
receive the bobbins, connected with each other by one terminal in the same manner as those of an electromagnet, the other terminals being connected with the binding posts at the opposite end of the handle. The polar extensions are held in place by screws passing through them and through the arms of the magnet, but in the modification shown in Fig. 4, the extensions consist of screws having a head of large diameter, the screws being inserted in the central portion of the compound magnet. Each bobbin has soft iron heads fitted to the polar extensions, soft iron wires being fitted in a circle within the heads to form the framework of the bobbins. These wires are insulated and upon them is wound a fine wire forming the conductor of the telephone, the winding varying according to the conditions under which the instrument is to be used, and its sensitiveness being varied by adjusting the diaphragm. Figs. 7 and 8 illustrate modifications in which the telephone handle is omitted and the ear piece cell is placed directly on the poles of a permanent horseshoe magnet, the bobbins being attached to the poles by screws, while the earpiece is arranged to adjust the distance of the diaphragm with reference to the polar extensions.

This invention has been patented by Mr. Eloy Noriega, Box 516, Mexico City, Mexico.

**A DEVICE FOR THAWING ICE FROM PIPES.**

A portable apparatus for conveniently and rapidly thawing ice formed in water pipes is shown in the illustration, and has been patented by Mr. Isaiah H. Simpson, of Brunswick, Me. On a suitable base are mounted a hollow drum supporting inside and outside coils, an oil reservoir, a pump and an air compressor,

the two latter being simultaneously operated by a hand lever. The pump is connected by a suction hose with a receptacle set under the pipe to be thawed, and the discharge hose from the pump is centrally connected by a coupling with the inner coil of pipe, the other end of this coil connecting with the one on the outside of the drum, the outer end of the latter coil



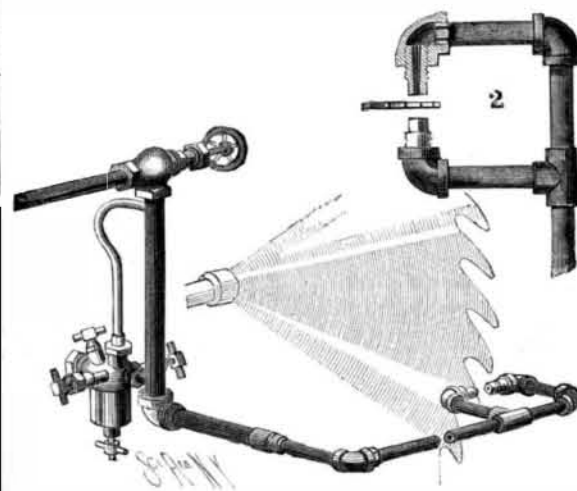
SIMPSON'S ICE-THAWING DEVICE.

being extended for insertion in the pipe to be thawed. The inner coil of pipe is preferably of wrought iron, to withstand heat, but the other portions are of zinc or lead, or material that will bend easily, while the drum is mounted to be conveniently turned without disconnecting the pipes.

Through one trunnion of the drum, as shown in the small figure, extends a pipe having a bell-shaped outer end, into which passes the flame of a hydrocarbon burner provided with an air pipe, while its feed pipe leads to the reservoir, having oil in its lower part, above which is an air chamber connected with the air compressor. The air compressor forces the air into the chamber above the oil, and from this chamber an air pipe leads to the burner, where the oil is drawn in through the feed pipe and atomized by the compressed air, the combustion heating the water at the same time passed through the coil, so that any ice in the pipe to be thawed will be quickly melted, the water flowing into the receptacle to be used over again. Any length of pipe desired can be run over the drum to pass a distance into the pipe to be thawed out, or, by a modified form of the improvement, a section of the pipe may be heated in coil form within a separate shell instead of within the drum, the device being then used in the same manner as described.

**A DEVICE FOR CLEANING WOOD SAWS.**

In the device shown in the illustration the gummy matter accumulating upon the saw is removed by steam emitted in contact with the teeth, while the saw is running in the lumber, Fig. 1 showing the application of the improvement, while Fig. 2 is an enlarged view of the nozzles and pipe connection. The invention has been patented by Mr. Thadious V. Elliott, Nichols, S. C. A pipe from a steam boiler, adapted to supply steam and water of condensation, or hot water, is connected by means of a valve with a vertical pipe, a lateral and horizontal extension from which connects with two nozzles whose apertures are adjacent to opposite sides of the saw, near its cutting edge. The nozzles are in the form of threaded hollow plugs, which screw into elbows of the supply pipes, being adjustably held to be readily moved toward or from the saw blade. To facilitate the cleaning of the saw, a lubricator of approved form is connected with the vertical pipe, as shown in Fig. 1, the oil passing from the lubricator to mix with the steam or water carried to the nozzles. The openings in the nozzles are preferably conical, so that the cleaning mixture is ejected with considerable force against the sides of the saw.



ELLIOTT'S SAW CLEANER.