connected with the lever *k* and arranged to enter the mortises *p*, *p1*, substantially as described.

No. 25,149. Saw-Sharpenin Device.

(Appareil à Limer les Scies.)

William Tucker, East Brookfield, Mass., U. S., 16th October, 1886; 5 years.

Claim.—1st A rotary saw file of spiral form, formed upon a metallic cylinder, with intervening spaces or ways for each alternate tooth of the saw, substantially as set forth. 2nd. The combination, with a rotary spiral file, mounted as shown and described, of a flat rest or table for a straight saw, substantially as and for the purpose set forth.

No. 25,150. Machine for Turfing Fabrics.

(Machine à Pelucher les Draps.)

Matthew F. Connett, Jr., Peoria, and Charles B. Merriman, Springfield, Ill., U.S., 16th October, 1886; 5 years.

Claim.—1st. In combination with the sheath and the needle-bar, the stop on the bar and the sleeve on the sheath, provided with a lug to engage the stop on the bar, substantially as and for the purpose shown. 2nd. In combination, with the sheath, the needle-bar, the stop on the bar and the sleeve on the sheath made adjustable along the sheath, and provided with a lug or stop to engage the stop on the needle-bar and limit the upward movement of the latter, substantially as and for the purpose described. 3rd. In combination with the sheath and the needle-bar within the same, both open at the same side, the stop within the bar and the adjustable sleeve on the sheath provided with a lug projecting into the needle-bar, substantially as and for the purpose specified. 4th. In combination with the sheath open at its rear side, the sleeve on the sheath, the stop-lug thereon and the spring-catch adapted to engage any one of a series of holes or notches on the sheath, substantially as and for the purpose shown. 5th. In combination with the sheath and the needle-bar within the same, carrying a tubular needle, the spring rigidly connected with the sheath projecting down into the needle and serrated or roughened at its lower end, substantially as and for the purpose set forth. 6th. In combination, with the sheath, the needle-bar, the hollow needle carried thereby, and an arm connected with the sheath so as to be stationary as the needle-bar, and needle reciprocate projecting down into the needle and serrated at its lower end, substantially as and for the purpose described. 7th. In combination, with the sheath and the needle-bar, the tubular needle carried by the latter, the plate held rigidly to the sheath, and the spring-arm attached to such plate extending down into the needle, and adapted at its lower end to catch and hold the yarn as the needle rises, substantially as and for the purpose specified. 8th In a turfing machine, in combination with the needle-bar, the tubular needle carried thereby, having its lower end cut away at an angle to form a point, and adapted to catch the yarn and prevent it from slipping through the needle as the latter descends, and means for causing the yarn to feed through the needle, substantially as and for the purpose shown. 9th. In a turfing machine, in combination with the needle-bar, the tubular needle having its lower end cut away at an angle to form a penetration point, and notched or roughened at the rear side of this cut, and means for holding the yarn from being pulled upward as the needle ascends, substantially as and for the purpose set forth. 10th. In combination, with the needle-bar and the pivot-bar on the rear side of the same, the needle pivoted at its rear side upon this pivot-bar, and a spring engaging the upper end of the needle, above its pivotal point, and pressing such end rearward, substantially as and for the purpose shown. 11th. In combination with the needle-bar, open at its rear side, the pivot-bar extending across such side, the needle pivoted to such bar near its upper end, and provided with a plate to steady it in the bar as it swings on its pivot, and the spring within the bar pressing the portion of the needle above its pivot rearward, so that the lower portion of the needle normally slants downward and forward with reference to the needle-bar, substantially as and for the purpose set forth. 12th. In combination with the needle-bar and the pivot-bar extending across the same, the needle provided with a series of notches adapted to engage the pivot-bar, and a spring pressing the needle toward such pivot-bar, substantially as and for the purpose described. 13th. In a turfing machine, in combination with the needle bar, provided at its lower end with ears to strike the fabric and limit its stroke, the needle provided on its rear side with several pivoted notches, the pivotal bar on the rear side of the needle-bar adapted to be engaged by any of the notches on the needle, and the spring engaging the upper end of the needle and pressing it rearward, substantially as and for the purpose specified. 14th In a turfing machine, in combination with the sheath adapted to rest on the fabric, the needle-bar, means for limiting the upward stroke of the bar in the sheath, means for limiting the downward stroke of the bar with relation to the fabric, and the needle so attached to the bar as to descend down through the fabric a greater distance than its point rises above the fabric, substantially as and for the purpose shown. 15th. In a turfing machine, in combination with the sheath adapted to rest on the fabric, the needle-bar within the same having its lower end provided with suitable ears to strike the fabric and limit the downstroke of the bar, means for limiting the upward stroke of the bar, the needle carried by the bar and so attached to it that its point projects beyond the limiting ears a greater distance than it rises above the fabric on its upstroke, substantially as and for the purpose set forth. 16th. In combination with the sheath for the needle-bar of a turfing machine, the two parallel feet at the sides of the lower end thereof formed of a single piece of wire, substantially as and for the purpose described. 17th. In combination with the sockets on each side of the lower end of the sheath and on the front side thereof, the feed formed of a single piece of wire having one end fastened in the socket on one side of the sheath, then extending downward, then forward, then upward, then across through the sockets on the front side of the sheath, then downward, then rearward, and finally upward and into the socket on the other side of the sheath where it is fastened, substantially as and for the puopose specified.

No. 25,151. Telephone. *(Téléphone.)*

The Bell Telephone Company, Montreal, Que. (Assignee of Ezra T. Gilliland, Boston, Mass., U.S., 16th October, 1886; 5 years.

Claim.—1st. In a magneto telephone, the combination of a permanently magnetic cast iron inclosing case, a core or pole piece metallically attached thereto and in magnetic connection therewith, so that the edge of the said case constitutes one pole of the magnet and the said core the other, and a diaphragm resting on the edge of the said case. 2nd. In a telephone, a circular magnetized cast iron inclosing case or cup, a core or pole piece of iron attached to the internal surface of the base of said cup, and maintained in a magnetic condition by virtue of attachment, a diaphragm resting on the edge of said cup, the said edge being extended outwardly beyond the end of the core sufficiently to enable the centre of the diaphragm to be close to said core without touching the same, a coil or helix of insulated wire adapted to be included in an electric circuit surrounding the said pole-piece within the said magnetic inclosing case, and a cap capable of being screwed down on the case to hold the diaphragm in place and to serve as an ear piece, substantially as described. 3rd. In a telephone, the combination of the metal inclosing case, a hollow handle therefor attached thereto, as described, an insulating disk attached to the floor of said case, a pair of binding screw posts secured to said disk for the attachments of the electric connections of a flexible conductor, and a third binding screw attachment similarly mounted and adapted to be connected with a non-conducting strand of the said flexible cord, so as to relieve the strain upon the electric conductors thereof, substantially as described. 4th In a telephone, a permanently magnetic case adapted to contain the operative parts and to serve as a seat for the diaphragm, an iron core deriving its magnetism from the said case and constituting a central pole therefor, and a wire coil surrounding said central pole and connected by central springs with screw terminals, whereby the said coil may be included in an electric circuit. 5th. In a magneto-telephone, a detachable inducing coil or helix complete in itself, and adapted by means of terminal pins affixed to the edge of the bobbin on which the said helix is wound to engage and lock with contact springs connected with or adapted to be connected with an electric circuit, as and for the purposes described. 6th. In an electric telephone, a magnet and an iron core or pole-piece therefor, a coil or helix of insulated wire surrounding the said core, binding screws for connection with an electric circuit and spring connections extending between the said binding screws and the coil terminals, the said springs being permanently secured to the former and adapted to make contact with the latter by the resiliency of their free ends, whereby the coil may be readily attached for use or detached for inspection or repairs 7th. In a magneto-telephone, the following elements in combination a magnetized cast iron inclosing cup or case, a core or pole-piece attached to and projecting from the centre of the floor of said cup and magnetized therefrom, a pair of screw connections attached to a non-conducting disk, which disk is permanently attached to the floor of the inclosing case and adapted to connect by suitable wires with an electric circuit, a metal spring attached to each screw-connection and extending therefrom within the case, and a helix of insulated wire, the spool of which is adapted to slide easily over the pole-piece, and is likewise provided with rigid metal pins constituting the terminals of the helix, which pins are adapted when the helix is slid on the core to be turned round, and to be brought under and into electrical contact with the free ends of the metal springs or to be reversely detached therefrom, in the manner and for the purposes described 8th. A magneto telephone, comprising the following elements: a circular magnetized cast iron case, an iron core or pole-piece projecting from the interior centre of the floor thereof, a vibratory diaphragm resting by its edges on the edge of the case, and having its centre in close proximity to, but not in contact with, the core, a helix or coil surrounding the said core, a non-conducting disk or washer mounted upon the interior surface of the floor of the inclosing case, a pair of binding posts mounted on said disk and adapted for connection with the electrical-conducting strands of a flexible conducting cord, a single binding post adapted to hold a non-conducting strand of said cord, spring connections between the two electrical binding screws and the coil terminals, a hollow handle opening into the case, whereby a flexible conductor is conveyed to the binding screws, and an ear piece or cap, all arranged as described and for the purposes set forth. 9th. The combination, in a telephone, of the magnetized iron case or head B, provided with a threaded and perforated shoulder E, with the non-conducting perforated handle D, the said handle having a collar D2 by which it may be suitably supported in a yoke, and having a flaring or bell-shaped expansion to the channel at its outer end or muzzle, substantially as and for the purposes described 10th In a telephone, a cast iron permanent magnet, substantially as described. 11th. In a telephone, a permanently magnetized cast iron cup, the edge whereof constitutes one pole of the operating magnet, provided with a soft iron core affixed to the bottom of said cup, and extending outwardly to form the other pole of said magnet. 12th. The combination, in a magnet-telephone, of a metal cup or inclosing case enclosing the pole-piece and electro-magnetic helix, and provided with perforated neck extending from one side thereof, with a handle therefor of non-conducting material, the stem whereof is adapted to fit in the said neck and to be secured therein, the said handle being likewise perforated or channelled throughout its length, whereby a flexible conductor may be introduced through the said handle into the metal telephone case, substantially as specified. 13th In a telephone, the detachable coil having permanent firm terminals and adapted to surround the magnetic core, combined with screw line terminals and metal springs permanently affixed to the said screw terminals, and extending to the coil terminal pins, with which the free ends of the said springs are maintained in contact by their own resiliency, in the manner described,

No. 25,152. Mail Bag. *(Valise à Lettres.)*

The Union Mail Bag Company, (assignee of Leander W. Freeman) Liberty, Ind., U.S., 16th October, 1886; 5 years.

Claim.—1st. The combination, with a mail bag, of hinged mouth plates connected by hinges that extend only part way across said