

16th. In combination with the standards O, having the toothed bars O₁, the vertically sliding head N, provided with bolts C₁ and weighted levers O₂, and the cords O₃; 17th. In a matching machine, the combination of the main frame K and the press roll guides S₁, consisting of two round rods S₂ applied to the frame and sustained by the braces; 18th. The press roll carrying heads, bored out and mounted on two round rods S₃, applied to the frame and sustained by braces; 19th. The duplex matching machine provided with the inclined guides or supports D D₁; 20th. A matching machine, mounted on opposite sides for enabling a single attendant to feed two boards at a time; 21st. In a matching machine, the combination of two sets of matching mechanism on opposite sides, and intermediate rests or supports to facilitate the feeding of the lumber to both sides of the machine by a single attendant; 22nd. In a matching machine, the combination of two sets of matching devices on opposite sides, two side guides G₁ and an intermediate rest or rests D₁ inclined downward toward the two guides; 23rd. In a matching machine, a delivery spring V, arranged in rear of the matching heads, to effect the automatic side delivery of the boards; 24th. In combination with the rods S₂ and the sliding head thereon, the connecting plate B, screw D₂ and spring E₁; 25th. In combination with the surfacing and matching machines, the slitting saws S₁; 26th. The adjustable guides Z₁ for presenting the boards to the slitting saws; 27th. The combination of the supporting rollers O, feeding roller N and driving mechanism, whereby boards of different thickness may be fed simultaneously.

No. 10,236. Improvements on Clothes Wringers and Mangles. (*Perfectionnements aux essoreuses à linge et aux calandres.*)

Austin D. Cable and Walter M. Rice, Montreal, Que., 14th July, 1879, for 5 years.

Claim.—1st. A clothes wringer and mangle combined, in which a spring having the U form is used; 2nd. A lug J or projection on the frame of the machine, through which passes a screw; 3rd. A flange O attached to the frame of the wringer or mangle; 4th. The combination of the plain smooth wood core rollers, or any other suitable material, with a sleeve of rubber of any required thickness, and also with the frame of the machine.

No. 10,237. Wood Working Machines.

(*Machine à travailler le bois.*)

William H. Doane and George W. Hughes, Cincinnati, Ohio, U.S., 11th July, 1879, for 5 years.

Claim.—1st. A universal wood worker, on one side of which a horizontal cutter head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, such a machine having the respective tables, for said two cutter heads, mounted side by side at a distance apart, so as to leave a free open space between where a belt or belts may run from a counter shaft to drive the said cutter heads; 2nd. In a universal wood worker, on one side of which a horizontal cutter head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, the combination of the respective tables, for said two cutter heads, mounted side by side at a distance apart, and the separate arbors of said two cutter heads which have pulleys on their ends overhanging the space between the tables; 3rd. In a universal wood worker, on one side of which a horizontal cutter head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, the combination of the respective tables for said two cutter heads, mounted side by side at a distance apart, the separate arbors of said two cutter heads, which have pulleys on their ends overhanging the space between the tables, and independent driving pulleys on a single countershaft adapted to drive the said cutter heads, either separately or together; 4th. In a universal wood worker, the combination of the hand wood worker and the moulding machine, arranged on a single frame and pointing with their front ends in opposite directions with a single counter-shaft arranged across the end of the machine, behind the hand wood worker; 5th. In a universal wood worker combining, in its construction, a moulding machine and a hand wood worker, the combination of a counter-shaft, the pulleys thereon for separately driving through belts the two axially arranged independent cutter heads and the intermediate shaft below the path of said belts for driving the feed gear of the moulding machine from the hand wood worker side of the combined machine; 6th. In a universal wood worker, the combination of the counter shaft, the loose driving sleeve thereon, the duplex friction clutch, a loose pulley on the driving sleeve adapted to be driven by one face of the friction clutch, and a fast but shiftable pulley on the counter shaft, adapted to be driven by the other face of the friction clutch; 7th. The main frame of a universal wood worker composed of a single casting formed with two stands and a low connecting web to leave a gap between the stands, on each of which a table or tables and cutter heads are mounted for planing purposes; 8th. The combination and arrangement of the general counter-shaft of the machine, the pulley on the arbor of the upper cutting cylinder, the feed rolls, the feed roll driving shaft and a train of wheels for transmitting motion from said driving shaft to the feed rolls, said train of wheels being arranged outside of the straight path of the belts which runs from the general counter-shaft to the pulley of the upper cutting cylinder; 9th. The combination of the feed roll, the fixed shaft 13, the sleeve bearing of the feed roll shaft hinged to said shaft 13, the fixed bracket under the feed roll and the set screw in this bracket for limiting the descent of the sleeve bearing; 10th. The vertically adjustable main table of the moulding machine provided with permanent fence; 11th. The combination of the presser foot over the lower cutting cylinder and the swing arm carrying said presser foot, and adapted to be swung laterally entirely clear of the cutting cylinder and its tables; 12th. The combination of the internally adjustable pivoted bonnet and the swivelled supporting standard thereof; 13th. The combination of the endwise adjustable bearings of the upper cutting cylinder and the bonnet supported on such bearings; 14th. The combination of the table, the slide bar connected therewith, the link for automatically sliding said bar and table, and the screw spindle for raising and lowering the table; 15th. The combination of the table, the slide bar and the lever pivoted to the table and adapted to operate on the slide bar; 16th. The combination of the table, the slide bar connected therewith, the lever adapted to operate on the slide bar, the link for automatically moving the latter and the screw spindle for raising and lowering the table; 17th. The fence and its supporting bar directly connected together by cylindrical studs, on one, engaging elongated straight grooves, in

the other, which connection provides for adjusting the fence circularly as well as up-and-down on its supporting bar; 18th. The combination of the fence and its supporting bar directly connected together by cylindrical studs, on one, engaging elongated straight grooves, in the other, and a clamping device for rigidly securing the fence to its supporting bar after the proper adjustment thereon.

No. 10,238. Improvements on Barrels. (*Perfectionnements sur barils.*)

Samuel Wright, Harrison, Ont., 11th July, 1879, for 5 years.

Claim.—1st. A double skin veneer barrel made from stave shaped strips of veneer, the joints of the staves on the one skin being made to overlap or butt, with the joints on the other skin, the whole, when together, forming a jointless bulge; 2nd. A veneer bulge-shaped barrel formed of the stave shaped strips a b, in combination with the hoops C E for retaining the head D; 3rd. The segment F, attached to the spider I to which the segments G H are hinged, in combination with the arm J pivoted to the spider.

No. 10,239. Magneto-Electric Machine. (*Machine magneto-électrique.*)

Wesley W. Gary, Boston, Mass., U.S., 16th July, 1879, for 5 years.

Claim.—1st. The described method of producing induced electrical currents consisting in vibrating an iron armature coiled with wire to and from the neutral line in the field of a permanent magnet; 2nd. In a magneto-electric machine or instrument, the combination of a permanent magnet, an induction coil and a soft iron armature arranged to move wholly within the magnetic field to and from the neutral line; 3rd. In a magneto-electric machine, the combination of a permanent magnet, an induction coil and an armature, and operating mechanism arranged, to vibrate the armature to and from the magnet, from or across the neutral line without departing from the magnetic field; 4th. The combination, in a magneto-electric machine, of a permanent magnet, an induction coil and a soft iron armature, vibrated only from the neutral line toward the magnet and back to the neutral line; 5th. In a magneto-electric machine, the combination of a permanent magnet, an induction coil and a soft iron armature arranged to vibrate to and from, and to stop upon the neutral line in the magnetic field; 6th. The combination, in a magneto-electric machine, of a permanent magnet, an induction coil, an iron armature vibrating wholly within the magnetic field, to or across the neutral line, and an automatic commutator arranged to change the course of the induced current when the armature is upon the neutral line; 7th. In a magneto-electric machine, the combination of a permanent magnet, an induction coil and armature and an automatic commutator or current changer arranged to move as the armature reaches the neutral line in the magnetic field; 8th. In a magneto-electric machine, the combination of a permanent magnet, an armature moving to and from the same and a spring, or its equivalent, arranged to counteract the attractive influence of the magnet; 9th. The combination, in a magneto-electric machine, of a permanent magnet, an armature arranged to move to and from the magnet and spring, or equivalent devices, arranged to offer an increasing resistance to the armature as it approaches the magnet; 10th. The combination of the permanent magnet, the induction coil and the armature extending across both poles of the magnet and arranged to move to or from them both at the same time; 11th. The combination of the permanent magnet, the armature extending across both poles of the magnet, the induction coil, the vibrating lever and the eccentric arranged to vibrate the lever.

No. 10,240. Improvements on Explosive Projectiles and Torpedoes. (*Perfectionnements aux projectiles explosibles et aux torpilles.*)

James H. McLean and Myron Colony, St. Louis, Mo., U.S., 16th July, 1879, for 5 years.

Claim.—1st. A torpedo or projectile provided with magnets for attachment to a ship's side; 2nd. A torpedo provided with a propelling apparatus to cause it to approach an enemy and a magnetic appliance to adapt it to attach itself automatically to an iron body; 3rd. A torpedo or projectile provided with a magnetic appliance for attachment to the side or bottom of a ship and a time firing apparatus to determine the period of explosion; 4th. A torpedo or projectile provided with magnets mounted on pivots to adapt them to turn automatically into their operative position; 5th. A pair of torpedoes hinged in front to a coupling bar and provided with suitable propellers and with a brace adapted to hold them in parallel position, while moving forward, and permitting them to be drawn into line for action; 6th. A torpedo or projectile provided with a magnetic appliance for attaching it to a ship's side or bottom and with a flotation apparatus to regulate the depth of immersion; 7th. A torpedo or projectile constructed with an explosive chamber, one or more flotation chambers and one or more zones of magnets to adapt the torpedo or projectile to attach itself to an iron body; 8th. A torpedo or projectile provided with one or more zones of magnets M M arranged radially in circumferential tiers with their poles presented outward; 9th. A circumferential tier of radial magnets M, interposed discs P and bolts O; 10th. A shell or torpedo charged with an explosive compound contained in balls of elastic material, arranged in tiers separated by discs of elastic material; 11th. A shell or torpedo constructed with an explosive chamber, one or more flotation chambers, one or more zones of magnets and a time firing apparatus; 12th. A torpedo or projectile provided with a mechanical device for effecting its explosion after any desired interval; 13th. A torpedo or projectile provided with a concealed mechanical device for effecting its explosion after a determined period and a stop to prevent the starting of the time mechanism until the torpedo or projectile is to be used; 14th. A torpedo or projectile provided with a concealed device, to effect its explosion after a determined period and a plug to prevent access to the interior of the shell after it is closed for use; 15th. The combination, in a torpedo or projectile, of a time mechanism for determining the period of explosion and an elastic envelope to prevent concussion; 16th. The combination, in a torpedo or projectile, of a time firing mechanism, an elastic envelope therefore and one or more elastic diaphragms having metallic rims; 17th. The combination of a time mechanism and a firing pin or hammer; 18th. The combination of the setting device H, trigger S and firing pin K with a time gearing; 19th. In a time firing mechanism constructed with a spring A, a train of gearing, a setting wheel P, adjustable on its arbor to determine the period of explosion, and a spring pin or hammer released by said setting wheel; 20th. The com-