No. 2001. WILLIAM H. DANIELS, Bryan, Ohio, U. S., 22nd January, 1873, for 5 years: "A Holder for Harvester Cutters while being Sharpened." (Porte-couteaux de moissonneuses pour les affiler.)

Claim.—1st. The combination of the fixed and inflexible angle-irons D, and wedges E, the top rail A, having a longitudinal groove in its upper side beneath the over-hanging ends of the angle-irons and the triangular fixed-brackets C; 2nd. In combination with a reaper-knife holder the foot-rail F.

No. 2002. JOHN C. SHAY, Petroleum Centre, Pa., U. S., 22nd January, 1873, for 5 years: "Pipe-Coupling." (Joints de tuyaux.)

A coupling for metal pipes so constructed as to form a stronger joint than ordinary, being peculiarly adapted to well-tubing, etc.

Claim.—The coupling A, having the projecting thread B, and collars C.

No. 2003. PATRICK DUNN & THOMAS HARRIS, Côte St. Paul, Que., 22nd January, 1873, for 5 years: "Horse-Shoe Nail Machines." (Machines à clou à cheval.)

Relates to improvements in the roll-stock of that class of machine in which the nail is pressed by the roll upon a fixed anvil to draw it to the desired thickness.

Claim.—1st. The wedge-keys F, F, in combination with the nut I, for adjusting the roll-stock G. 2nd The steel pins K, for maintaining the roll-pin L, in position and to receive the lateral friction of the roll J.

No. 2004. JOSEPH B. STEARNS, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Duplex Telegraph." (Télégraphe à double courant.)

Claim.—1st The combination of an electro-magnet coil constructed of two opposing or neutralizing conductors with a key or circuit breaker, so arranged as to close one circuit before it opens the other; 2nd. A neutralizing relay composed of two spools upon each core and cross connected as illustrated by figure 7, of the drawings; 3rd. A neutralizing relay having one or more coils around the armature, and illustrated in figure 16, of the drawings; 4th A neutralizing relay with helices composed of two concentric shells and cross-connected and illustrated by figure 15, of the drawings; 5th. The combination with a neutralizing relay of the construction shown in either figures 7, 15, or 8, of an adjusting magnet, and illustrated by figure 8, of the drawings; 6th. The combination of a condensor with the branch or compensating circuit whereby the effect of static induction upon the receiving relay or instrument is counteracted; 7th. The combination of the induction coils or apparatus with the branch or compensating circuit whereby the effect of static induction upon the receiving relay or instrument is counteracted; 8th. The combination of a relay or receiving magnet with a bridge-wire when arranged in the circuit of said bridge-wire so that said relay will be operated by received currents and not by transmitted currents; 9th. The combination with the polarized magnet or magnets of a bridge-wire when arranged in the circuit of said bridge-wire so that said polarized magnet will be operated by received currents and not by transmitted currents; 10th. The combination with a chemical recording apparatus of a bridge-wire when arranged in the circuit of said bridge-wire so that said chemical recording apparatus will be operated by received currents and not by transmitted currents; 11th. The combination of the resistance coils Y, Y', the resistance coils Z, Z, the relay M, the moveable arm W, and key K; 12th A repeating apparatus constructed and having a mode of operation shown in figure 3, of the drawings; 13th. The combination of the keys F, F², and F³, with the electro-magnets S, S², and S³, circuit breaking lever K, and local battery L, whereby the sounding local circuit is extended from the main to one or more branch offices; 14th The combination of the relay M, local battery *l*, receiving sounders R, R², and R³, whereby the receiving local circuit is extended from the main to one or more branch offices; 15th. The combination of magnets, keys or circuit breakers and conductors for enabling way stations to communicate with terminal stations as illustrated by figure 13, of the drawings; 16th. The arrangement of circuits as illustrated by figure 12 of the drawings.

No. 2005. THOMAS MCCABE, Ottawa, Ont., 25th January, 1873, for 5 years: "A Shingle Machine." (Machine à bardeau.)

Claim.—1st. A shingle machine the combination of the inner-rail C, and outer-rail D, with iron rail *i*; 2nd. The bole-holder K, comprising dog *l*, springs *m* and *s*, rods *n*, *t* and *u*, lifter Z, hammer head *v*, wedge *w*, and pin *p*; 3rd. The combination of short-grooved slides *y*, and racks *x*, with iron-rail *i* and pinions *c*, to run the bole-holders K, and bevel-slides *f*, parallel with the saws; 4th. The combination of the upright posts L, and inclined planes *r*, with the pin *p*, of the bole-holders; 5th. The combination of the four saws M, with the whole machine and the adjustable bearings *e*', to obviate the necessity of setting the bole or saw to alternate the thick and thin ends of the shingles; 6th The combination of the endless screw H, with diagonal toothed spur-wheels T, provided with the friction-springs C', to regulate the pressure on the saws M, and with the pinions *e*; 7th. The combination of the different parts and the machine as a whole substantially as described.

No. 2006. WILLIAM MURPHY, Sackville, N. B., Assignee of Charles H. Straffin, Boston, Mass., U. S., 25th January, 1873, for 5 years: "A Clothes Line Reel." (Un rouet de ligne d'étendage.)

Consists in combining with a reel and frame a friction-plate to arrest the motion of the reel, so that when the line is being drawn out sufficient resistance occurs to prevent it from dragging on the ground.

Claim.—The clothes line reel consisting of the frame B, provided with the dove-tail D, and friction-plate N, and holding the bobbin A, as described.

No. 2007. EDWARD DUFFEE, Haverhill, Mass., U. S., & ANDREW J. TILTON, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Gas Purifier Screen." (Crible pour l'épurage du gaz.)

Consists of a series of independent cylindrical or other proper shaped detachable bars or rods extending across the frame either longitudinally or transversely.

Claim.—1st. The improved gas purifying screen described, consisting of the frame A, B, C, D, and the series of detachable bars *b*, *b*, etc., constructed, arranged and combined together as set forth; 2nd. A gas screen of the kind described having its frame bevelled, grooved or rabetted, in manner and for the purpose set forth

No. 2008. EDWARD DUFFEE, Haverhill, Mass., U. S., & ANDREW J. TILTON, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Gas Purifier Screen." (Crible pour l'épurage du gaz.)

Claim.—A screen for dry coal-gas purifiers, composed of crossed or interlaced thin strips of wood reeved through and supported by a wooden frame-forming the bars A and C, with projecting abutments, and the bars B, D, with extensions, or the equivalents thereof

No. 2009. JOHN S. PATRIC, Rochester, N. Y., U. S., 25th January, 1873, for 5 years: "Laminated Pipe Machinery." (Appareil à tuyaux laminés.)

Claim.—1st. The process of forming pipe, by a continuous winding of wooden splints upon a forming mandrel or core, when such splints pass from a tank of suitable cement with which they are more or less thoroughly saturated and coated; 2nd. An apparatus for winding, wooden splints in the production of pipe, a core provided with an alternate reciprocating movement, in combination with the fixed position of the splint, or vice-versa, for the purpose of compensating for the gain or "lead" of said winding; 3rd. Combination with the car G, the self-adjusting or swing-pulleys P and P1, belts R, and hangers or pivoted arm J and J1; 4th. The arrangement for constructing pipe formed of wooden splints spirally-wound after passing through either asphaltum or other cement upon a core or mandrel consisting either of the diagonally divided cylindrical staves *b* and *b*, as shown in fig. 6, for very small pipe; or the crescent-shaped staves *b*, wedge staves *b*² and axial wedges *n* and *n*¹, shown in fig. 7 for medium sized pipe, 5th. An apparatus for forming pipe from wooden splints wound spirally, the forming mandrel or core composed of staves *b* and *b*¹, and heads H, combined and arranged as shown in fig. 4, or composed of the staves *b* and *b*¹, hoops *h*, and half-heads H and H¹, combined as shown in fig. 3, for the construction of the larger sizes of pipe; 6th. Combination with the staves, and heads constituting the forming cylinder or core for making spirally wound-pipe, the toggle jointed bars F, and rod *g*, or equivalent devices; 7th In an apparatus for making pipe formed by winding several layers of wooden splints spirally, either in the same or opposite directions, and with or without cement, a forming mandrel or core so constructed as to retain, rigidly its cylindrical form during the winding process and capable of being collapsed for removal.

No. 2010. JAMES A. HOUSE, Bridgeport, Conn., U. S., 25th January, 1873, for 15 years: "Improvements on Sewing Machines." (Perfectionnements aux machines à coudre.)

Claim.—1st The projections *p*, *q*, and *r*, making part of the hook K, with the gap between them the former preventing the lifting up of the bobbin while the cast off loop is being drawn up through the gap, said projections being constructed and operating as specified; 2nd. The reversed hook or guards overlapping the seizing hook; 3rd A differential disk *f*3, in combination with two pins *e*², and *f*1, taking into grooves therein, one pin being secured to a driving and the other to a driven shaft and the whole being and acting as set forth to cause one shaft to be moved by another with a differential velocity; 4th. A differential disk *f*3, mounted in a pillow block *f*4, capable of lateral adjustment in combination with two shafts and a pin on each of them entering slots in the differential disk *f*3, whereby one shaft can be caused to revolve at a differential velocity by motion derived from another shaft, and the difference of velocity can be augmented or diminished by adjustment of the disk; 5th. Combination with a hook K, revolving with a differential velocity upon an axis lying in a horizontal plane and a needle acting in a