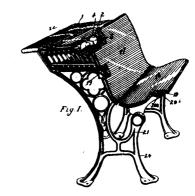
ing beyond or outside of said pivot and having formed therein a longitudinal slot extending from near said pivotal connection to near the end of said extension, a table or bed for supporting the working parts of the machine and the paper or other material to be operated upon, a grooved T-shaped bar or plate mounted upon said table, a fulcrum pen mounted in the slot in the bar D and extending into the groove in said T-shaped bar and freely adjustable towards and from the pivotal connection of the bars D and E, the plate B2 fitted to and movable in a transverse groove in said Tshaped bar and adapted to maintain the pivoted ends of the bars D and E at the desired height above the table, a pivoted radius arm and a raised bar or bars for supporting the opposite ends respectively of said bars at the desired elevation, a pattern plate suspended above the pencil carrying bars, a guide carrying lever or arm detachably mounted directly above one of said pencil carrying bars, and a guide carrying wheel or truck mounted upon a revoluble crank carried by said guide lever or arm in such a manner that its point or contact with the pattern will always be in axial line with the centre of one of the pencil holding sockets. 5th. In a machine for outlining and proportioning patterns of different sizes from a single model, the combination with the four bars, E, F, G, and I', of an ordinary contact that the size of th of an ordinary pantograph, a series of pencil carrying bars of different lengths arranged between and parallel to the bars, F and G¹, a ent lengths arranged between and parallel to the bars, F and G^1 , a table or bed for supporting the working parts of the machine and the material to be operated upon, the T-shaped bar B provided with the two grooves c^3 , c^4 , arranged at right angles to each other, said bar being mounted upon said table and movable thereon in the direction of the length of the groove c^3 , the plate B fitted to and movable endwise in the groove c^3 , the bar D pivoted at d^2 to the bar E and the plate B and provided with the slot f, a fulcrum pen adjustably secured in said slot f, and projecting into the slot c^3 in the bar B¹, the radius arm B⁴ and the bars A and A⁴ for supporting the movable ends respectively of the bars E and D, and means having provision for moving the T shaped bar B¹ the plate B² and the pantograph pivoted thereto in a direction parallel to the means having provision for moving the T snaped par 15¹ the plate B² and the pantograph pivoted thereto in a direction parallel to the front of table the and locking it in its adjusted position, substantially as described. 6th. In a pantograph machine the combination of the bars D, E, F, G¹, I, I¹ and a series of pencil carrying bars mounted upon the bars B¹ I and I between the bars F and G¹ the base fin the bar D a table for supporting the working and G¹ the slot f in the bar D, a table for supporting the working Parts of the machine, a pivoted radius arm, and raised bars for supporting the movable ends of the bars E and D respectively, a bar or plate having a groove in its upper side extending in the direction of the length of the table and parallel with its front side, a fulcrum pm adjustably secured in the slot f and engaging with the groove in said grooved bar, the pin d connecting the bars D and E and means having provision for moving said pivotal connection of the bars D and E in a straight line at right angles to the front edge of the table. and E in a straight line at right angles to the front edge of the table A, the raised bars A¹ and A², the T shaped bar B¹ having grooves c³ and c⁴, the plate B², the bars D, E, F, G⁴, I and I⁴, a series of pencil carrying bars arranged between and parallel to the bars F and G⁴ the pivot pin d² connecting the bars D and E to the plate B², the fulcrum pin g adjustably secured in the slot f in the bar I and extending into the group c³ in the bar R the red C⁴ unwarted above the pencil the groove c3 in the bar B, the rod C1 supported above the pencil ranging bars in a position parallel to the upper surface of the table, the hub or sleeve C² fitted to and adjustable endwise of said rod the T shaped pattern carrier C³, C⁴ adjustably mounted in a bearing in the hub C², the pattern C⁵ suspended from said carrier above the pencil carrying bars, the arm K mounted above and movable with one of said. one of said pencil carrying bars, and the truck l^3 mounted upon a crank pin revoluble with an axle set in said arm with its axis directly beneath the periphery of said truck at the bottom of its groove, and in axial line with one of the pencil holding sockets. 8th. In a pantograph the combination of a series of pencil carrying bars of differestign the combination of a series of pench carrying oars or unre-ent lengths arranged parallel to each other, of a table for supporting the working parts of the machine and the material to be operated upon, a pattern plate suspended above the pencil carrying bars, a guiding wheel or truck mounted upon a revoluble crank carried by an arm basted diseased ways less with one of said pencil carrying an arm located above and movable with one of said pencil carrying bars, and a handle connected to said truck carrying arm by a universal versal or swiveling joint as a means of manipulating said arm in carrying the truck around the pattern. 9th. In a pantograph machine the combination of the table A, the bars N. N. provided with the oblique slots pland at one end with a series of rack teether arranged in the pattern. with the oblique slots p^1 and at one end with a series of rack teem arranged in a plane parallel to the sides of the slots p^1 , the toothed segments p^2 , the shaft O, the handle P, and the paper holding bars M M provided with the hook ends M¹, substantially as described. 10th. In a pantograph the combination with the pencil bar of the tubular socket h provided with the peripheral groove s, the pencil or knife carrying spindle r fitted to be movable vertically therein, the stand q provided with the arm q^1 and the catch q^2 and stepped in the groove s, the lever r^1 fulcrumed in the stand qsteeped in the groove s, the lever r^1 fulcrumed in the stand q and pivoted to the spindle r, the locking latch levers q^3 , and the springs q^4 and t, all constructed, arranged and operating, substantially as described in the spindle q^4 and q^4 and springs q⁴ and t, all constructed, arranged and operating, substantially as described. 11th. In a pentograph, the combination of a series of pencil or knife carrying bars of different lengths arranged parallel to each other, the bar C arranged above said pencil carrying bar, the bar R¹, the sleeve R², secured to one end thereof, the rod C³, the sleeted by R² adjustably mounted on said rod \overline{C}_3^{s} , the bar K^1 , the sleeve K^s , secured to one end thereof, the local C_3^{s} , the slotted bar C^4 , the clamp R adjustably mounted on said rod C_4^{s} , the pendent studs e^1 , e^1 , adjustably secured in the slotted bar C_4^{s} , a pattern plate secured to said studs e^1 , e^1 , and the clamp R, the arm K, the crank l^1 , carried by said arm K, and the truck l^3 ,

mounted on the crank pin with the periphery of its groove directly over the axis of the shaft of said crank, substantially as described. 12th. The combination in a pantograph machine, of the bars D and E pivoted together at d^2 , a series of pencil or knife carrying bars of different lengths arranged parallel to each other and connected together so as to maintain such parallelism, slides connecting two of said pencil carrying bars to the bar D, so as to be freely movable endwise thereof, and one of said pencil carrying bars as F extending across and beyond the bar E, a series of graduations on each of said bars E and F, and the two slides E^1 and E^2 pivoted together and fitted to and adjustable on the bars E and F respectively, substantially as described. 13th. In a pantograph provided with a series of pencil or knife carrying bars of different lengths arranged parallel to each other, and a model pattern arranged above said bars, the combination of the two studs J and J^1 , each provided with a series of three holes u^3 , u^4 and u^5 , the arm K, provided with two series of three holes u^n , u^1 and u^2 , arranged as set forth, the removable pins j and j^1 , and the crank l^1 and l^3 , carried by said arm K all constructed, arranged and operating, substantially as described.

No. 42,829. School Desk. (Pupitre d'école.)



Walter H. Morden and Alexander John Gilmour, both of Toronto, Ontario, Canada, 6th May, 1893; 6 years.

Claim.—1st. A spherical ink well for school desks, provided at or near the top of its vertical axis with an opening, the edge of said opening provided with an outwardly extending lug or ear adapted to engage the edges of the opening in the desk top, the combination with suitable means for securely holding said ink well in place and allowing it a partially longitudinally revoluble movement, substantially as described. 2nd. A spherical ink well for school desks, located in the underside of the desk top and provided at or near the top of its vertical axis with an opening and at one side of the latter, with an outwardly extending lug adapted to engage the opening in said desk top, and longitudinal groove encircling said ink well, in combination with a support located within said groove and concombination with a support located within said groove and connected to some convenient part of the desk, said support allowing the ink well a partially revoluble movement, substantially as described. 3rd. A spherical ink well for school desks, provided at or near the top of its vertical axis with an opening, the edge of which opening is fitted with an outwardly extending lug or ear adapted to engage the opening in the desk top, a longitudinal groove or channel encircling said ink well, in substitution with an outward leasted within a constitution with a stable groups. combination with suitable support located within said groove or channel, said support allowing the ink well a longitudinally revoluble movement, which movement is arrested by means of the aforesaid lug or ear, substantially as described. 4th. A spherical ink well for school desks, provided at or near its vertical axis with an opening, the edge of which opening is fitted with an outwardly at opening, the edge of which opening is never with an outwardly extending lug or ear adapted to engage the opening in the desk top, a longitudinal groove or channel encircling said ink well, in combination with a support or bearing consisting of a U-shaped band, the ends of which band are connected to the under side of the desk top and curved portion located within said groove or channel, said support allowing the ink well a longitudinally revoluble movement, support allowing the ink well a longitudinally revoluble movement, which movement is arrested by means of the aforesaid lug or ear, substantially as described. 5th. In a spherical ink well for school desks, provided at or near the top of its vertical axis with an opening, the edge of which is fitted with a lug or ear, and a longitudinal groove or channel encircling said ink well, in combination with a support or bearing consisting of a U-shaped band, the ends of which are connected to the under side of the desk top, and the which are connected to the under side of the desk top, and the curved or rounded portion located within said groove or channel, forming a semi-spherical bearing for said ink well and allowing said ink well a longitudinally revoluble movement, which movement is arrested by means of the aforesaid lug or ear coming in contact with the edge of the opening through the desk top, substantially as described. 6th. A spherical ink well for school desks, provided at or near the top of its vertical axis with an opening, the edge of which opening is provided with an outwardly extending ear or lug. or near the top of its vertical axis with an opening, the edge of which opening is provided with an outwardly extending ear or lug, a longitudinal groove or channel encircling said ink well, in combination with a support or bearing consisting of a U-shaped band, the ends of which are connected to the top plate supported on the