March 8, 1927. 1,620,570

J. H. REYNOLDS

AUTOMATIC GLUING MACHINE FOR APPLYING PAPER TO WOOD

Filed March 10, 1923 3 Sheets-Sheet 1

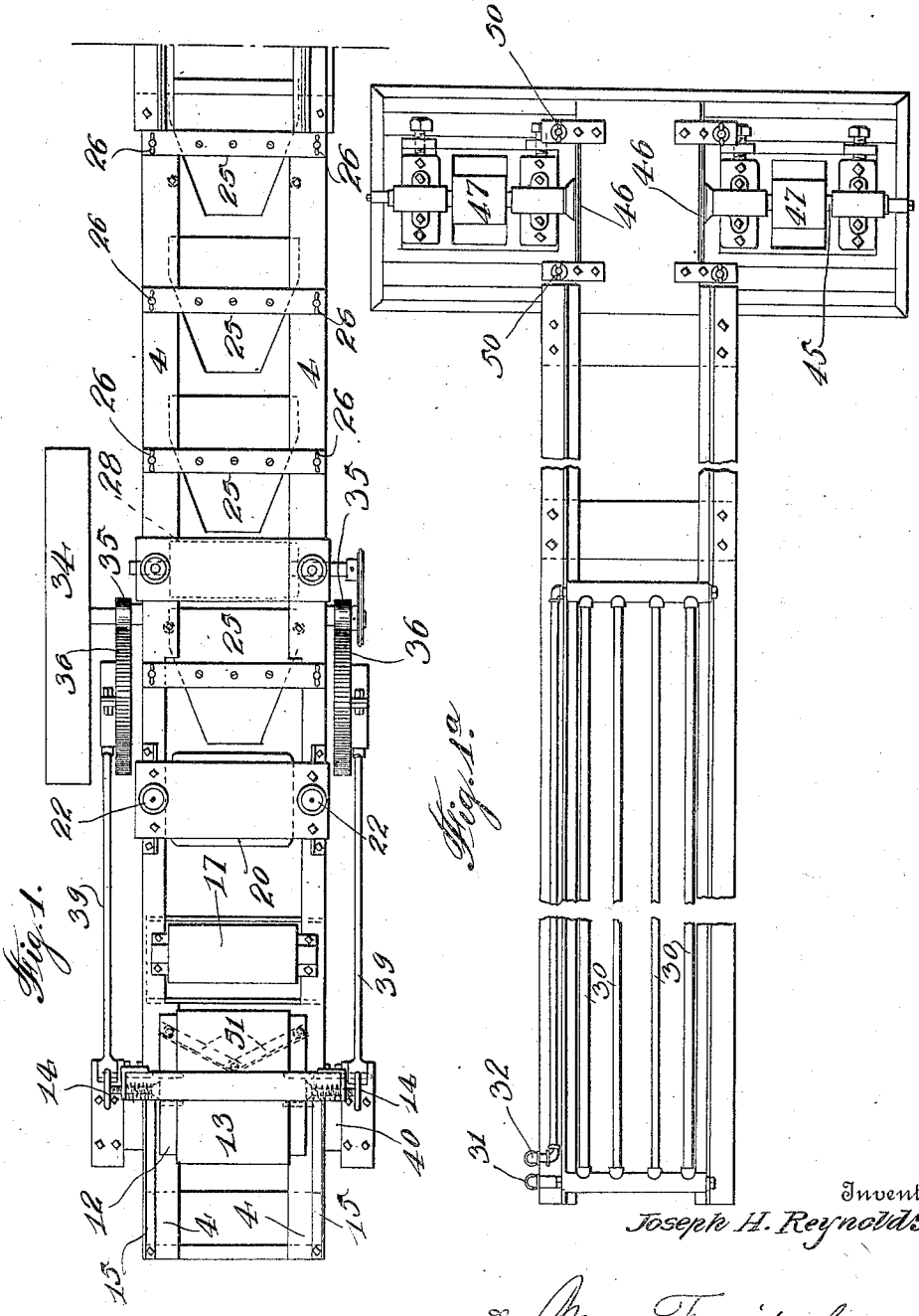


Fig. 1.

Fig. 1a.

Inventor
Joseph H. Reynolds

By Mann, Fennick & Lawrence.
Attorneys

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J. H. REYNOLDS

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Filed March 10, 1923 3 Sheets-Sheet 2

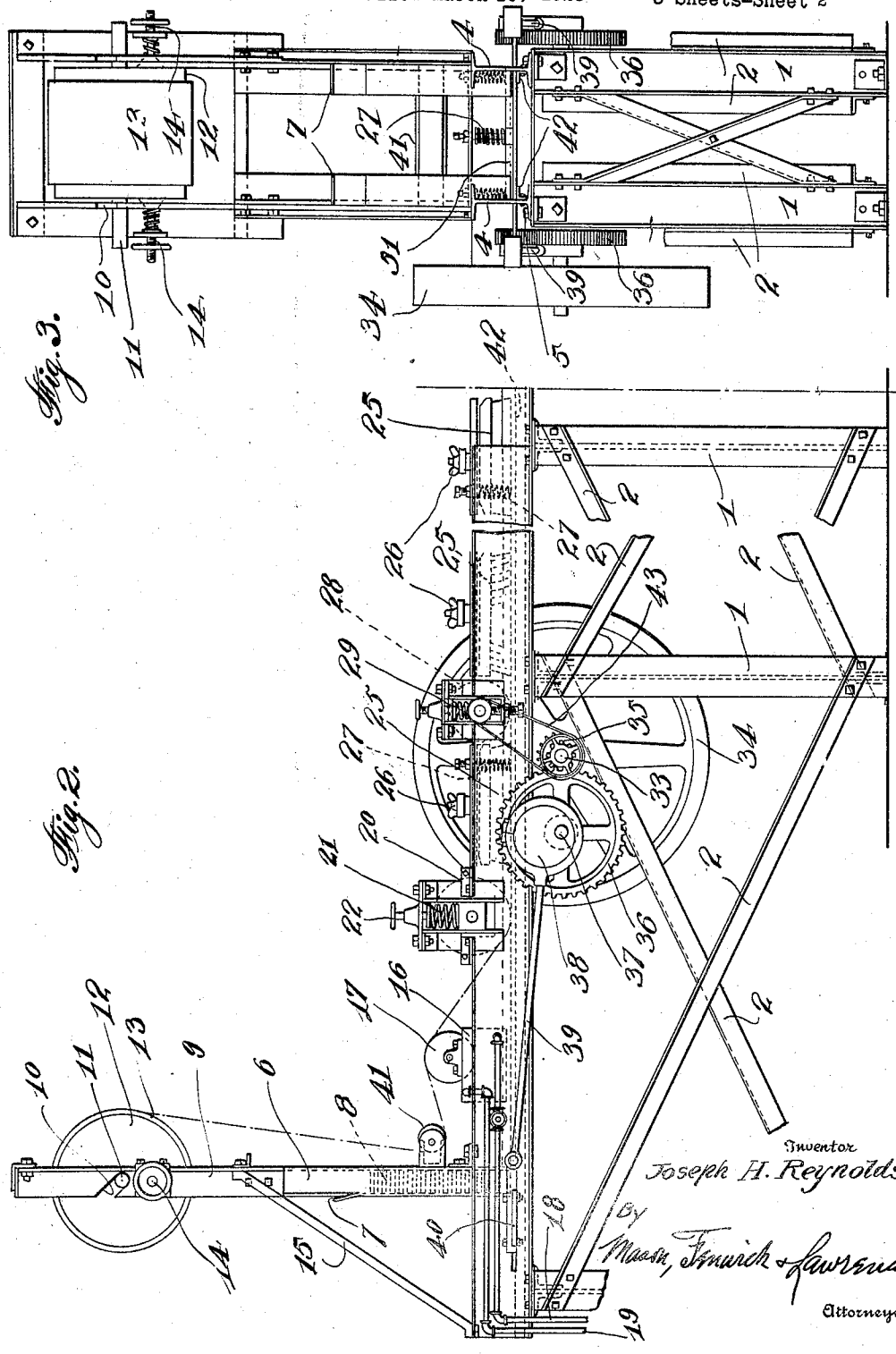


Fig. 3.

Fig. 2.

Inventor
Joseph H. Reynolds
By Munn, Fenwick & Lawrence
Attorneys

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J. H. REYNOLDS

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Fig. 4.

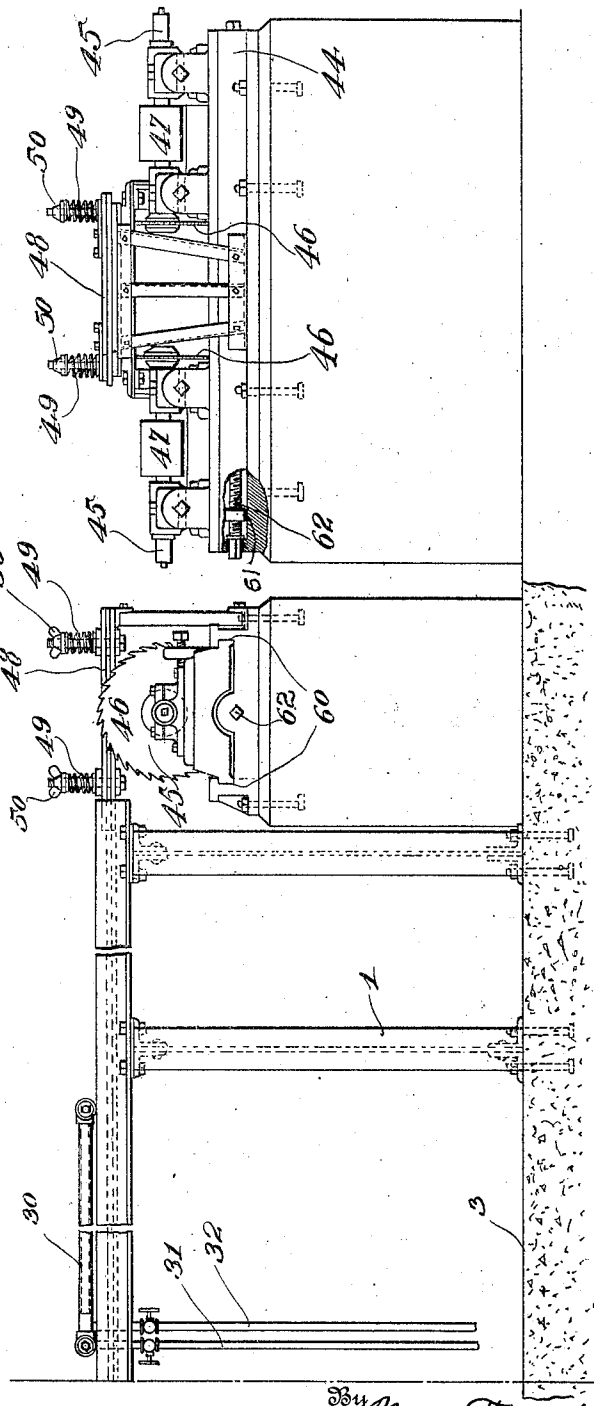


Fig. 2a.

Inventor
Jos. H. Reynolds

By Mason, Fenwick & Lawrence.
Attorneys.

Patented Mar. 8, 1927. 1,620,570

UNITED STATES PATENT OFFICE.

JOSEPH H. REYNOLDS, OF BRISTOL, TENNESSEE.

AUTOMATIC GLUING MACHINE FOR APPLYING PAPER TO WOOD.

Application filed March 10, 1923. Serial No. 624,196.

This invention relates to improvements in mechanism for manufacturing parquetry flooring, and more especially to mechanism for applying glue to a suitable backing which is securely affixed to the upper surface of the adjacent flooring strips as they are fed through the machine to form a continuous strip of flooring material.

An object of the invention is to provide suitable means for applying glue to a paper backing, or other material, and then applying and rolling the same on the upper surface of the strips of flooring to form a continuous strip that may be cut as desired to form the correct size for use in the manufacture of parquetry flooring.

Another object of the invention is to provide a suitable machine for securing together the separate pieces constituting a given form or pattern of flooring, together with means for sawing the opposite edges of the assembled strips so that the same will be of exact width throughout its entire length.

Other objects will appear as the description proceeds.

In the accompanying drawings, which form a part of this specification:

Fig. 1 is a plan view of my improved mechanism;

Fig. 1A is a continuation of the plan view of Figure 1;

Fig. 2 is a side elevation of my improved mechanism;

Fig. 2A is a continuation of the side view of Figure 2;

Fig. 3 is a front end elevation of my improved mechanism; and

Fig. 4 is a rear elevation of my improved mechanism.

Like characters of reference are used throughout the following specification and drawings to designate like parts.

A suitable frame is formed of the upright posts —1— and diagonally extending bars —2— and extends substantially parallel with the floor —3—. Spaced I-beams —4— are positioned at either side of the frame and are attached thereto by means of the bolts —5— and extend the approximate length of the frame, and are adjustable laterally to receive various lengths of strips.

A feeding chute —6— is positioned adjacent the forward end of the machine, and is provided with an outwardly extending opening —7— to receive the strips of wood —8— which are to be secured together. A frame —9— is positioned at the top of the chute —6— and is provided with the downwardly extending slots —10— which are adapted to receive the bar or supporting rod —11—, on which is mounted a roller —12— which carries the supply of paper or other material —13—. Adjustable resiliently mounted tensioning means —14— are positioned at either side of the frame —9— and are adapted to engage the opposite ends of the roller —12—. Re-enforcing strips —15— are connected with the chute —6— and the upper portion of the I-beams —4— to rigidly hold said chute in fixed position.

Inwardly extending members —51— are positioned between the I-beams —4— and intermediate the chute —6— and pot —16— and are spring tensioned so that the members will keep a firm pressure on the last strip of wood —8— just after it is withdrawn from the chute —6—, thereby preventing the backing up of the strips, and holding the same until the glued material is applied on the strips and properly adheres and dries without interfering with the action of the feed finger connected with the eccentric —38—, and allows each strip to be fed in the machine with an evenly timed action. It will be further seen that the resilient tensioned pressure roll —20— and brushes —23— and —24— and —25— and —28— will further tension the strips of wood so that the whole operation will be a continuous and even one and will hold the strips in fixed position until the glued material is firmly adhered thereto.

Positioned between the I-beams —4— and slightly to the rear of chute —6— is a glue pot —16— which has mounted therein a roller —17— which rotates in the glue. A suitable inlet pipe —18— is connected with the glue pot —16— and is adapted to carry the liquid glue into the pot. At the top of the pot —16— is an overflow pipe —19— which is adapted to carry off the surplus glue, or overflow.

A suitable rubber pressure roller is mounted between the I-beams —4— and slightly to the rear of the glue pot —16—, and is provided with springs —21— at its opposite ends and manually operated means —22— for tensioning the pressure on said roller.

Suitable brushes —25— are detachably held in position between the I-beams —4— by means of the wing nuts —26— and are so

mounted as to be tensioned by means of the adjustable tension springs —27—.

A rotary brush —28— is mounted between the I-beams —4— and is provided with an adjustable tensioning means —29—.

Positioned to the rear of the brush —25— and spaced above the frame is a heating or drying coil —30— which is provided with an inlet pipe —31— and an outlet pipe —32—, so that hot water or steam may be admitted to the heating coil.

A main driving shaft —33— is rotatably mounted below the I-beams —4— and carries at one of its ends a driving pulley —34— to which any suitable source of power may be attached to operate the mechanism. Positioned at either end of the said shaft —33— are gear wheels —35— which are in mesh with the gear wheels —36— mounted on the axle of shaft —37—. Eccentrics —38— are mounted on the shaft —37— and are provided with arms —39— which are pivotally connected with the slidable and removable feed finger —40— and cause the same to reciprocate backward and forward to intermittently feed the strips 8 from the chute 6 along the angle irons 42. The paper, or other material, —13— is adapted to pass about the idling pulley —41— and up over the top surface of the gluing roller —17— where a coating of glue will be applied to its lower surface. The strips of wood —8— are continuously fed into the feeding chute —6— by an operator and are intermittently withdrawn from the chute and forced toward the rear of the machine along the angle irons —42— as just described.

Thus, it will be seen that as the strips of wood —8— are fed along the angle irons —42—, they will pass under the spring tension roller —20— together with a freshly glued strip of binding paper, or other material, —13—. Since the eccentrics are continuously operated to force the strips of wood toward the rear of the machine they will pass first under the pressing roller —20— where the glued paper will be pressed firmly on the upper surface of the same after which they will pass under the brush —23— and adjustably tensioned brush —28—, and brush —25—. A suitable driving pulley —43— will be connected from the shaft —33— to the rotary brush —28—. The passing of the strips of wood with the glued paper, or other material, on their upper surface under the several brushes and roller will cause the said paper to be affixed to the strips. After this, the strips will pass under the heating coil —30— where the glue will be positively dried if it is not dried when the strips of wood and paper, or other material, pass under the brushes and roller.

A suitable frame —44— is mounted transversely at the rear end of the machine and carries the adjustable shafts —45— which have mounted thereon the rotary saws —46—. Suitable pulleys —47— are mounted on the shafts —45— so that the same may be rotated at a very high rate of speed. The shafts —45— are so mounted that the saws —46— may be adjusted inwardly and outwardly on the transversely extending beds —60— through the action of the nuts —61— on the spiral adjusting screws —62— to cut the desired amount from the strips of wood —8—. Clamping members —48— are tensionally mounted adjacent the saws —46— by means of the springs —49— and adjustable wing nuts —50— to hold the strips in rigid position while being forced by the eccentric action of the machine through the saws.

The main frame of the apparatus is adapted to be moved laterally throughout its entire length, in order that the desired length of strips may be run through the same.

Many minor changes in details of construction may be resorted to without departing from the spirit of the invention.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent of the United States, is:

A machine for applying and gluing strips of paper to wood, comprising a frame, a second frame vertically arranged on the first named frame having a feeding chute adapted to receive a plurality of wooden strips, means for holding a paper roll, a removable reciprocating feeding finger for forcing the wooden strips from the chute along the frame, eccentric means for operating the feeding finger, and means for applying glue to the paper comprising a glue pot mounted on a frame and having rotatably mounted therein a roller which functions to rotate in the glue, a suitable resilient pressure roller mounted on the frame in the rear of the glue pot, suitable springs at the ends of the pressure roller and manually operated means for varying the tension on the roller and the paper for gluing to the wooden strips, suitable brushes detachably held in position on the frame, a resilient member for tensioning the brushes, a rotary brush mounted on the frame suitably provided with an adjustable tension means and a heating coil spaced above the frame, thereby providing a machine wherein strips of wood are fed along the frame passing, together with the glued paper, under the brushes and roller, thereby causing the paper to be affixed to the strips, after which the strips are dried by passing under the coils.

In testimony whereof I affix my signature.

JOSEPH H. REYNOLDS.