K. Vogel.
Weaving Heddle.

No. 7,553. Patented Aug. 6, 1850.

Fig. 3.

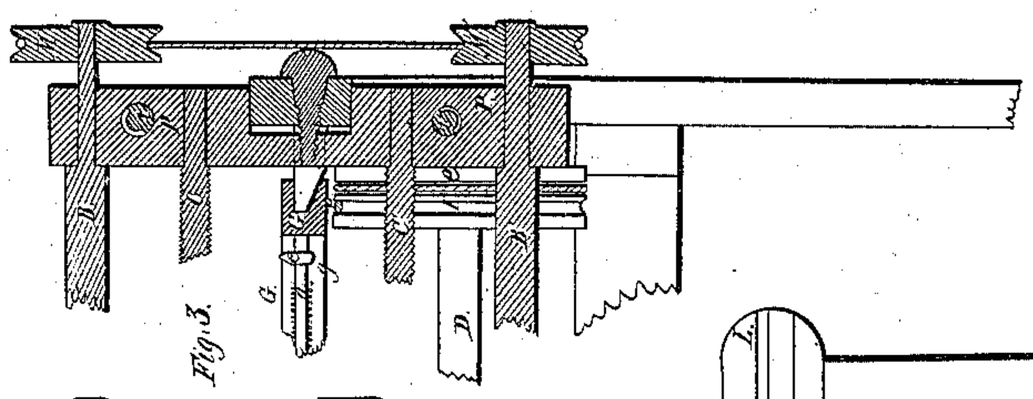


Fig. 4.

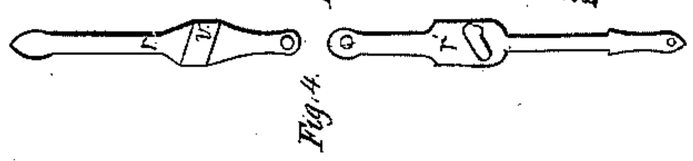


Fig. 1.

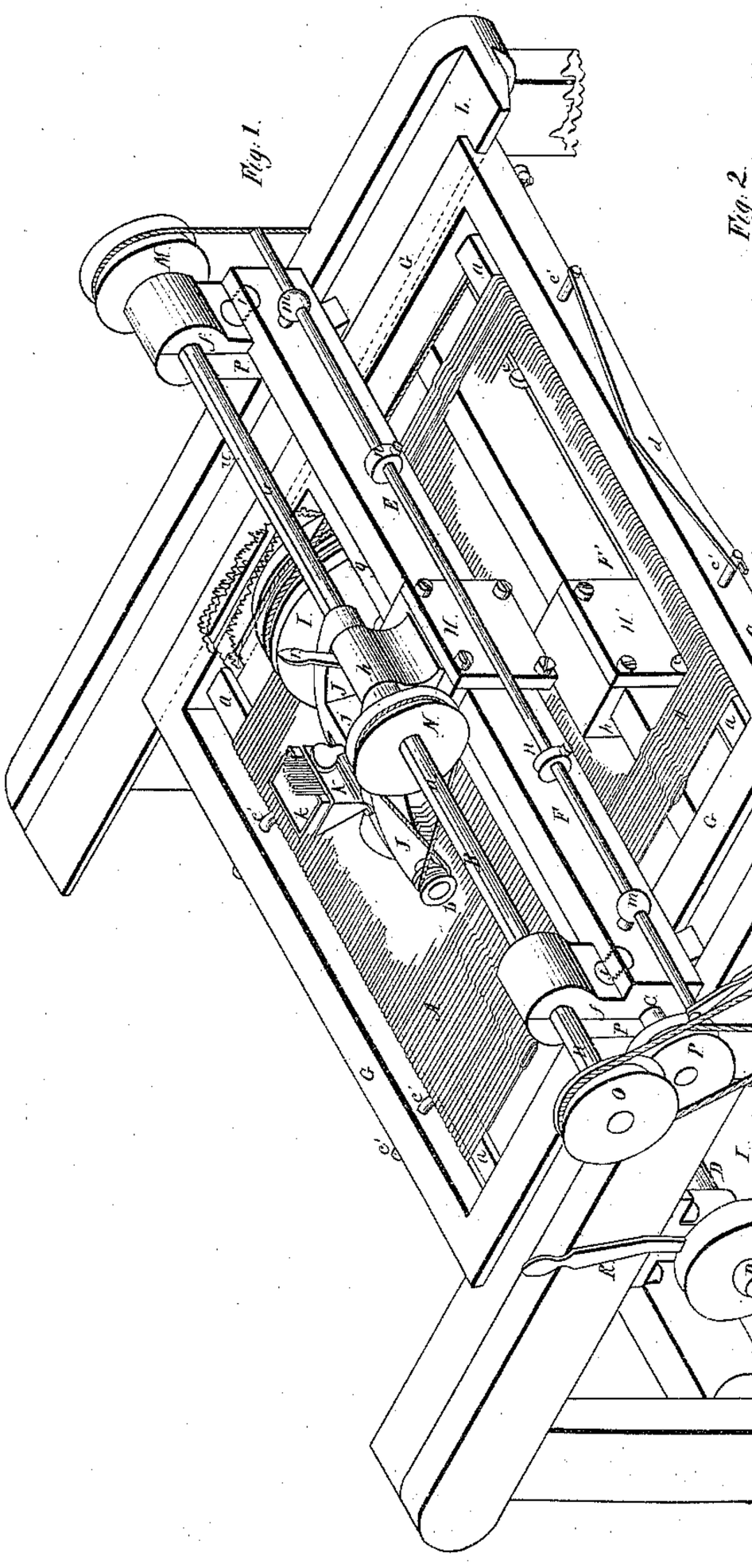
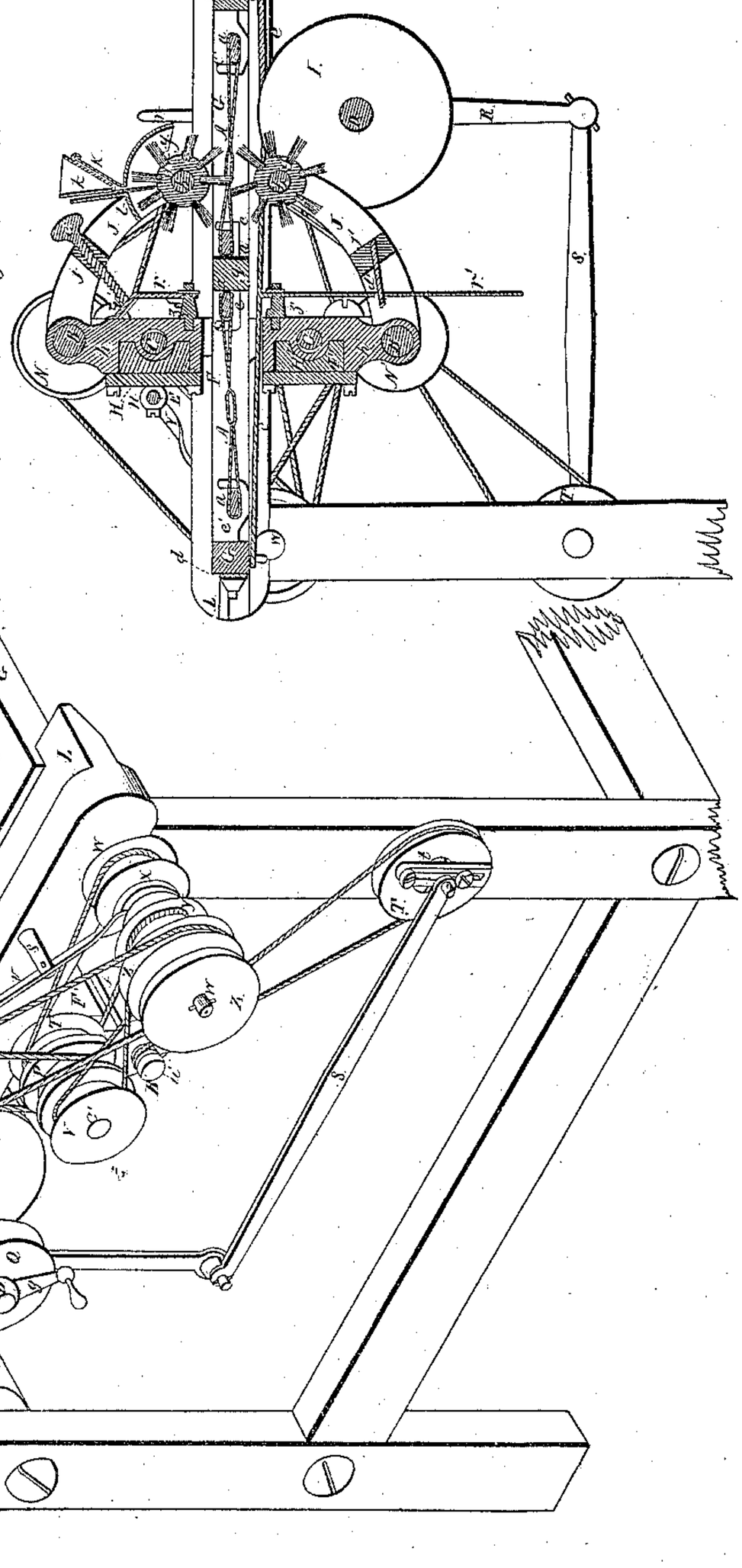


Fig. 2.



UNITED STATES PATENT OFFICE.

KASIMIR VOGEL, OF WESTBROOK, MAINE.

IMPROVEMENT IN MACHINERY FOR DRESSING WEAVERS' HARNESSES.

Specification forming part of Letters Patent No. **7,553**, dated August 6, 1850.

To all whom it may concern:

Be it known that I, KASIMIR VOGEL, of Westbrook, in the county of Cumberland and State of Maine, have invented a Machine for Dressing Weavers' Harnesses with Size, Varnish, &c.; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an isometrical perspective view of the machine with some portions of the frame thereof broken out; Fig. 2, a vertical transverse section through the center of the machine; Fig. 3, a vertical longitudinal section through the center of a portion of the left-hand end of the machine, and Fig. 4 a side view of parts of the machine detached.

Similar letters indicate like parts in all the figures.

The frame of the machine may be constructed in any well-known or usual manner. A rectangular sliding frame composed of the side and end pieces G G and the central longitudinal bar *g* is placed within the machine and supported by means of the tongues L L, that project inward from the sides of the upper end beams of the machine-frame into grooves in the ends of the sliding frame. In this said sliding frame G G the harnesses A A are placed and stretched preparatory to their passing through the operation of sizing or varnishing. The permanent hooks *c c*, that project inward from opposite sides of the bar *g* of the sliding frame, receive one each of the pair of harness-bars *a a*, and the movable hooks *c' c'*, the shanks of which pass through holes in the side bars G G of the sliding frame, receive the other bars *a a* of each pair of harness-bars. The outer ends of the shanks of each pair of the hooks *c' c'* are connected to the ends of the spring *d*, which draws them outward, and thereby stretches the threads which compose the harnesses, as represented in Fig. 1.

Longitudinal guiding-beams F F' extend from one end of the frame of the machine to the other, which are made fast to the upper end beams of the frame a short distance from their centers, the beam F being above the end beams of the machine-frame and the beam F' below the same and directly under the beam F. The ends of the beams F F' are connected to (or cast with) the uprights *f f*, and to the front flat sides of the uprights *f f* are secured by means of the screws *i i* the uprights *p p*. Semicircular concavities are formed in the inner surfaces of the uprights *p p* and *f f*, which are brought opposite each other, and receive the journals of the shafts B B' and the screw-shafts C C'.

A spindle *w* projects from the corner of the right-hand end of the machine, on which is placed the driving-pulley Z. The driving-pulley Z is made fast to the front end of a sleeve or tubular shaft that projects inward the whole length of the spindle *w*, and on which is placed the pulleys Y and W and the clutch X, located between the said pulleys. The pulleys Y and W play loosely on the sleeve of the driving-pulley Z, save when they are connected therewith or disconnected from, it by the longitudinal movement of the clutch X to the right or left.

The clutch X is made to turn with the sleeve of the driving-pulley Z by means of a feather on the sleeve, which fits into a groove within the clutch. The clutch is automatically moved longitudinally by means of the lever *v*, one end of which is connected to the clutch and the other to the end of the sliding rod E, the said lever *v* being also jointed to the stud *s*, which serves as its fulcrum. The sliding rod E is supported by and works in the guides *m m*, which project from the rear side of the beam F. The manner in which the sliding frame is reciprocated will be explained farther on.

The driving-pulley Z is banded to the pulley O on the front end of the shaft B. The pulley Y on the sleeve of the driving-pulley is connected by a crossed band with the pulley V on the end of the screw-shaft C', and the pulley W is connected by an uncrossed band with the pulley T' on the same screw-shaft C'. By moving the clutch X to the left the pulley W will be connected thereto and revolve with the same, and the pulley Y will play loosely on the sleeve of the driving-pulley in an opposite direction, and by moving the clutch X to the right the pulley Y will be connected thereto and revolve with the same, and the pulley W will play loosely on the sleeve of the driving-pulley. It will therefore be perceived that the motion of the screw-shaft C' will be reversed at every movement

of the clutch X from right to left, or vice versa. The screw-shaft C′ is connected with and imparts a corresponding motion to the screw-shaft C by means of a band which unites the pulley P′ on the former to the pulley P on the latter. The shaft B is connected to the shaft B′ and imparts a corresponding motion thereto by means of a band which unites the pulley M on the former to the pulley M′ on the latter, as shown in Fig. 3.

T is a pulley which works upon a bearing made fast to the post of the machine below the spindle *w*, and is driven by a band which connects it with the right-hand end of the shaft B′, as shown in Fig. 1. An adjustable crank-wrist *t′* is secured to the front side of the pulley T by means of set-screws, as shown in Fig. 1, by which its distance from the center of the pulley can be varied as circumstances may require. A pitman S connects the crank-wrist *t′* with the lever R, which is placed upon the shaft D. The said lever R plays loosely on the shaft D, save when its curved elastic upper end is sprung into a notch in the inner surface of the pulley Q, which pulley Q is permanently secured to the left-hand end of the shaft D, as shown in Fig. 1. It will thus be perceived that when the pulley T is rotated and the lever R is sprung into the notch in the pulley Q an oscillating motion will be communicated to the shaft D, which movement of the shaft D will impart a reciprocating motion to the frame G G by means of the pulleys I I on the shaft D and the bands *e e* surrounding the same, with their extremities made fast to the under surfaces of the sides of the said reciprocating frame.

During the before-described reciprocating movement that is imparted to the frame G G the harness A, that is stretched therein, is dressed with size or glue in the following manner: A box *h*, of the form shown in Figs. 1 and 2, is combined with the shaft B, the screw-shaft C, and the beam F, the shaft B passing through a hole in the top of *h*, the screw-shaft C passing through a female screw formed in an opening near its center, and the beam F fitting accurately into a recess in the rear side of *h*. The plate H, placed on the rear side of the beam F, is combined with the box *h* by means of set-screws. A frame composed of the curved arms J J, connected by the transverse pieces *j*, is combined with the shaft B and the sliding box *h* H by means of holes in the rear ends of the arms J J, that receive the shaft B, after the said arms have been placed on each side of the upper end of the sliding box *h*. Holes are formed in the front ends of the arms J J, that receive the shaft *b* of the circular brush *y*, and over this brush there is placed and secured to the arms J J the receptacle K *k*, in which the size or glue is placed for dressing the harness. A pulley N is placed on the shaft B by the side of one of the arms J and connected to the shaft by means of a feather on its inner periphery, passing into the groove *u* in the shaft, and to the arm J by a clutch, so that the said pulley will rotate with the shaft B and also move longitudinally with the frame J *j* and the sliding box *h* H. The pulley N is banded to a pulley on the shaft *b* of the rotary brush *y* and imparts motion thereto. A box *h′* H′, a frame J′ *j′*, a pulley N′, and a rotary brush *y′*, exactly corresponding in shape with the box *h* H, the frame J *j*, the pulley N, and the rotary brush *y*, are combined with each other and with the beam F′, the shaft B′, and the screw-shaft C′ in the same manner that the said parts *h* H, J *j*, N, and *y* are combined with each other and the beam F, shaft B, and screw-shaft C. The frames J *j* and J′ *j′* are adjustable in their positions, so that the brushes *y y′* can be brought so near to each other as to bring their peripheries in contact with each other and with the harness A, or they can be so far separated as not to touch the harness. The frame J *j* is moved up or down by the action of the lever *r* as follows: At its lower end the lever *r* is jointed to the stud *z*, projecting from the box *h*. A set-screw *c′*, which passes through the portion *j* of the frame J *j*, bears against the inclined plane *v′* on the front side of the lever *r*, so that by moving the lever *r* to the right the action of the said inclined plane *v′* on the extremity of the screw C′ will elevate the frame J and the brush *y*, and by turning the lever *r* to the left the said frame and brush will be permitted to descend. The frame J′ *j′* and the brush *y′* are elevated or depressed by means of the lever *r′* as follows: The upper end of the lever *r′* is jointed to the stud *z′*, projecting from the box *h′*, and the pin *d′*, projecting from the transverse piece *j′*, that unites the arms J′ J′, passes through an inclined slot in the lever *r′*. (Shown in Fig. 4.) It will be perceived, therefore, that by moving the lever *r′* to the left the frame J′ *j′* and the brush *y′* will be elevated, and by turning the lever to the left the said frame and brush will be depressed.

The size or glue is placed in the receptacle *k*, which has a finely-perforated bottom, and is placed within the outer casing K, that has an open bottom. A thin web of bristles is placed between the rear sides of the receptacle *k* and the casing K, which extends down to such a distance below the bottom of *k* as to come in contact with the brush *y*, and consequently serves to conduct the size or glue from the receptacle to the rotating brush and to evenly distribute it thereon.

The rotary movement of the screw-shafts C C′ will impart a longitudinal movement to the frames J *j* and J′ *j′* and the parts combined therewith, which movement will be automatically reversed in the following manner: Nuts *n n* are placed upon the rod E, (which is located in the guides *m m*, projecting from the rear side of the beam F,) and their position is regulated by set-screws.

The plate H projects a sufficient distance from F to strike against the nuts *n n*. When, therefore, the movement of the box *h* H brings the plate H in contact with one of the nuts *n*, it will move the rod E, the lever *v*, connected to its right-hand end, and the clutch X, and thereby will throw one of the pulleys W or Y out of gear and the other into gear with the driving-pulley, which will reverse the motion of the screw-shafts C′ C in the manner before described, which will reverse the longitudinal movement of the frames J *j* and J′ *j*′ and the parts combined therewith, causing the brushes *y y*′ to traverse and act upon the entire length of the harness at the same time that the reciprocating movement of the frame G will cause the said brushes to act upon any desired portion of the width of the harness. The upper brush *y* lays the size or glue upon the upper side of the harness smoothly and evenly, and the under brush *y*′ receives a portion of the size or glue from the upper brush *y* and lays it smoothly and evenly upon the under side of the harness. When the harness in the front end of the frame G G has been sufficiently dressed with size or glue, the brushes *y y*′ are thrown outward from each other by means of the lever *r r*′, and the lever R is sprung out of the notch in the pulley Q. The shaft D is then turned around by taking hold of the crank *q* until the lever R again springs into the notch in the pulley Q, which will occur at the moment that the center of the harness in the rear end of the frame G G is brought between the brushes *y y*′. The brushes are then moved inward and brought in contact with each other and the harness, when the operation of dressing the harness is proceeded with in the manner above described. While the harness in the rear end of the frame G G is being dressed with size or glue the harness in the front end of the said frame that has previously been dressed is removed and an undressed harness is secured in its place.

Instead of bands and pulleys for communicating motion from one part of the within-described machine to another, cog-wheels and pinions may be made use of.

Having thus fully described my machine for dressing weavers' harnesses with size, glue, &c., what I claim therein as my invention, and desire to secure by Letters Patent, is—

1. The within-described combination of the size or glue receptacle K *k* and the rotating brushes *y y*′ with each other and with the shafts B B′, the screw-shafts C C′, the sliding rod E, the lever *v*, the clutch X, the pulleys W Y, and the driving-pulley Z, by which the brushes *y y*′ are made simultaneously to rotate on their axes and to alternately traverse from one end of the harness A to the other (or any portion of it) and deposit the size or glue evenly and smoothly upon the threads of the harness, substantially as herein set forth.

2. In combination with the size or glue receptacle K *k* and the rotating and reciprocating brushes *y y*′, above set forth, the imparting a reciprocating movement to the frame G G, in which the harnesses A A are placed, simultaneously with the combined movements of the said brushes *y y*′, substantially in the manner herein set forth.

3. The making the sliding frame G G of such shape and capacity as to receive two sets of harness A A when it is combined with the shaft D, the pulley Q, the crank or lever *q*, the elastic lever R, the pitman S, and the crank-wrist *t*′, substantially as herein set forth, by which, without stopping the machine, a dressed harness can be removed from the frame and an undressed harness secured in its place while another harness is being dressed with size or glue in the opposite receptacle of the said frame, substantially in the manner herein set forth.

The above specification of my invention signed and witnessed this 17th day of April, 1850.

KASIMIR VOGEL.

Witnesses:
Z. C. ROBBINS,
R. W. FENWICK.