

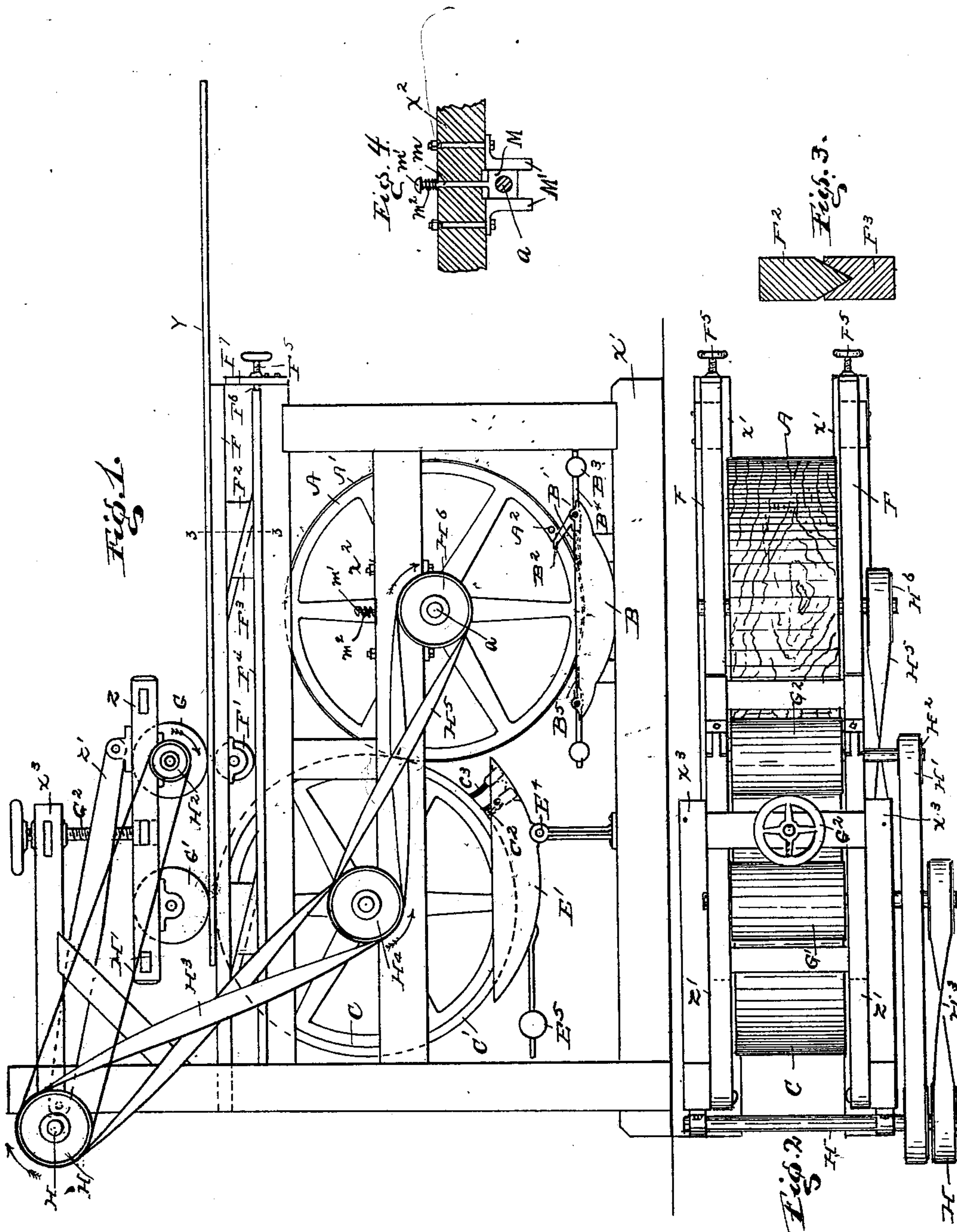
No. 675,362.

Patented May 28, 1901.

B. W. AUGUSTINE.
WOOD GRAINING MACHINE.

(Application filed July 6, 1900.)

(No Model.)



WITNESSES:

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BERNARD W. AUGUSTINE, OF ALAMEDA, CALIFORNIA.

WOOD-GRAINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 675,362, dated May 28, 1901.

Application filed July 6, 1900. Serial No. 22,749. (No model.)

To all whom it may concern:

Be it known that I, BERNARD W. AUGUSTINE, a citizen of the United States, residing at 1000 Pacific avenue, in the city and county of Alameda, in the State of California, have invented certain new and useful Improvements in Wood-Graining Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in painting-machines, and more particularly to graining-machines.

In the drawings, Figure 1 is a side elevation of a machine constructed in accordance with this invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical sectional elevation of the adjusting-wedges on the line 3 3 of Fig. 1. Fig. 4 is a detail view, partly in section, illustrating the spring-journal supporting the shaft of the design or type roller.

The object which the present invention has in view is to reproduce accurately a grain taken from the surface of one board and impressed upon another board.

My invention consists in the various matters hereinafter described and claimed:

In the description, with reference to the drawings, distinguishing letters of reference will be assigned to the various groups of mechanisms, the subsidiary parts of such groups being distinguished by the addition of a numeral to the common letter.

The design or type roller A has a circumference equal to the length of an average board, say twelve feet. Secured to the face of the roller is a veneer of the wood to be imitated. This veneer A' is preferably glued to a strip of sheet metal or canvas adapted to be rigidly secured to the roller A. By this treatment of the veneer it is rendered less liable to warping, as well as making it easy of manipulation. The roller A is mounted in a spring-journal having a vertical play and secured to the side beam X² of the frame X. The reason of this play will appear later in the description. The manner of supporting the roller A is illustrated in Fig. 4. A suitable journal-box M carries each end of the shaft a of said roller, and said boxes slide be-

tween plates M', suitably secured to the side beams X². A pin m upon the box extends through said beam, and between the top of the beam and the head m' of the pin is a spring m², tending to force the box upwardly and thus cause the roller A to bear against the roller C. The lower periphery of the roller A is extended into the paint-vat B, resting on the floor-sill X' of the frame X. The vat B contains the wood-filler to be applied to the capillary grain on the veneer surface of the roller A. The filler is applied by means of the brush B', pivoted on the end of the vat B, so that its bristles sweep the surface of the roller A. To replenish the brush, it is provided with the trip-arm B², extending into the path of the pin A² on the edge of the roller A. As the pin A² passes the brush is submerged in the filler and returned to its operative position by the weight B³, adjustable on the extension B⁴ of the brush to regulate the pressure of the bristles on the roller A. The brush B' insures an even distribution of filler over the entire surface of the roller, which is not possible by merely submerging the roller in the filler, as the air contained in the capillary interstices of the wood prevent a proper adhesion. To remove the surplus filler from the roller, the squeegee B⁵ is provided on the opposite side of the vat B and similarly mounted to the brush B'.

The printing-roller C is of the same diameter as the roller A. Permanently attached to the roller C is a thickness of sensitive compound C', similar in composition to the printer's roller or hectograph, adapted to receive a transfer-impression of the grain on the roller A and transmit same to the surface of the board Y.

It is not advisable to take more than one impression from a single transfer on the roller C. To prepare the roller C for a new transfer, the cleaning mechanism E is provided, consisting of the vat E', filled with gasoline or some suitable solvent, through which the roller C is rotated. To remove the transfer, the brush C² and squeegee C³ are so mounted as to bear against the surface of the roller C. The brush and the squeegee are mounted in the end of the vat E', which is pivoted at the point E⁴ on a bracket mounted on the floor-sill X'. The sliding weight E⁵ permits of a

regulation of the pressure of the brush C² and squeegee C³.

The idler F' on the supporting-frame F, upon which the board Y rests, is adjustable 5 vertically to regulate the pressure of the roller C against the surface of the board Y. The adjustability is effected by means of the wedge-blocks F² on the frame F and similar blocks F³ on the strip F⁴, which is advanced 10 or receded by means of the screw F⁵ working loosely in the bracket F⁶ on the strip F⁴ and being threaded in the bracket F⁷ on the frame of the machine. To raise the frame F, the strip F⁴ is drawn forward, causing the blocks 15 F² to ride upon the blocks F³. To prevent lateral slipping between the blocks F³ and F⁴, they are given the V-shaped faces shown in Fig. 3.

The feed-roller G, mounted in the frame Z, 20 bears against the upper side of the board Y, sending it past the roller C to receive its transfer-impression. The roller G' is an idler in the frame Z to maintain the pressure between the board Y and the roller C, said pressure being effected by means of the screw-jack G² 25 bearing against the beam X³ of the frame X, in which it is threaded.

The feed-roll is driven by the main driving-shaft H by means of the belt H' and pulley 30 H² on the feed-roll. The roller C is driven from the same source through the reversed belt H³ and pulley H⁴ on the shaft of roller C.

The roller A is driven by the reversed belt H⁵ and pulley H⁶ on the shaft of the roller A 35 from the pulley H⁴ on the shaft of the roller C. Pivoted on or near the main driving-shaft H are the beams Z', connecting flexibly with the frame Z to maintain the centers of the feed-roll G and driving-shaft H at equal distance 40 when the frame Z is raised or lowered to accommodate the various thicknesses of boards Y. This insures an equal tension on the belt H'.

The roller A is mounted below the center 45 of the roller C. This causes a tangential contact between the two rollers, the pressure of the contact being regulated by the play in the mountings of the roller A, referred to earlier in this specification. The contact between 50 these two rollers should be just sufficient to cause the surface of the roller C to pick the filler from the interstices of the veneer on the surface of the roller A.

Presuming the machine to be in operation, 55 the process is as follows: The roller A rotates past the brush B' and receives the filler, the excess of which is scraped off by the squeegee B⁵. As the roller A continues its rotation and comes in contact with the roller C the 60 filler contained in the wood-grain on the roller A is transferred to the sensitive surface on the roller C, which in turn transfers the impression to the surfaced face of the board Y, the board Y being fed through the machine 65 by the feed-roller G, as heretofore described. At each complete revolution of the roller C the transferred impression is removed by pass-

ing through the bath-vat E', when the operation just described is repeated for each successive board. This insures a clean-cut im- 70 pression being transferred to each individual board, which might not be the case were it attempted to make more than one transfer from the roller C without thoroughly cleaning the same. It is evident that any wood- 75 grain which is capable of receiving the filler may in this manner be transferred to a board having a neutral and indistinct grain, such as pine or spruce. When it is desired to treat a board having beaded or fluted surface 80 of not too great a depth, it has been found possible by increasing the pressure between the roller C and the frame Z, the elasticity of the sensitive surface of the roller C being crowded into the inequalities in the 85 surface of the board Y. After the board Y has received the transfer, as described, and is thoroughly dried it can be treated in any manner usual to wood-finishing—such as shel- 90 lacing, varnishing, and rubbing.

While the mechanism of this machine has been specifically described, it will be recognized that certain mechanical substitutions may be taken advantage of without interfering 95 with the spirit of this invention.

Having thus described this invention, it is claimed—

1. In a graining-machine, a frame having mounted therein, a roller having a type-surface adapted to receive a filler; means for ap- 100 plying said filler to the roller consisting of a vat through which the surface of the roller passes; a brush, pivotally mounted in the vat, having a means of maintaining the brush in contact with the surface of the roller, a trip 105 on said brush operated by a pin on said roller to submerge, at regular intervals, the brush into the filler contained in the vat; a scraper mounted in the vat and bearing against the surface of the roller; substantially as de- 110 scribed.

2. In a graining-machine, a frame having mounted therein a type-roller adapted to receive a filler; means for applying said filler 115 to the roller, consisting of a vat through which the surface of the roller passes; a brush pivotally mounted in the vat, having a means of maintaining the brush in contact with the surface of the said roller; a trip on the said brush operated by a pin on said roller to sub- 120 merge, at regular intervals, the brush in the filler contained in the vat; a scraper mounted in the vat and bearing against the surface of the roller; a printing-roller mounted in said frame in contact with said type-roller adapted 125 to pick the impression therefrom, and transfer it to the affinitive surface of an object brought in contact therewith; means for cleaning said printing-roller, consisting of a vat pivotally mounted thereunder, having a brush and 130 scraper mounted in the vat so as to be held in contact with the surface of the printing-roller by the weight of the vat on the opposite side of the pivot; substantially as described.

3. In a machine of the nature indicated, a type-roller, a printing-roller, and means for yieldingly holding said rollers in contact with each other; substantially as described.

5 4. In a machine of the nature indicated, a type-roller, a printing-roller, and spring-pressed bearings in which one of said rollers is mounted, whereby said rollers are held in yielding contact with each other; substan-
10 tially as described.

5. In a machine of the nature indicated, an operative roller, a supply member adapted to contain the material to be applied to said roller, a brush movably mounted and adapted
15 to move into contact with the said material and also into contact with said roller, and means for automatically causing said brush to so move; substantially as described.

6. In a machine of the nature indicated, an
20 operative roller, a supply member adapted to contain the material to be applied to said roller, a brush pivotally mounted and adapted to swing upon its pivot into contact with either the said material or the said roller, and means
25 for automatically causing said brush to so swing; substantially as described.

7. In a machine of the nature indicated, an operative roller, a supply member adapted to contain the material to be applied to said
30 roller, a brush movably mounted and adapted to move into contact with the said material and also into contact with said roller, means for normally holding said brush in contact with said roller, and means for automatically
35 causing said brush to periodically move into contact with said material; substantially as described.

8. In a machine of the nature indicated, an operative roller, a supply member adapted to
40 contain the material to be applied to said roller, a brush movably mounted and adapted to move into contact with the said material and also into contact with said roller, means for normally holding said brush in con-
45 tact with said roller, and means upon said roller for automatically causing said brush to periodically move into contact with said material; substantially as described.

9. In a machine of the nature indicated, an
50 operative roller, a supply member adapted to contain the material to be applied to said roller, a brush movably mounted and adapted to move into contact with the said material and also into contact with said roller,
55 means for normally holding said brush in contact with said roller, and a projection upon said roller adapted to engage a part upon said brush to cause the same to periodically con-
60 tact with said material; substantially as described.

10. In a machine of the nature indicated, an operative roller, a supply member adapted to contain the material to be applied to said roller, a brush pivotally mounted and adapt-
65 ed to swing upon its pivot into contact with either the said material or the said roller, said brush having a weighted portion extending

beyond the pivot, whereby the brush is nor-
mally held in contact with said roller, and a
projection upon the said roller adapted to en- 70
gage a part upon the brush to cause the same
to periodically contact with said material;
substantially as described.

11. In a machine of the nature indicated, an operative roller, a supply member adapted to
75 contain the material to be applied to said roller, a brush pivotally mounted and adapted to swing upon its pivot into contact with either the said material or the said roller,
80 means for normally holding said brush in contact with said roller, a projection upon said roller, and a trip-arm upon said brush and extending into the path of travel of said pro-
jection, whereby said brush is caused to peri-
85 odically contact with said material; substan-
tially as described.

12. In a machine of the nature indicated, an operative roller, a supply-tank adapted to con-
tain the material to be applied to said roller,
a brush pivoted upon said tank and adapted 90
to swing into contact with said roller and also into the material in said tank, and means for automatically causing said brush to so swing;
substantially as described.

13. In a machine of the nature indicated, an
95 operative roller, and a pivoted member for operating upon the same, said member having a weighted portion whereby the member is swung upon its pivot into operative contact
with the said roller; substantially as described. 100

14. In a machine of the nature indicated, an operative roller, a movable tank in which said
roller rotates, a member (as a brush) for op-
erating upon said roller, said member being
105 mounted upon said tank to move therewith,
and means for holding said tank in position to cause said member to engage said roller;
substantially as described.

15. In a machine of the nature indicated, an
110 operative roller, a movable tank in which said roller rotates, a member (as a brush) for operating upon said roller, said member being mounted upon said tank to move therewith,
means for holding said tank in position to
115 cause said member to engage said roller, and
means for varying the pressure between said member and said roller; substantially as de-
scribed.

16. In a machine of the nature indicated, an operative roller, a pivoted tank in which said
120 roller rotates, and a member (as a brush) for operating upon said roller, said member being mounted upon said tank to move there-
with, said tank being weighted to cause the
same to swing upon its pivot to bring said 125
member into contact with said roller; sub-
stantially as described.

17. In a machine of the nature indicated, an operative roller, a pivoted tank in which said
130 roller rotates, a member (as a brush) for operating upon said roller, said member being mounted upon said tank to move therewith,
and an adjustable weight upon said tank to
cause the same to swing upon its pivot to

bring the said member into contact with said roller; substantially as described.

18. In a machine of the nature indicated, a frame, a printing member, a movable support
5 for the object to be operated upon by said printing member, and oppositely-inclined wedge-surfaces carried by said frame and said support, whereby movement of said surfaces over each other causes the said support
10 to be adjusted with relation to the printing member; substantially as described.

19. In a machine of the nature indicated, a frame, a printing member, a movable support for the object to be operated upon by said
15 printing member, and movable wedge-shaped members upon said frame and supporting said support, whereby movement of said wedge-shaped members causes adjustment of the

said support with relation to the printing member; substantially as described. 20

20. In a machine of the nature indicated, a frame, a printing member, a movable support for the object to be operated upon by said printing member, a bar movable upon said
25 frame, and wedge-shaped members upon said bar and supporting said support, whereby movement of said bar causes adjustment of the said support with relation to the printing member; substantially as described.

In testimony whereof I have hereunto set
30 my hand this 12th day of June, 1900.

BERNARD W. AUGUSTINE.

Witnesses:

BALDWIN VALE,
JNO. S. ROBBINS.