

(No Model.)

2 Sheets—Sheet 1.

H. N. RANGE.
SANDPAPERING MACHINE.

No. 522,918.

Patented July 10, 1894.

Fig. 1.

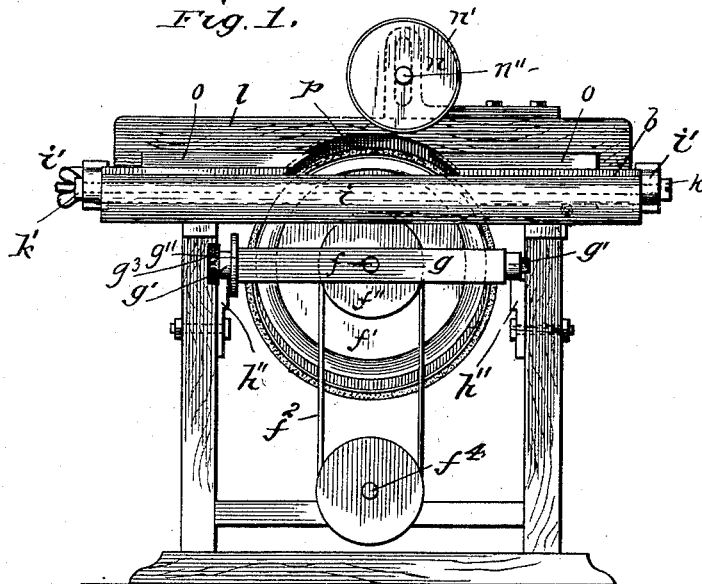


Fig. 2.

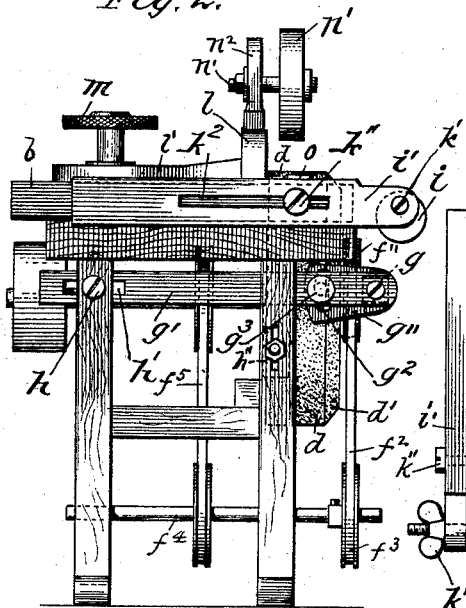
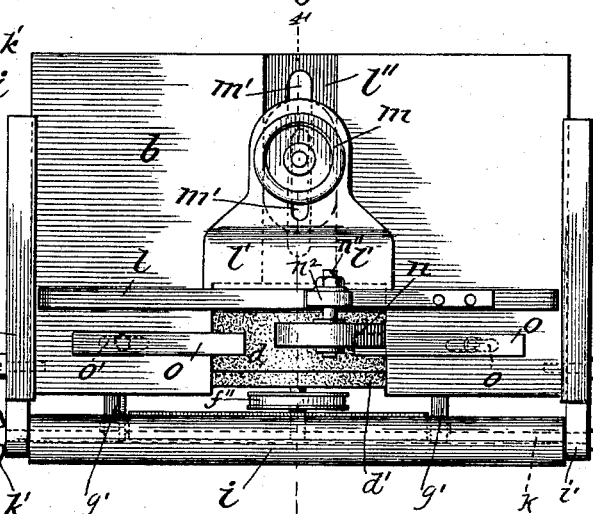


Fig. 3.



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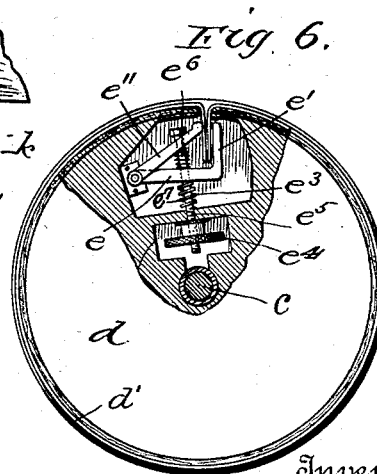
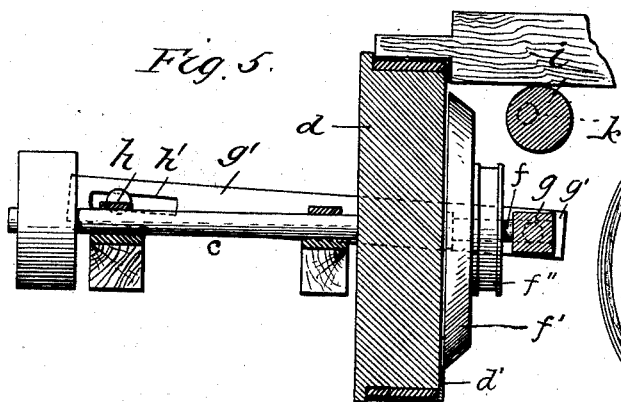
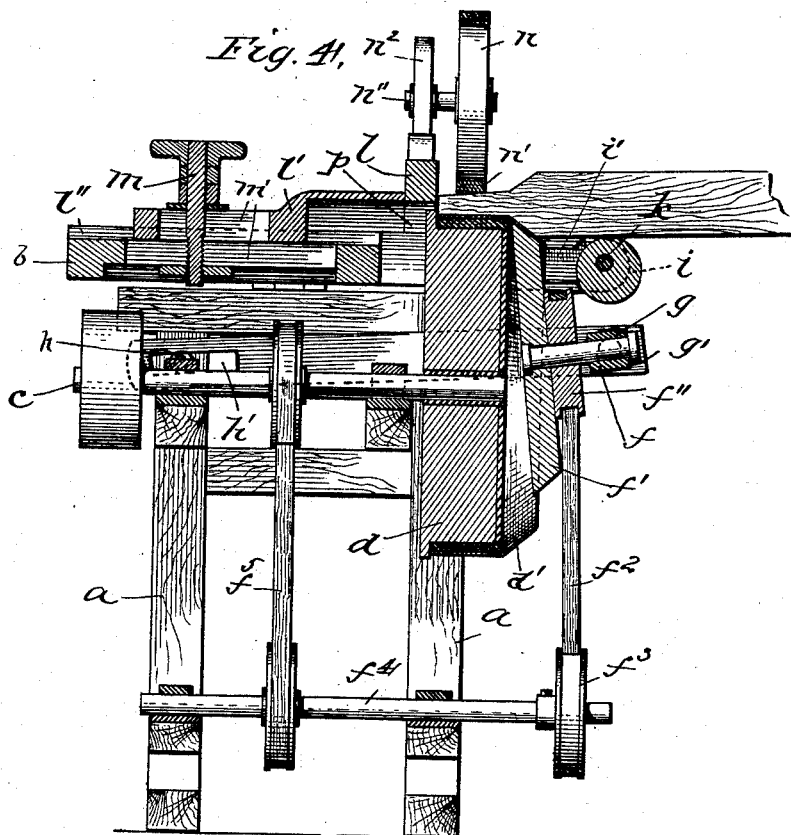
(No Model.)

2 Sheets—Sheet 2.

H. N. RANGE.
SANDPAPERING MACHINE.

No. 522,918.

Patented July 10, 1894.



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UNITED STATES PATENT OFFICE.

HERCULE N. RANGE, OF CHICAGO, ILLINOIS.

SANDPAPERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 522,918, dated July 10, 1894.

Application filed March 30, 1894. Serial No. 505,755. (No model.)

To all whom it may concern:

Be it known that I, HERCULE N. RANGE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sandpapering-Machines, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

10 Figure 1 is a front elevation of my machine; Fig. 2 an end elevation; Fig. 3 a plan view; Fig. 4 a vertical sectional view on the line 4—4 of Fig. 3; Fig. 5 a detail sectional view showing the adjustable supplemental
15 wheel out of use, and Fig. 6 a detail view of the sand-paper wheel showing the devices for securing and tightening the sandpaper.

This invention has relation to machines for sandpapering the reduced edges of panels, and it consists in certain features of construction and arrangement hereinafter fully described and claimed.

In the drawings, *a* designates the frame of the machine, *b* the table thereof, *c* the main shaft carrying the main sandpaper wheel *d* at one end, said wheel working up through an opening formed in the front edge of the table. The sandpaper is secured on the periphery of this wheel, and interposed between
30 the wheel and the sandpaper is the usual felt cushion. One edge of the sandpaper projects outwardly a suitable distance beyond the outer edge of the wheel, forming an annular flexible or yieldable part *d'* which is adapted to work against the beveled shoulders of the panel, as shown most clearly in Fig. 4.

The sandpaper may be stretched upon the wheel by any suitable means, but I prefer the devices shown in Fig. 6. In this construction a plate *e* is employed, this plate being pivoted at one end in a recess in the wheel *d* and being provided at its other end with an angular lip *e'* which projects outwardly toward the periphery of the wheel.

45 Pivoted in the same recess with plate *e* and on the same pivot therewith is a clamping plate *e''*, whose free edge extends to near the angular lip of the main plate *e*. These two plates are drawn together by a rod or pin *e³* which passes through the plates radially and has a head formed on its outer end and a set screw *e⁴* tapped on its inner end, said set-

screw bearing against a suitable part or stop *e⁵* of the wheel.

Surrounding the pin *e³* between the two 55 plates is a coil spring *e⁶*, and on the pin between the main plate *e* and the stop *e⁵* is another coil-spring *e⁷* which is stronger than said spring *e⁶*. The two edges or ends of the strip of sandpaper after being passed around 60 the wheel are inserted in the transverse slot in its periphery and in between the lip *e'* and the free end of the plate *e''*. The thumb screw is then turned to draw the pin radially inward, whereupon spring *e⁶* will first yield 65 and plate *e''* will clamp the two ends of the sandpaper against lip *e'*, and then by continuing to draw the pin radially inward the stronger spring *e⁷* will yield and permit both plates to be swung inwardly together, thereby 70 permitting any desired tension to be given to the sandpaper.

Journalled upon a short axle *f* is a supplemental-wheel *f'*, which is supported adjacent to the outer face of the wheel *d* and is smaller 75 in diameter than said wheel. The periphery of this wheel is suitably beveled to fit the beveled shoulders of the panel, and the wheel is mounted on the inner end of the axle *f* in order that it may come close to the face of the 80 main wheel. This wheel is rotated at the same speed as the main wheel by means of a pulley *f''* secured to its outer side and driven by a belt *f²*, this belt passing over a pulley *f³* carried by a counter shaft *f⁴* journalled in 85 the lower part of the machine, this counter-shaft being driven by a belt *f⁵* running over suitable pulleys on said counter shaft and main shaft.

The axle *f'* is supported in a bar *g*, which 90 is pivotally supported at its ends in the outer ends of bars *g'* extending out from the frame of the machine. The bar *g* is rotatably adjustable upon its pivots and is held rigidly in its adjusted positions by means of a plate *g''* 95 secured on one of its ends, said plate extending inwardly adjacent to the inner side of one of the arms *g'* and provided with a segmental slot *g²* near its inner edge. This plate *g''* is adjustably clamped to the bar *g'* by means of 100 a set screw *g³* which is carried by said arm *g'* and works in the slot *g²*. The inner ends of bars *g'* are pivotally and adjustably clamped to the frame by means of set screws *h* carried

by the frame and working through longitudinal slots h' in said bars g' . The frame formed by the bars g' and g'' is adjustably supported by means of stops h'' adjustably clamped to

5 the uprights of the machine-frame.
It will be observed that the periphery of wheel f' may be adjusted so as to bear upon the inner side of the yielding edge d' of the sandpaper, thereby keeping the flexible part
10 of the sandpaper pressed against the beveled shoulder of the panel. Making the bar g adjustable rotatively permits the axle f to be set at the proper angle to suit the bevel of the shoulder of the panel, and making the frame
15 carrying said axle vertically adjustable permits the wheel to be thrown out of use by dropping it down, as shown in Fig. 5.

It will be observed that the periphery of the wheel f' may be convexed or concaved or
20 otherwise formed whenever it is desired to dress off shoulders having other contours. The object of this supplemental wheel is to keep the sandpaper pressed positively against the shoulder of the panel and insure the formation of sharp corners or angles and also
25 avoid the formation of ridges in the work.

The panel is supported in passing over the sandpaper wheel by a cylindrical bar i which is supported in the outer ends of arms i' by
30 means of a rod k extending longitudinally through the bar or roller i and through the ends of arms i' . The rod k passes eccentrically through the roller i and has tapped on one end a thumb screw k' , in order that the
35 roller may be held in its rotative adjustments. The arms i' are adjustably secured to the ends of the table by means of set screws k'' , which pass through slots k^3 in said arms and enter the ends of the table. The arms i' are flanged
40 along their upper and lower edges and said flanges embrace the edges of the table and serve to guide the arms in their longitudinal adjustments. By thus eccentrically mounting
45 the supporting roller or rod i and making it rotatably adjustable, it will be observed that the panel may be supported at the desired angle, and by making the arms i' adjustable outwardly and inwardly, the supporting rod i may be set to accommodate wider
50 and narrower panels.

A guide l is mounted upon the table parallel with the main wheel d to assist in guiding the panel and also for regulating the width of the exposed surface of the sandpaper-
55 wheel. This guide l has a rearwardly-extending arm l' which works in a transverse groove l'' in the table and thereby serves to keep the guide parallel with the sandpaper wheel. The arm l' carries a set-screw m , which works
60 through corresponding slots m' in the table and said arm and thereby serves to clamp the guide l in its adjusted positions. A pressure-roller n is carried by said guide l and is provided with an elastic tire n' . This roller n
65 is journaled upon a short axle n'' which is adjustably supported in a slotted standard n^2 bolted to the guide l . The axle n'' projects

forwardly from the support n^2 in order to bring the roller over the work. The elastic tire on the roller permits the roller to accommodate itself to the oblique surface of the
70 panel, and mounting the roller adjustably permits it to be raised and lowered to accommodate panels of varying thicknesses. This wheel keeps the work down close to the sand-
75 paper wheel as the work passes through the machine.

To support the panel on opposite sides of the sandpaper wheel, I employ two strips o , one being secured on the table on each side
80 of the wheel and parallel with the guide l . The inner ends of these strips are curved so that they may be brought close to the periphery of the sandpaper wheel, and the strips themselves are made longitudinally adjust-
85 able by means of a suitable slot and set screw o' . These strips support the panel as it passes under the pressure wheel and keep it approximately level, and by longitudinally adjusting
90 the strips on the table the amount of exposed wheel surface may be regulated to suit the character of work being performed.

It is evident that the specific construction of this machine may be varied without departing from the spirit of the invention.
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As shown most clearly in Fig. 4, the guide l may be recessed at p in order to permit it to be adjusted over the surface of the sandpaper wheel and thereby regulate the width of the
100 grinding surface exposed.

It is desirable that the strip of sandpaper be creased near one edge before it is secured around the wheel, in order that the projecting edge may yield readily and conform to the bevel of the panel.
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Having thus fully described my invention, what I claim is—

1. In a sandpapering machine, the combination of a table, a main sandpapering wheel, a strip of sandpaper secured thereon and having its annular edge extending beyond one face of the wheel, and a supplemental wheel supported adjacent to the main wheel and adapted to press the projecting edge of the sandpaper against the work, substantially as described.
110

2. The combination of a frame, a main wheel, sandpaper secured on the periphery of said wheel and projecting beyond one edge, a supplemental wheel supported upon an independent axle adjacent to the main wheel, and means for obliquely setting said supplemental wheel, substantially as described.
120

3. The combination of a frame, a main wheel, sandpaper secured on this wheel and projecting beyond one of its sides, a supplemental wheel supported adjacent to the extension of the sandpaper, an axle supporting this wheel, a bar supporting the axle, means for rotatively adjusting this bar, and means
125 for revolving the wheels, substantially as described.
130

4. The combination of a frame and table, a main wheel and means for rotating it, sand-

paper secured on said wheel and projecting beyond its edge, a vertically adjustable frame carrying an axle, a supplemental wheel carried by said axle and supported adjacent to the main wheel and adapted to press the extended portion of the sandpaper against the work, and means for rotating said supplemental wheel, substantially as described.

5. The combination of a main frame, a sandpapering wheel, a supporting roller set eccentrically and rotatably adjustable, and longitudinally adjustable arms supporting said roller, substantially as described.

6. The combination of a sandpapering wheel and means for securing and tightening the sandpaper thereon, said means consisting of a movable plate carrying a lip, another plate also movable and adapted to be pressed against said lip, a pin or bolt engaging said plates, a spring interposed between the plates, another spring interposed between the lipped

plate and an adjacent stop, and means for adjusting the pin or bolt endwise, substantially as described.

7. The combination of a wheel carrying a strip of sandpaper, a plate *e* pivoted at one end and provided with a lip at its other end, another plate *e''* pivoted at one end and its other end being adapted to bear against the lip on plate *e*, a bolt or pin passing through said plates and being endwise adjustable, a spring interposed between the plates, and a stronger spring interposed between plate *e* and an adjacent stop, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HERCULE N. RANGE.

Witnesses:

GEO. E. WILLIAMS,
C. W. DUNKLEY.