

(No Model.)

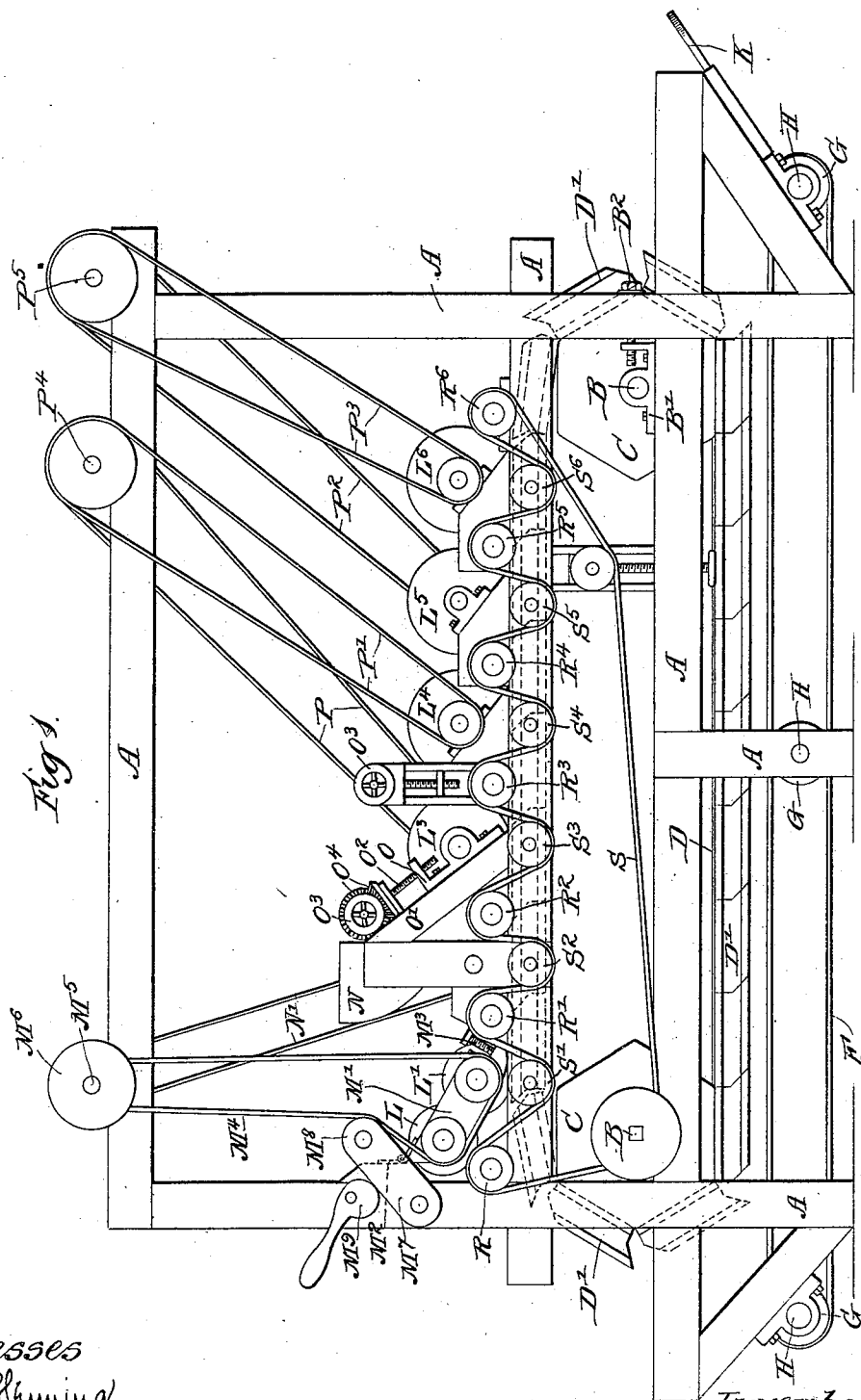
3 Sheets—Sheet 1.

N. NELSON.

COMBINED SCOURING, POLISHING, AND BUFFING MACHINE.

No. 510,438.

Patented Dec. 12, 1893.



Witnesses

Wm. F. Heming

Geo. M. Rhems

by

Nels Nelson
Francis W. Parker Atty

Inventor

(No Model.)

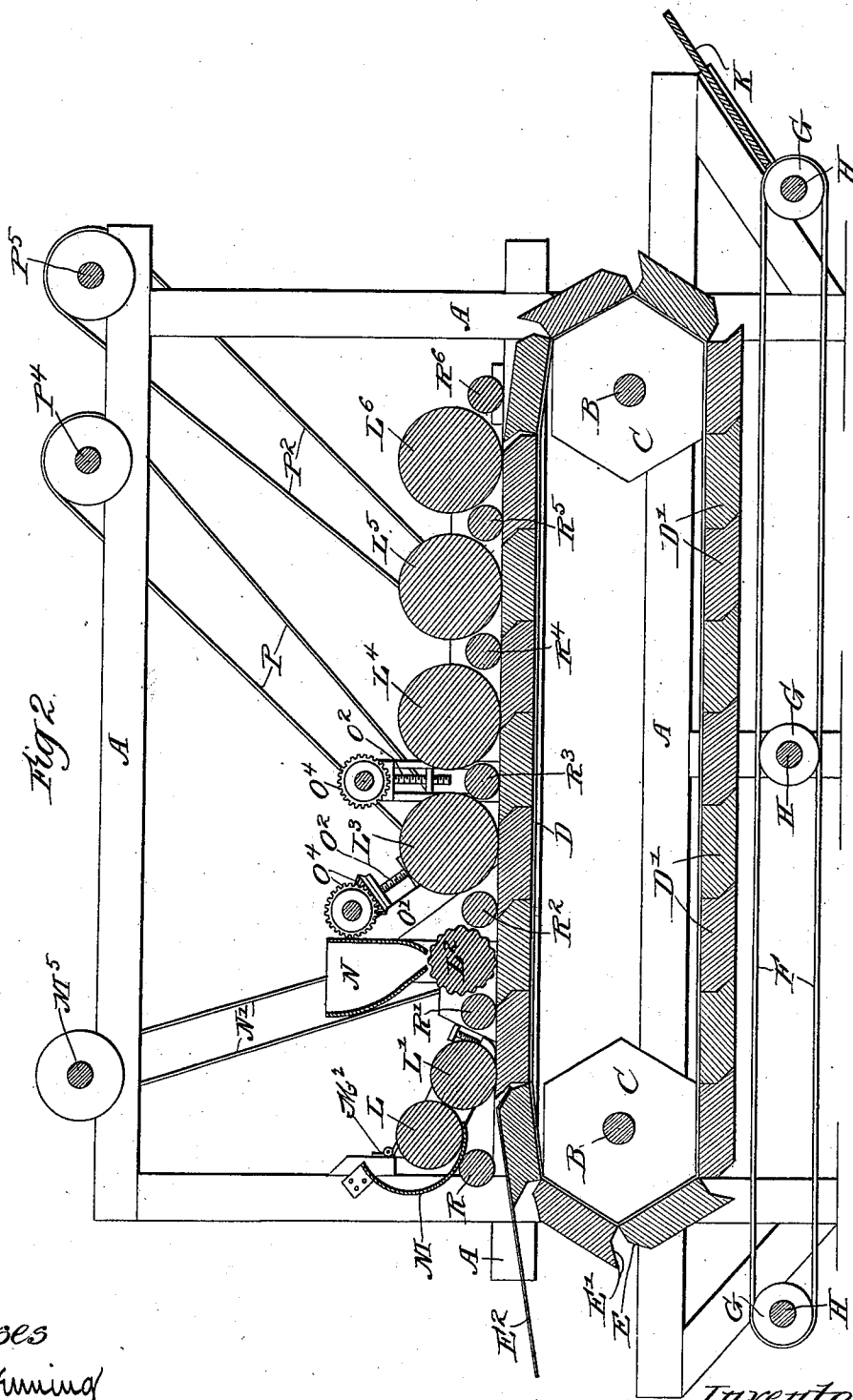
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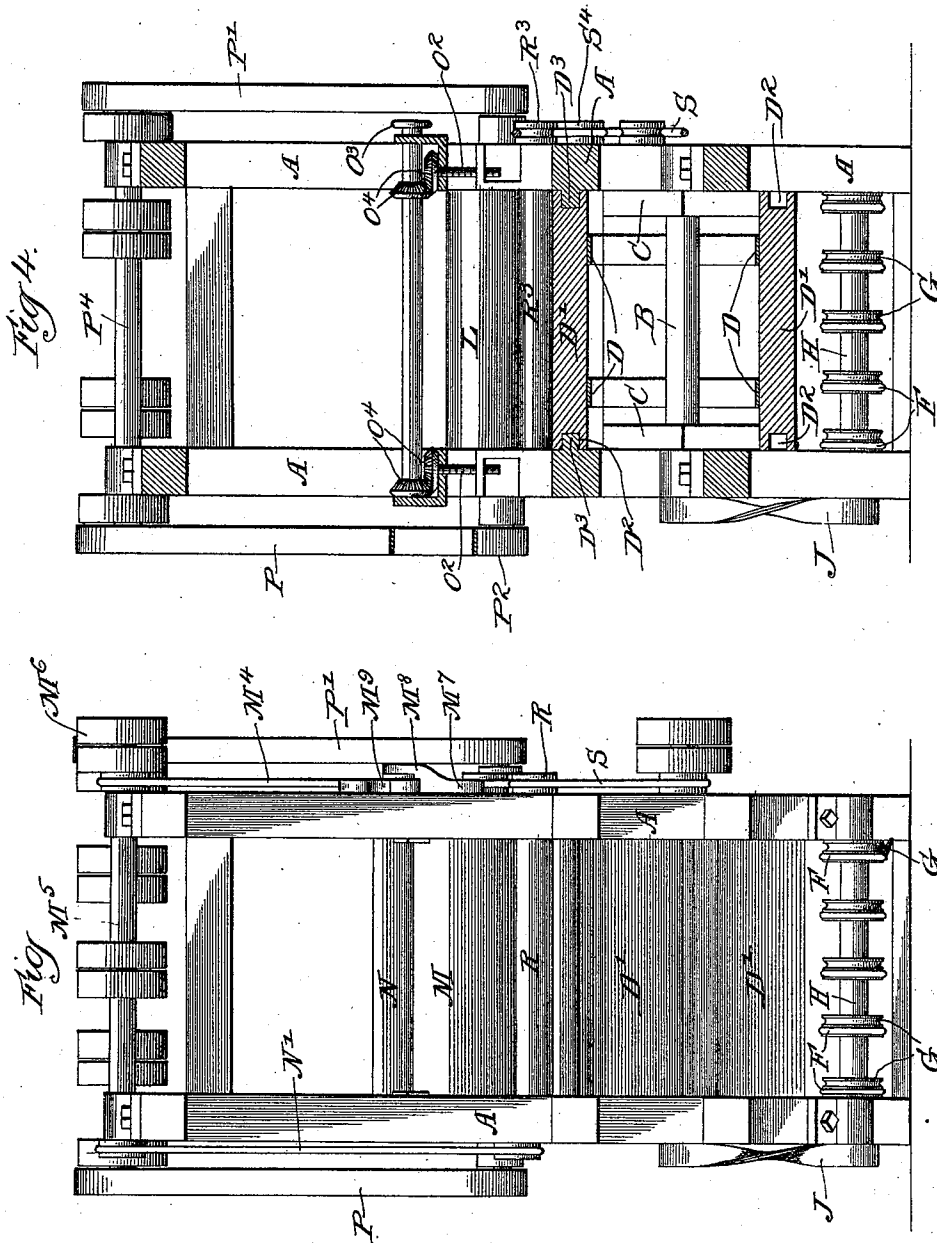
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Witnesses
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UNITED STATES PATENT OFFICE.

NELS NELSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO GUSTAV DITTMAN, OF
SAME PLACE.

COMBINED SCOURING, POLISHING, AND BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 510,438, dated December 12, 1893.

Application filed February 6, 1893. Serial No. 461,288. (No model.)

To all whom it may concern:

Be it known that I, NELS NELSON, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented a new and useful Improvement in a Combined Scouring, Polishing, and Buffing Machine, of which the following is a specification.

My invention relates to combined scouring, polishing and buffing machines, and particularly, such as are to be used in connection with stove boards and the like, and it is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the machine.
15 Fig. 2 is a vertical longitudinal section; Fig. 3, a front end view; Fig. 4, a vertical cross-section.

Like parts are indicated by the same letters in all the figures.

20 A, A are the frame pieces, upon and by which the operating portions of the machine are supported and sustained.

B, B are transverse shafts suitably supported on such frame at one end, preferably by the sliding bearings B' held by the screw bolts B², so that the distance between the two shafts is adjustable or variable. Each of these shafts carries upon it a series of hexagonal plates C. These plates are shown 30 hexagonal, although of course, they might be of some other figure, provided only they present exterior angular surfaces. About these axles and plates run the belts D, D having secured upon them the transverse slats D', D', 35 which are provided at their ends with the slots D², D², to receive the ribs D³, D³, which inwardly project from two of the side bars of the frame A. These slats are shaped as shown so as to overlap, and when traveling 40 in the same plane, as for example, a horizontal plane above the shafts, to present a flat smooth surface. Each is provided with a flattened surface E, while the opposed edge of the next slat is provided with a corresponding surface E', between which surfaces, 45 a plate of metal E² may be inserted so as to be clasped and held therein.

F, F are a series of belts or straps on the pulleys G, G, which are themselves supported 50 on the transverse shafts H, H, on the frame of the machine. These belts F, F serve to

return the plates of metal after they have passed under the rollers back to the point at which they were introduced, and the belts are adapted so as to be driven from the pulley at one end of one shaft, which pulley is driven 55 by the belt J belting on to one of the transverse shafts B.

K is a platform at the end so that the plates when they have passed through the buffing 60 machine are received thereon and directed thereby back on to the belts F.

L, L', L², L³, L⁴, L⁵ and L⁶ are grinding, polishing and buffing rollers, suitably supported along the table formed by the slats D', D'. 65 The roller L' engages the roller L lying in the curved plate M, and receiving thence the acid or cleaning liquid or the like which is to be first deposited upon the plate. It is deposited upon the plate by means of the roller L'. The 70 rollers L and L' are secured in the frame pieces M', which are hinged each by a hinge M², and adjustably held by a screw M³. These rollers are driven by a belt M⁴ from the shaft M⁵ by means of the pulley M⁶ thereon. 75

M⁷ is a pivoted piece carrying a pulley M⁸ to bear against the belt M⁴, and controlled by the eccentric belt tightener M⁹.

The roller L² is preferably corrugated, and lies immediately beneath the receptacle N, 80 whereby any sort of grinding powder or the like may be deposited upon the plate to be ground. N' is a belt which drives this roller, and it is driven by a suitable pulley from the shaft M⁵. The roller L³ is supported upon a 85 sliding bearing O, which rests upon the inclined frame O', and is adapted to be moved by means of the screw rod O² controlled by the hand-wheel O³ and the beveled gears O⁴. This same arrangement is provided at each 90 end or side, but one hand-wheel serves to operate both sets of gears. The rollers L⁴, L⁵ and L⁶ are similarly mounted that they may be in fixed bearings as shown, and if a movable bearing is employed, the parts must be 95 separated more than is indicated in the drawings. They are driven respectively by the belts P, P', P², P³, which are driven from the shafts P⁴ and P⁵.

R, R', R², R³, R⁴, R⁵ and R⁶ are guide or 100 bearing rollers, whereby the plate is carried forward and held down against the belt. They

are all driven by a single belt S, which traverses them, and in turn also, the idle pulleys S', S², S³, S⁴, S⁵ and S⁶. The belt may be disposed in any desired manner so as to drive the several rollers at any convenient speed, and they may be driven in the same or opposite directions as occasion may require, or the particular work in hand may seem to suggest.

I do not of course desire to be limited to the specific arrangement, size and proportion of the parts shown as some of the features of my invention might be used without the others, and without departing from the spirit of my invention. Indeed, I have suggested further supplying of adjustable features, but having shown one such adjustment, the application of the others is obvious.

The use and operation of my invention are as follows: By means of the sectional belt or the arrangement of overlapping slats which I have shown, I furnish a traveling belt over which or along which the plate to be treated passes, and at the same time, the belt is so devised that it grips and holds and carries the plate itself. By so arranging, I can treat the plate without bending it except so far as the end to be gripped is bent. These various rollers which are used may be employed in succession to apply the acid upon the plate, the grinding or polishing powder thereon, the coarse grinding cloth or paper down to the first or polishing rollers. The man to operate the machine will stand at the left end as indicated in the drawings, and feed the plates in between the slats at the point where they are coming together, and as soon as the end of one plate has disappeared, he feeds in the next plate. These plates are carried around, and as soon as the end is freed by the separation of the slats as they start around the angular plates at the other end of the machine, the plate is fed through by means of the rollers and belt until it drops upon the platform at the end, and then upon the belts F, F, whence it is carried back to the point of departure where if its condition is not satis-

factory, it may again be inserted in the machine, and sent through.

I claim—

1. In a grinding, polishing and buffing machine, the combination of a series of grinding, polishing and buffing rollers with a table or belt consisting of a series of slats adapted to clamp the plate to be treated and supported at their sides so as to form a rigid flat table.

2. In a grinding, polishing and buffing machine, a movable table consisting of a series of slats with supporting belts, said slats grooved at the ends, and ribs which project into such grooves so that the moving slats form a rigid table.

3. In a grinding, polishing and buffing machine, a movable table consisting of a series of slats with supporting belts, said slats grooved at the ends, and ribs which project into such grooves so that the moving slats form a rigid table, said slats provided with overhanging or gripping edges, while the plate to be treated is inserted so as to be clamped, and by these means carried through beneath the rollers.

4. In a grinding, polishing and buffing machine, a series of rollers in combination with an inclined transverse curved liquid holding plate, a roller therein forming the bottom thereof, a roller engaging the latter and bearing upon the table so that the liquid is carried by the one roller to the other, and thence to the plate to be treated.

5. In a grinding, polishing and buffing machine, the combination of a series of bearing or guide rollers to keep the plate down upon the belt, a movable belt or table under such rollers, a series of guides or idle pulleys and a single belt which passes over the guide pulleys, and also over the guide or bearing rollers with their pulleys so as to make all of such pulleys travel in the same direction by means of one belt.

NELS NELSON.

Witnesses:

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