B. S. LOVELAND.

SCRAPING MACHINE.

APPLICATION FILED MAR. 24, 1909.

1,107,810. Patented Aug. 18, 1914.

Fig. 1.

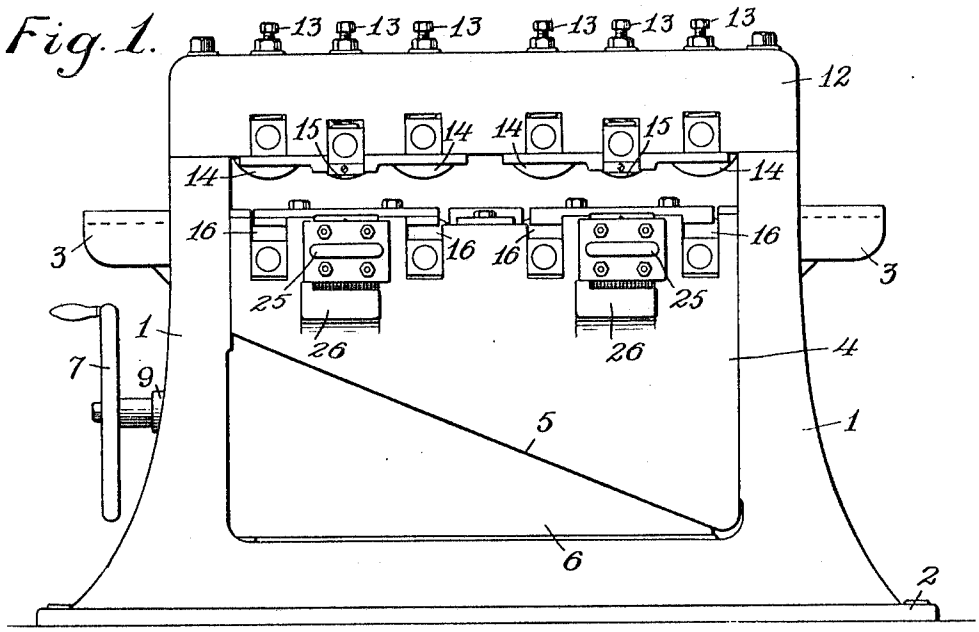
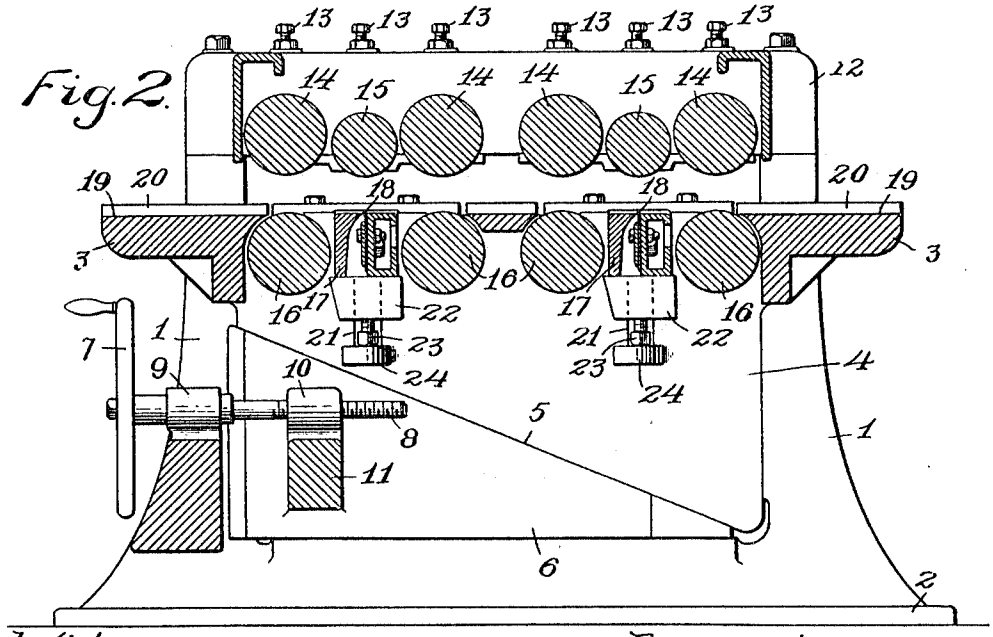


Fig. 2.



Witnesses

R. D. Tolman.

Penelope Bruberbach.

Inventor

Byron S. Loveland.

By Rufus B. Fowler

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BYRON S. LOVELAND, OF WINCHENDON, MASSACHUSETTS, ASSIGNOR TO BAXTER D. WHITNEY AND WILLIAM M. WHITNEY, AS FIRM OF BAXTER D. WHITNEY & SON, OF WINCHENDON, MASSACHUSETTS.

SCRAPING-MACHINE.

1,107,810. Specification of Letters Patent. Patented Aug. 18, 1914.

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To all whom it may concern:

Be it known that I, BYRON S. LOVELAND, a citizen of the United States, residing at Winchendon, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Scraping-Machines, of which the following is a specification accompanied by drawings, forming a part of the same, in which—

Figure 1 is a side view of my improved scraping machine, and Fig. 2 is a central longitudinal vertical sectional view of the same.

Similar reference figures refer to similar parts in the different views.

My invention relates to wood scraping machines designed to finish plane surfaces, and impart the necessary smoothness to the surface, and it consists in the construction and arrangement of parts as hereinafter described and pointed out in the annexed claim.

Referring to the accompanying drawings, my improved scraper is supported by posts 1 mounted on a base 2, and comprises a supporting table 3 for the material to be scraped. The table 3 is mounted at each end on a support 4 arranged to reciprocate vertically in ways in the posts 1. Each support 4 is provided with a bottom 5 arranged at an oblique angle, which is engaged by the upper surface of a wedge shaped block 6 at the same angle, which is horizontally reciprocated in ways in the base 2 by a hand wheel 7, operating a screw 8 held in a bracket 9 in the frame and engaging a screw threaded lug 10 mounted on a bar 11, connecting the wedge shaped blocks 6, which operate the supports 4 at each end of the scraper. This arrangement for vertical adjustment of the table 3 is well known in wood scrapers and forms no part of my invention. The posts 1 are connected by end pieces 12 in which are journaled a series of upper rolls, vertically adjustable by screws 13 in the usual manner. The series of upper rolls comprises feed rolls 14 and pressure rolls 15, the feed rolls 14 being arranged to cooperate with feed rolls 16 journaled in the supports 4 and vertically adjustable therewith. This method of mounting and adjustment of the feed and pressure rolls is also well known in machines of this class. Knife bars 17 extend between the supports 4 and are arranged with their ends in vertical ways 21 in said supports. The pressure rolls 15 are arranged to coöperate with the knife bars 17, and hold the material to be scraped in contact with the scraping knives 18 held in the knife bars. The upper extremities of the feed rolls 16 and knife bars 17 are arranged to be approximately in the plane of the upper surface 19 of the table 3, which is provided with a lip 20 to insure the correct location of the material to be scraped. The feed rolls 14 and 16 are driven by gears, not shown, in the manner common in woodworking machines of this class, and feed the material along the surface 19 of the table 3 beneath the pressure rolls 15 and in contact with the knives 18 held in the knife bars 17, by which the operation of scraping is performed. The separate knife bars 17 in my improved scraper are vertically adjustable with the feed rolls 16 by the movement of the supports 4, but are also capable of independent vertical adjustment in the ways 21. Supporting blocks 22 are provided below each end of the knife bars 17, and are arranged to be reciprocated in the ways 21 by screws 23, resting upon shelves 24 projecting from the supports 4. At one end of each knife bar 17, as shown in Fig. 1, a handle 25 is provided, by which the knife bar may be drawn out from its operative position, when desired, upon a shelf 26 on the outside of the supports 4. The above described construction for vertical adjustment of the knife bars 17 is also well known.

To complete the process of wood finishing by scraping, it is desirable that the material to be finished should be submitted to the scraping operation at least twice, the first time with a scraping knife arranged to make a relatively deep cut, thereby removing all dirt or foreign matter inhering in the outer layer of wood and also a second cut with the knife adjusted merely to complete the smoothing operation and to remove a practically negligible amount of material. Up to the present time these scraping operations have been performed upon separate machines, the material to be scraped being removed from one machine before it was inserted in the second. This was rendered necessary by the difference in the character of the cut, requiring different adjustments

of the operative parts of the separate machines, and also by the difference in the quality of the material, the first cut being made through the outer layer, which more quickly impaired the sharpness of the knife employed, while the second cut, made in new wood after the outer layer was removed, had less effect upon the scraping edge of the knife. Delay or interruption between these operations, which is liable to occur, gives time for the material, after having been scraped once, to acquire more or less moisture or other foreign substance upon its scraped surface, which interferes with the complete accuracy of the second scraping and tends to dull more quickly the second knife.

My improved construction, as above pointed out, is arranged to enable an individual vertical adjustment to be given to the knives, which are at the same time vertically adjustable together by movement of the supports 4. This individual adjustment is necessary to allow for the difference in the character of the cut by each knife, while a combined adjustment is also necessary so that both knives may accurately operate upon the same material. The thickness of a certain piece of planed material passing through the scraper at a certain time being substantially uniform, provision must be made for a uniform adjustment of the knives in their operative relationship to the material, while a separate adjustment is necessary to differentiate the operation of each knife in such relation.

I claim:

In a machine of the class described, the combination with a fixed framework having vertical ways, of a work supporting table, supports for said table movable in said vertical ways, means for simultaneously adjusting said supports, a pair of longitudinally removable knife bars movable with said supports, blocks beneath the ends of said knife bars, shelves projecting from said supports beneath said blocks, adjusting screws carried by said blocks and resting on said shelves for the adjustment of said knife bars independently of each other with respect to said supports, a series of individually adjustable feed and pressure rolls carried by the framework above each knife bar, a series of individually adjustable feed rolls carried by said supports adjacent each knife bar, and means projecting from one of said supports for supporting said knife bars upon withdrawal of the same from the machine.

Dated this twenty second day of March 1909.

BYRON S. LOVELAND.

Witnesses:
H. S. PARK,
P. P. ELLIOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."