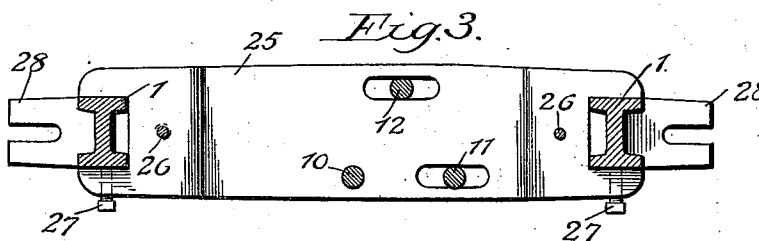
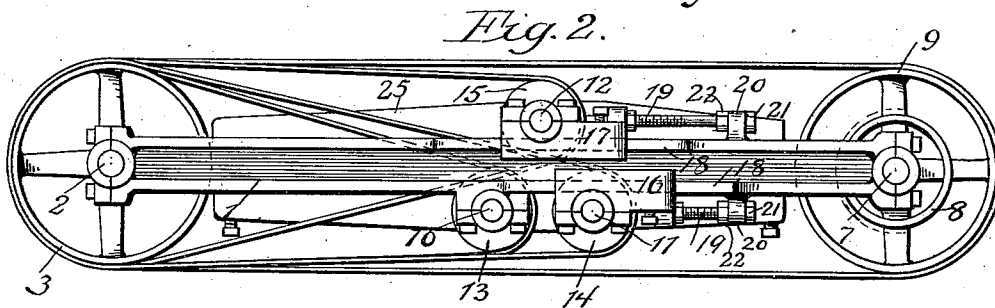
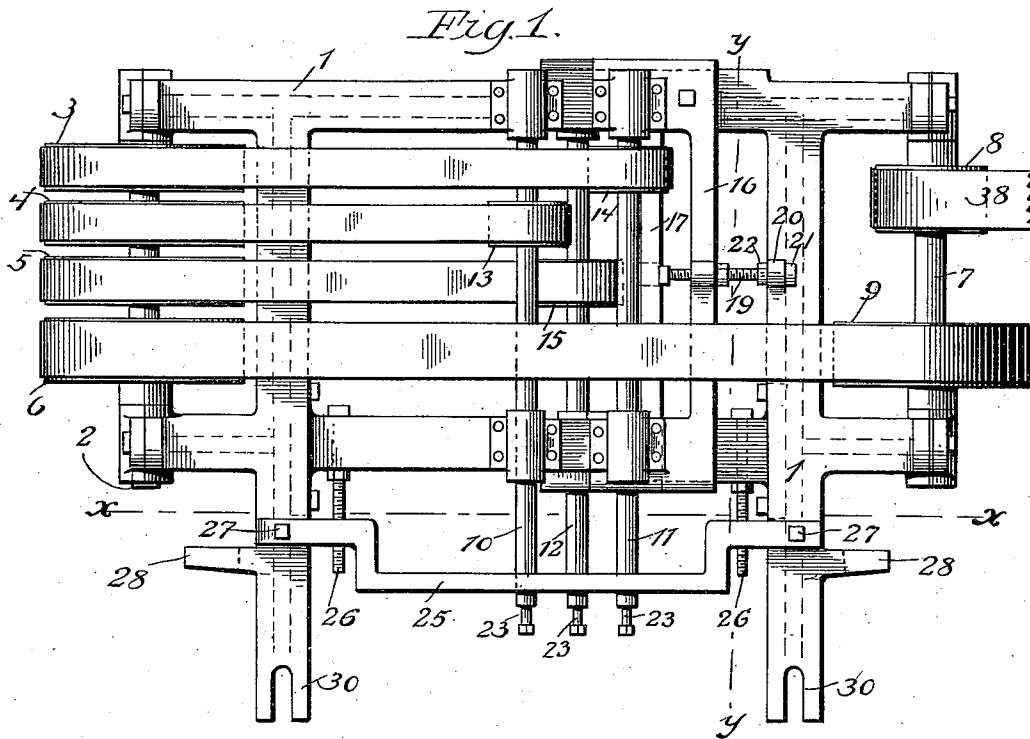


F. C. GERHARD & M. BINTNER.
COMBINED SHEATHING AND LATH MACHINE.

No. 546,522.

Patented Sept. 17, 1895.



Witnesses.

J. Jensen.
W. A. Newton.

Inventors.

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By *Charles Bairns* Attorney.

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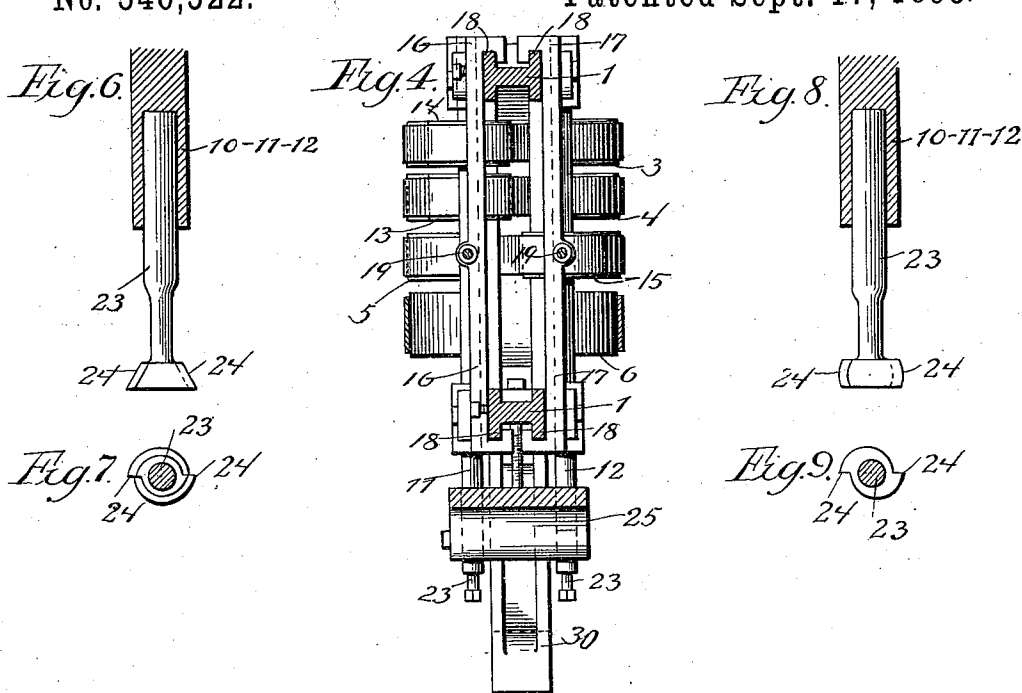


Fig. 10.

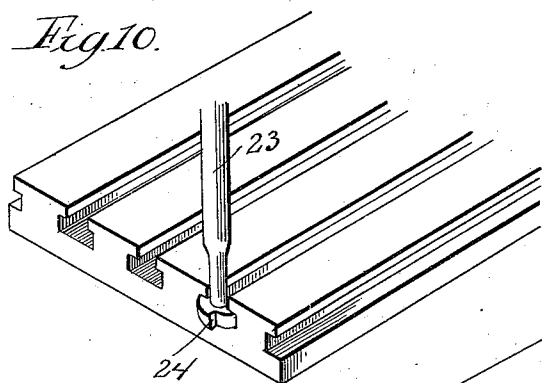


Fig. 11.

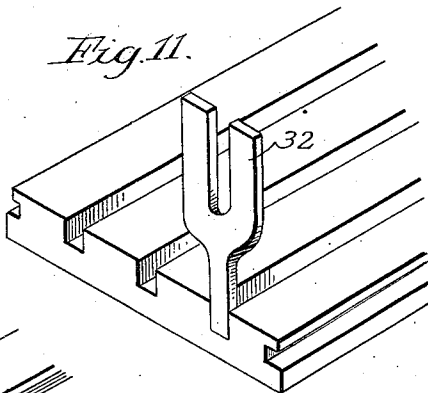
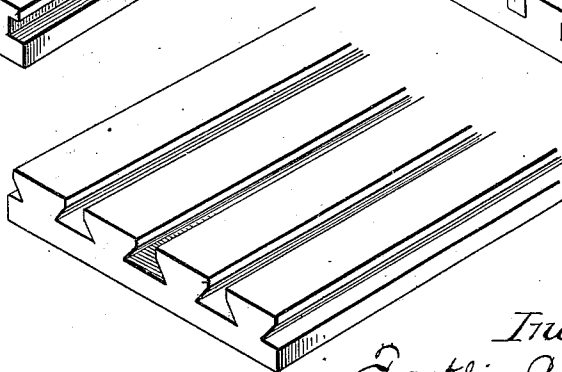


Fig. 12.



Witnesses.

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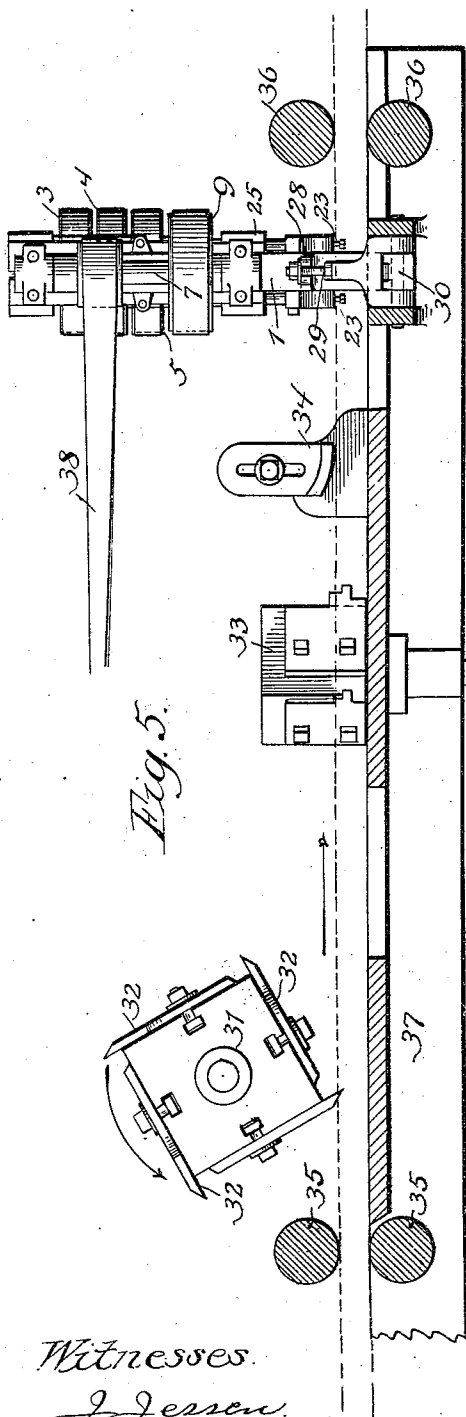
(No Model.)

3 Sheets—Sheet 3.

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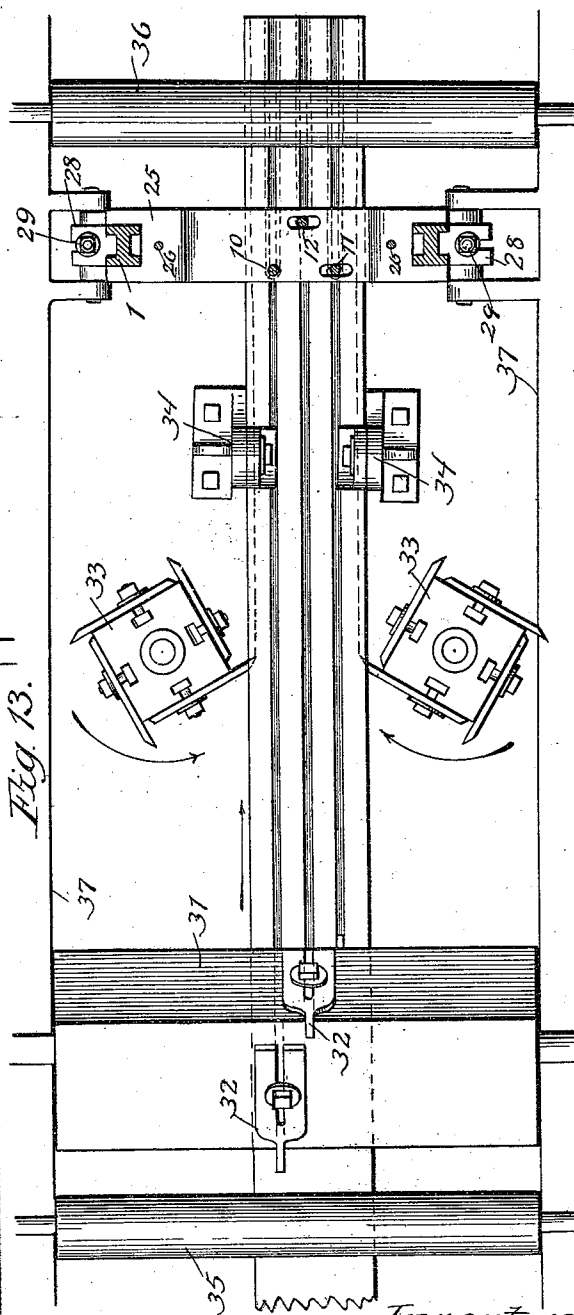
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UNITED STATES PATENT OFFICE.

FRANKLIN C. GERHARD AND MICHAEL BINTNER, OF MINNEAPOLIS,
MINNESOTA.

COMBINED SHEATHING AND LATH MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,522, dated September 17, 1895.

Application filed November 12, 1894. Serial No. 528,577. (No model.)

To all whom it may concern:

Be it known that we, FRANKLIN C. GERHARD and MICHAEL BINTNER, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Combined Sheathing and Lath Machine, of which the following is a specification.

Our invention relates to machines for grooving and undercutting as practiced more especially in making combined sheathing and lath; and the objects of our improvement are to provide an adjustable machine for such purpose which can be attached to and operated in connection with the ordinary machine in a planing-mill known as a "matcher."

We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the mechanism for adjusting and operating the undercutting-bits. Fig. 2 is a top view of the same. Fig. 3 is a cross-section through the line $x x$, Fig. 1. Fig. 4 is a cross-section through the line $y y$, Fig. 1. Fig. 5 is a side elevation of the machine including the co-operating parts of the matcher. Figs. 6 and 7 show, respectively, a side elevation and bottom view of an undercutting-bit. Figs. 8 and 9 are respectively similar views of another form of bit. Figs. 10, 11, and 12 show the product in different forms and stages. Fig. 13 is a top view of the same parts shown in Fig. 5, with the upper portion of the apparatus for operating the bits removed.

The same numeral refers to the same parts throughout the several views.

In the mechanism for operating the bits 1 is the frame. At one side of this frame is a shaft 2, mounted in suitable bearings upon the frame. The shaft 2 is provided with belt-pulleys 3, 4, 5, and 6, rigidly secured to the shaft. At the opposite side of the frame is a shaft 7, mounted in a similar manner upon the frame, and shaft 7 is also provided with similar band-pulleys 8 and 9. Mounted upon the middle portion of the frame are revolving shafts 10, 11, and 12, having band-pulleys 13, 14, and 15, respectively. The shaft 10 may be mounted in bearings secured directly to the frame 1, as shown in Fig. 1. Shafts 11 and

12 should be rendered adjustable laterally, and for this purpose we prefer to have shafts 11 and 12 pivoted in suitable bearings, respectively, upon arms 16 and 17. The arms 16 and 17 at their upper and lower ends grasp flanges 18, formed upon the horizontal bars of the frame 1, as shown in Fig. 4. The flanges 18 thereby furnish supports to hold the arms 16 and 17 securely to the frame and likewise form horizontal ways upon which the arms may slide. To effect this horizontal adjustment of the arms 16 17, and thereby of the shafts 11 12, bolts 19 are loosely held within ears 20 upon the frame 1 and pass through said arms respectively. A head and collar 21 22, rigidly secured to or formed upon the bolts 19, prevent the bolts from moving horizontally within the ears 20. The bolts 19 are also provided with screw-threads which operate within corresponding threads in the arms 16 17. In the lower ends of the shafts 10 11 12 are removably secured bits 23, having cutting-edges 24. A bar 25 extends transversely between the sides of the frame 1 near its bottom. Through slots or openings in this bar the lower ends of the shafts 10 11 12, with their bits, project. The bar 25 may be forked at both ends, so as to embrace the side pieces of the frame, as shown in Fig. 3. Bar 25 is adjusted vertically by means of the screw-threaded bolts 26, passing through a cross-bar of the frame 1 and operating in corresponding threads in bar 25. When bar 25 is so adjusted to the proper height, it may be firmly anchored to the frame by means of set-screws 27. For attaching the mechanism described to the matcher a forked lug or projection 28 may be formed on the frame 1 to receive a hinged bolt 29 upon the matcher, and the lower ends of the upright standards of the frame have forks 30 to fit upon a corresponding bar in the matcher, or any other suitable means may be employed therefor, according to the build of the matcher.

The co-operating parts of the matcher consist of the top cylinder and head 31, provided with the ordinary grooving-knives 32 for cutting plain grooves in the surface of boards, the side heads 33, also provided with knives for grooving the two edges of the board and trimming them to a definite width, guides 34, and the sets of rollers 35 36. These parts will

be mounted upon the usual bed 37, with the usual mechanism for operating the same.

The operation of our machine is as follows: The device for operating the undercutting bits having been secured to the matcher (preferably over the bottom cylinder) is operated by the belt 38 upon the belt-pulley 8 on shaft 7, while a belt from pulley 9 to pulley 6 drives shaft 2, with its pulleys 3 4 5, which pulleys, respectively, have belts running to pulleys 14, 13, and 15, and thereby rotate the shafts 11, 10, and 12 and operate the bits 23. A board being introduced between the rollers 35, is acted upon by knives 32 in the revolving cylinder 31, producing grooves in its top surface, as shown in Fig. 11. The board then passes between the two revolving side heads 33, which are adjusted to trim it to the desired width by means of suitable knives, which also groove its edges to the form shown in Figs. 11 or 12, according to the form of groove ultimately desired in the sheathing. The forward end of the board is then received between the two guides 34, set to receive its exact width, so that it may be properly delivered to the undercutting-bits. The shafts holding the bits 23 will have been adjusted laterally by the devices described, so that a bit will enter each groove made by knives 32, and the transverse bar 25 will have been also adjusted, so as to come close to or bear upon the upper surface of the board and hold it in contact with the bed of the matcher. The bits, being provided with cutting-edges lateral to their shanks made in such form as to provide the groove desired by their revolution, undercut the groove produced by the knives 32, as the board passes through. The rollers 36 deliver the finished sheathing and lath combined from the rear end of the machine in the form shown in Figs. 10 or 12, the bit of Fig. 8 being adapted to produce the sheathing of Fig. 10 and the bit of Fig. 6 that of Fig. 12. The number of the bits with their operating-shafts employed is not essential, either two or three will be the numbers ordinarily called for in practice. By this method the power

employed to produce the groove is much less than that heretofore necessary and the objectionable noise incident where saws are used to undercut is removed, besides forms of grooves can be produced which cannot be produced by any other machine.

What we claim as new, and desire to secure by Letters Patent, is—

1. An attachment for a planing machine, and which is independent thereof, consisting of a frame that is adapted to be secured in a vertical position above the planing machine at any desired point, combined with a suitable number of vertical cutter shafts journaled in the frame, a presser bar, vertically adjustable upon the lower portion of the frame, and means for adjusting the shafts laterally, substantially as described.

2. An attachment for a planing machine, consisting of a frame that is adapted to be secured in a vertical position above the top of the planing machine, combined with a number of vertical cutter shafts, journaled in the frame, driving mechanisms for the shafts independent of the planing machine, means for adjusting the shafts laterally, and a vertically adjustable presser bar, on the lower portion of the frame, and which also serves as a bearing for the lower ends of the cutter shafts, substantially as set forth.

3. The frame, provided with suitable means for attachment to a planing machine at its lower ends; the bent presser bar, and means for adjusting it vertically upon the frame; the cutter shafts, and mechanisms for driving each one separately; adjustable arms in which two of the shafts are journaled, and means for adjusting the arms laterally; the lower ends of the shafts being made to pass through the presser bar which forms a guide for them, all being arranged and combined to operate, substantially as specified.

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MICHAEL BINTNER.

Witnesses:

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CHAS. S. CAIRNS.