Feb. 22, 1927. 1,618,207

F. L. LANE

SECTIONAL HOLDDOWN BAR FOR ENDLESS BED SANDERS

Filed Dec. 24, 1925 2 Sheets-Sheet 1

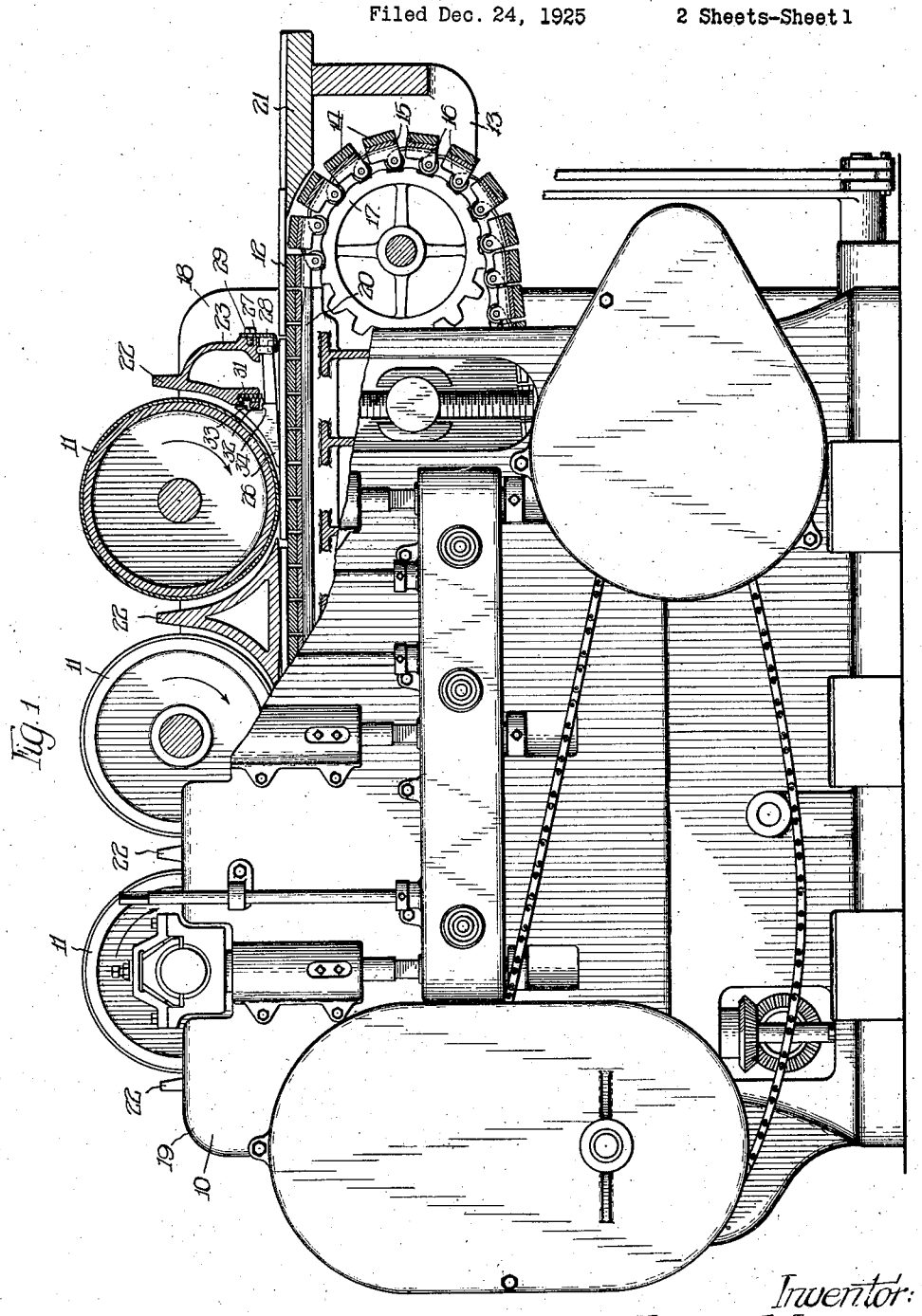


Fig. 1

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Fig. 3.

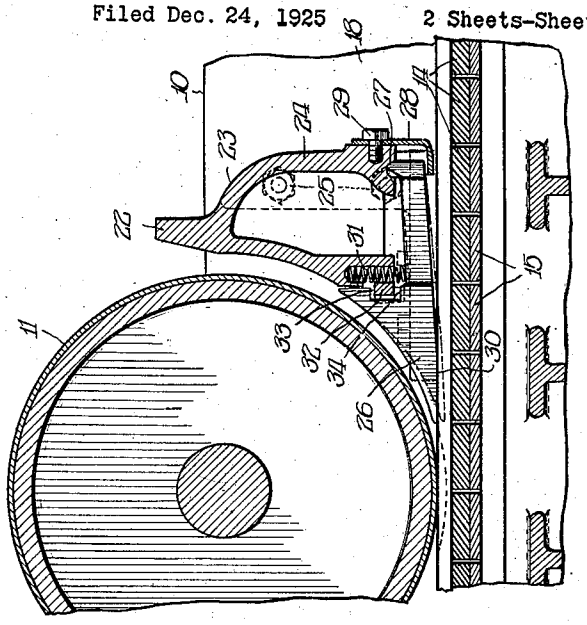
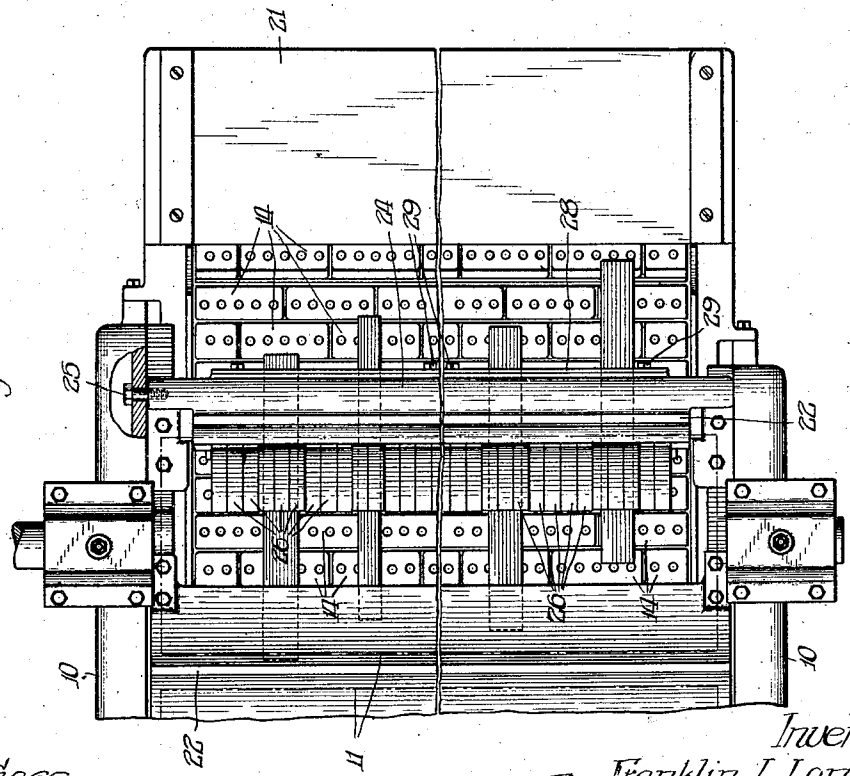



Fig. 2.




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Patented Feb. 22, 1927. 1,618,207

# UNITED STATES PATENT OFFICE.

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## SECTIONAL HOLDDOWN BAR FOR ENDLESS BED SANDERS.

Application filed December 24, 1925. Serial No. 77,647.

This invention has to do with sanding machines of the type commonly known as endless bed sanders, wherein the stock to be surfaced is placed on a moving bed and is carried by the same under a hold-down bar and into co-action with one or more rapidly rotating sander drums.

One object of the invention is to provide an improved hold-down bar which is capable of compensating automatically for any variations in the thicknesses of different pieces of stock approaching the first or sizing drum by allowing the thicker pieces to be acted upon by that drum to proportionately greater depths than the thinner pieces, whereby the sizing is substantially completed by the first drum and the succeeding drums may more effectively accomplish the smoothing and polishing operations for which they are intended.

Another object is to provide such a hold-down bar which is capable of handling simultaneously several pieces of stock of different thicknesses.

Other objects and advantages will be evident upon a full understanding of the nature of the hold-down bar, the invention residing substantially in the novel features of construction, arrangement and combination of parts constituting the bar.

A preferred form of the invention is set forth in the accompanying drawings and following description, but it is to be understood that such embodiment is presented merely for the purpose of illustration and is not to be accorded any interpretation which might be calculated to limit the invention short of its true and most comprehensive scope in the art.

In the drawings:

Fig. 1 is a partially sectioned side elevation of an endless bed sander equipped with a hold-down bar constructed in accordance with the invention;

Fig. 2 is a plan view of the front end of the sander, showing several pieces of stock engaged by the hold-down bar; and

Fig. 3 is a fragmentary vertical section taken longitudinally of the sander through the hold-down bar and first drum.

It will be observed in the drawings that the sander includes a main frame 10, a series of sander drums 11 which are rotatably mounted in bearings in the upper portion of the frame, and an endless bed 12 which is adjustably positioned with the upper horizontal stretch of the same spaced below the peripheries of the drums.

The bed 12 is mounted on a separate bed frame 13, and the frame 13 is supported between the side walls of the frame 10 by suitable means which permit of vertical adjustment. The surface of the bed is composed of a large number of closely arranged rubber pads 14 which are secured to a number of transversely extending slats 15, and the slats 15 are attached to two spaced chains 16 which are trained over sprockets 17 carried by the frame 13. The upper stretch of the bed 12 moves from the in-feed end 18 of the sander to the out-feed end 19, and is supported during such movement on a number of longitudinally extending ways 20 upon which the under surfaces of the slats 15 slide.

The pieces of stock to be surfaced are fed onto the bed 12 from a table 21 which is arranged at the extreme in-feed end of the frame 13 in alignment with the bed, and, during the successive surfacing operations by the drums 11, the pieces are held down upon the resiliently yieldable pads 14 of the bed in proper position relative to the drums by means of a number of transversely extending hold-down bars 22. The bars 22 are arranged in front of, between, and behind the drums 11, with the under surfaces of the bars at about the same level as the bottoms of the drums. The bars 22, with the exception of the front one, are in the nature of fixed guides which serve to press the pieces of stock against the resiliently yieldable bed and thereby equally gauge the amount of material removed from the top surfaces of the stock by the operation of the drums.

The front hold-down bar 23 is different from the others, and it is in the construction, arrangement and operation of the same that this invention particularly resides.

The bar 23—which is best shown in Figs. 2 and 3—consists of a hollow frame 24 which is secured by bolts 25 or other suitable means to the side walls of the frame 10. The bar is of sectional construction in that the bottom of the same is composed of a number of closely arranged fingers 26. The front ends of the fingers 26 pivotally engage with the frame by means of a rib and groove connection 27 therebetween, and are held in such engagement by an angle strip 28 which is re-

movably secured to the front face of the frame by bolts 29 and extends beneath the front ends of the fingers. The bottom operating faces 30 of the fingers extend rearwardly from the front ends of the same at a slight downward inclination, and the rear ends, which are curved to conform generally to the adjacent portion of the front drum 11, are pressed downwardly by small coil springs 31 which are interposed between the fingers and the frame. The fingers are limited in their downward spring pressed movement by lugs 32 on the frame which engage with shoulders 33 on the fingers, and are limited in their upward resiliently yieldable movement by engagement of the lugs 32 with shoulders 34 on the fingers.

In the operation of the sander, the front hold-down bar 23 functions in the following manner:

The pieces of stock to be surfaced are placed on the table 21 and are carried into the sander by the pads 14 on the bed 12. The pieces may be placed on the table in stacks, if desired, and the front face of the bar 23 will act as a hopper for automatically feeding the pieces, the latter being removed from the bottom of the stacks in single order and carried beneath the angle strip 28. The number of fingers 26 engaging with each piece will, of course, depend upon the width of the latter. As the pieces move below the hold-down bar, they come into contact with the downwardly and rearwardly inclined bottom faces 30 of the fingers and bear against the same, which causes the pieces to imbed slightly in the resiliently yieldable pads 14. If a piece is relatively thin, the fingers 26 in engagement therewith will be pressed upwardly but a slight amount, and a proportionately thin layer of the stock will be removed by the front drum in the sizing operation, while, if the piece is relatively thick, the fingers will yield a greater amount and a proportionately thick layer of the stock will be removed. As a result, the pieces of stock are brought to substantially the same thickness irrespective of their original sizes, and the actions of the succeeding drums are almost entirely smoothing and polishing ones.

I claim:

1. In a sander, the combination with a rotatable drum, and an endless resiliently yieldable bed for moving pieces of stock to be surfaced into co-action with the periphery of the drum, of a sectional hold-down bar in advance of the drum having resiliently and independently yieldable sections.

2. In a sander, the combination with a rotatable drum, and an endless resiliently yieldable bed for moving pieces of stock to be surfaced into co-action with the periphery of the drum, of means for positioning the stock relative to the drum comprising a stationary frame, and a number of resiliently yieldable fingers pivoted at their front ends to the frame and spring pressed at their rear ends from the same to provide bottom operative surfaces on the fingers for engagement with the stock.

3. In a sander, a sectional hold-down bar in advance of the drum, comprising a stationary frame, a plurality of closely arranged fingers interlocked at their front ends with the frame, an angle strip secured to the front face of the frame and extending beneath the front ends of the fingers for maintaining loosely the interlocked engagement between the fingers and frame to effect a pivotal connection therebetween, springs interposed between the rear ends of the fingers and the frame to render the fingers resiliently yieldable to upward pressure, and co-acting shoulders on the fingers and frame for limiting the upward and downward movements of the fingers.

4. In a sander, the combination with a series of rotatable drums, and an endless bed for moving pieces of stock to be surfaced into co-action with each of the drums in turn, of resilient means for pressing the stock toward each of the drums, rigid means for limiting the extent to which the stock is caused by said resilient pressing means to approach all drums except the first, and resilient means for yieldingly resisting the approach of the work toward the first drum whereby to cause the work to be both sized and smoothed by that drum.

In testimony whereof I have hereunto subscribed my name.

FRANKLIN L. LANE.