March 29, 1932. F. J. KISTNER 1,851,256

SUPPORT FOR TOP AND BOTTOM CUTTER HEAD MOTORS OF MOLDERS

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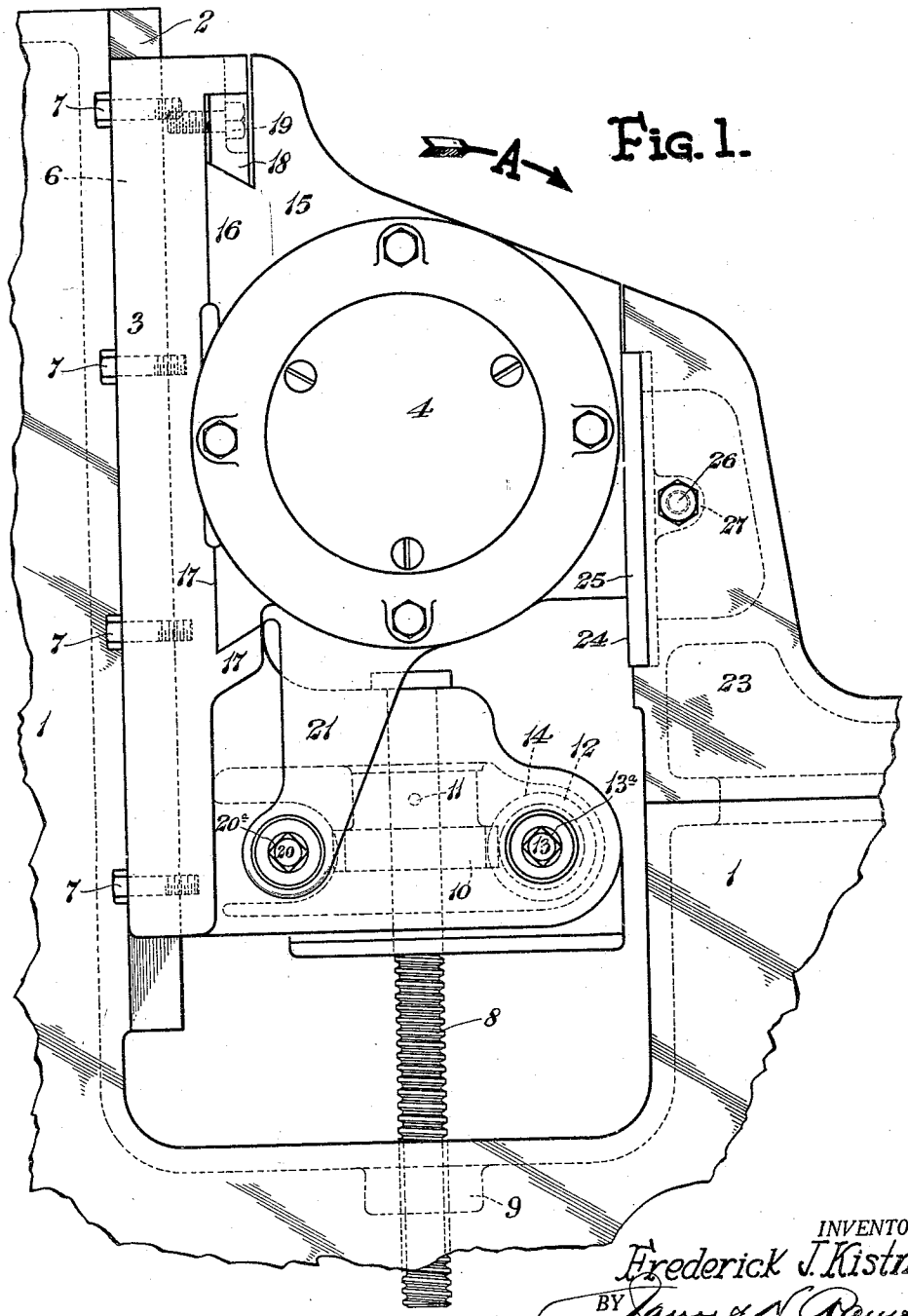

Fig. 1.

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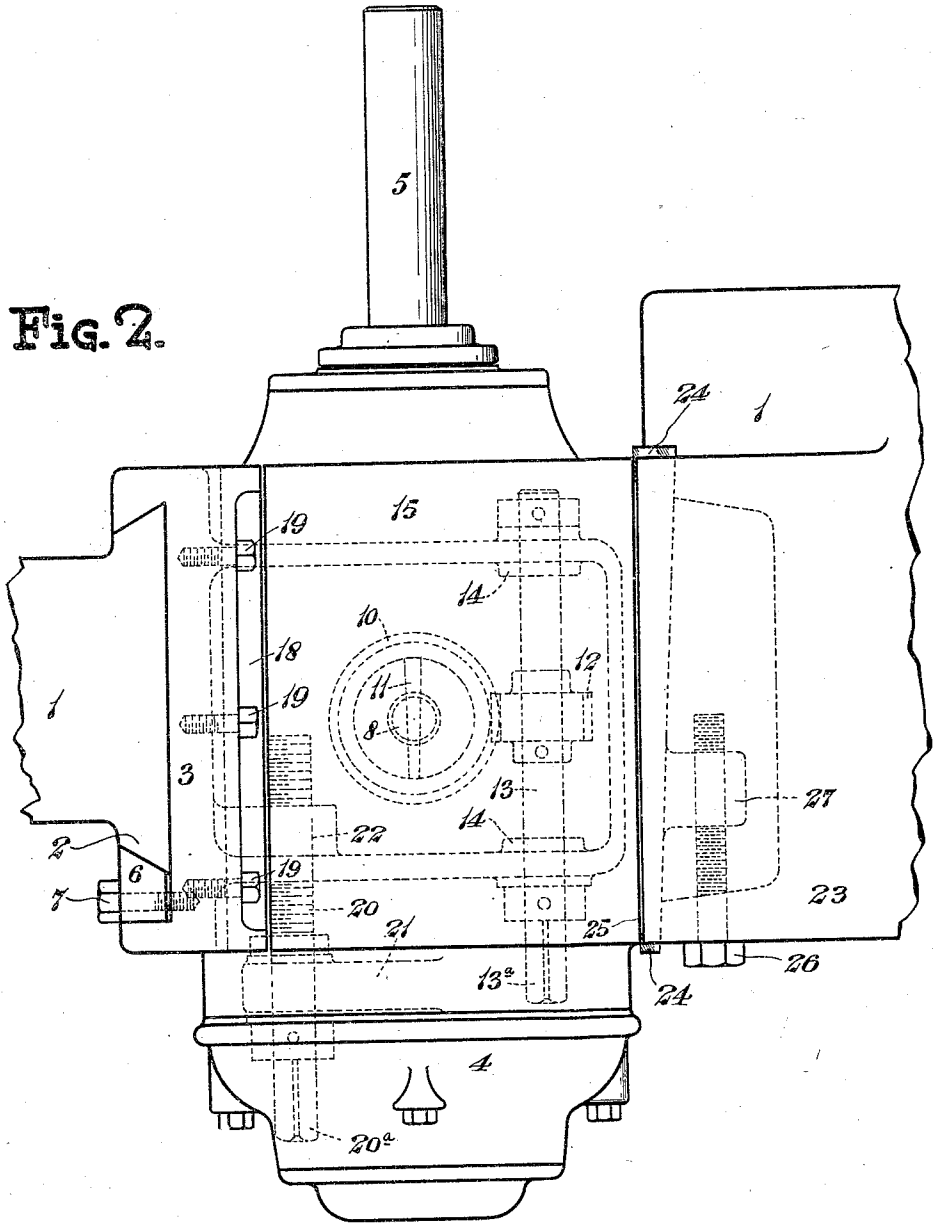
Fig. 2.



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UNITED STATES PATENT OFFICE

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SUPPORT FOR TOP AND BOTTOM CUTTER HEAD MOTORS OF MOLDERS

Application filed November 10, 1930. Serial No. 494,497.

This invention relates to a molder or like woodworking machine and more particularly to means for supporting the motors of the top and bottom cutter heads.

Heretofore in woodworking machine, such as molders, the top and bottom cutter heads thereof have given considerable trouble, due to the manner in which they have been supported relative to the main frame of the machine. It is well-known to those skilled in the use of molders that the top and bottom cutter heads must be capable of adjustment both vertically and horizontally relative to the machine. In order to impart these two movements to both cutter heads, it has been the common practice to mount them in a manner known as an "overhung position",—that is, having the motor mounted for horizontal movement upon a slide, the slide, in turn, being mounted for vertical movement upon the main frame of the machine.

When mounting the top and bottom cutter head motors of molders by the overhung method, as above described, there are certain objections, namely: the weight of the motor and cutter head combined has a tendency to sag or drop away from the main slide, the slide in turn away from the main frame, which results in vibration, should the cutter head or rotor, or other rotating parts of the motor be out of balance.

It is an aim of this invention to overcome these objections in the mounting of top and bottom cutter head motors for molders. Briefly stated, my invention consists in supporting the top and bottom cutter head motors of molders on a plurality of sides so as to render them solid relative to the machine, thereby tending to eliminate vibration due to an out of balance cutter or rotor or other rotating parts of the unit, said supporting means being so constructed that either vertical or horizontal adjustment of the unit may be quickly and easily accomplished.

My invention will be well understood by reference to the following description of the single illustrative embodiment thereof shown, by way of example, in the accompanying drawings, wherein—

Fig. 1 is a side elevation of the top cutter head unit of a molder shown supported by my improved structure, the main frame of the molder being broken away and shown only in the vicinity of the cutter head unit; and

Fig. 2 is a plan view of Fig. 1.

In the embodiment of my invention as illustrated and which shows a preferred construction, 1 designates a portion of the main frame of a molder, which is provided with a vertical dovetailed slideway 2 for slidably receiving and supporting the slide 3. The cutter head motor 4 is mounted for horizontal movement upon the slide 3, as will be presently described and drives the cutter head axis or spindle 5. As best seen in Fig. 2, a gib 6 is held between the vertical dovetailed slideway 2 and the slide 3 by screws 7, and by examination of this figure it will be clearly apparent that should any wear occur between the gib 6 and the vertical dovetailed slideway 2 or said slideway and the slide 3, by tightening the screws 7, the gib 6 will be drawn inwardly, thereby removing any excess play between the slide 3 and the vertical dovetailed slideway 2.

As before stated, the slide 3 is mounted for vertical movement upon the slideway 2 and the means for raising and lowering said slide upon said slideway consists in elevating and lowering screw 8, rotatably supported in said slide 3, the lower threaded end of which is received by the threaded boss 9 of main frame 1, as clearly illustrated in Fig. 1. Spiral gear 10 is suitably fixed for rotation with the elevating and lowering screw 8, as by pin 11 and is in permanent mesh with spiral gear 12, the latter gear being suitably fixed to shaft 13, which is rotatably mounted in bosses 14—14 formed integral with the slide 3. The outer end of shaft 13 is squared to accommodate a hand crank, the crank not being shown. It will, therefore, be seen that when the hand crank is applied to the squared end 13a of the shaft 13 and rotated, the slide 3 will be moved upwardly upon the vertical dovetailed slideway 2 by means of the spiral gears 10 and 12 and the screw 8, respectively, and when said crank is rotated in a reverse direction said slide 3 will be moved downwardly upon the vertical dove-

tailed slideway 2 by said spiral gears 10 and 12 and screw 8.

The housing 15 of motor 4 is provided with a horizontal dovetailed projection 16 which fits within the dovetailed horizontal slideway 17, formed within the slide 3. A gib 18 is inserted between the horizontal dovetailed projection 16 and the dovetailed horizontal slideway 17 and is held therein by means of the screws 19. This gib serves to take up any wear which may occur between the horizontal dovetailed projection 16 of housing 15 and the dovetailed horizontal slideway 17 of slide 3.

The means for moving the housing 15 of motor 4 horizontally upon the slide 3 consists of shaft 20 which is rotatably supported within lug 21, said lug being formed integral with the housing 15, the inner threaded end of said screw being received by the threaded hole 22 in slide 3, as clearly shown in Fig. 2. The outer end of shaft 20 is squared to accommodate a hand-crank and when the hand-crank is attached to said squared end 20*a* of said shaft and rotated, the threaded end of said shaft, working within the threaded hole 22 in slide 3, moves the lug 21 and, consequently, the motor housing 15 and motor 4 inwardly and when said crank is rotated in a reverse direction, said lug 21 will be moved outwardly, thus moving the housing 15 and motor 4 outwardly. Thus it will be seen that by rotating the threaded shaft 20 the motor housing 15 can be moved horizontally upon the slide 3.

The parts mentioned thus far are well-known to those skilled in the art of woodworking machinery and constitute what is known as an "overhung cutter head unit". With a construction of this nature the motor housing 15 is supported only by the slide 3 and the slide supported only upon the frame 1 and due to the weight of said housing, motor 4 and other parts of the cutter head unit, the slide has a tendency to sag outwardly and downwardly away from the main frame 1 in an approximate direction of arrow A, thus allowing considerable vibration of the cutter head unit in the event that the rotor of the motor 4 is slightly out of balance, or if the cutter head (not shown) be out of balance.

In order to overcome these objections and to further strengthen and support the housing 15, I provide a supporting member or extension 23, suitably fixed to and above the main frame 1 and provided with an adjustable tapered gib 24 which is adapted to tightly fit against a vertically disposed wall 25 formed integral with the motor housing 15. The adjustment of the gib 24, as shown in Fig. 2, is accomplished through the screw 26 which is passed through a hole in said supporting member 23 and threaded within boss 27, said boss being formed integral with said gib, as best seen in Fig. 2. By means of this gib 24 and supporting member 23, one side of the motor housing 15 is rigidly supported, and by means of the slide 3, the opposite side of the motor housing is supported, thereby eliminating the overhung construction and reducing vibration of the cutter head unit to a minimum. By use of the gibs 18 and 24, the motor housing 15 is rigidly supported between the slide 3 and the supporting member 23 and by use of the gibs 6 and 24 the slide 3 is rigidly supported between the main frame 1 and the supporting member 23.

I have found, by actual experience, that in providing an additional supporting member, such as 23, and an adjustable tapered gib 24, in combination with a vertically disposed wall 25, formed integral with the motor housing 15, that the top and bottom cutter head units are rigidly supported at all times and are capable of being adjusted, both vertically and horizontally which eliminates, to a minimum, vibration of said cutter head units and produces a machine capable of performing perfect work.

While I have shown and described one particular embodiment of my invention, it is to be understood that certain changes and modifications can be made without departing from the scope or spirit thereof, the invention being limited only by the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a molder or like woodworking machine, the means for supporting the upper or top cutter head unit which comprises a bed or main frame, a cutter head unit having its axis above the bed of said machine, an extension above the bed and to one side of said cutter, a slide mounted for vertical movement on said extension and adapted to carry one side of said cutter head unit, means permitting horizontal movement of said cutter relative to said slide, and a similar parallel extension located above the bed of the machine and on the other side of said cutter head unit to hold the latter and guide it against the slide and the slide in turn against the first-named extension.

2. In a woodworking machine, such as a molder, the means for supporting the upper cutter comprising the combination of a bed, an extension extending above said bed and to one side of said cutter, a slide mounted for vertical movement upon said extension, a cutter head unit carried by said slide and having its axis above said bed, means for moving said cutter in a horizontal direction upon said slide and relative to said bed, and a second extension located above said bed and parallel with said first-named extension to hold and guide said cutter head unit and slide against said first-named extension.

3. A support for top cutter head units of molders and like woodworking machines comprising, in combination with the main frame or bed of such machines, a vertical dovetailed slideway extending above said bed, a slide mounted for vertical movement thereon, means for moving said slide, a cutter head unit mounted for horizontal movement on said slide including a motor housing, a vertically disposed wall on said housing parallel with said vertical dovetailed slideway and an extension or supporting member located above said bed and having one face parallel with said slideway and in engagement with said wall of said motor housing to hold and guide said cutter head unit and slide against said slideway, substantially as described.

4. In a molder or like woodworking machine, the support for the top cutter head unit which comprises the combination of a main frame or bed, a vertical slideway extending above said bed, a slide mounted for vertical movement thereon, a cutter head unit mounted for horizontal movement on said slide, a vertically disposed wall on said cutter head unit parallel with said slideway and an extension or supporting member located above said bed and having one face in engagement with said vertically disposed wall of said cutter head unit to hold and guide said unit and slide against said slideway, substantially as described.

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