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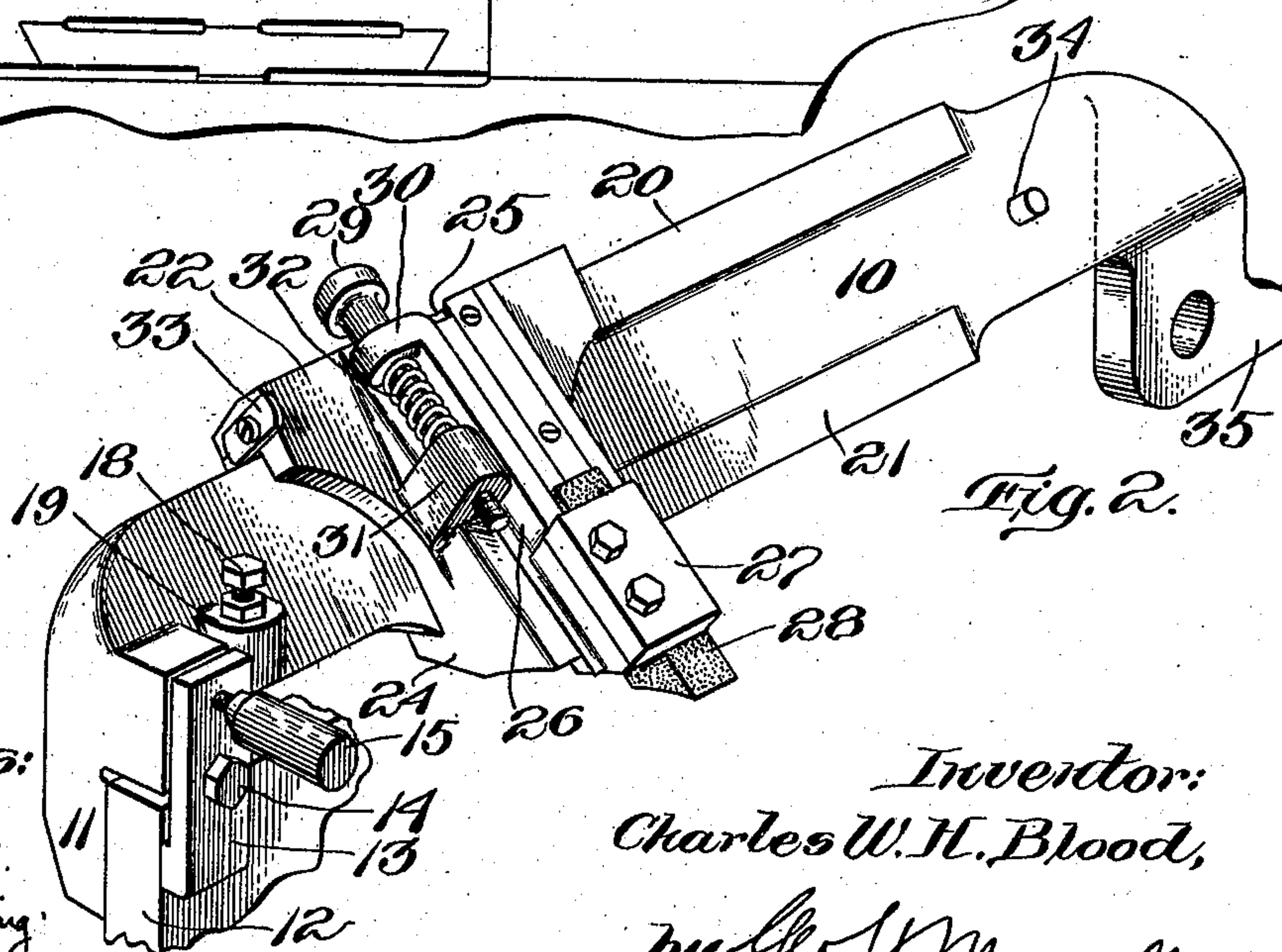
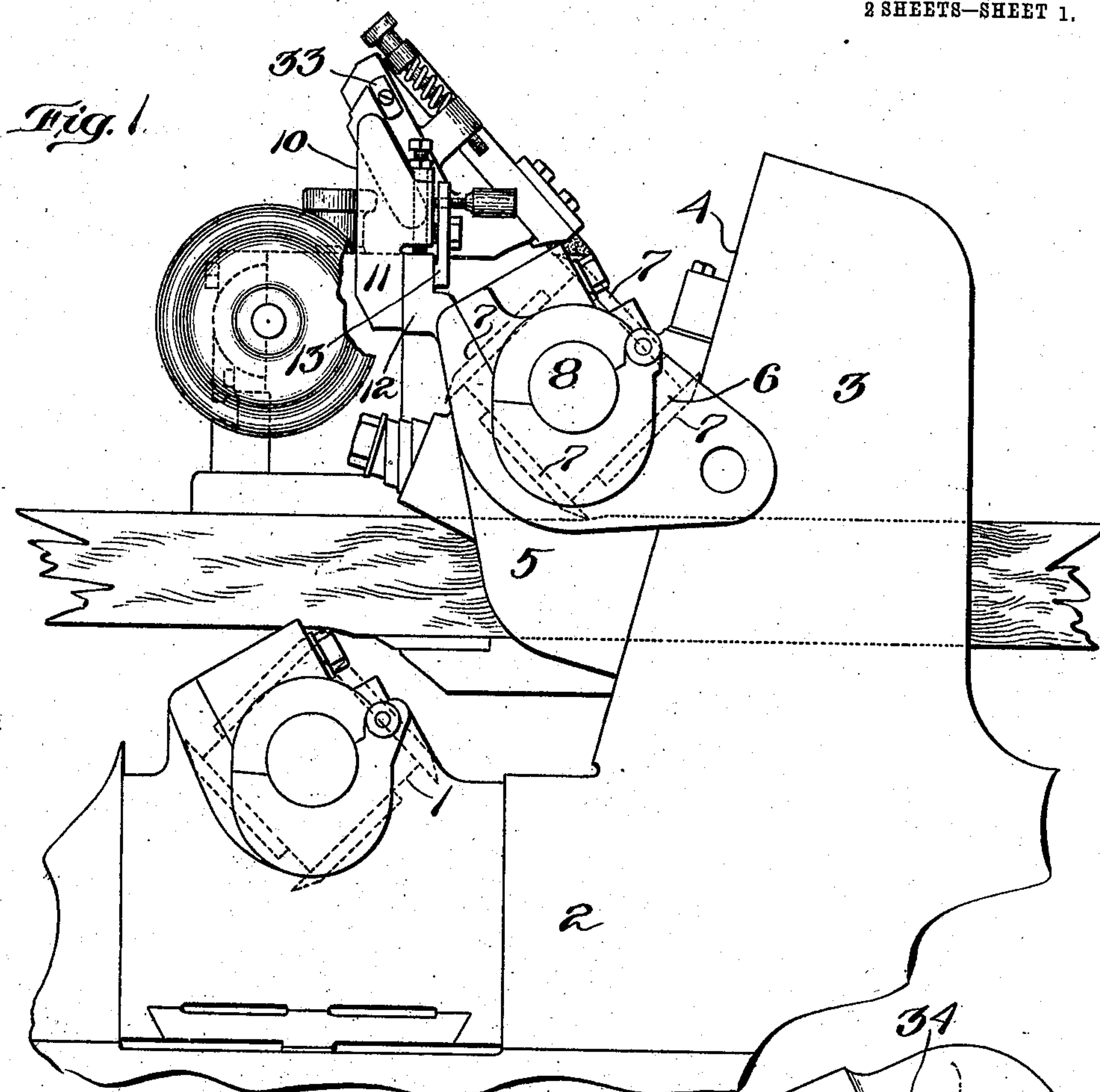
PATENTED JULY 2, 1907.

C. W. H. BLOOD.

UPPER CUTTER HEAD SHARPENER FOR PLANING MACHINES.

APPLICATION FILED MAR. 12, 1907.

2 SHEETS—SHEET 1.



**Witnesses:**

Wm. J. Pike

M. J. Spalding

*Inventor:*

*Charles W. H. Blood,*

by Geo. S. Maxwell,  
Attorney

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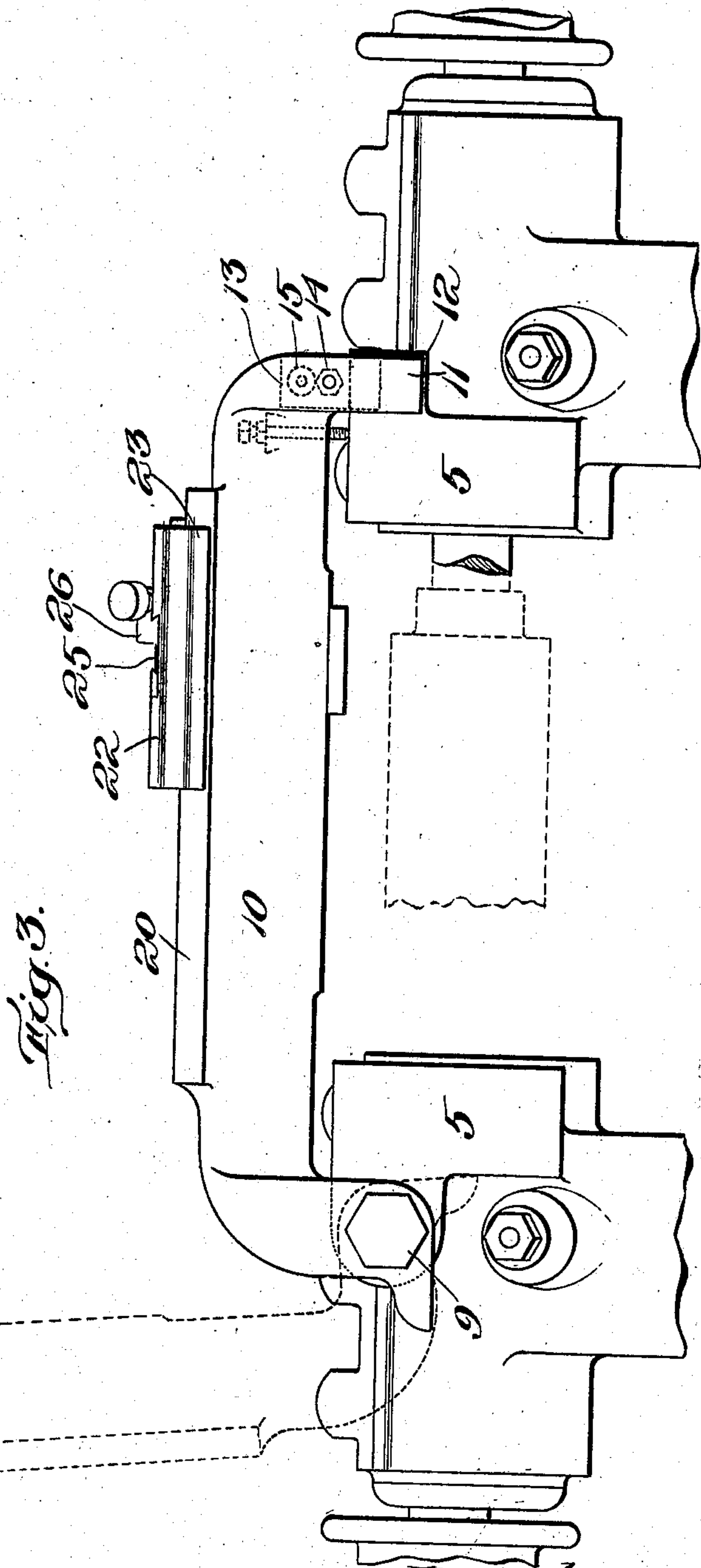
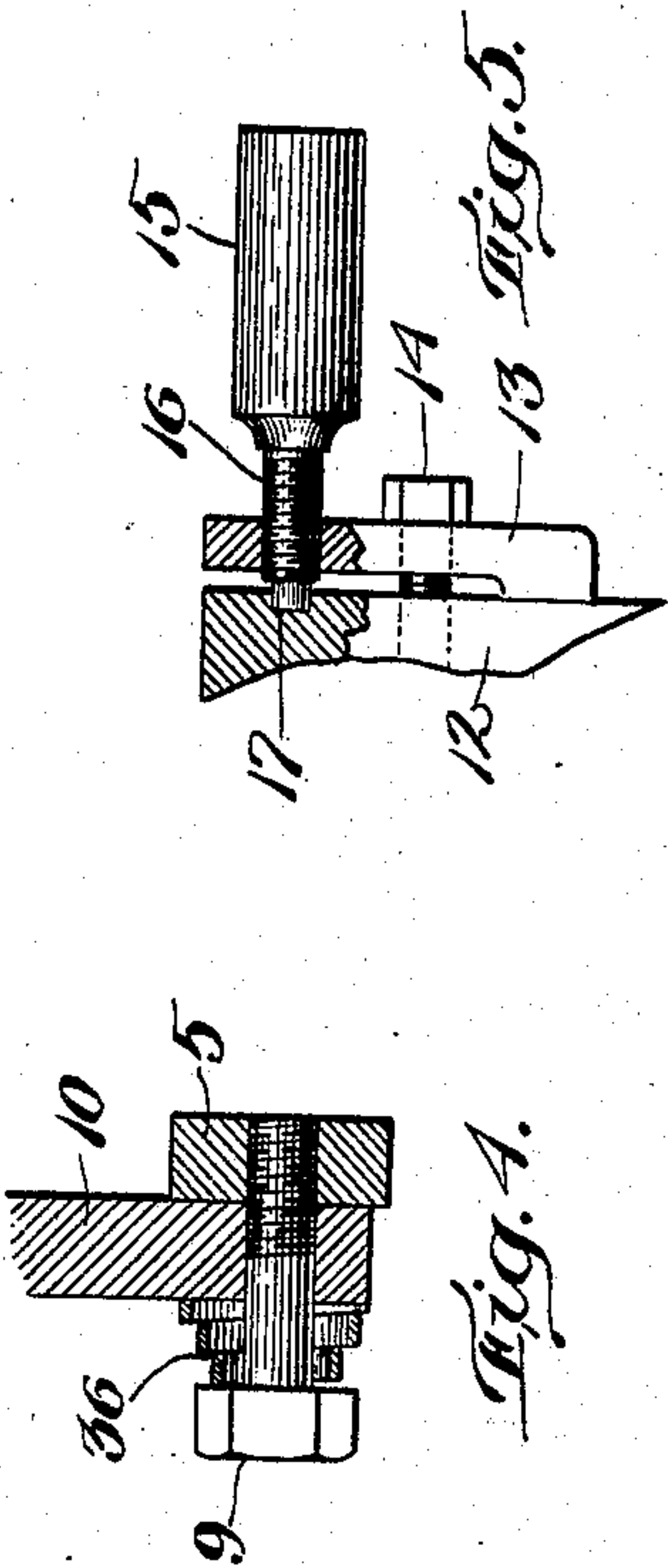
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by Geo. H. Maxwell  
Attorney.



# UNITED STATES PATENT OFFICE.

CHARLES W. H. BLOOD, OF WINTHROP, MASSACHUSETTS, ASSIGNOR TO S. A. WOODS MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

## UPPER CUTTER-HEAD SHARPENER FOR PLANING-MACHINES.

No. 858,564.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed March 12, 1907. Serial No. 361,974.

*To all whom it may concern:*

Be it known that I, CHARLES W. H. BLOOD, a citizen of the United States, residing at Winthrop, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Upper Cutter-Head Sharpeners for Planing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is a sharpening device or attachment especially adapted for the top cutter-head of high-speed wood planers, its object being to provide means ever ready at the hand of the operator for instantly truing the knives with extreme accuracy, certainty, and quickness.

To this end I mount on the traveling yoke of the main cutter-head a swing bar, which therefore takes all positions of said yoke, provided with a guideway and a sliding carriage provided with an emery wheel or stick or other sharpener, adjustable into position for accurately grinding the knives into uniform alinement.

A sharpening device for the upper cutter-head differs from one for other locations in that it cannot remain adjacent the cutter-head, but must be moved out of the way of the shaving spout, hooding, and adjacent mechanism, as well as out of the way of setting the knives, etc. Accordingly I have provided mechanism whereby the sharpener may be instantly moved into absolutely correct position with relation to the knives and yet be normally out of the way.

Besides the above general features, my invention includes, in its preferred embodiment herein set forth, various constructional details of importance which will be pointed out more fully in the course of the following description.

In the drawings, in which I have shown a preferred embodiment of the invention, Figure 1 shows the attachment in end view applied to a usual planer, a fragmentary portion of the latter being shown in side elevation; Fig. 2 is a perspective view, parts being broken away; Fig. 3 shows the attachment in front elevation, the adjacent parts being broken away for clearness of illustration; Figs. 4 and 5 are sectional details to be referred to.

It will be understood that I have purposely omitted showing the general details of the planer itself, as this may be of any usual or preferred kind, a lower cutter-head being indicated at 1 mounted in the planer bed 2, from which extends usual standards 3 on whose inclined face or ways 4 slides the traveling yoke 5 which carries the upper cutter-head 6, including its knives 7 which are to be sharpened, said cutter-head being journaled at 8.

In the preferred construction of my invention I pivot

at 9 on the farther end of said traveling yoke a bar 10 whose forward end has a depending lip 11 adapted to rest flat against a lug 12 which I form on the front portion of the near end of the yoke 5. Coöperating with the lip 11 is a clamping plate 13 loosely held by a bolt 14 to the bar 10 and locked in clamping position by a knurled handle 15 threaded at 16 into the top end of the plate 13 and having a bearing end 17 engaging a recess in the adjacent face of the bar 10. By this means the bar can be quickly clamped by rocking the plate 13 on the bolt 14 as a pivot, the handle grip 15 enabling the operator to set and steady the bar and sharpener and affording convenient means also for raising and lowering the bar. A vertical adjusting screw 18 is threaded into a boss 19 just back of the clamping handle 15 in the bar 10 for accurately adjusting the bar vertically, so as to bring it into absolutely horizontal position or true parallelism to the desired cutting edge of the knives. On the top edge of the bar 10 I provide a preferably V-shaped way or track 20, this location and shape of track being preferable, as it automatically keeps itself clean of shavings, sawdust, etc., an opposite track 21 being provided at the lower side of the bar which is at its intermediate or track-supporting surface inclined obliquely in the general direction of the cutter-head as clearly shown in Figs. 1 and 2. On these tracks or ways 20, 21 I mount a longitudinally sliding carriage 22 provided with opposite jaws 23, 24 for engaging the respective tracks and maintaining absolutely true and steady position as the carriage is slid back and forth by the operator.

On the top surface of the carriage a transverse dovetailed way 25 is provided in which is mounted a cross carriage 26 having a clamping plate 27 for clamping in position thereon an emery stick 28, although I wish it understood that any other recognized sharpening device or means may be mounted in position on said carriage, said cross carriage being accurately adjusted downwardly by a hand screw 29 loosely engaging a shoulder 30 of the cross carriage and a threaded boss 31 of the main slide carriage 22, a coiled spring 32 serving to maintain the cross carriage held tightly upward against the head of the hand screw 29 as clearly shown in Figs. 1 and 2. The front end of the carriage 22 is provided with a button 33 pivotally mounted to swing from the unlocked position shown in Fig. 1 to the locked position shown in Fig. 2, so as to maintain the carriage normally at the forward or upper end of the supporting bar when not in use, this position being desirable for reasons presently explained. The bar 10 also has a stop 34 adjacent its opposite end to prevent the carriage 22 from accidentally sliding off or injuring the knives or adjacent parts. The farther end or rear end of the supporting bar 10 is provided adjacent its pivot



with a stop shoulder 35 for normally maintaining the bar in stable upright position when turned back as shown in Fig. 3. And to insure a yielding fit and prevent the attachment from accidentally falling and to hold it automatically at any angle to which it may be temporarily lifted by the operator, I have provided a heavy spring-washer 36 bearing at one side against the adjacent end of the bar 10 and at its opposite side against the head of the pivot bolt 9, as shown in detail in Fig. 4.

I wish it understood that although I have taken pains herein to set forth the specific details of construction as contained in the preferred embodiment of my invention herein-shown, the latter is capable of a wide variety of embodiments and I do not intend to limit myself to any particular details excepting as required by certain of the claims hereinafter set forth.

The convenience and adaptability to use of my attachment will be obvious to those skilled in wood planers.

Whenever the upper cutter-head shows defective work or indicates that it needs sharpening, the operator simply reaches the handle 15 and pulls the bar 10 down into snug engagement with the lug 12, and clamps it by a simple turn of the handle. This brings the lip 11 flat against the lug 12, the vertical position of the bar being accurately controlled by the adjusting bolt 18. Thereupon he slides the carriage 22 back and forth the desired number of times until all the knives of the upper cutter-head are brought into absolutely true alinement and are all sharpened properly. He then turns the button 33 back to locking position as shown in Fig. 2, unclamps the clamping plate 13 by turning the handle 15 backward slightly and then still grasping the handle, swings the bar 10 and the sharpener thereon over out of the way to the position shown in dotted lines in Fig. 3. The reason for preferring to have the emery-supporting carriage normally at the upper or forward end of the supporting bar is that it saves all possible danger to the knives (which are usually at the far end of the head), and is handier to get at. The spring washer mounting at 36 makes it impossible for the supporting bar 10 to fall, even with its comparatively heavy carriage 22, and serves also to hold the bar in perfectly true vertical position in coöperation with the contacting faces 11 and 12 at the opposite end.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is,

1. In a wood planer, a top cutter-head and its traveling yoke, combined with a knife sharpener support pivoted on said yoke to swing in the plane of said cutter-head, said support having longitudinal ways, a sharpener mounted to travel on said ways, and means for adjusting the sharpener transversely of the ways toward and from the cutter-head.

2. In a wood planer, a top cutter-head and its traveling

yoke, combined with a knife sharpener including a bar having one end pivoted to one end of said yoke and the other end provided with clamping means for removably clamping it to the opposite end of said yoke.

3. In a wood planer, a cutter-head, and a knife sharpener mounted adjacent thereto for sharpening the knives of the cutter-head, including a supporting bar pivoted at one end to swing toward and from said cutter-head, said bar having longitudinal guideways, and a carriage mounted to slide on said guideways and provided with means for retaining a sharpening tool.

4. In a wood planer, a cutter-head, and a knife sharpener mounted adjacent thereto for sharpening the knives of the cutter-head, including a supporting bar pivoted at one end to swing toward and from said cutter-head, provided with yielding means for preventing the bar from falling when raised, said bar having longitudinal guideways, and a carriage mounted to slide on said guideways and provided with means for retaining a sharpening tool.

5. A sharpening device for a wood planer cutter-head, comprising a support, a bar pivoted at one end thereon and provided at its opposite end with a depending lip to engage a flat surface of said support, a clamping plate opposite said lip, a threaded handle for moving said plate into clamping position, guideways extending longitudinally of said bar, and a carriage mounted to slide on said ways provided with means for supporting a sharpening tool.

6. A sharpening device for a wood planer cutter-head, comprising a support, a bar pivoted at one end thereon and provided at its opposite end with means for maintaining the bar in true vertical position and with adjusting means for regulating the horizontal position of the bar, guideways extending longitudinally of said bar and a carriage mounted to slide on said ways provided with means for supporting a sharpening tool.

7. A sharpening device for a wood planer cutter-head, comprising a support, a bar pivoted at one end thereon to swing upward away from the cutter-head, said bar having guideways extending longitudinally thereof, a carriage mounted to slide on said guideways provided with means for supporting a sharpening tool, and means for locking said carriage at the forward end of said bar when not in use.

8. A sharpening device for a wood planer cutter-head, comprising a support, a bar pivoted at one end thereon to swing upward away from the cutter-head, yielding means for maintaining said bar self-supporting at any angle, said bar having guideways extending longitudinally thereof, a carriage mounted to slide on said guideways provided with means for supporting a sharpening tool, and means for locking said carriage at the forward end of said bar when not in use.

9. A sharpening device for a wood planer cutter-head, comprising a support, a bar pivoted at one end thereon to swing toward and from the cutter-head, clamping means and adjusting means at the opposite end for moving said bar into true alinement with the cutter-head, longitudinal ways on said bar, a carriage movable on said ways, provided with means for securing a sharpening tool, and a stop for limiting the rearward movement of the carriage on said ways.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES W. H. BLOOD.

Witnesses:

C. G. OSTEMAN,

EDMUND A. ROTHWELL.