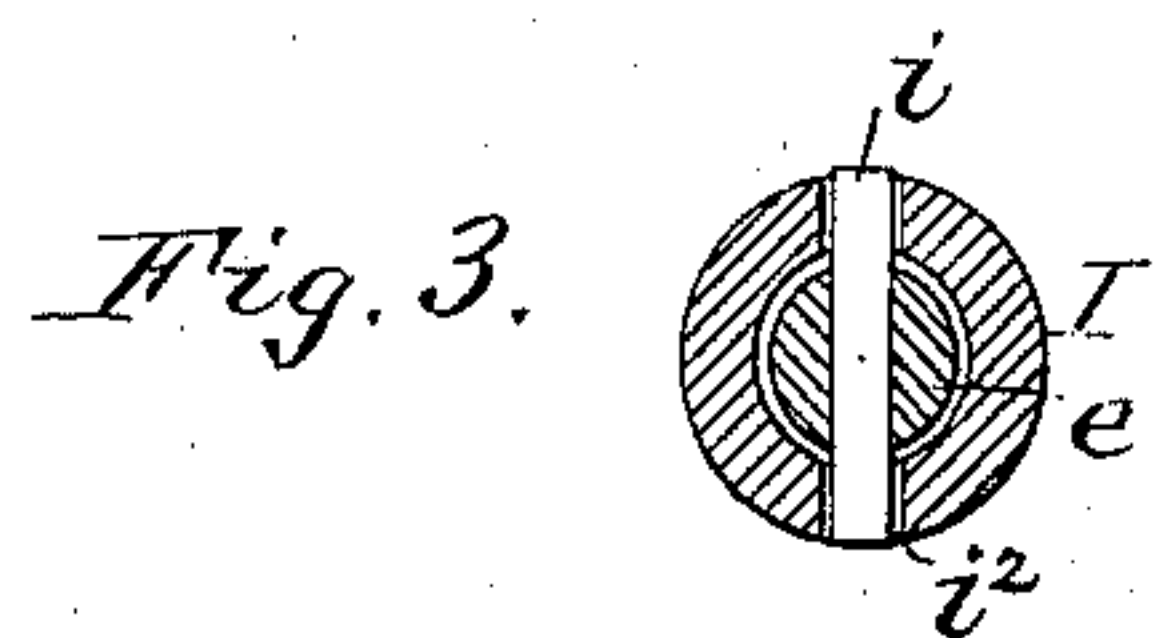
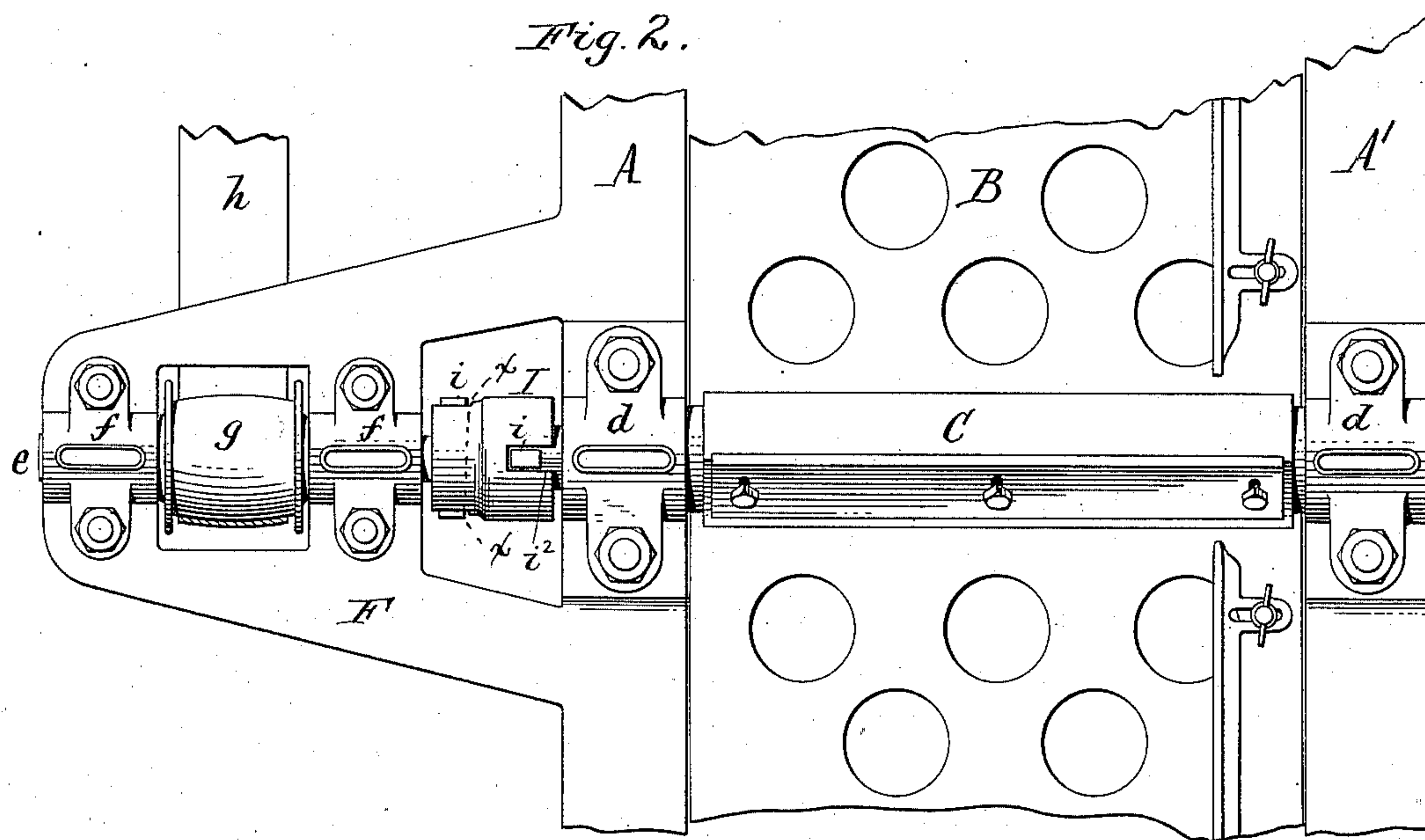
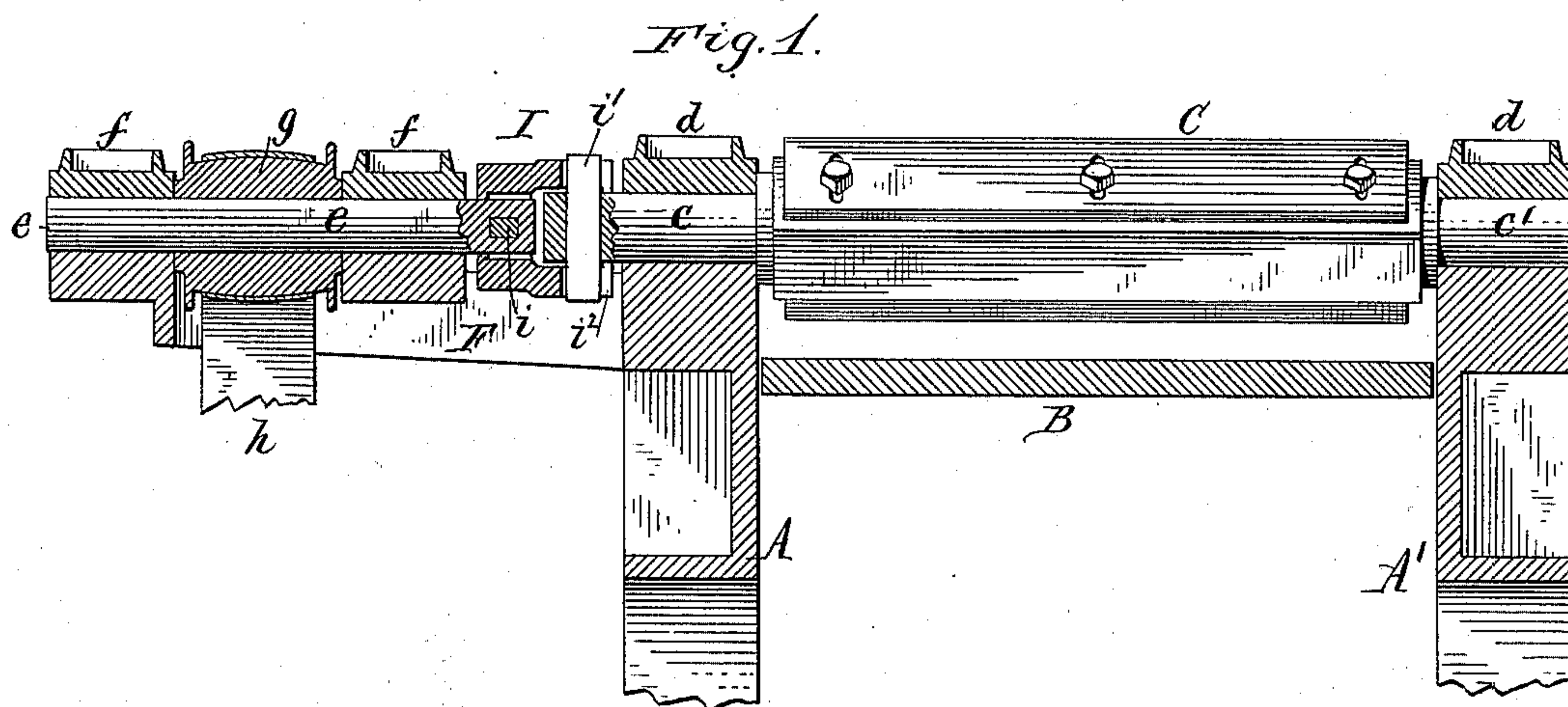


(No Model.)

J. ROSS.
WOOD PLANING MACHINE.

No. 385,284.

Patented June 26, 1888.



Chas. J. Buchheit.
Geo. J. Buchheit, Jr. } Witnesses.

Josiah Ross Inventor.
By Wilhelm Honner.
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UNITED STATES PATENT OFFICE.

JOSIAH ROSS, OF BUFFALO, NEW YORK.

WOOD-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,284, dated June 26, 1888.

Application filed February 28, 1888. Serial No. 265,591. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH ROSS, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Wood-Planing Machines, of which the following is a specification.

This invention relates more especially to that class of wood-planing machines which are provided with a transverse rotary cutter-head or cylinder carrying the knives or cutters.

Heretofore a driving-pulley was mounted upon one of the spindles of the cutter-head, which pulley was connected with a pulley on the main driving-shaft by an endless belt. This construction is objectionable, as the spindle carrying the pulley is subjected to great strain, which tends to spring or deflect the spindle and produces considerable friction, thereby requiring the spindles of the cutter-head to be mounted somewhat loosely in their bearings to avoid excessive heating of the latter. This loose arrangement of the spindles allows the cutter-head to quiver and run irregularly, thereby producing a rough, uneven surface on the board. The joint of the driving-belt in passing around the driving-pulley jars the latter and increases the tremulous motion of the cutter-head.

The object of my invention is to remedy this difficulty and to connect the cutter-head with the main driving-shaft in such a manner that the irregular motion of the driving-shaft will not be transmitted to the cutter-head.

The invention consists of the improvements, which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a fragmentary sectional elevation of a planing-machine provided with my improvements. Fig. 2 is a top plan view of the planer. Fig. 3 is a cross-section in line *x x*, Fig. 2, on a reduced scale.

Like letters of reference refer to like parts in the several figures.

A A' represent the side frames of the planer. B is the table upon which the lumber is placed, and C is the transverse cutter-head or cylinder arranged above the table.

c c' represent the spindles or journals of the cutter-head, which are snugly mounted in bearings *d d*, which may be rigidly or adjust-

ably secured to the upper side of the side frames, A A'.

e is a short horizontal counter-shaft arranged in line with the adjacent spindle *c* of the cutter-head and journaled in suitable bearings, *f f*, arranged in a lateral extension or frame, F, formed on or secured to one of the side frames, A A'.

g is a driving-pulley mounted on the counter-shaft *e*, between the bearings *f f*; and *h* is an endless band or belt running around the pulley *g* and a pulley mounted upon the line or main driving-shaft, which is not shown in the drawings.

I is a universal coupling connecting the inner end of the shaft *e* with the adjacent spindle *c* of the cutter-head C. This coupling consists, preferably, of a horizontal sleeve or collar and two square or flat-sided connecting-pins *i i'*, secured, respectively, to the ends of the shaft *e* and spindle *c* at right angles to each other, or nearly so, and arranged in longitudinal slots *i''*, formed in the sleeve. By this construction the connecting-pins *i i'* are given the necessary play in the sleeve to permit of the requisite freedom of movement of the end of the spindle *c* and shaft *e*. The end portions of the bore of the sleeve are made to fit the shaft *e* and spindle *c* quite snugly, so as to keep the sleeve properly balanced, while the inner portion of the bore of the sleeve is recessed or made of larger diameter than the shaft and spindle to give the latter the proper play in the sleeve.

The coupling I forms a flexible or yielding connection between the cutter-head and the driving-shaft *e*, which transmits the rotary motion of the latter to the spindle *c* of the cutter-head, without, however, imparting the quivering motion of the driving-shaft to the cutter-cylinder. By this construction the spindles of the cutter-head are entirely relieved from the springing strains of the driving-belt, thereby enabling the spindles to be mounted more snugly in their bearings, without the liability of heating the same, and insuring a regular and uniform running of the cutter-head. It also permits the spindles to be made lighter or of smaller diameter, thereby reducing the friction and requiring less power to drive the cutter-head. By this arrange-

ment the spindles and bearings will also wear longer and require repairing less frequently.

As the cutter-head and driving-shaft *e* are mounted in independent bearings, the cutter-head can be run at a very high speed without injury thereto, the shaft *e* being mounted somewhat loosely in its bearings to prevent heating, thereby rendering the cutter-head less liable to be arrested upon feeding lumber of unusual thickness to the machine.

It is obvious that a ball-and-socket joint may be substituted for the universal coupling I; but I prefer to employ the latter, as it is less expensive.

I claim as my invention—

1. In a planing-machine, the combination, with the main frame and a rotary cutter-head provided with spindles mounted in the main frame, of an independent driving-shaft and a universal or yielding coupling, whereby said

driving-shaft is connected with one of the spindles of the cutter-head, substantially as set forth.

2. In a planing-machine, the combination, with the main frame and a rotary cutter-head or cylinder provided with spindles mounted in bearings in the main frame, of an independent driving-shaft and a universal coupling connecting said driving-shaft with one of the spindles of the cutter-head, and consisting of a sleeve and two connecting-pins secured, respectively, to the ends of the shaft and spindle, and arranged in openings formed in the sleeve, substantially as set forth.

Witness my hand this 17th day of February, 1888.

JOSIAH ROSS.

Witnesses:

FRED. C. GEYER,
CHESTER D. HOWE.