No. 729,896. PATENTED JUNE 2, 1903.

V. ROYLE.

CUTTER HEAD FOR ROUTING MACHINES.

APPLICATION FILED FEB. 16, 1901.

NO MODEL.

Fig. 1.

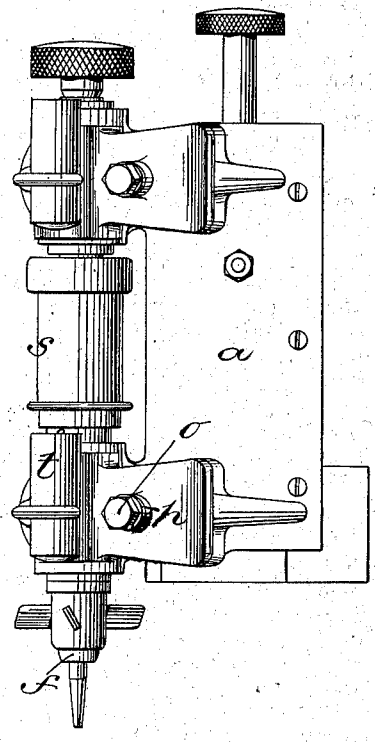


Fig. 3.

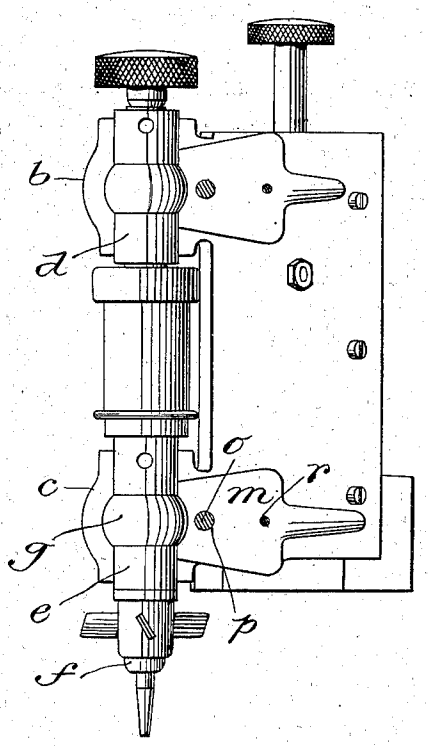


Fig. 2.

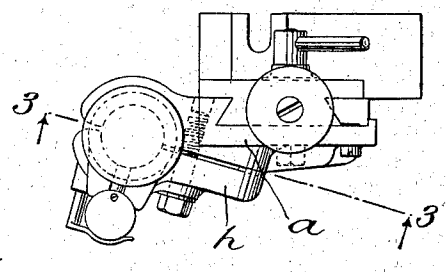


Fig. 4.

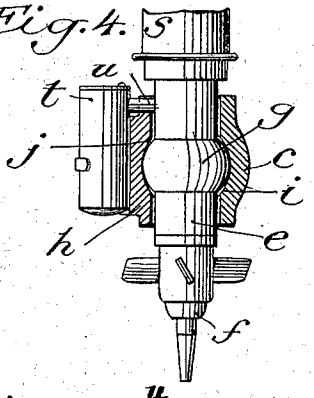
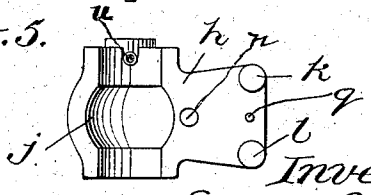


Fig. 5.



Witnesses:-
George Barry Jr.
Henry Phieme

Inventor:
Vernon Royle
By Brown & Durand
his Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 729,896. Patented June 2, 1903.

UNITED STATES PATENT OFFICE.

VERNON ROYLE, OF PATERSON, NEW JERSEY.

CUTTER-HEAD FOR ROUTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 729,896, dated June 2, 1903.

Application filed February 16, 1901. Serial No. 47,538. (No model.)

To all whom it may concern:

Be it known that I, VERNON ROYLE, a citizen of the United States, and a resident of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Cutter-Head for Routing-Machines, of which the following is a specification.

My invention relates to a cutter-head for routing-machines, and relates more particularly to means for maintaining the boxes in which the cutter-carrying spindle is mounted in perfect alinement for the ready removal and accurate replacement of a spindle by unskilled as well as skilled labor.

In the accompanying drawings, Figure 1 is a view of the cutter-head in side elevation. Fig. 2 is a top plan view. Fig. 3 is a vertical section in the plane of the line 3 3 of Fig. 2. Fig. 4 is a vertical section through the lower box-bearing in a plane at right angles to the plane of the line 3 3 of Fig. 2, and Fig. 5 is a bottom plan of one of the removable half-bearings for the spindle-box.

The body of the cutter-head is denoted by *a*. It is provided with lateral projections *b c*, spaced apart and shaped to form half-bearings for the spindle-boxes. The spindle-boxes are denoted, respectively, by *d e*. They are quite similar in construction and each consists of a tube or sleeve within which the cutter-carrying spindle *f* has a free rotary fit, the central portion of the tube being externally enlarged in spherical form, as denoted by *g*. The half-bearings for the reception of the boxes *d e* have the one half-bearing of each couple removable, the removable bearing corresponding to the stationary half-bearing *c*, being denoted by *h*, it being understood that a similar removable half-bearing is made to correspond with the stationary bearing *b*. The grooves *i* and *j*, formed, respectively, in the half-bearings *c* and *h* for the reception of the spherical enlargement *g* of the spindle-box, have a curve corresponding to the curve of the spherical portion *g* in the plane of the longitudinal axis of the spindle, so that the spherical portion *g* has a bearing contact with the faces of the grooves, while the cylindrical portions of the spindle-box *e* are allowed play in their bearings to permit the box *e* to accommodate itself to the direction which the spindle seeks when in operation. The grooves in the removable half-bearing *h* and its corresponding stationary half-bearing *c* together make a little less than the complete circumference of the spherical portion *g* of the box, taken in a plane through the center from which the spherical portion *g* is described, so that the said bearings may be forced toward one another with any desired degree of pressure within the limits of the adjusting-screw.

The removable half-bearing *h* is provided with short legs *k l*, adapted to rest upon a seat *m* on the body *a* of the head and with a hole *n*, located intermediate of the line of the legs *k l* and the groove *j* and also on a transverse line intermediate of the legs *k l* for the reception of the adjusting-screw *o*, which has a screw-threaded engagement with a hole *p*, tapped into the seat *m*. The removable half-bearing *h* is further provided with a centering-pin *q* intermediate of the legs *k l*, which centering-pin is adapted to fit into a hole *r* in the seat *m*, and thereby insure the adjustment of the half-bearing in exact alinement with its companion half-bearing *c*.

The spindle is provided intermediate of the bearings for its boxes with a band-pulley *s*, as is common, and the removable half-bearings are each conveniently provided with a detachable vertical oil-reservoir *t* for supplying oil to the interiors of the boxes which hold the spindle through conduits *u*, one of which is shown in Fig. 4 and also in Fig. 5.

The structure is one which admits of the ready removal and readjustment of the spindle with its boxes without any liability of error in readjusting the spindle, and it at the same time leaves the spindle free to adjust itself with its boxes in exact alinement when in operation under the pressure of the band (not shown) on its drive-pulley *s*. The liability of the spindle to cut out its box (an objection which has hitherto existed to a greater or lesser extent whatever the care exercised in mounting it) is wholly obviated, thereby increasing the facility with which it may be rotated within its bearings and materially increasing the life of the parts and reducing the power required for driving the spindle.

It is obvious that changes might be resorted to in the structure of the parts without departing from the spirit and scope of my

invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

The combination with the cutter-head provided with a box, half-bearing thereon adapted to receive a globular portion of the box, of a removable half-bearing constructed to coact with the half-bearing on the head, spacing-legs interposed between the removable half-bearings and the head, the removable half-bearing and the head being provided, the one with a centering-pin and the other with a socket for the reception of the pin and a single screw for forcing the removable half-bearing toward the half-bearing on the head.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 17th day of January, 1901.

VERNON ROYLE.

Witnesses:
FREDK. HAYNES,
HENRY THIEME.