No. 671,092. Patented Apr. 2, 1901.

C. W. PASHLEY.

ENGRAVING MACHINE.

(Application filed Apr. 25, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

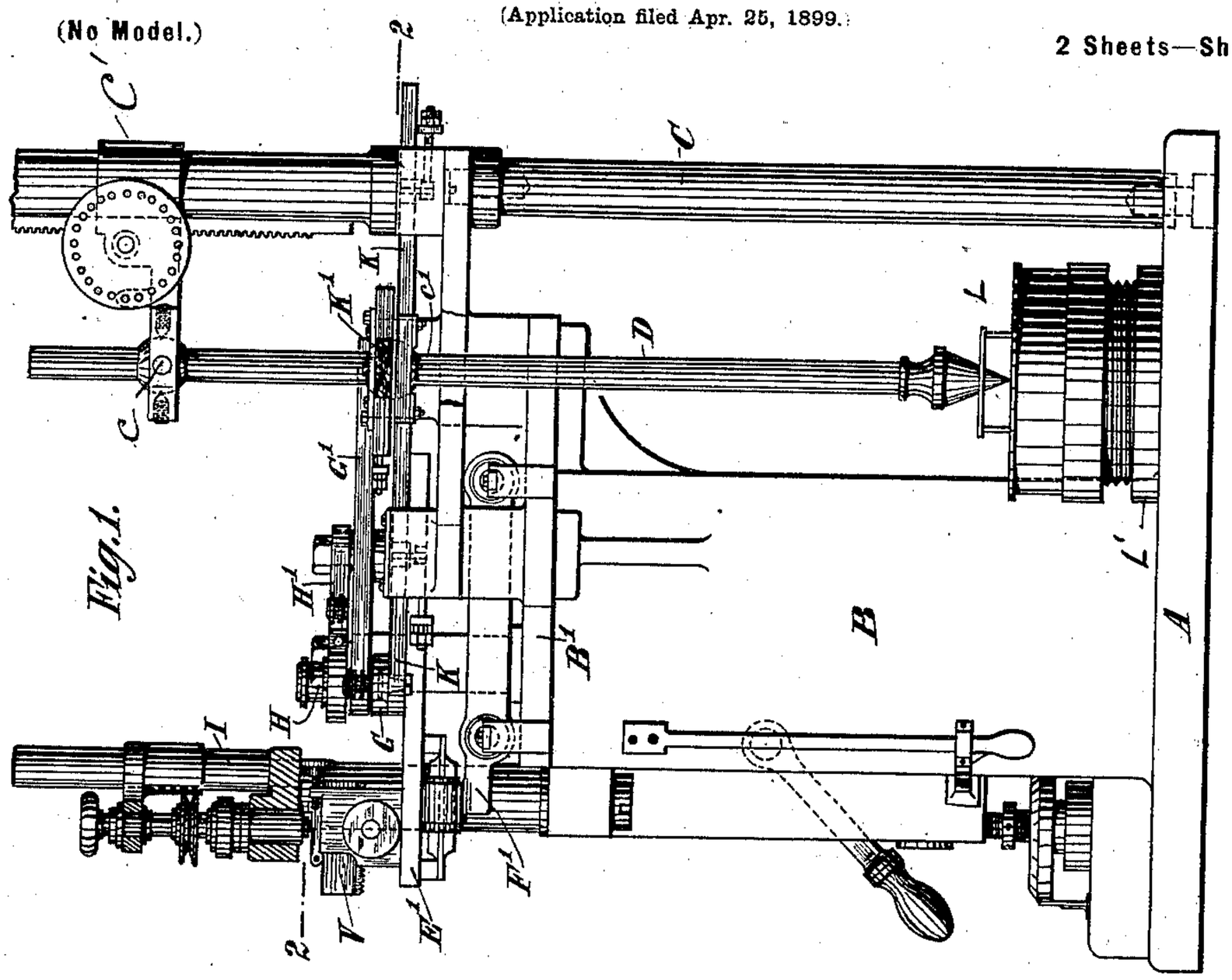

Fig. 2.

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Fig. 3.

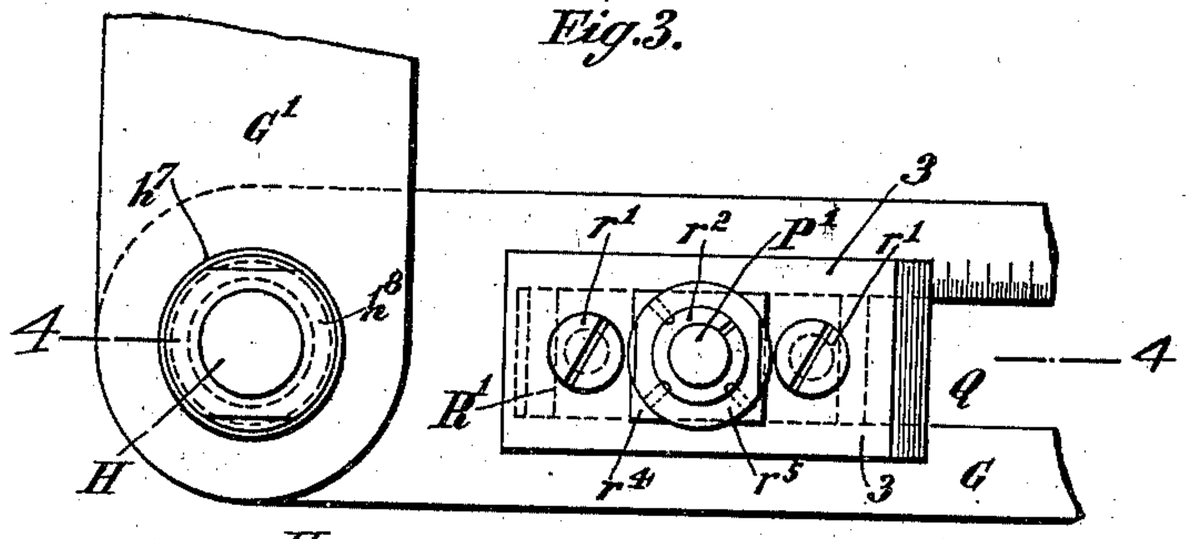


Fig. 4.

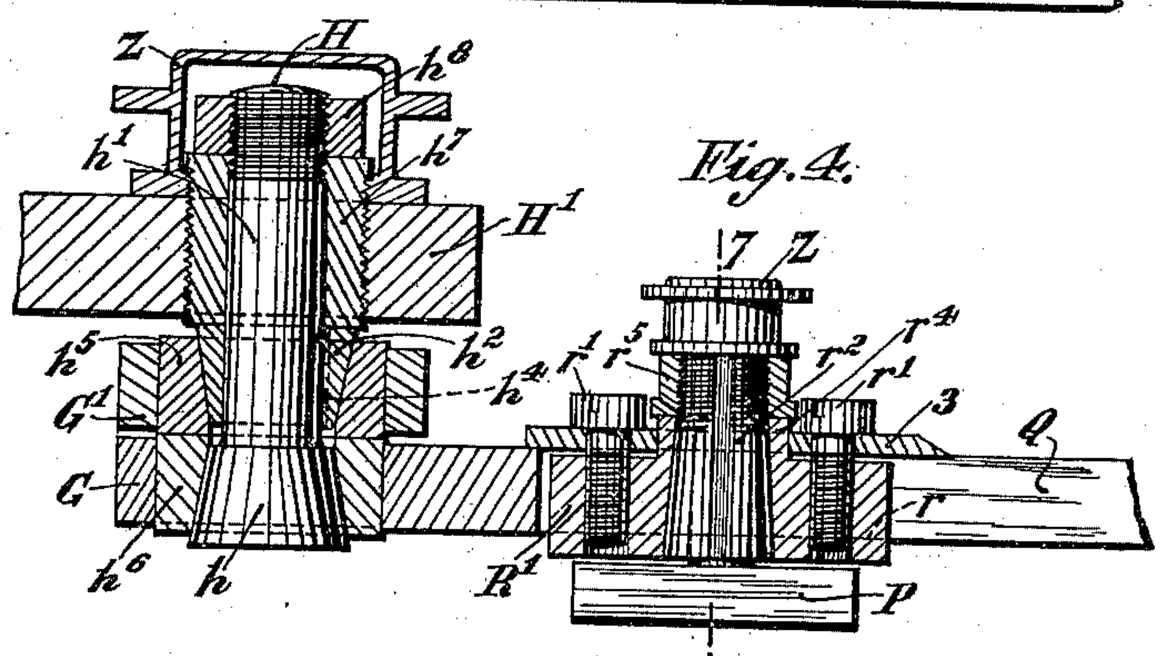


Fig. 6.

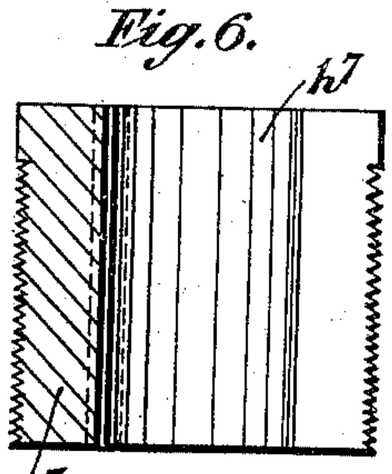


Fig. 8.

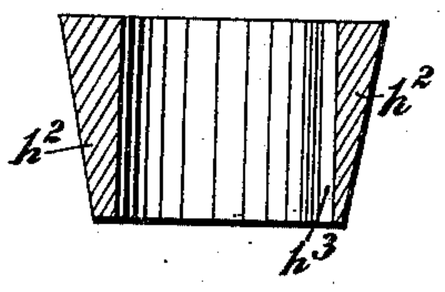


Fig. 10.

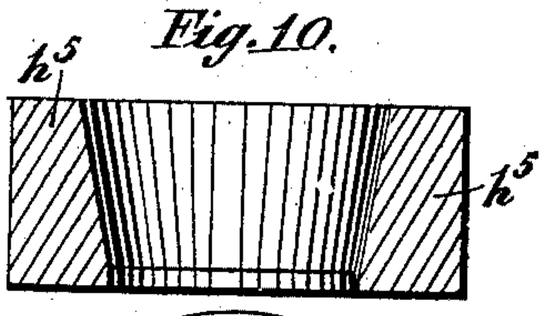


Fig. 5.

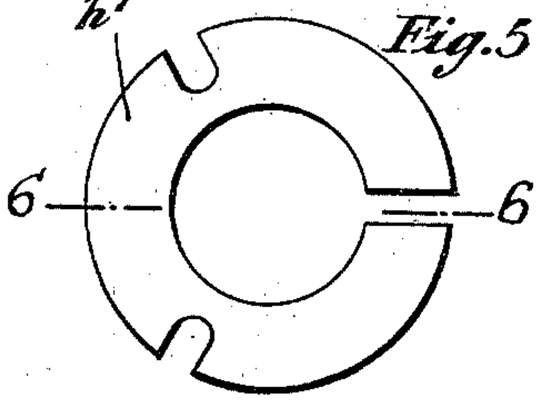


Fig. 7.

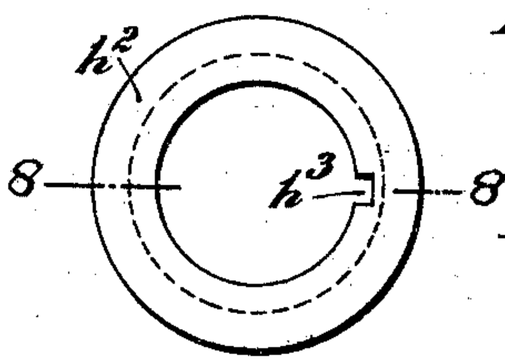
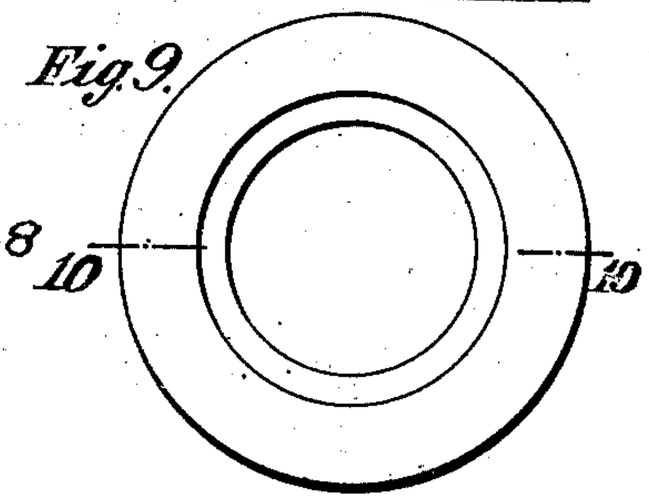


Fig. 9.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES WALTER PASHLEY, OF BROADHEATH, ENGLAND, ASSIGNOR TO THE LINOTYPE COMPANY, LIMITED, OF LONDON, ENGLAND.

ENGRAVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 671,092, dated April 2, 1901.

Application filed April 25, 1899. Serial No. 714,392. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WALTER PASHLEY, of Broadheath, in the county of Chester, England, have invented certain new and useful Improvements in and Connected with Engraving-Machines; and I do hereby declare the following to a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in the joints and bearings of the engraving-machine described in the specification of British Letters Patent No. 11,938, dated June 19, 1895.

A is the bed-plate of the machine; B, the standard, upon which is fixed the stationary plate B′, in which reciprocate the frame F′ and block E′.

V is the vise, fast on the top of the reciprocating top block E′. The construction and operation of this vise form no part of my present invention and are therefore not particularly shown or described herein.

I is the standard that carries the tool-holders *i*.

C is a fixed standard carrying a bracket C′, vertically adjustable thereon, and from which hangs the tracer-rod D by a ball-joint *c*.

L is the pattern, and L′ the pattern-holder.

K K′ are two links connected to the tracer-rod D and having their outer ends respectively joined to the outer ends of a pair of levers G G′, fulcrumed upon a bracket H′, secured by lugs C″ on the standard B. Each lever G G′ is connected to the reciprocating top block E′ by a pivot-pin P′, as described in greater detail farther on.

There are several parts of the above machine included in Figures 1 and 2 which are not affected by the present invention and which need not therefore be described in this specification. Full details of their construction and operation will be found in the specification above mentioned.

Referring to the accompanying drawings, which are to be taken as part of this specification and read therewith, Fig. 1 is a side elevation from the right hand of the engraving-machine above mentioned; Fig. 2, a plan taken along the line 2 2 of Fig. 1; Fig. 3, a detail plan of the first part of the invention; Fig. 4, a sectional plan on the line 6 6 of Fig. 3, including part of the bracket that supports the fulcrum-pin; Fig. 5, a plan of the split bush of the fulcrum-pin; Fig. 6, a vertical section on the line 9 9 of Fig. 5; Fig. 7, a plan of the tapered internal bush of the fulcrum-pin; Fig. 8, a vertical section on the line 11 11 of Fig. 7; Fig. 9, a plan of a lever-bush; Fig. 10, a vertical section on the line 13 13 of Fig. 9.

The invention consists in an improved device for taking up wear at the fulcrum-pin H of the two levers G G′ between it and them. It is illustrated in Figs. 3 to 10. Instead of that pin H being parallel throughout its length, as heretofore, it has a head *h*, the diameter of which gradually increases from its junction with the shank *h*′, as clearly shown in Fig. 4.

h^2 is a bush tapered externally in the opposite direction to the head *h* and fitting on the shank *h*′.

h^3 is a slot in the internal face of the bush h^2 and parallel with its axis.

h^4 is a pin projecting from the shank *h*′ into the slot h^3 to prevent the bush h^2 turning about the said shank and to allow them both to move parallel with their common axis in either direction.

h^5 is a bush in the end of the lever G′ to receive the above-described bush h^2, and h^6 is a similar bush in the end of the lever G to receive the head *h*, both bushes being held fast to their respective lever ends.

h^7 is a split bush screwed into the bracket H′.

h^8 is a screw-threaded nut on the screw-threaded end of the shank *h*′.

When the bushes h^2 h^5 h^6 and the pin-head *h* are new, the latter and the bush h^2 are at some distance apart, as shown in Fig. 4, that distance being equal to the maximum take-up that will be possible. The split bush h^7 is screwed down through the bracket H′ to push the bush h^2 into the bush h^5 far enough to take up the wear in respect of the lever G′, and the nut h^8 is screwed down the shank *h*′ after the bush h^7 to pull the tapered head *h* into the correspondingly-tapered bush h^6 to take up the wear in respect to the lever G. It is preferred that the bushes h^5 h^6 should respectively project beyond both sides of the

respective levers G G′, as shown in Fig. 4, in order that both the pin-head *h* and the bush h^2 may always have bearings as deep as the respective levers G G′ are thick.

I claim—

In an engraving-machine of the class specified, the combination of two levers having bushes tapered in opposite directions fast on them, a supporting-bracket, a fulcrum-pin supported thereby and having a parallel shank where it passes through the said bracket and the bush in the upper of the two levers, and a tapered head fitting in the bush in the bottom lever, an oppositely-tapered bush between the said shank and the bush in the upper lever and loose upon the said shank, and a nut upon the screw-threaded nose of the fulcrum-pin on the opposite side of the supporting-bracket and adapted by being turned down the said pin toward the tapered head of it to draw the bushes in the two levers toward each other.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES WALTER PASHLEY.

Witnesses:
THOMAS TAYLOR,
JOHN EDWARD STANLEY.