

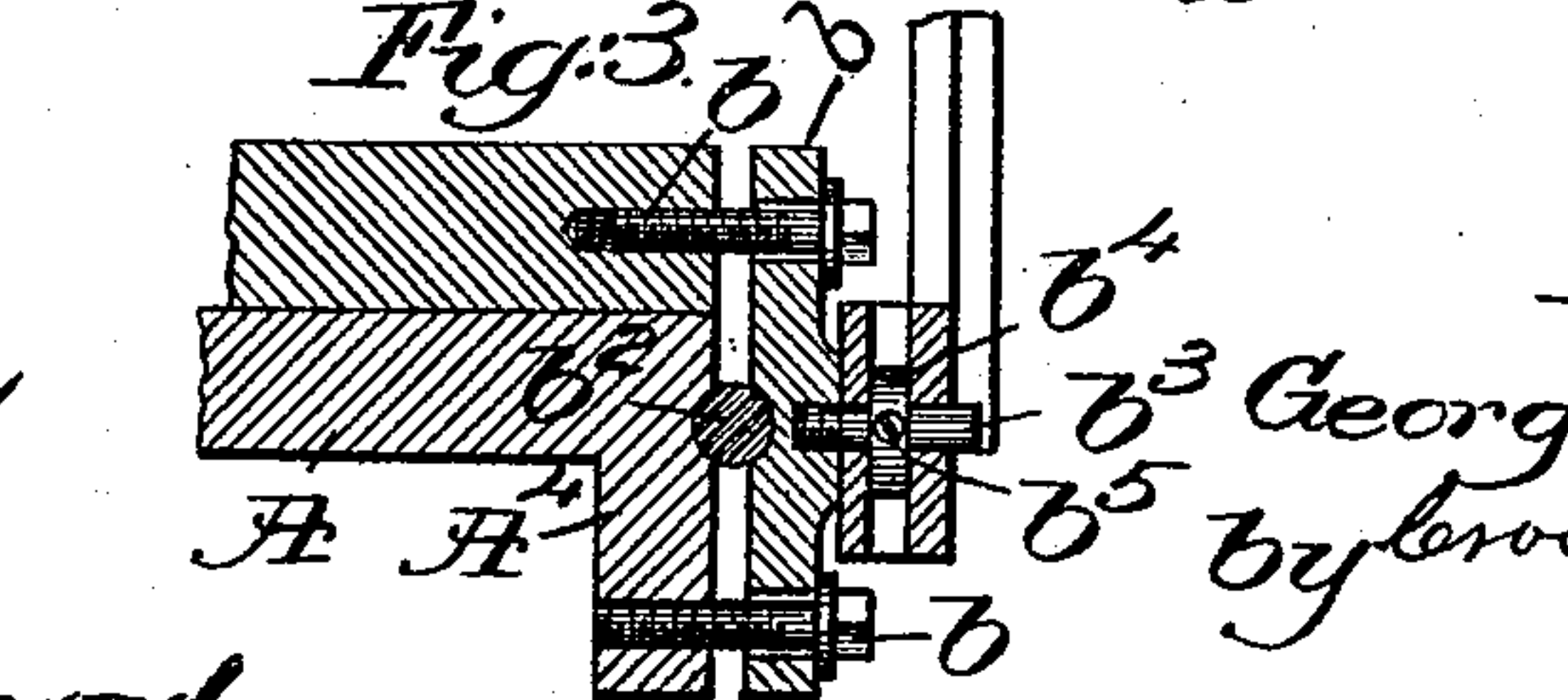
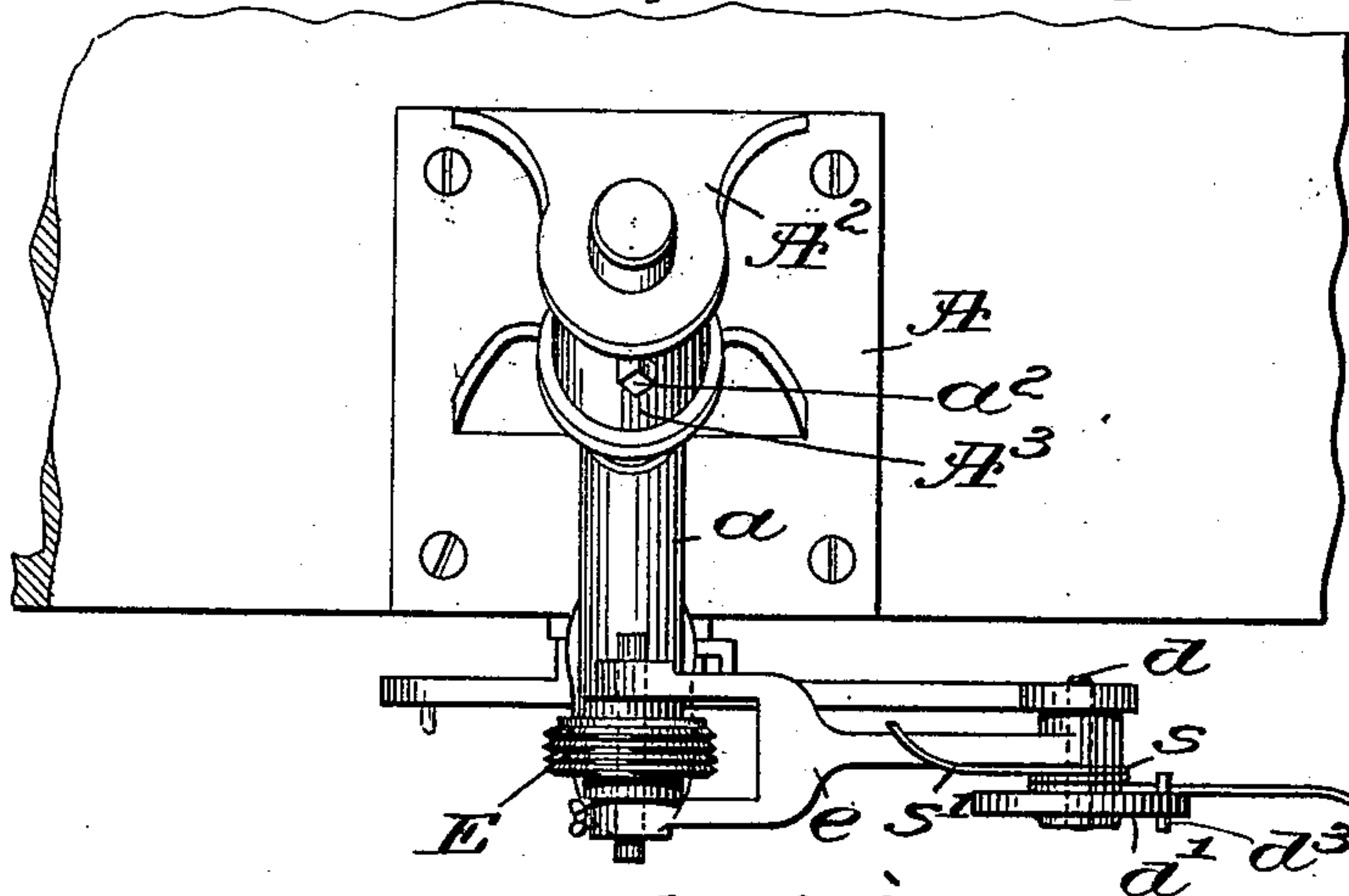
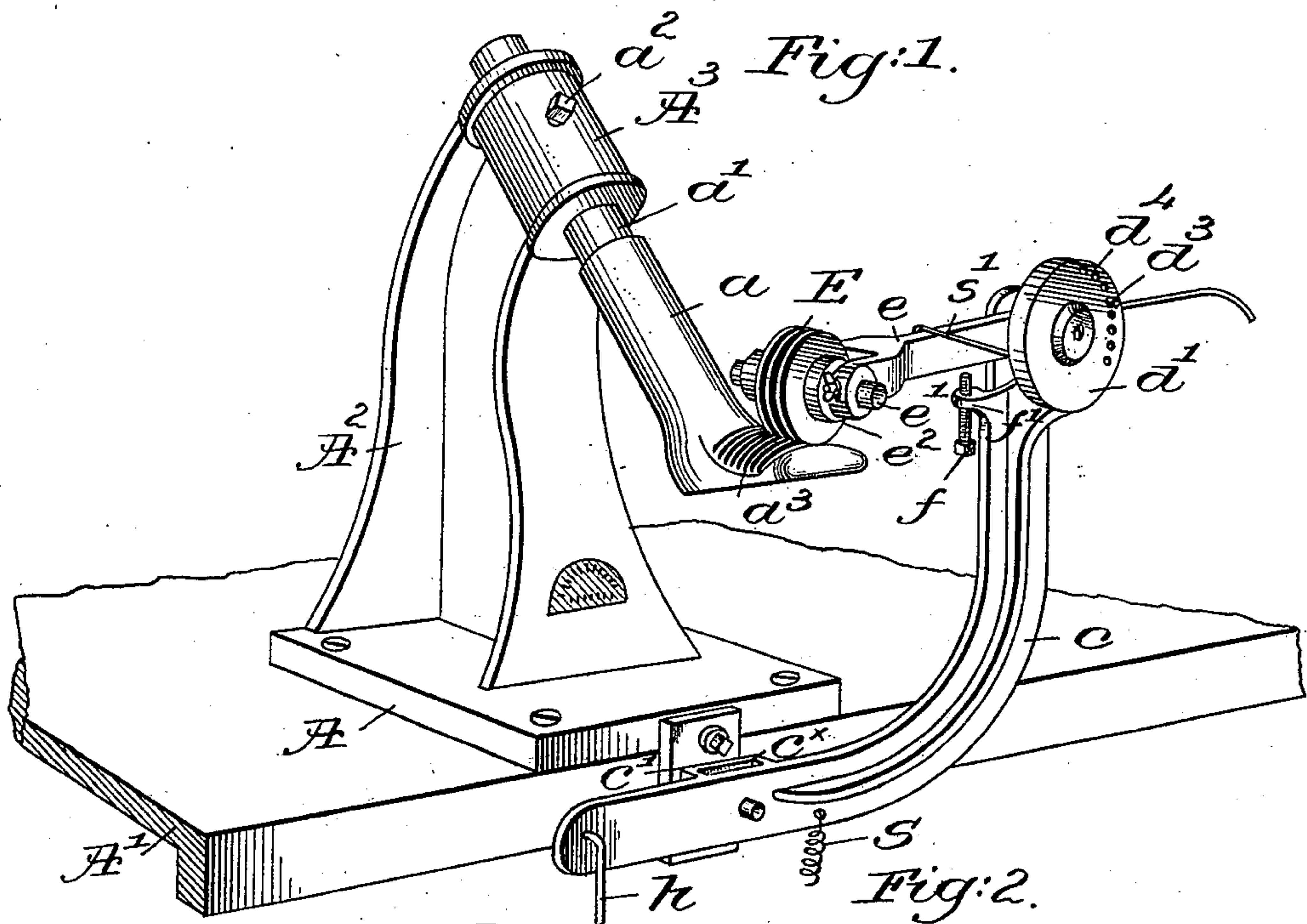
(No Model.)

G. KNIGHT.

MACHINE FOR CREASING BOOT OR SHOE UPPERS.

No. 518,410.

Patented Apr. 17, 1894.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR CREASING BOOT OR SHOE UPPERS.

SPECIFICATION forming part of Letters Patent No. 518,410, dated April 17, 1894.

Application filed October 17, 1893. Serial No. 488,371. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE KNIGHT, a subject of the Queen of Great Britain, residing at Brockton, county of Plymouth, State of Massachusetts, have invented an Improvement in Machines for Creasing Boot or Shoe Uppers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a novel and improved apparatus for creasing the fore part of a boot or shoe upper or vamp between the toe and the instep for the purpose of improving the appearance of the boot or shoe, and to, in a measure, determine the location of the wrinkles which are formed in the upper after a boot or shoe has been in use for a short time.

My novel apparatus consists essentially of a fluted horn adapted to enter and support the shoe the upper of which is to be creased, and a creasing tool preferably made as a roll and mounted on a carrier which by its movement causes the tool or roll to traverse the horn in the direction of the creases, the said tool being preferably pressed normally toward the horn, a suitable stop however being preferably employed to limit the distance between the tool and the horn according to the thickness of the stock or the work to be done.

The invention also comprehends various features of construction which will be hereinafter described and pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing one embodiment of my invention; Fig. 2, a top or plan view of Fig. 1, and Fig. 3, an enlarged sectional detail to be referred to.

Referring to the drawings, in the embodiment of my invention there shown and selected by me for the purpose of illustrating my invention, A represents a base which may be secured in suitable manner to a bench or support A'. The base A is provided with a substantially vertical standard A<sup>2</sup> terminating at its upper end in a head A<sup>3</sup>, preferably inclined downwardly toward the front of the base at an angle of about forty-five degrees,

more or less, and provided with an opening to receive the shank  $a'$  of the horn or support  $a$ , said horn being retained in proper adjusted position by means of a set screw  $a^2$ . The horn which I prefer to employ, and which I have herein shown, is of such shape as will properly fill the entire fore part of the shoe and extend nearly or quite to the toe within the shoe, said horn or last between the toe and the instep portions being preferably provided with several cross flutes or grooves  $a^3$ , as best shown in Fig. 1. The base A at its front side, as herein shown, has a depending block A<sup>4</sup>, to which is attached by suitable bolts  $b, b$ , a front plate  $b'$ , a short shaft or rod  $b^2$  being interposed between the plate  $b'$  and block A<sup>4</sup> and let into shallow grooves in each, as shown, at a point preferably midway between the bolts  $b, b$ , to thereby constitute a pivot or hinge about which the angular position of the plate  $b'$  with relation to the base A may be varied by means of said bolts  $b, b$ . The plate  $b'$  at its middle, preferably opposite the hinge rod  $b^2$ , is provided with a pivot stud  $b^3$ , shown as tapped into the said plate, said stud, in the construction herein shown, constituting a pivot for the carrier  $c$ , which latter at its fulcrum or pivot point is thickened, as at  $c'$ , Fig. 1, and provided with a vertical chamber or slot  $c^x$  to receive the collar  $b^4$  clamped upon the pivot rod  $b^3$  by means of a set-screw  $b^5$ . By thus chambering or slotting the carrier and placing the collar  $b^4$  within the same, I am enabled to retain the said carrier against lateral movement by a single collar which is adjusted to vary the position of the carrier upon its pivot rod, without necessitating the use of two collars as would be the case were the carrier retained by collars at either side. The carrier  $c$  is preferably curved, as shown, and at its upper end is fitted to receive the end of a short pivot stud  $d$ , shown in dotted lines Fig. 2, said stud at its outer end carrying a disk  $d'$ , as shown. Upon this pivot stud  $d$ , and between the said disk and carrier is pivoted one end of the arm  $e$  carrying at its opposite end the creasing tool, the said arm in the present embodiment of this invention being forked at its outer end to receive the roller creasing tool E, the latter being loosely



journaled upon a short shaft  $e'$  carried in the forked end of the arm  $e$  and retained in operative position by means of a suitable thumb-screw  $e^2$ . A spring  $s$  is shown coiled about the hub of the arm  $e$ , the same having one of its ends  $s'$  hooked over or attached to the said arm and its other end passed under a pin  $d^3$  inserted in one of a series of holes  $d^4$  in the disk  $d'$ , see Fig. 1, the said spring acting to press the creasing tool down upon or toward the fluted top of the horn. The tension of the spring may be varied by changing the pin  $d^3$  from one to another of the holes in the disk.

I have herein provided a stop  $f$  shown as a screw threaded in a lug  $f'$  on the carrier  $c$  to limit the downward movement of the arm  $e$  by the spring when the creasing tool is removed from the horn. The carrier  $c$  may be vibrated by hand or power, or, as in the present instance, by means of a foot rod  $h$  attached to a treadle not shown.

In the operation of my improved creasing machine the treadle is first released to permit the carrier  $c$  to be moved to the right, Fig. 1, by a spring  $S$ , to thereby remove the creasing tool from the last or form. The boot or shoe to be creased is then slipped upon the horn and firmly seated thereupon. The operator then places his foot upon the treadle, or by other convenient means moves the carrier to the left Fig. 1, causing the creasing tool  $E$  to pass once over the fore part of the upper of the boot or shoe upon the horn, the fluted roller pressing the said upper into the grooves or flutes in the horn, the said tool and carrier being returned again to their normal positions by the spring  $S$ . Passing the creasing tool in this manner once over the upper and back again to its normal position creases the upper, the number of creases made at a single movement of the tool depending upon the number of flutes or grooves in the tool and in the horn within the boot or shoe. The creasing tool  $E$  may be removed from the forked end of the arm  $e$  and another tool of different shape or size substituted in its place, and by means of the set-screw  $a^2$  for the form and the screws  $b, b$ , controlling the angular position of the carrier, together with the adjustment for the spring  $S$ , the machine may be adapted for any size or kind of boot or shoe.

This invention is not restricted to the particular construction or arrangement of parts herein shown, for the same may be varied without departing from the spirit and scope of the invention.

Having described my invention, and without reference to details, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a horn to enter and support a boot or shoe to be creased; of a fixed support; a creasing tool, a carrier therefor attached to said support and movable thereon in a line parallel with the desired lines of the

creases, whereby movement of said carrier causes said tool to be moved across said horn in the lines of and to form said creases in the boot or shoe upon the horn; and means to move said carrier, substantially as described.

2. The combination with a fluted horn to enter and support a boot or shoe to be creased, of a fixed support; a roller creasing tool, a carrier therefor attached to said support and movable thereon in a line parallel with the lines of the flutes in said horn, whereby movement of said carrier causes said tool to be moved across said horn and in the lines of the flutes therein to form creases in the boot or shoe upon the horn; and means to move said carrier, substantially as described.

3. A creasing machine, consisting of a fluted horn; a fluted roller creasing tool; a fixed support, a carrier attached thereto and movable in a direction parallel with the lines of the flutes in said horn; an arm pivoted to said carrier, and in the free end of which said roller creasing tool is journaled; and means for moving said carrier to cause said tool to follow in the lines of the flutes in said horn to crease a boot or shoe upon the latter, substantially as described.

4. In a creasing machine of the class described, a fluted horn; a fixed support; a carrier attached to said support and movable thereon in a line parallel with the lines of the flutes in said horn; an arm pivoted to said carrier; and a creasing tool mounted in the free end of said arm; combined with a spring to press said tool toward the fluted surface of said horn; and means to move said carrier to cause said tool pressed into the flutes in the horn to be moved in the lines of said flutes to crease a boot or shoe placed upon said horn, substantially as described.

5. In a creasing machine of the class described, a base, a standard thereon having an angularly positioned head, a horn adjustably mounted in said head, and held thereby in an angular or inclined position, combined with a pivoted carrier, an arm as  $e$  pivoted to said carrier, a creasing tool on the end of said arm, and a spring to press said tool toward the fluted surface of said horn, substantially as described.

6. In a creasing machine of the class described, a base, a fluted horn carried thereby, a plate  $b'$  pivotally connected to said base, combined with a carrier pivoted to said plate, an arm as  $e$  pivoted to said carrier, a creasing tool on the end of said arm, and a spring to press said tool toward the fluted surface of said form, substantially as described.

7. In a creasing machine of the class described, a horn, combined with a pivoted carrier  $c$ , a creasing tool, and a supporting arm therefor pivoted to said carrier, the spring  $s$ , the disk  $d'$  provided with a series of holes, and the pin  $d^3$ , all to operate substantially as described.

8. In a creasing machine of the class de-



scribed, a base, a horn carried thereby, a pivot  
stud  $b^3$  attached to said base, a creasing tool  
and the carrier  $c$  therefor having a slot, and  
a collar  $b^4$  in said slot and clamped to said  
5 pivot stud, all to operate substantially as  
described.

In testimony whereof I have signed my

name to this specification in the presence of  
two subscribing witnesses.

GEORGE KNIGHT.

Witnesses:

FREDERICK L. EMERY,  
JOHN C. EDWARDS.