

W. H. COOK & J. HARRISON.

APPARATUS FOR IMPARTING VARIABLE MOTION TO THE TRAVERSE RODS  
IN MACHINES FOR PREPARING AND SPINNING FIBROUS MATERIALS.

No. 500,113.

Patented June 27, 1893.

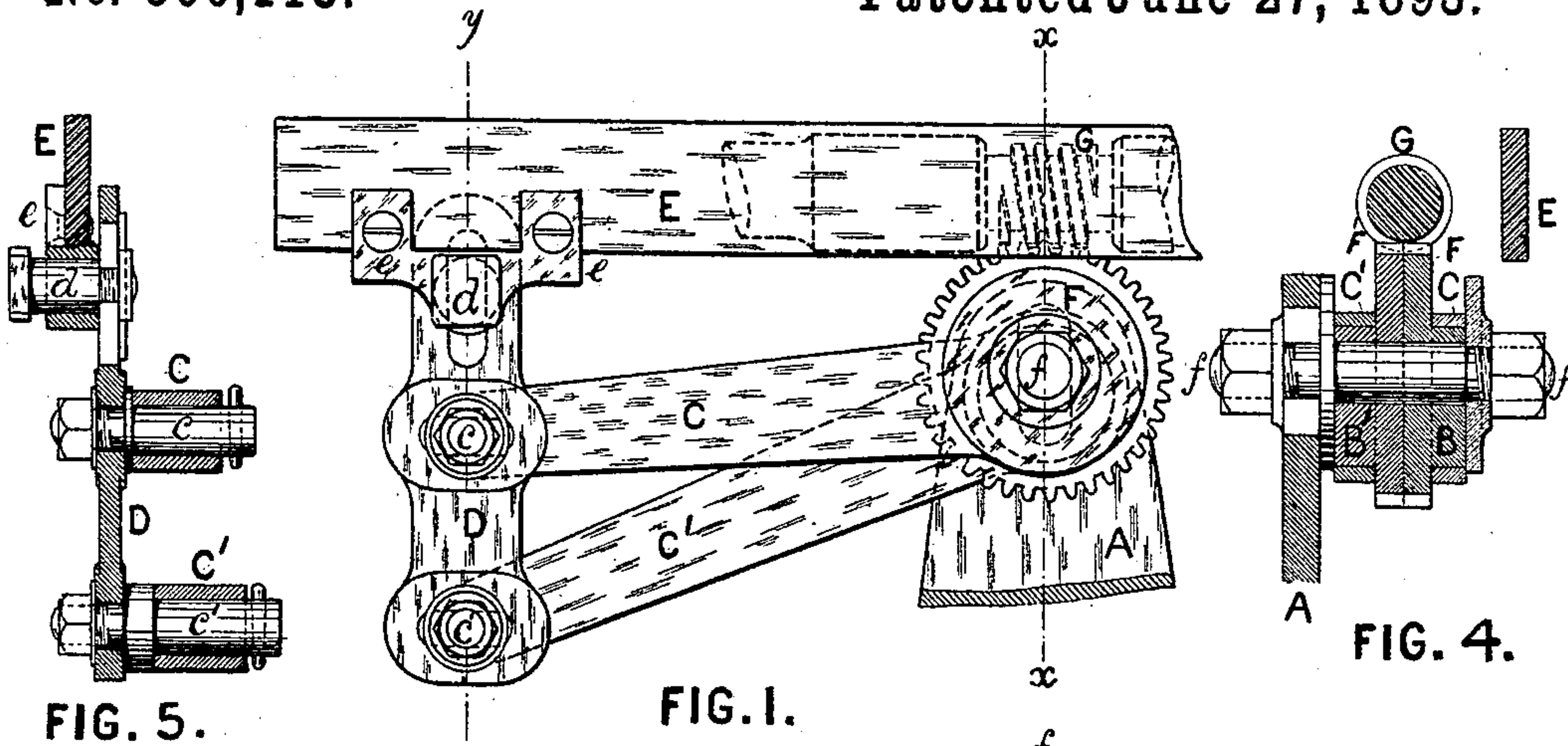


FIG. 5.

FIG. 1.

FIG. 4.

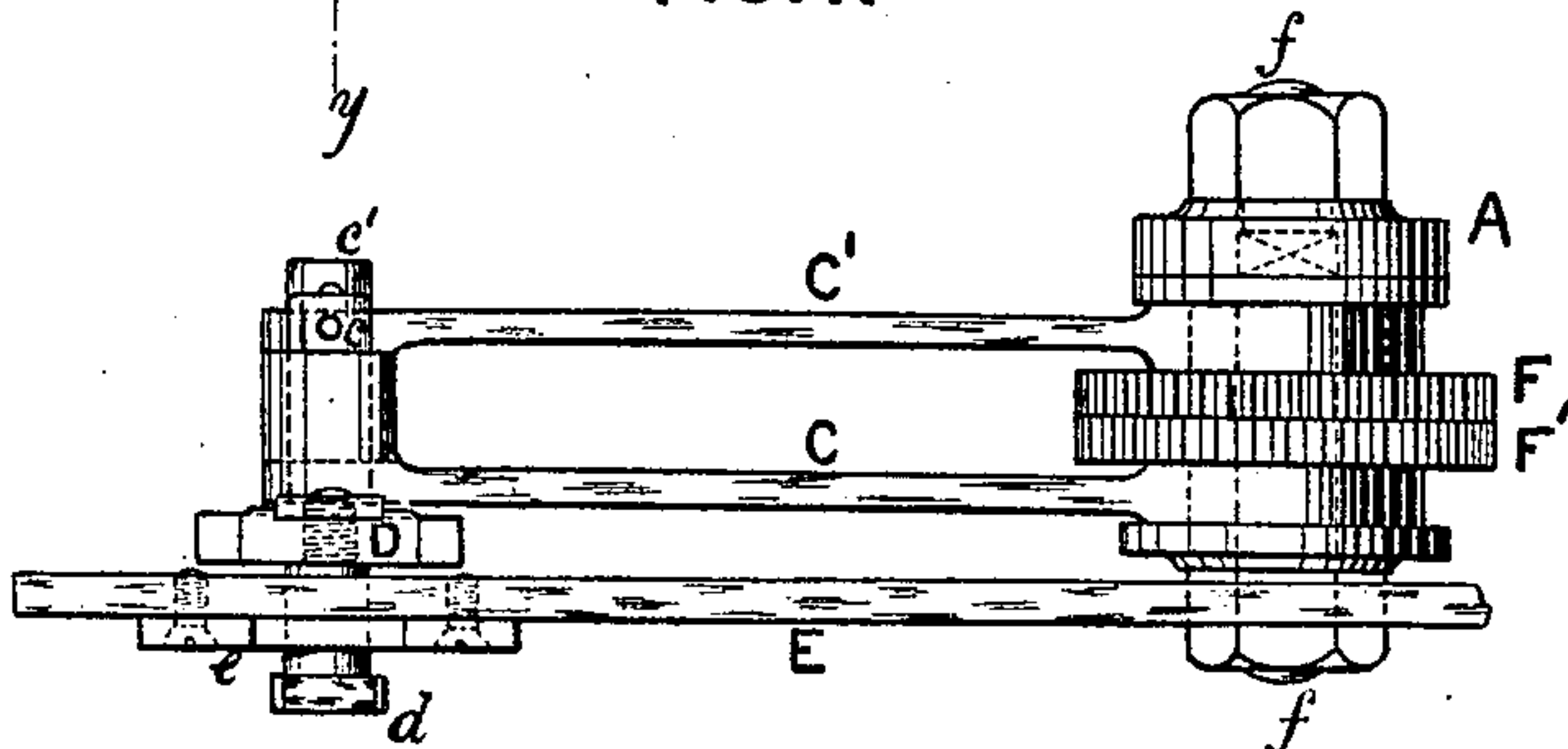


FIG. 3.

FIG. 2.

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WITNESSES

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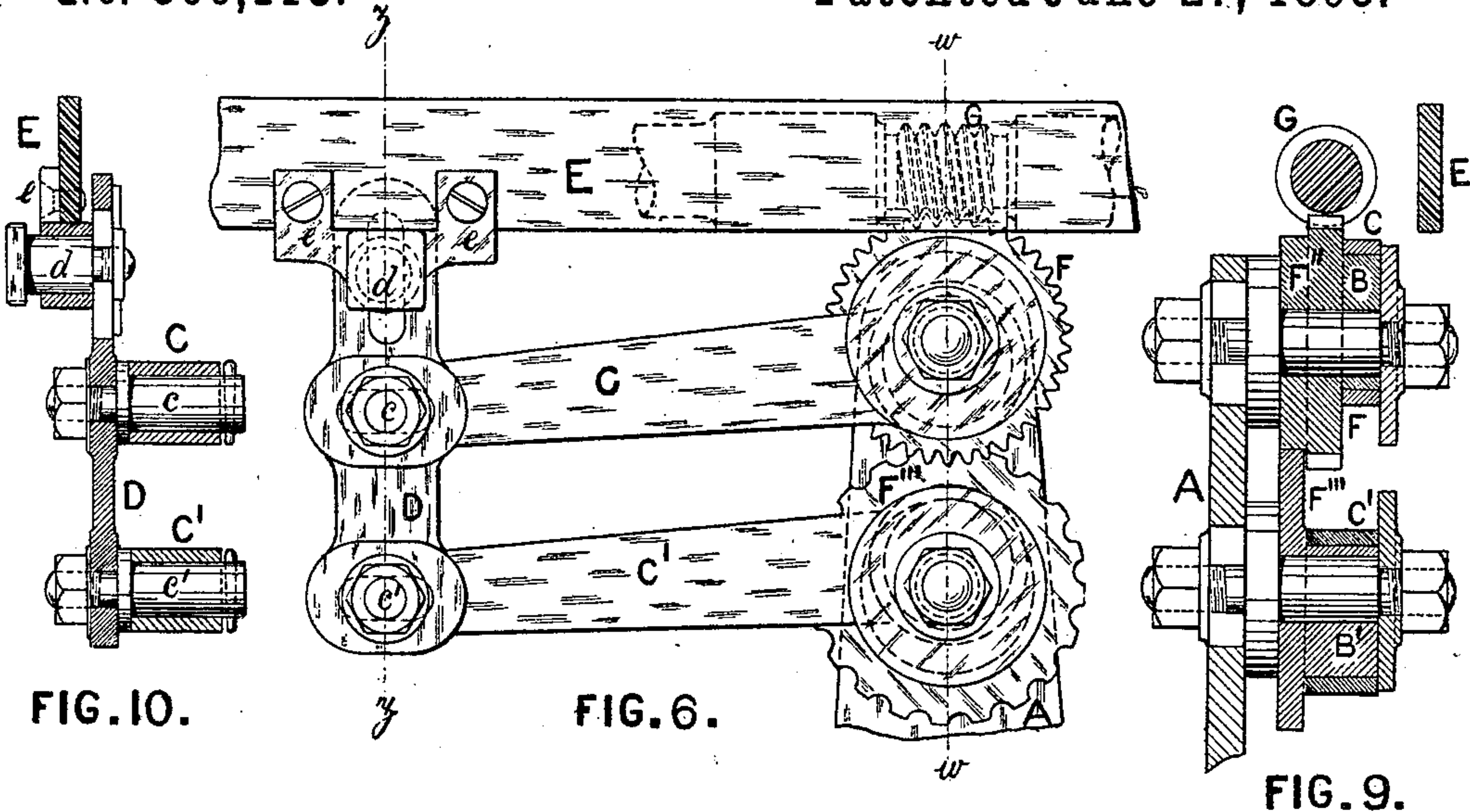


FIG. 10.

FIG. 6.

FIG. 9.

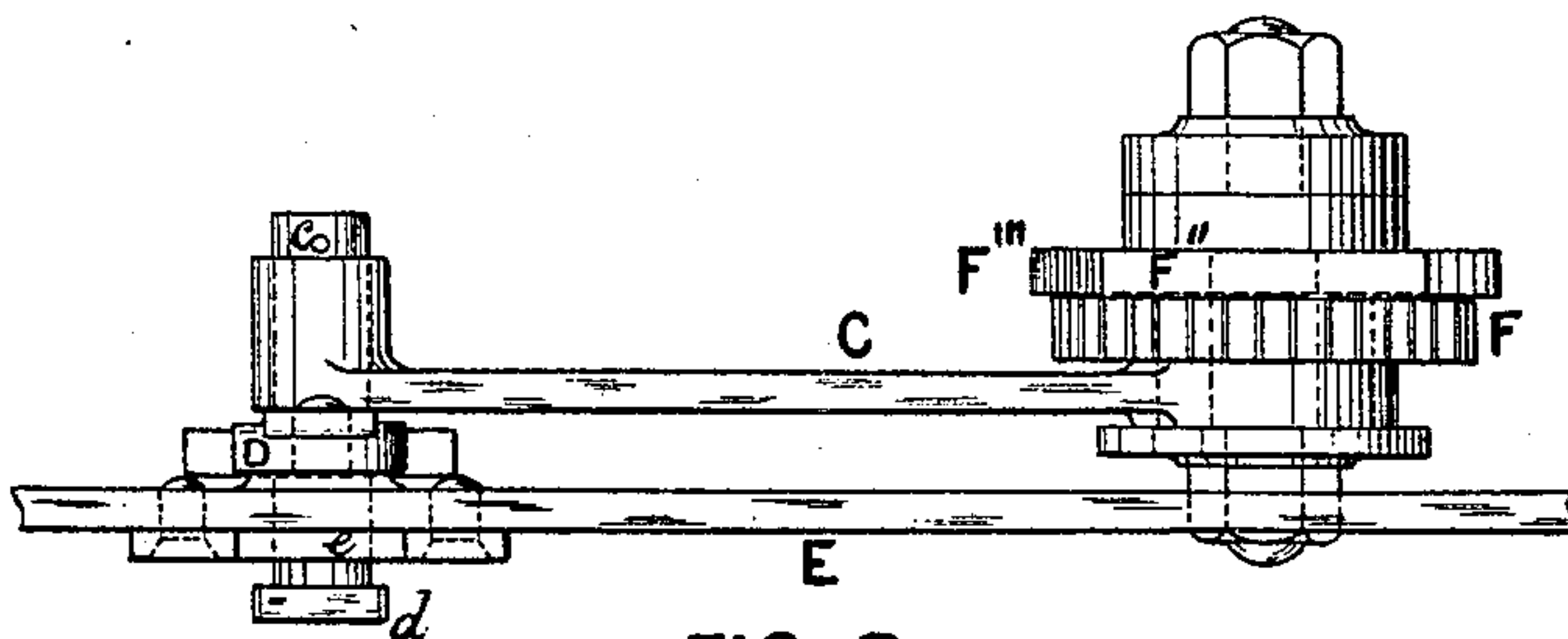


FIG. 8.

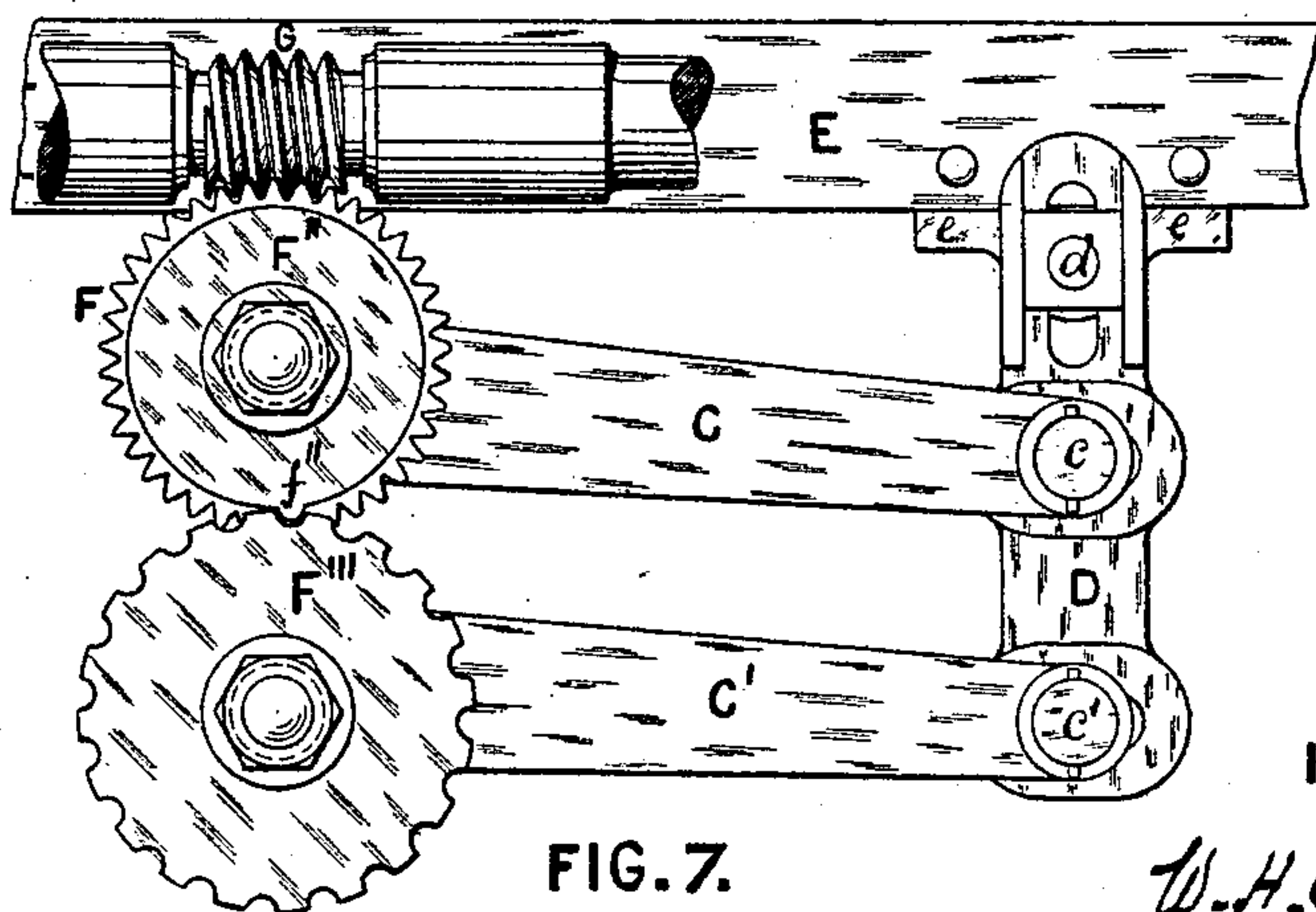


FIG. 7.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. COOK AND JAMES HARRISON, OF MANCHESTER, ENGLAND,  
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DOXEY, OF SAME PLACE.

APPARATUS FOR IMPARTING VARIABLE MOTION TO THE TRAVERSE-RODS IN MACHINES FOR PREPARING  
AND SPINNING FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 500,113, dated June 27, 1893.

Application filed October 11, 1892. Serial No. 448,524. (No model.) Patented in England April 15, 1891, No. 6,444.

*To all whom it may concern:*

Be it known that we, WILLIAM HALL COOK  
and JAMES HARRISON, subjects of the Queen  
of Great Britain, residing at Manchester, in  
the county of Lancaster, England, have in-  
vented certain new and useful Improvements  
in Apparatus for Imparting a Variable Mo-  
tion to the Traverse-Rods in Machines for  
Preparing and Spinning Fibrous Materials,  
(for which we have obtained Letters Patent in  
Great Britain, No. 6,444, bearing date the 15th  
day of April, 1891,) of which the following is  
a specification.

This invention is designed to produce a re-  
ciprocating motion varying in the distance  
traveled at each stroke or varying the point  
upon which the direction of movement  
changes at the end of each stroke, to be ap-  
plied to the traverse or traverse rod of spin-  
ning or other similar frames, with the object  
of preventing the wearing of grooves in, or  
the cutting of the leather covered rollers be-  
tween which the rove or sliver of material  
passes.

It consists essentially in constructing the  
apparatus with two independent eccentrics  
which act independently of each other through  
two separate links or connecting rods affixed  
to a bracket pivoted to the traverse rod.

It will be fully described with reference to  
the annexed drawings which show apparatus  
constructed in accordance with the invention.

Figure 1 is a front elevation; Fig. 2, back  
elevation; Fig. 3, plan; Fig. 4, transverse sec-  
tional elevation through the eccentrics on line  
 $x-x$ ; Fig. 5, transverse sectional elevation on  
line  $y-y$ ; Fig. 6, front elevation of modified  
form or arrangement of the apparatus; Fig. 7,  
back elevation of same; Fig. 8, plan of same;  
Fig. 9, transverse sectional elevation on line  
 $w-w$ ; Fig. 10, transverse sectional elevation  
on line  $z-z$ .

On a fixed bracket A placed on the roller  
beam or other convenient position in the ma-  
chine, we mount two separate eccentrics B B'  
working independently of each other, and  
each fitted with a connecting rod or link C C'  
by which the motion of the two eccentrics is  
conveyed to a common bracket D, pivoted to

the traverse rod E. Each of the eccentrics  
we prefer to form on the side of a toothed  
wheel which receives motion from a worm or  
other gear, and by which they are rotated.

Referring more particularly to Figs. 1 to 5,  
the two eccentrics B B' are each formed on  
the face of a worm wheel F F' and are mounted  
side by side on a stud  $f$  carried by the fixed  
bracket A. The two worm wheels vary in  
size by one or more teeth so that their rela-  
tive position and that of the eccentrics is  
constantly varying. On the traverse rod E,  
is pivoted the bracket D, to which both ec-  
centrics are connected by the rods or links  
C C'. The bracket is pivoted at one end  
to the traverse rod, and at its other end is  
pivoted the connecting rod C', the connect-  
ing rod C being pivoted to it by a separate  
pivot at a convenient distance from the bot-  
tom of the bracket. The bracket D is pro-  
vided with a longitudinal slot at its upper  
end, and is connected to the traverse rod E  
by a stud  $d$ , the position of which is adjust-  
able in the slot. The stud  $d$  is fast to the  
bracket D and pivoted or free to rotate in the  
bracket  $e$  fitted to the traverse rod E. The  
ends of the connecting rods are each pivoted  
on studs  $c c'$  made fast in transverse slots.  
The throw or length of traverse of the rod E  
can be regulated or adjusted as required by  
altering the position of the studs  $d, c$  or  $c'$  in  
their respective slots, so as to give a longer  
or shorter extreme traverse. The wheels F  
F' are driven by the worm G cut in or fixed  
upon the roller or by any other suitable ar-  
rangement.

Referring more particularly to Figs. 6 to  
10, the same description will in most part ap-  
ply to the modified form of the apparatus, but  
instead of both eccentrics B B' and their re-  
spective wheels being mounted on the same  
stud or center, they are mounted upon sepa-  
rate studs, and the wheel F''' driven from a  
wheel F'' connected to the worm wheel F, as  
by this means greater variation or difference  
in the speed of the two eccentrics B B' can  
be obtained. In the drawings a star or stud  
wheel is shown at F''' connected to the eccen-  
tric B', which is actuated by a stud or pro-



jection  $f''$  on the wheel  $F''$  by which the wheel  $F'''$ , and eccentric  $B'$  are moved forward one tooth at each revolution of the eccentric  $B$  and wheel  $F$ . The wheel  $F$  is driven  
5 by the worm  $G$  on the roller.

In operation, motion is conveyed from the worm  $G$  on the roller shaft to the eccentrics  $B B'$  through the wheels  $F F'$  in the first example; as one eccentric is driven faster than  
10 the other and their relative positions are gradually and constantly changing, the eccentrics will at one time be both moving the connecting rods or links  $C C'$  and with them the bracket  $D$  in the same direction, and at  
15 another time one eccentric will be throwing its connecting rod in one direction, and the other eccentric its connecting rod in the opposite direction, thus communicating a constantly varying traverse to the end of the  
20 bracket  $D$  and traverse rod  $E$ . In the second example, the constant movement to the traverse rod is effected by the eccentric  $B$  and connecting rod  $C$  while the end of the connecting rod  $C'$  acts as a fulcrum, the position of  
25 which is altered at each revolution of the eccentric  $B$  by the movement given to the eccentric  $B'$  thus communicating a varying motion to the end of the bracket  $D$  fixed or connected to the traverse rod  $E$ .

30 We wish it to be understood that we are well aware that two eccentrics have been used to vary the traverse where one eccentric has been placed inside the other or to act directly upon the other, and that such have been actuated by two worm wheels of different diameter gearing together into a single worm, and  
35 we do not make any claim therefor.

What we claim as our invention, and desire to protect by Letters Patent, is—

40 1. An apparatus for imparting a variable motion to the traverse rod of preparing and spinning machines provided with two independent eccentrics working separately and two separate connecting links through which  
45 the movement of the eccentrics is independently transmitted through a common bracket to the traverse rod in combination with a common bracket to which they are pivoted, the traverse rod to which the bracket is attached,  
50 and the worm wheels and worm which actuate the eccentrics substantially as described.

2. In apparatus for imparting a variable motion to the traverse rod of preparing and spinning machines the combination with the traverse rod of two separate independent eccentrics the relative positions of which are  
55 constantly changing, two separate independent connecting rods through which the movement of the eccentrics is transmitted, two worm wheels affixed to the eccentrics, a worm  
60 affixed to the roller shaft and a common bracket attached to the traverse to which the connecting rods are attached in different positions substantially as described.

3. In apparatus for imparting a variable motion to the traverse rod of preparing and spinning machines, the combination of the two separate independent eccentrics  $B B'$  which work independently of each other, the worm wheels  $F F'$  which are attached to and  
70 actuate the eccentrics, the two separate links or connecting rods  $C C'$  through which the movement of the eccentrics is transmitted and the bracket  $D$  affixed to the traverse rod common to the two connecting rods, with the  
75 worm  $G$  on the roller and the traverse rod  $E$  substantially as described.

4. In apparatus for imparting a variable motion to the traverse rod of preparing and spinning machines, the combination of the  
80 traverse rod  $E$ , the actuating worm  $G$  on the roller, the bracket  $A$ , the worm wheels  $F F'$  which are attached to and actuate the eccentrics, the independent eccentrics  $B B'$ , the stud  $f$  which carries the eccentrics, the two  
85 separate connecting rods  $C C'$  which transmit the movement of the eccentrics, the bracket  $D$  to which the two connecting rods are attached in different positions, the studs  $c c'$  with which the ends of the connecting rods  
90 engage and the bracket  $e$  provided with stud  $d$  by which the bracket  $D$  is attached to the traverse rod.

In testimony whereof we have signed our names to this specification, in the presence of  
95 two subscribing witnesses, this 19th day of September, 1892.

W. H. COOK.  
J. HARRISON.

Witnesses:

I. OWDEN O'BRIEN,  
CHAS. OVENDALE.