

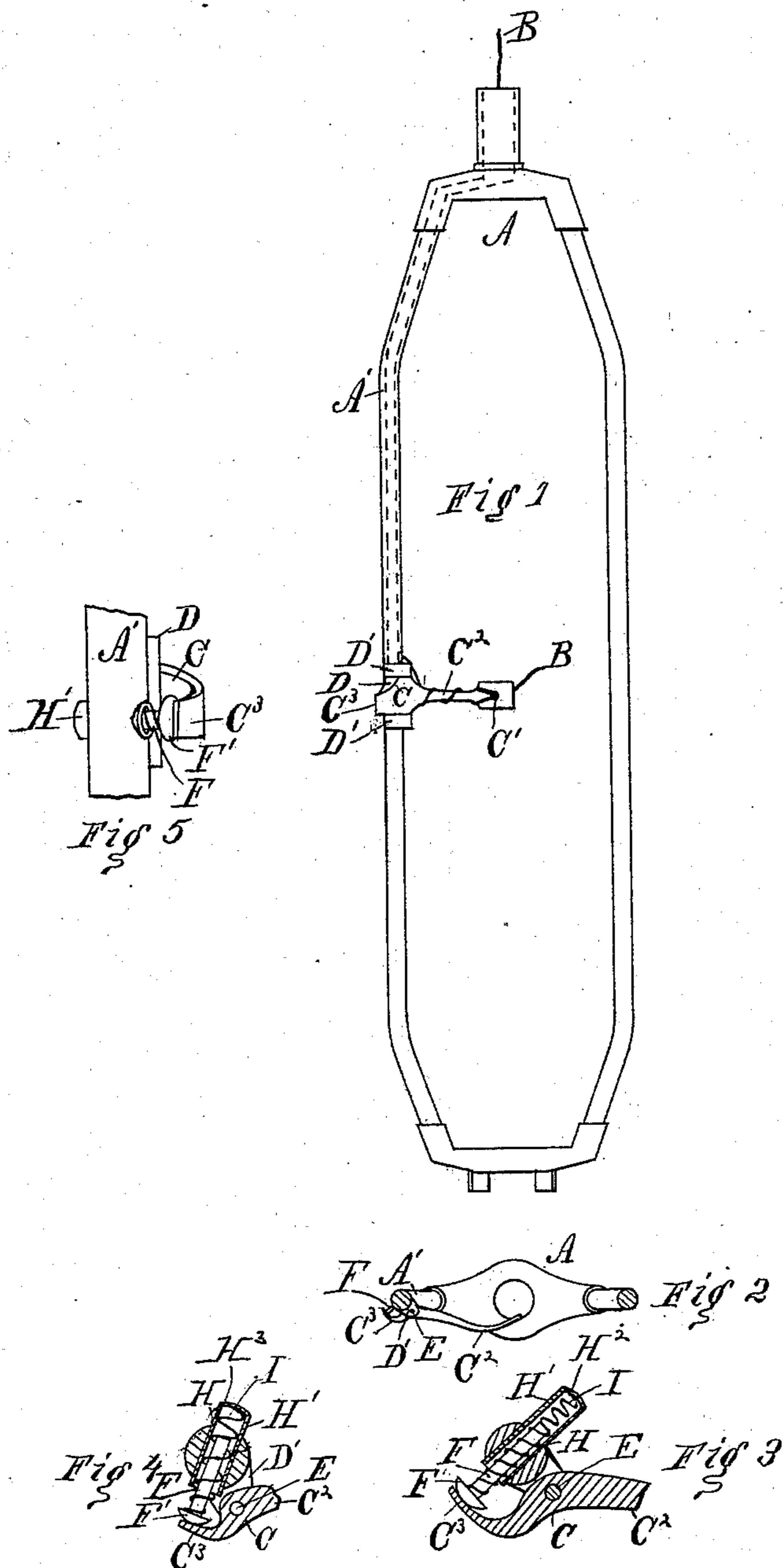
(No Model.)

E. W. KELLEY.

FLIER FOR ROVING MACHINES.

No. 282,329.

Patented July 31, 1883.



Witnesses—  
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# UNITED STATES PATENT OFFICE.

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## FLIER FOR ROVING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 282,329, dated July 31, 1883.

Application filed November 18, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD W. KELLEY, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Fliers for Roving-Machines, of which the following is a specification.

My invention consists in the combination of the flier provided with an opening to receive the spiral spring, said spring, a pin provided with a head, the presser provided with an outer arm, and means of pivoting said presser to a side of said flier; also, in the combination of the flier, the block provided with lugs, the pivot, the presser provided with an outer arm, a tube closed at its inner end and secured to the side of said flier, a spiral spring, and a pin provided with a head, all as and for the purpose hereinafter specified.

In the accompanying drawings, Figure 1 is an elevation of a flier to which my invention is applied; Fig. 2, a horizontal cross-section of the same just above the block; Fig. 3, a horizontal central section through the tube and presser to show how the presser may be applied in place of the "centrifugal presser," so-called, without moving the block; Fig. 4, a similar section, showing the best position of the block; Fig. 5, an edge or side elevation of part of the flier with presser attached thereto.

A is the flier proper, of any usual form; B, the roving entering the top of the flier, passing down within the hollow arm A' of said flier, then out and around the presser C, and through the eye C' of the latter to the bobbin.

The flier is operated in the usual manner in connection with a spindle and bobbin, the spindle and bobbin not being shown, as they form no part of my invention.

A block, D, provided with lugs D' D', is secured to the flier, in the usual manner, by soldering or brazing. Through the lugs D' D', and through the presser C, is passed a pivot, E, on which the presser turns. The inner arm, C<sup>2</sup>, of the presser C is of the usual form; but my presser is also provided with an outer arm, C<sup>3</sup>, said outer arm being slightly curved to take up as little room as possible, and to afford a proper bearing for the head F' or outer end of the pin F.

The pin F is preferably cylindrical, and its

head F' is rounded, as shown, to cause less friction on the arm C<sup>3</sup>.

A hole, H, is drilled into the vertical part of the side or arm A' of said flier, at about right angles to said side of the flier, and in this hole is inserted a tube, H', closed at its inner end, H<sup>2</sup>, and the tube is soldered or otherwise secured in position. Within the tube H' is placed a spiral spring, I, and within the spring is placed the shank or stem of the pin F, the outer end of said spring pressing against the inner or under side of the head F' of said pin and crowding said head against the outer arm, C<sup>3</sup>, of the presser, and therefore throwing the long arm C<sup>2</sup> of said presser in toward the center of the flier for the usual purpose of winding the roving closely upon the bobbin.

As above indicated, my presser may be applied in place of the so-called "centrifugal presser" without moving the block, (see Fig. 3;) but the best position of the block is shown in Fig. 4, with the lugs turned farther away from the center of the flier proper to enable more roving to be wound upon the bobbin without striking said lugs, the center of the flier in Figs. 3 and 4 being supposed to be at the right of each of said figures, on a horizontal line running through both of them. Whether the tube H' projects through the side of the flier toward the center will depend on the thickness of such side, and if the side be thick enough the hole H may be bored into and not through the same, and in this case no tube will be needed.

The presser above described has several advantages over those in common use. The centrifugal presser is provided with an outer extension; but this extension is made broad to catch the air and is unreliable in its action, because, the speed of the machine varying, the resistance of the air and the pressure of the presser also vary proportionately. Hence the faster the machine runs (with the centrifugal presser) the harder the bobbin is wound, and vice versa, so that the hardness of the roving varies at the stopping and starting of the machine and whenever there is a variation of speed. Furthermore, the wing of the centrifugal presser extends out so far that the fliers must be made smaller, and consequently less roving can be wound upon the bobbins. The bobbins must be doffed oftener and the

machine more frequently stopped, thus diminishing the production of the machine. The tension being more uniform, with my presser a greater amount of yarn can be wound on the  
5 bobbin, the gain being made mostly at the stopping and starting of the machine. The spring-presser commonly used has a coiled ribbon-spring extremely liable to get clogged by dirt accumulating between the coils of the  
10 same, and there is no way of cleaning such a spring without removing the presser entirely from the flier, and to remove and replace the pin and spring of such a presser involves considerable time and labor. Such a presser is  
15 therefore more expensive to repair than mine. The spring in my flier will bring the dirt out of the tube when said spring expands, and the dirt (if any adheres to the spring) can then be readily cleaned off. The pin to which the flat  
20 coiled spring is generally attached costs more than my whole device, including the presser, spring, tube, and pin, so that mine is cheaper. My device is more durable, because the flat spring above named is coiled around a very  
25 small and angular center, and being continually coiled and uncoiled wears off and breaks.

The coiled flat spring cannot readily be adjusted to vary the tension of the same, and cannot be adjusted to slight variations. If my spring gets slack, it can be tightened by putting a washer or circle of sheet metal of suitable thickness between the spring and the closed end of the tube.

I claim as my invention—

1. The combination of the flier A, provided with an opening, H, to receive the spiral spring I, said spring, the pin F, provided with the head F', the presser C, provided with the outer arm, C<sup>3</sup>, and means of pivoting said presser to a side, A', of said flier, as and for the purpose specified.

2. The combination of the flier A, the block D, provided with the lugs D' D', the pivot E, the presser C, provided with an outer arm, C<sup>3</sup>, the tube H, closed at its inner end and secured to the side A' of said flier, the spiral spring I, and the pin F, provided with the head F', as and for the purpose specified.

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