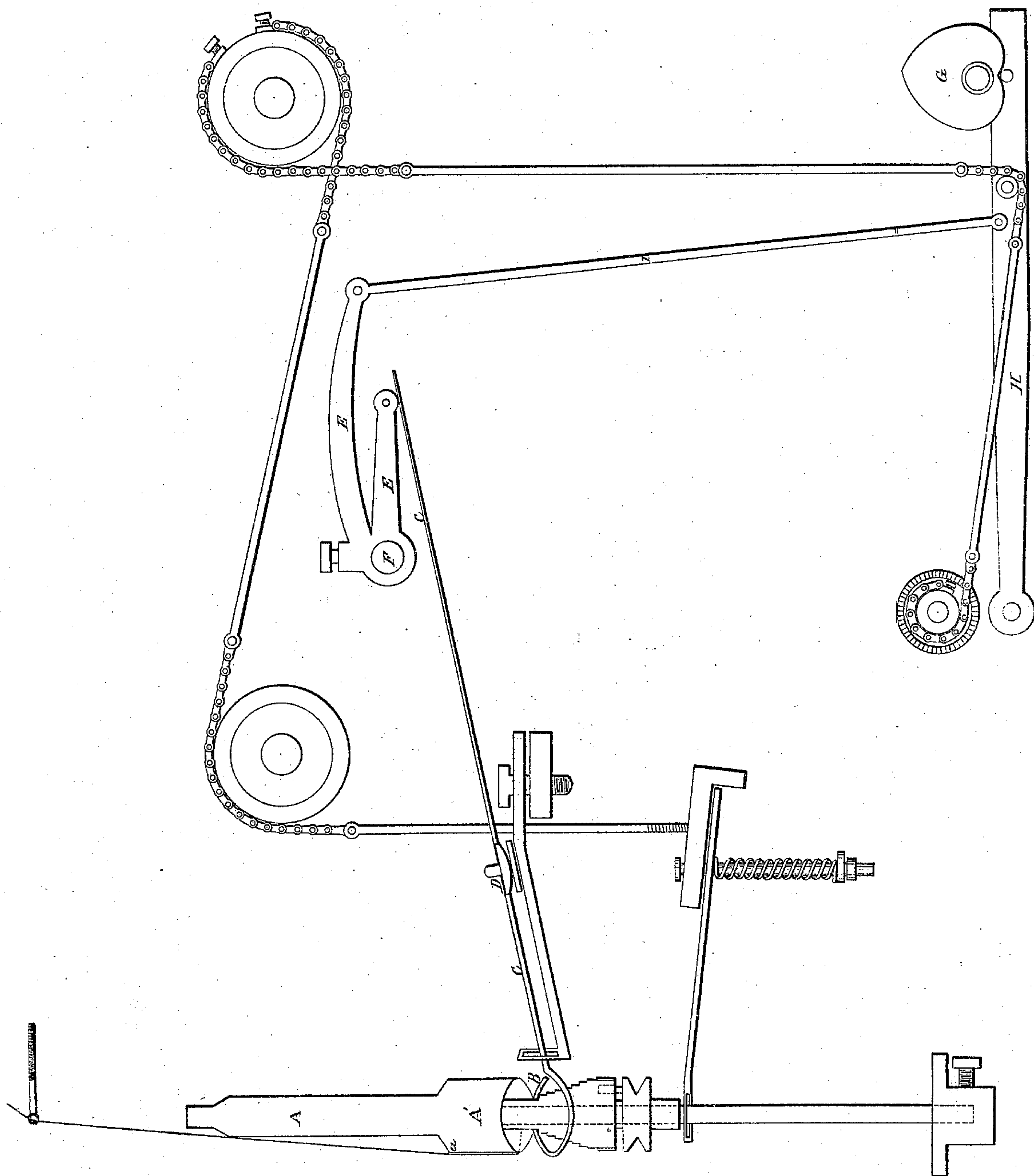


Sheet 1, of 5 sheets.

J. Whitehead.
Spinning Mach.

Nº 2,073.

Patented Jun. 18, 1842

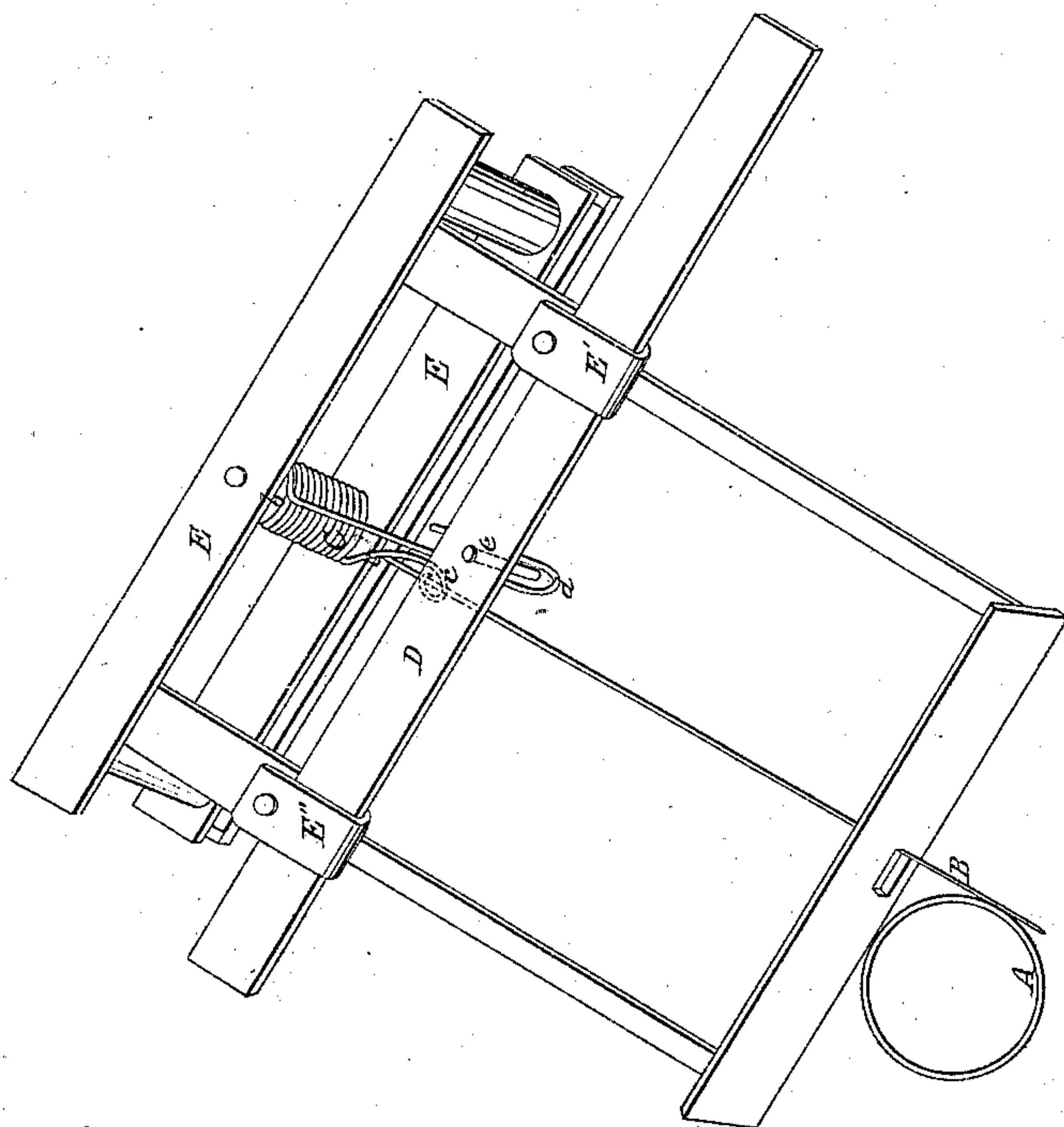


Sheet 2, 2 Sheets.

J. Whitehead.
Spinning Mach.

Nº 2,673.

Patented Jun. 18, 1842.



UNITED STATES PATENT OFFICE.

JESSE WHITEHEAD, OF MANCHESTER, VIRGINIA.

MANNER OF REGULATING THE DRAG OF YARN IN THE OPERATION OF SPINNING.

Specification of Letters Patent No. 2,673, dated June 18, 1842.

To all whom it may concern:

Be it known that I, JESSE WHITEHEAD, of Manchester, in the county of Chesterfield, in the State of Virginia, have invented a new and useful Improvement in the manner of regulating the drag of the yarn in the operation of spinning in that kind of apparatus in which the cap spinner is used, which improved apparatus I denominate the "spring drag-cap spinner;" and I do hereby declare that the following is a full and exact description thereof.

In spinning machines in which the cap spinner of the ordinary construction is employed, the drag of the yarn is produced by its lapping around it to a certain extent, and by the resistance of the atmosphere; but the adhesion of the thread to the surface of the cap is subjected to great variation in consequence of changes in the state of the air, such changes producing much irregularity, difficulty and waste. To prevent this, I sometimes, and especially when spinning yarn for filling change the form of the cap spinner itself, its lower portion for about one third, or one fourth, of its length, consisting of a hollow cylinder of the ordinary diameter; it has then an offset by which this lower is joined to its upper portion, which may be made of about half the diameter of the lower part; the exact proportion, however, not being a point of any importance. A cap of this form is particularly well adapted to the spinning of filling upon the spools used for that purpose; but for spinning warp, in which bobbins are used with a double head, it will be necessary to employ the cylindrical cap of one-size from end to end as generally constructed. In all cases, however, I employ a ring of metal which is made to surround the spool at the lower edge of the cap, to which ring a graduated pressure is applied, and it is thereby made to regulate the drag of the thread which passes between it and the cap, the graduation being such as to adapt the pressure to the varying size of the cap as it is formed.

In the accompanying drawings, A, A', is one of my caps used for spinning filling, the lower part A', being of the usual size, while the upper part A, is shown of a reduced diameter. Under this construction the thread as it passes up to the eye is free from the body of the cap after it leaves the angle *a*, of the offset, and its lapping round

the cap is restricted to the portion of it A', which will be subjected to little variation; a point of much greater importance in spinning filling than in spinning warp, the former from its loose twist being much more liable to break from any undue strain upon it.

B, is a ring of brass, or other metal, which is attached to an elastic, or spring, rod C, C, supported on a fulcrum at D, and it will be manifest that if pressure be made on the outer end of this rod it will be borne up against the lower edge of the cap with a degree of force proportioned to said pressure, and will produce a corresponding drag on the yarn.

E, is a lever working on a fulcrum at F, and carrying a faller wire *b*, which is to operate upon the respective rods C, C.

G, is the ordinary heart motion, by which the spools are raised and lowered, as in other spinning machines, and the apparatus by which the pressure on the ring B, is regulated is moved by the lever H, upon which the heart G, operates, and raises and lowers the spools, in a manner well known.

I, is a connecting rod attached to the lever H, and to the lever E, and thus giving motion to the faller *b*, by which the pressure of the ring is regulated. By this arrangement, the drag of the thread will be the greatest when the yarn is being wound on the spool at the greatest diameter of the cap, and will be least when it is being wound on the smallest part, the pressure regularly increasing and diminishing as it approaches to, and recedes from, these points. By this means the yarn is wound upon the spool with greater regularity than heretofore, and with a firmness which has not been attained in any other way; its quantity being sometimes increased fifty per cent. When the yarn is to be wound upon a bobbin regularly from end to end, the pressing apparatus for increasing the drag is so arranged as gradually to increase it as the winding upon the bobbin advances.

Having thus fully described the nature of my improvements in the spinning apparatus, what I claim therein as new and desire to secure by Letters Patent, is—

1. The so forming of the caps, when used for the spinning of filling upon spools, as that the yarn in its passage from the eye to the bottom of the cap, shall be in contact

with the lower portion of the cap only, said form being given thereto for the purpose, and substantially in the manner, above set forth.

5 2. I also claim the graduating the drag of the yarn by the pressure of a ring attached to an elastic, or spring, rod, the force of which is graduated to the varying diameter of the cap, as herein described. And

10 I do hereby declare that my invention does not in this part of it consist in, or depend upon, the precise means by which the pressure of the ring is graduated, as this may be variously modified, but I have pointed out

that arrangement of the respective parts for 15 effecting this object which I deem the most convenient; my improvement in this part, however, consists in the use of this graduated pressure made by means of a ring, by 20 any arrangement of the apparatus which is substantially the same as that described, and which produces a like effect by equivalent means.

JESSE WHITEHEAD.

Witnesses:

THOS. P. JONES,

EDWIN L. BRUNDAGE.