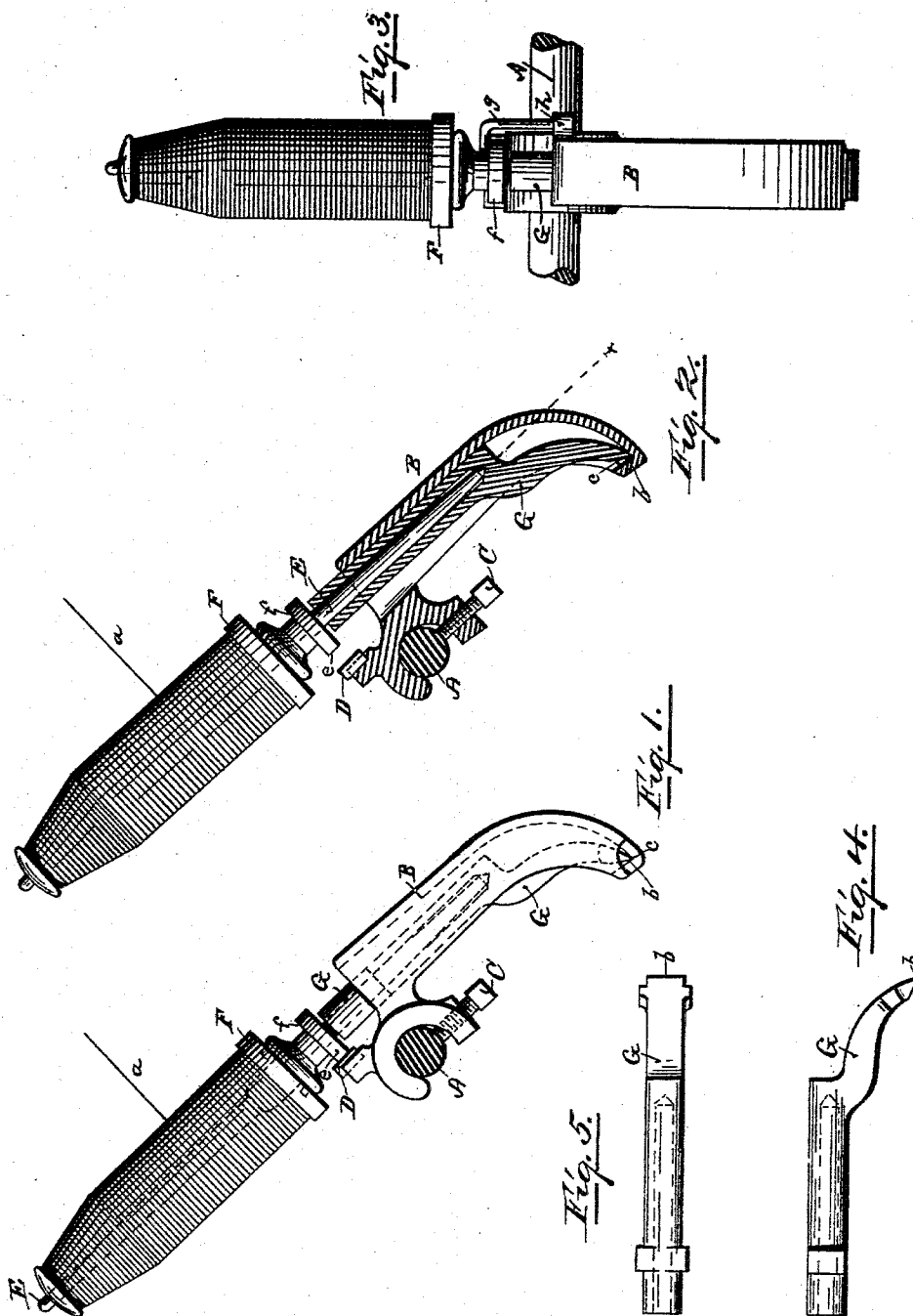


(No Model.)

F. W. EASTON.
FRONT SPOOLER SPINDLE.

No. 511,266.

Patented Dec. 19, 1893.



Witnesses:

Charles Hannigan
Joseph J. Scholfield

Inventor.

Frederic W. Easton
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Att'y.

UNITED STATES PATENT OFFICE.

FREDERIC W. EASTON, OF PAWTUCKET, RHODE ISLAND.

FRONT SPOOLER-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 511,266, dated December 19, 1893

Application filed June 14, 1893. Serial No. 477,570. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC W. EASTON, a citizen of the United States, residing at Pawtucket, in the State of Rhode Island, have invented a new and useful Improvement in Front Spooler-Spindles, of which the following is a specification.

The nature of my invention consists in the improved construction and arrangement of the spindle-step and holder, whereby a practically uniform tension will be exerted upon the thread, as it is being unwound from the bobbin or spool on the spindle.

In the accompanying drawings:—Figure 1, represents a side view of my improved front spindle. Fig. 2, represents a longitudinal section of the same. Fig. 3, represents a front-view taken at right angles with the axis of the inclined spindle. Fig. 4, represents a side view of the spindle step, removed from the holder. Fig. 5, represents a front view of the same.

In the drawings, A represents the fixed rod upon which the spindle holder B is secured, by means of the set screw C, the said spindle holder being provided with the friction cushion D, made of felt or other suitable material adapted to apply friction to the spindle E, so as to cause the proper degree of tension upon the thread *a*, which is being drawn from the spool F, on the spindle. The spindle step G is provided with a turning fulcrum *b*, which is offset on the inner side of the line of the axis of the spindle, as shown by the dotted axial line in Fig. 2, the said turning fulcrum being formed by a notch or recess *c*, in the holder B. The spindle holder B is attached to the rod A so that the spindle E will lie at about an angle of forty five degrees from a vertical line, or so inclined, that the friction

between the periphery *e* of the collar *f* upon the spindle E, and the cushion D, will serve to produce the required degree of tension upon the unwinding thread *a*, and in this case, upon the occurrence of an obstruction to the free unwinding of the thread, or if the thread is drawn from the spool more rapidly, then the resulting increased amount of tension will cause the slight backward movement of the spindle and its step, so that the periphery *e* of the collar *f*, will bear with less pressure, and consequently with less friction, against the friction cushion D, thus compensating for the increased difficulty in the rapid unwinding of the thread, and in case of a serious obstruction to the rapid unwinding of the same, or a sudden jerk upon the thread, the collar *f* may be drawn completely away from the friction cushion D, so that the spindle can revolve freely, as shown in Fig. 2. The spindle E is held to its seat in the step G by means of the wire *g* which screws into the lug *h* on the holder B, and at its upper end turns inward over the top of the collar *f*, thus securing both the spindle E and the step G to the holder B.

I claim as my invention—

The combination with the inclined spindle holder, provided with the friction cushion and a downwardly extending offset portion which forms a turning fulcrum for the spindle step, of the spindle step having a downwardly extending offset portion to bear upon the offset turning fulcrum of the holder, and the spindle provided with the friction collar above the spindle step, substantially as described.

FREDERIC W. EASTON.

Witnesses:

SOCRATES SCHOLFIELD,
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