

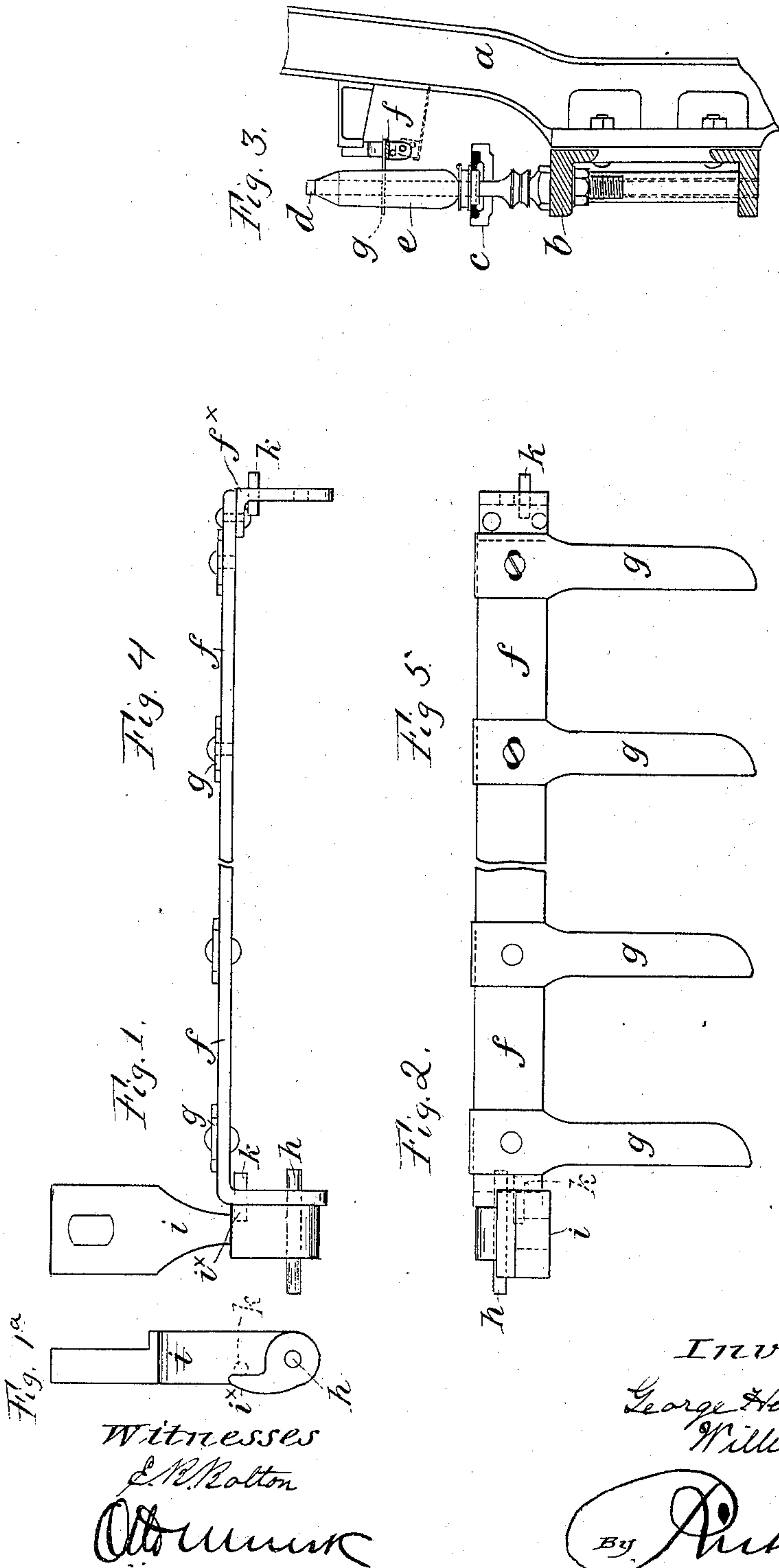
No. 610,106.

Patented Aug. 30, 1898.

G. H. & W. THOMSON.
RING SPINNING AND DOUBLING FRAME.

(Application filed Jan. 5, 1898.)

(No Model.)



Witnesses
E. M. Patton
[Signature]

Inventors:
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By *[Signature]*

their Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE HENRY THOMSON, OF ROCHDALE, AND WILLIAM THOMSON, OF SHAW, ENGLAND.

RING-SPINNING AND DOUBLING FRAME.

SPECIFICATION forming part of Letters Patent No. 610,106, dated August 30, 1898.

Application filed January 5, 1898. Serial No. 665,609. (No model.)

To all whom it may concern:

Be it known that we, GEORGE HENRY THOMSON, residing at Rochdale, and WILLIAM THOMSON, residing at Shaw, near Oldham, in the county of Lancaster, England, subjects of the Queen of Great Britain, have invented new and useful Improvements Applicable to Ring - Spinning and Doubling Frames, of which the following is a specification.

10 This invention is applicable to ring-spinning and doubling frames; and the object of the invention is to prevent the "ballooning" of the yarn or threads when commencing to wind on a fresh set of cops.

15 The nature of our said invention and the manner in which the same is to be performed or carried into practical effect will be readily understood on reference to the sheet of drawings hereunto annexed and the following explanation thereof.

20 Figure 1 is a front elevation, and Fig. 2 a plan view, of our improvement; and Fig. 3 is an end view showing the application thereof to a ring-spinning frame. Fig. 1^a is a detached view of the bracket *i*, hereinafter referred to. Figs. 4 and 5 are respectively a front elevation and plan view of a modification.

Referring to Fig. 3, *a* is part of the framing; 30 *b*, the spindle-rail; *c*, the ring-rail, and *d* the spool upon which the cop *e* is being wound.

Our invention consists principally of a rail *f*, (see also Figs. 1 and 2,) provided with a series of fingers *g*, projecting over the ring-rail *c*, between the spindles at such a height above the ring-rail as will be best suited to prevent the ballooning of the yarn while winding on the bottom part of the cop *e*. These rails *f* are cranked downward at each end, as shown 35 in Fig. 1, and are provided with pivots *h*, supported by suitable brackets *i*, or the rails *f* may be made straight at the end and be riveted or bolted to cranked brackets *f*^x, as shown in Figs. 4 and 5.

45 When commencing a fresh set of cops, the finger-rail *f* is maintained in such a position that the fingers *g* project horizontally be-

tween the spindles, as shown at Fig. 3, the weight of the fingers causing a small stop-pin *k* on the cranked end of *f* (or on the cranked 50 bracket *f*^x) to bear against a small nub *i*^x on the supporting-bracket *i*. (See also side view of this bracket detached at Fig. 1^a.) The finger-rail remains in the horizontal position so long as there is a tendency to too much bal- 55 looning of the yarn; but as the formation of the cops *e* is proceeded with and the ring-rail *c* rises higher it lifts up the fingers *g* out of the horizontal position, gradually tilting them and the rail *f* farther back at each lift until 60 the cops *e* are so far formed that all danger from ballooning ceases, when by the increased lift of the ring-rail *c* the finger-rail *f* becomes tilted so far back that it is overbalanced by its own weight and falls over backward, as 65 shown by dotted lines at Fig. 3, removing all the fingers *g* out of the way of the cops.

The fingers *g* may be permanently attached to the rail *f* by riveting or otherwise, as shown in Figs. 1 and 2; but we prefer to provide 70 them with slots and to fix them with screws, as shown in Figs. 4 and 5, or to attach them in any other convenient manner, so that they can be adjustable on the said rail to suit requirements.

We claim as our invention—

In combination with ring-spinning and doubling frames, a rail carrying a plurality of fingers projecting horizontally above the ring-rail between the spindles, and pivoted 80 crank-arms extending downward from said rail and serving to support the same in a nearly-balanced position whereby on the lifting of the ring-rail a determined distance said rail and fingers will become overbalanced to 85 remove the fingers automatically out of the way of the cops, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

GEORGE HENRY THOMSON.

WILLIAM THOMSON.

Witnesses:

CHARLES A. DAVIES,
J. E. HUGHES.