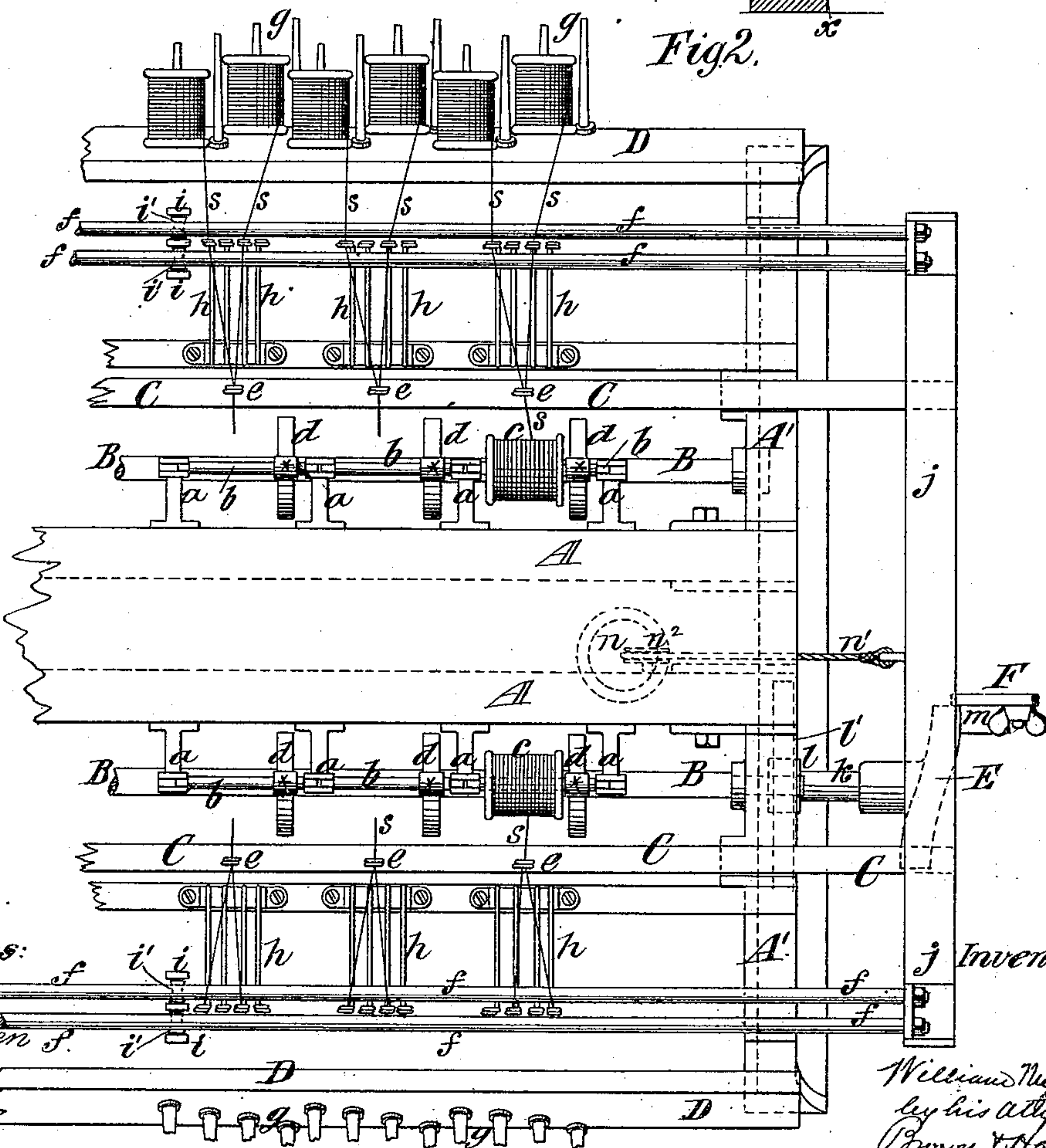
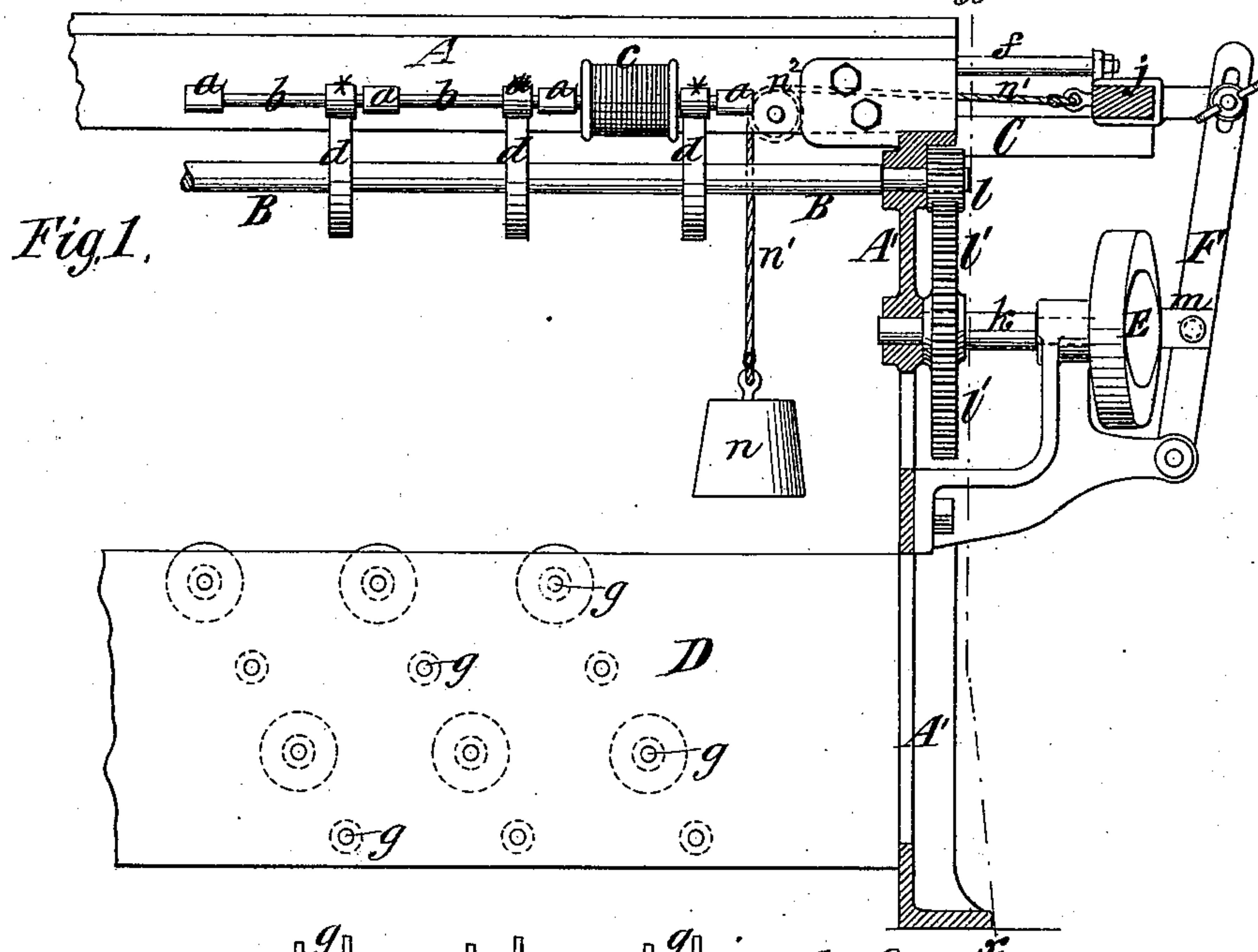


2 Sheets—Sheet 1.

MACHINE FOR DOUBLING AND SPINNING SILK.

Patented Dec. 22, 1885.



Witnesses:

Olundgren
Koristettulutus

Inventor:

William Nugent
by his attys.
Barnes & Hall

(No Model.)

2 Sheets—Sheet 2.

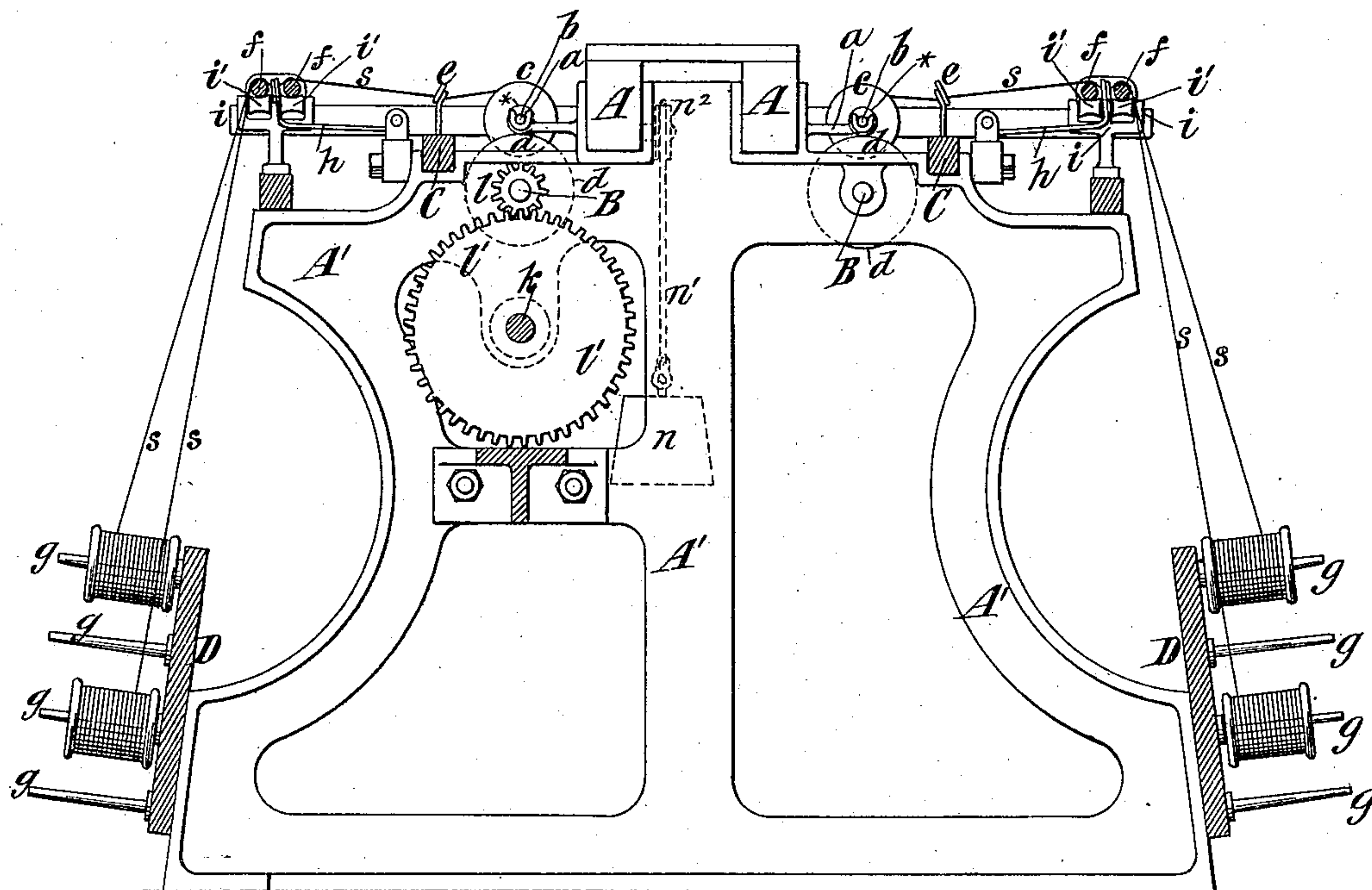
W. NUGENT.

MACHINE FOR DOUBLING AND SPINNING SILK.

No. 332,823.

Patented Dec. 22, 1885.

Fig. 3.



Witnesses:

O. Sundgren
Louis M. F. Whitelaud.

Inventor:

William Nugent
by his attys.
Brown & Hall

UNITED STATES PATENT OFFICE.

WILLIAM NUGENT, OF PATERSON, NEW JERSEY, ASSIGNOR TO STEPHEN VAN WINKLE, TRUSTEE, OF SAME PLACE.

MACHINE FOR DOUBLING AND SPINNING SILK.

SPECIFICATION forming part of Letters Patent No. 332,823, dated December 22, 1885.

Application filed September 16, 1884. Serial No. 143,197. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NUGENT, of Paterson, in the county of Passaic and State of New Jersey, have invented a certain new and useful Improvement in Machines for Doubling and Spinning Silk, of which the following is a specification.

The invention relates particularly to doubling machines or frames in which there are employed, in addition to the traverse-bar and its traverse-guides, a rod or rods extending parallel with said traverse-bar, and over which the threads or filaments of silk are drawn as they pass upward from spools or bobbins placed on the fixed spindles or jacks of the jack-board, and thence horizontally through the traverse-guides and to the bobbins on which they are wound. In machines of this class the faller-wires of the stop-motion, through which the threads or filaments pass, are turned up between or adjacent to said rods, and the rods usually occupy fixed positions, and are immovable longitudinally. The movements of the threads or filaments from side to side as the traverse-bar is moved do not extend back to these doubling-rods, because the faller-wires hold the threads or filaments against such traversing motion where they pass over said rods. Consequently the said rods become grooved or cut more or less deeply by the threads or filaments, and when a small knot or lump on the thread comes into the groove the thread is liable to break. Even if the grooves formed in the rods do not break the threads or filaments, they chafe and have a fuzz raised on them, which reduces their strength and impedes the after operations of reeling, dyeing, and weaving. After being in use for a time the aforesaid rods, although of steel, become so deeply grooved or cut as to render their further use impracticable, and they have then to be removed from the machine and ground off smooth.

The object of my invention is to prevent the cutting or grooving of the rods, as above described, and to obviate all the evil consequences resulting from the passage of the threads or filaments over such grooved or cut rods. These desirable results I attain by imparting a traverse movement to the aforesaid

rod or rods, as well as to the traverse-bar itself; and the invention consists in novel combinations of parts hereinafter described, and pointed out in the claims, whereby the desired end is attained.

In the accompanying drawings, Figure 1 is a sectional elevation of such parts of a doubling machine as are necessary to illustrate my invention. Fig. 2 is a plan thereof; and Fig. 3 is a transverse vertical section on the plane of the dotted line *xx*, Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A A designate the main stretches or longitudinal rails of the machine, which are supported by leg frames or standards A', one only of which is shown. Projecting from the rails A are open-top brackets or arms *a*, which support the spindles *b* of the winding-bobbins *c*.

B designates the bobbin-driving shafts, which are driven from the farther end of the machine, (not here shown,) and on the shafts B are friction driving-wheels *d*, on which the spindle-heads * bear, and from which the winding-bobbins derive motion.

C designates the traverse-bars, provided with guides or guide-eyes *e*, and *ff* designate pairs of rods parallel with each other. From spools on the jacks or fixed spindles *g* of the jack-board D the threads or filaments *s* pass upward over the rods *ff* to the traverse-guides *e*, and thence to the bobbins *c*. I have shown faller-wires *h*, which pertain to an ordinary stop-motion such as is in very common use. The eyes of these faller-wires are between the rods *ff*, and they prevent any traverse of the threads or filaments *s* over fixed rods.

In order to prevent cutting or grooving of the rods *f*, I impart to them a traverse motion very similar to the traverse movement of the traverse-bar C, and to provide for easy movement of said rods I provide forked standards *i*, in which are roller-supports *i'*, on which said rods are supported and moved.

In order to produce the traversing movement of rods *f*, I have here shown them as connected at their ends with a cross-bar, *j*, and the traverse-bars C are also connected with the same cross-bar, as best shown in Fig. 2.

Below the bobbin-driving shaft B, on one

side of the machine, is a short shaft, *k*, which receives rotary motion from the shaft *B* through a spur-pinion, *l*, and wheel *l'*, and on said shaft *k* is fixed a face-cam, *E*.

5 *F* designates a lever fulcrumed at the lower end, and connected near its upper end with the cross-bar *j*. To the said lever is attached a block, *m*, on which the cam *E* acts, and by its rotation said cam effects the outward move-
10 ment of the lever to move the bar *C* and rods *ff* toward the right. The return movement of said parts is effected by a weight, *n*, suspended by a cord, *n'*, passing over a pulley, *n''*, as shown in Fig. 1, and attached to the
15 cross-bar *j*. By thus reciprocating the rods *ff* they are worn smooth and kept free from grooves and cuts, which injure the threads or filaments.

What I claim as my invention, and desire
20 to secure by Letters Patent, is—

1. The combination, with mechanism, substantially as described, for driving winding-bobbins, of a traverse-bar and a rod or rods over which threads or filaments pass to the
25 traverse-bar, and mechanism, substantially as described, for imparting a traverse motion to said bar and to said rod or rods, as and for the purpose herein set forth.

2. The combination, with mechanism, sub-
30 stantially as described, for driving winding-

bobbins, of a traverse-bar and a rod or rods over which threads or filaments pass to the traverse-bar, roller-supports for said rod or rods, and mechanism, substantially as described, for imparting a traverse motion to
35 said bar and to said rod or rods, as and for the purpose set forth.

3. The combination, with mechanism, substantially as described, for driving winding-bobbins, of a traverse-bar, and a rod or rods
40 over which threads or filaments pass to the traverse-bar, a cross bar connecting said traverse-bar and rod or rods at their ends, and mechanism, substantially as described, connected with said cross-bar for moving it and
45 its attached bar and rod or rods, as and for the purpose herein set forth.

4. The combination, with mechanism, substantially as herein described, for driving winding-bobbins, of the traverse-bar *C* and
50 rods *f*, the cross-bar *j*, connecting said traverse-bar and rods, the cam *E* and means for rotating it, and the lever *F*, connected with said cross-bar and acted upon by said cam, substantially as herein set forth.

WILLIAM NUGENT.

Witnesses:

BENJAMIN CASLEY,
GEORGE J. KERR.