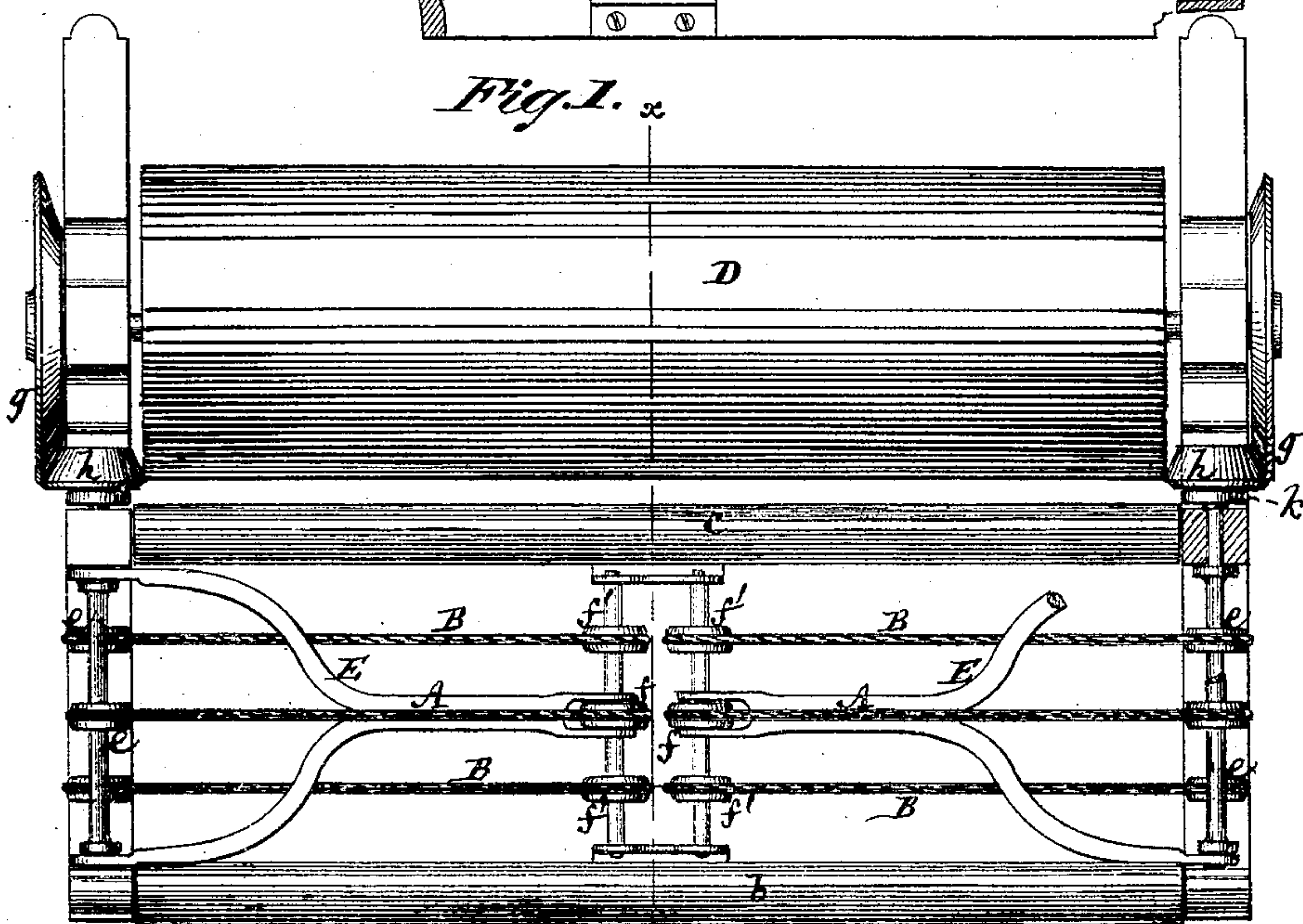
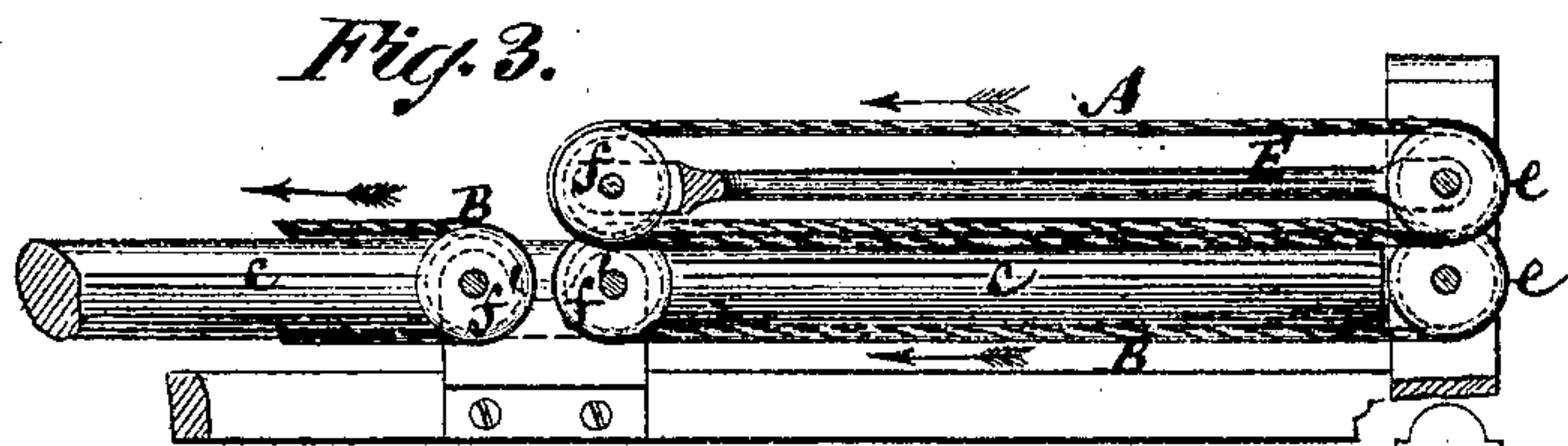
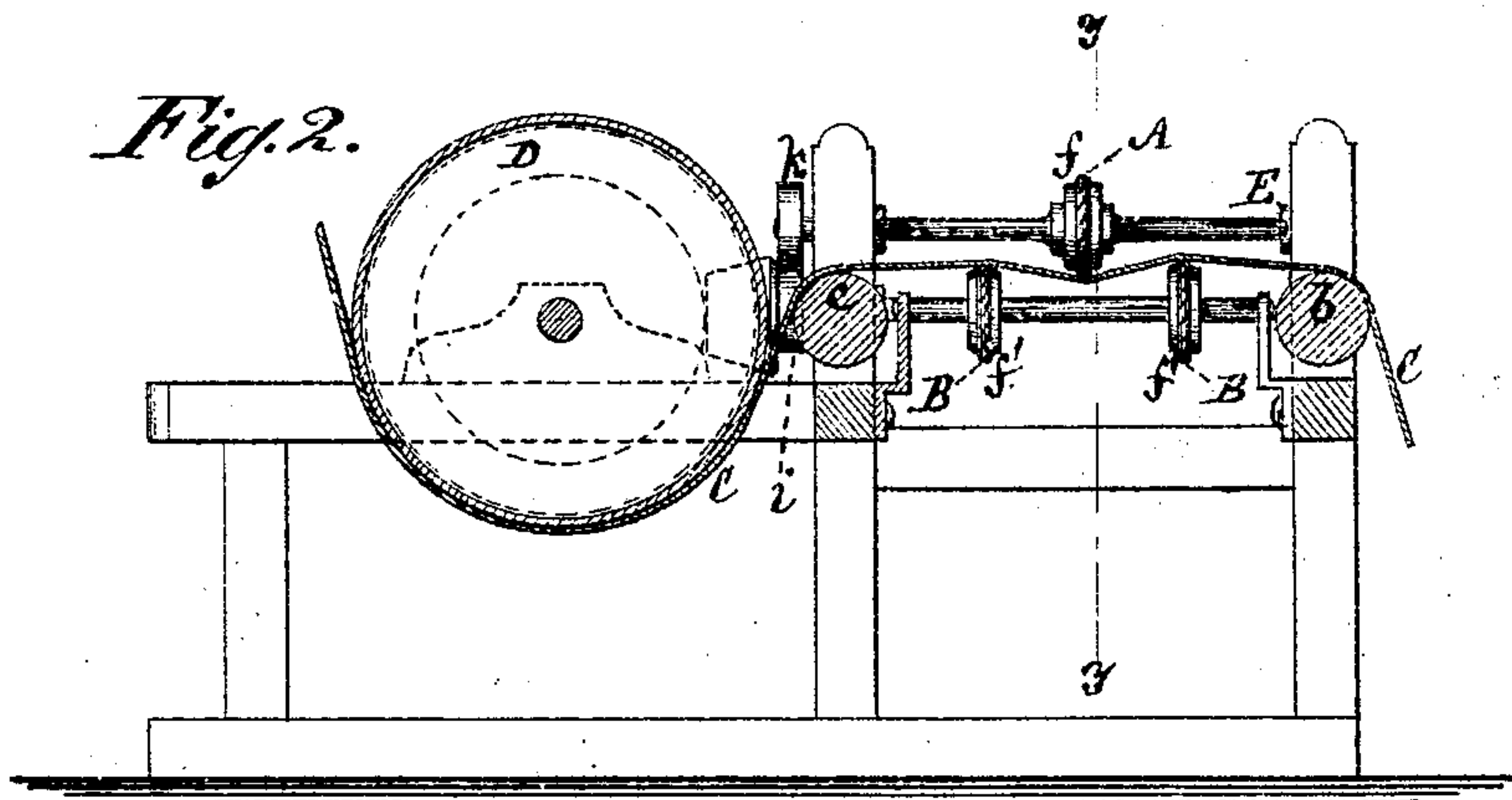


I. E. PALMER.

Machines for Stretching and Spreading Cloth.

No. 146,943.

Patented Jan. 27, 1874.



Witnesses

John Becker.

Geo. Haynes

Isaac E. Palmer,
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF HACKENSACK, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR STRETCHING AND SPREADING CLOTH.

Specification forming part of Letters Patent No. **146,943**, dated January 27, 1874; application filed March 24, 1873.

CASE A.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, of Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Machines for Stretching and Spreading Cloth and other Fabrics, of which the following is a specification:

This invention relates to a combination or system of endless traveling belts or cords, operating to rub or draw by friction on the surface of the cloth, either at right angles to the feed of the latter, or otherwise across it, and whereby pull or hold upon the selvage of the cloth may be dispensed with, and the stretching or spreading of the fabric is rendered more uniform. The invention consists in a deflecting arrangement of said belts or cords with their inner pulleys, for simultaneously stretching the fabric in direction of its feed.

In the accompanying drawing, which forms part of this specification, Figure 1 represents a plan of a cloth stretching, spreading, and dressing apparatus having my invention applied; Fig. 2, a vertical section of the same on the line *x x*; and Fig. 3, a section, in part, on the line *y y*.

Similar letters of reference indicate corresponding parts.

A B represent endless cords or belts, arranged transversely to the feed of the fabric C, which passes over a beam or roller, *b*, between said cords or belts, or over one set and under the other, and from thence over a roller, *c*, to the drying-cylinder D, or otherwise. The endless cords or belts A B, of which there may be any suitable number, extending from opposite sides toward the center of the machine, and traveling so as to rub or draw upon both surfaces of the fabric away from its center, are carried, by outer and inner pulleys *e e* and *f f'*, the pulleys *e e* being driven by gears *g h* and *i k*, from the drying-cylinder D, or otherwise. The inner pulleys *f* of the upper belts A, and the inner pulleys *f'* of the lower belts B, are arranged so that they and their belts or cords exert a deflecting action on the

fabric as the latter passes through between them, as clearly shown in Fig. 2 of the drawing, and whereby the fabric is stretched in direction of its feed as well as transversely, or, in other words, (that is, when the fabric is a woven one,) has its warp and weft simultaneously stretched, extreme draft or pull taking place in or from the center of the piece, where it presents greater resistance than at the selvages.

The several pulleys *f'* may be arranged loosely upon the same, or a central shaft and the upper pulleys *f* be disposed to project one beyond the other in a lateral direction, which will do away with any sagging of the fabric in between the pulleys; or friction-strips, connecting respectively the pulleys *f f* and *f f'*, may be used for the same purpose.

The pressure or action on the fabric of the bands or belts A B, and of the inner pulleys over which they run, is made automatically adjustable and yielding, by suspending the inner pulleys *f* of the belts A in hangers E E, having their centers of motion in line with the axes of the pulleys *e e*. This also provides for the hereinbefore-described deflecting action of the belts and their inner pulleys on the fabric.

The friction stretching belts or cords A B may be made of any suitable material, and either be flat, round, or of any desired shape, and either be plain upon their surfaces, or be provided with projections thereon.

What is here claimed, and desired to be secured by Letters Patent, is—

The arrangement, essentially as herein shown and described, of upper and lower friction stretching belts or cords A B, arranged to extend from opposite sides of the machine, for travel over or against the fabric, and, in concert with their inner pulleys *f f'*, serving to deflect the fabric as it passes in between them, all as specified.

ISAAC E. PALMER.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.