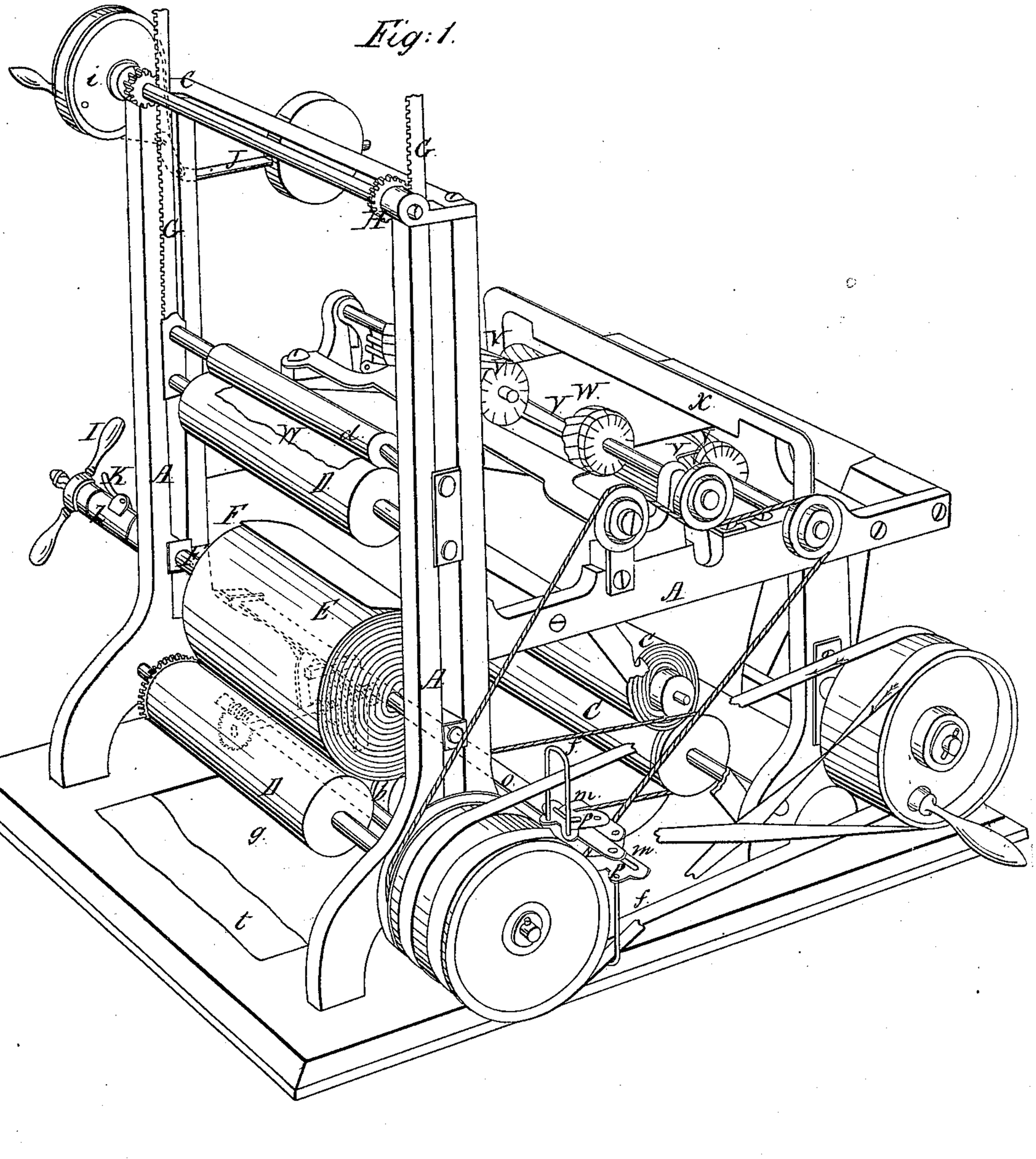
Sheet 1-2 Sheets.

G. C. Howard.

Cloth Finishing Mach.

No. 81,170. Patented Aug. 18, 1868.

Fig: 1.



Witnesses.
Stany. L. Lippincott
John H. Dale

Inventor
Geo. C. Howard

G. C. Howard.

Sheet 2-2 Sheets.

Cloth Finishing Mach.

No. 81,170.

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Fig: 2.

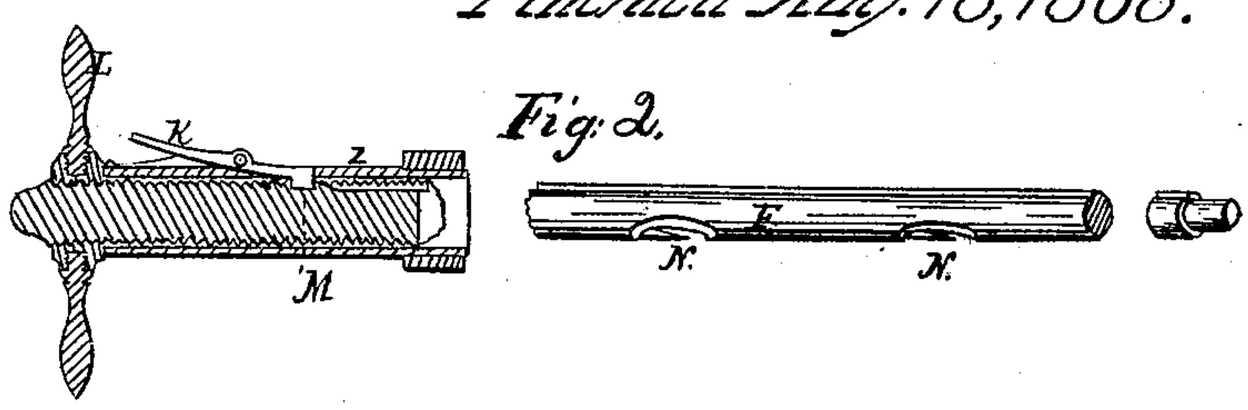


Fig: 3.

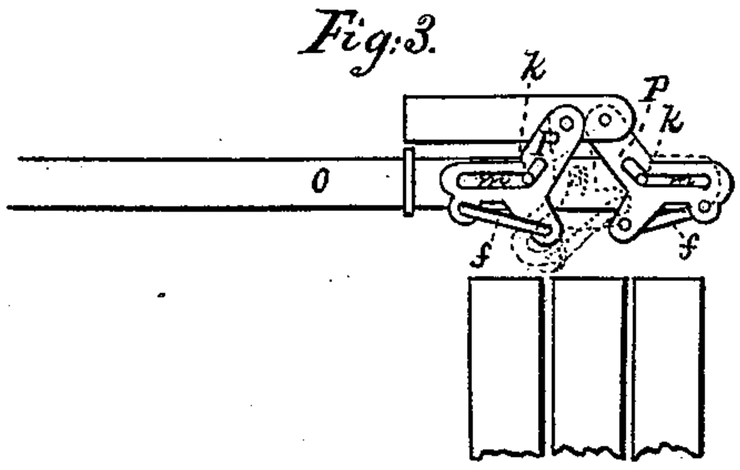


Fig: 4.

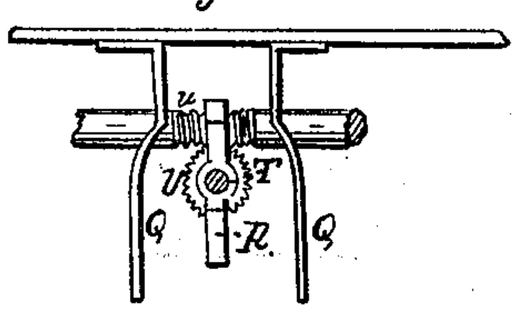


Fig: 5.

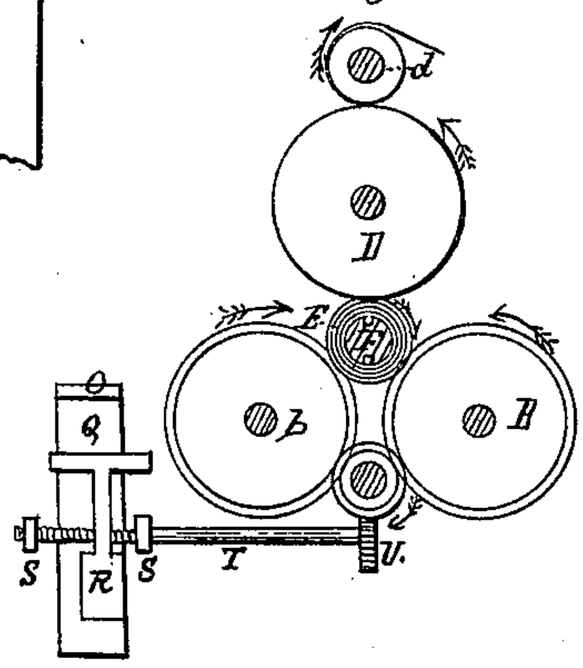


Fig: 6.

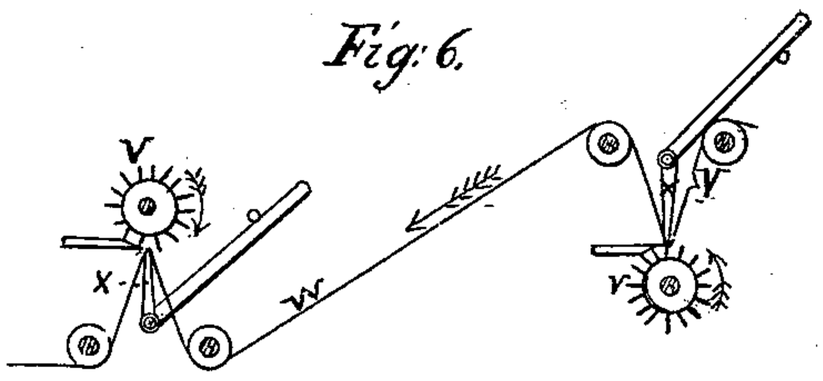


Fig: 7.

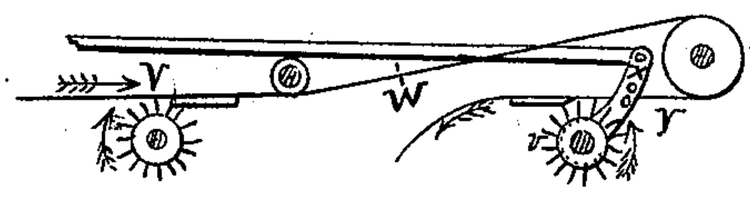
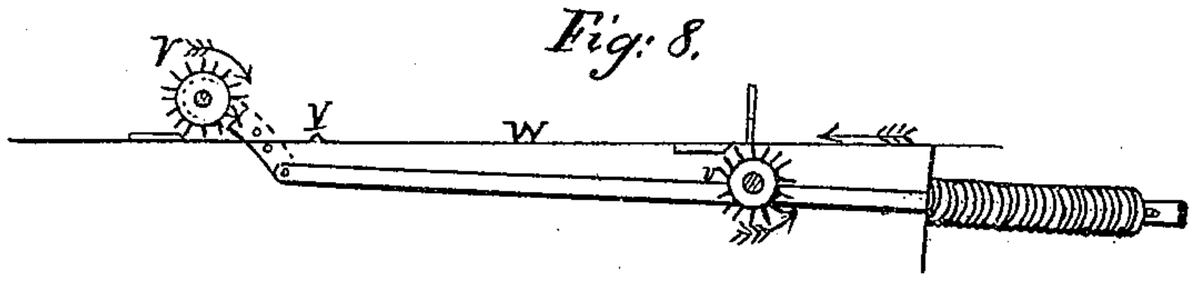


Fig: 8.



Witnesses:

Harry. L. Lippincott

John H. Dale.

Inventor.

Geo. C. Howard.

UNITED STATES PATENT OFFICE.

GEORGE C. HOWARD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR FINISHING CLOTH.

Specification forming part of Letters Patent No. **81,170,** dated August 18, 1868.

To all whom it may concern:

Be it known that I, GEORGE C. HOWARD, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement on a Machine for Finishing and Winding Textile Goods, Paper, or other materials, titled a "Finishing-Machine;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a longitudinal section of shaft F. Fig. 3 is a plan of belt-shifter. Fig. 4 is a device for operating belt-shifter. Fig. 5 is a side elevation of rollers, shaft F, and side view of device for operating belt-shifter. Figs. 6 and 7 represent different positions that the spirals and rests may be placed in to accomplish the same results. Fig. 8 is a view of the spiral cutters and self-operating lever for depressing the material as the joint passes under the spiral cutter shown in Fig. 1.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

My invention relates to a machine for finishing, winding, and rolling any kind of material.

A is the frame of the machine, to which the various parts are attached. B *b* are the rolls for winding and rolling or drawing the material through the machine, C *c* being a pair of rolls used when the material *t g* is reversed, or when it is desired to separate the two thicknesses. D *d* is a pair of rolls for first pressing the material and then compressing the roll E, which is shown completed, with the end sewed to keep it from unwinding, ready for market, the end of another piece, W, being shown between rolls D *d*, ready to be attached to shaft F. The said rolls D *d* are held in contact with roll E as it is being wound by means of racks G G, pinions H H, friction-wheel I, and lever J.

The shaft F in Figs. 1 and 2 is withdrawn by depressing the catch K, which fits into notch M in shaft F, and holds the shaft in place longitudinally when rolling. The points N N on shaft F, Fig. 2, are to fasten the ends of material W.

Fig. 5 shows driving-rolls B *b*, of which there may be one or more. D *d* are the compressing-rolls, and F the shaft on which material E has been wound.

Fig. 3 shows the belt-shifters. The pins K K in sliding bar O, moving in slots *m m* of shifter-arms P P, cause one belt only to be moved while the other stands, and thus the necessity of employing wide pulleys is avoided. The cross and straight belts move rolls B *b* either one way or the other, as may be desired.

To stop the machine at any time desired, I employ the following devices: There are curved arms Q Q, in Figs. 4 and 5, on bar O, and a double-faced clutch, R, and end clutches S S on threaded shaft T, rotated by means of worm *u* and worm-wheel U. As shaft T is rotated the clutch R is carried toward the end clutch S, and is caught by the said end clutch S, which, taking hold of the pin running through clutch R, turns said clutch R sufficiently to slide the bar O, and thereby move the belts onto the loose pulleys, and, at the same time, locks the bar O, so that it is impossible to start the machine in the wrong direction.

f f in Figs. 1 and 3 are the guides through which the belts pass, and by which they are moved. A movement of the bar O in its free direction reverses the machine.

Figs. 1, 6, 7, and 8 show rotary shears V *v* for finishing both sides of the material, a set being placed on each side of the material, which is held in contact with the said shears by means of rests, as required. To prevent the cutting of the material where it is united, the rests *x* are arranged to move from the shears V *v* by moving the handle Z as the united ends *y* approach the said shears V *v*, and to return to place after the ends have passed, the operation being performed either by hand or automatically.

The operation is to finish the material on both sides, and roll it tight or loose or with another sheet, *g*, for the purpose of retaining the length and width, and also to press the material so that it will retain its finish. The material W passes both shears V *v*, and is wound onto shaft F or roll *c* as may be desired. The machine is stopped when the material is being rolled or unrolled from shaft F by the stop-motion, Figs. 3, 4, and 5, as before described.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the cylinders V *v*, placed on opposite sides of web W, and the rests *x* and handle Z, arranged and operated substantially as described.

2. The combination of the rolls B *b*, shaft F, and rolls D *d* with the lever J, racks G, pinions H, and friction I, the rolls B *b* turning the shaft F, and through it, or the roll of material E, also turning the rolls D *d*, substantially as described.

3. The combination of the shaft F, provided with points N N, the threaded end, and notch *m* with the catch K and sleeve Z, substantially as described.

4. A stop-motion, with the clutches S S and curved arms Q Q, in combination with the clutch R, bar O, slotted arms P P, pins K K, and guides *f f*, substantially as described.

GEO. C. HOWARD.

Witnesses:
HARRY L. LIPPINCOTT,
JOHN H. DALE.