

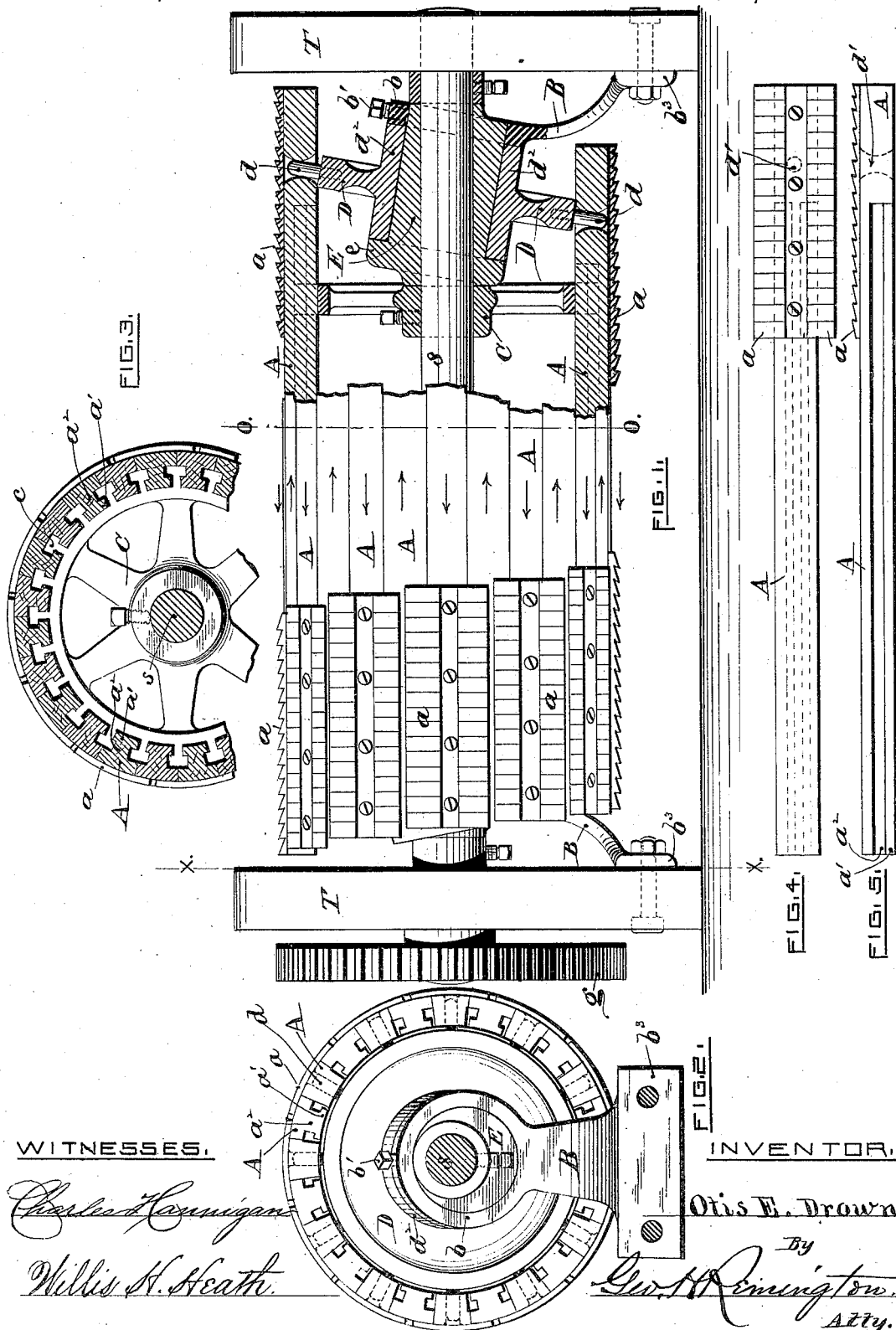
(No Model.)

O. E. DROWN.

CLOTH STRETCHING MACHINE.

No. 307,448.

Patented Nov. 4, 1884.



UNITED STATES PATENT OFFICE.

OTIS E. DROWN, OF LINCOLN, RHODE ISLAND.

CLOTH-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 307,448, dated November 4, 1884.

Application filed March 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, OTIS E. DROWN, a citizen of the United States, residing at Lincoln, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Cloth-Stretching Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to cloth-stretching machines; and it consists, essentially, of a revolving driving-shaft having guide-wheels secured thereto, in combination with a series of stretcher-bars extending the length of the machine, each bar provided at one end thereof with a metallic toothed plate, said bars being mounted upon and around the guide-wheels with the toothed ends of the bars reversed alternately, said shaft also carrying loose adjustable cams provided with means for restraining them from rotating, and means for engaging the stretcher-bars.

The invention further consists in the combination of said stretcher-bars with the revolving shaft, wheels, and cams, the latter being adjustably secured to a frame or holder secured in turn to the housing of the machine.

The invention finally consists in the general combination of the parts or elements, all as will be more fully hereinafter set forth.

In the accompanying drawings, Figure 1 represents a vertical elevation of my improved stretcher, showing one end thereof in section. Fig. 2 is an end elevation of the same. Fig. 3 is a partial transverse section on line *o o* of Fig. 1, showing the form of bars, &c. Figs. 4 and 5 represent, respectively, top and side views of a stretcher bar or slat, one end thereof being provided with ratchet-teeth and adapted to connect with the wheel.

The following is a more detailed description of the several parts constituting my invention.

A represents stretcher bars or slats, made of wood or other suitable material, said bars being grooved at *a'* upon each side thereof, said

groove extending through nearly its entire length. At *d'* the bar is adapted to engage with a pin, *d*, of the wheel D.

a represents a metallic ratchet or toothed plate attached to the end of each stretcher-bar A and adjacent to the cam by which such bar is operated, the sides of said bars being radial, which adapts them to be arranged in a cylindrical manner.

s represents the shaft, upon which are secured guide-wheels C, and adapted to receive motion by means of the gear *g*. Said shaft is suitably mounted in the frame T.

E represents cams, so called, although, in fact, they are cylindrical, but bored out so that the axes of the center and outside thereof are at an angle with each other, and not parallel. Said cams are loosely mounted upon the shaft *s* and prevented from revolving by means of the casting or piece B, the latter being provided with the foot *b'*, by which it is secured to the frame T, as shown.

b represents a continuation of said piece B, which is fitted to receive the said cam E, the latter being adjustably secured thereto by means of the screw *b'*, as shown in Fig. 1.

D is a wheel, provided with the hub *d'*, and loosely mounted upon the cam E.

d represents pins which are arranged around the periphery of said wheel D, and adapted to engage with the bars A.

C represents wheels which are secured to the shaft *s*, and adapted to receive and retain the bars by means of the projections *c*, as shown. (See Fig. 3.)

I will now explain the arrangement and operation of my improved cloth-stretcher. The guide-wheels C are placed upon and secured to the shaft *s*. The cams E are secured in position to the casting B by means of the screw *b'*. The bars A are arranged around said wheel C, and connected with the wheel D by the pins *d* or similar device. In practice the bars A (see Fig. 4) are all alike in form and placed around the wheels with their ends reversed alternately, thereby forming a cylinder, the ends thereof then appearing as shown in Fig. 2. I have represented a stretcher as provided with twenty-four bars, A, while each wheel D is provided with twelve pins, *d*, said wheels

being so placed or related to each other that they engage with the end of each alternate bar. Upon revolving said shaft *s* the guide-wheels C, with the bars A mounted thereon, convey rotary motion to the wheels D by means of the pins *d*, thereby producing longitudinal or end motion to the bars, which is utilized in stretching the cloth.

It will be observed that as my improved stretcher revolves with the shaft, it may be operated either by gearing, as described, or by the tension of the cloth or fabric passing over it.

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

1. The combination, with the driving-shaft and guide-wheels secured thereto, of a series of stretcher-bars, each of said bars extending the length of the stretcher, and provided with a metallic toothed plate attached to one end thereof, said bars being mounted upon and around said guide-wheels with the toothed ends of the former reversed alternately, cams supported upon said shaft, and means for restraining said cams from rotating, the whole

arranged substantially as shown, and for the purpose set forth.

2. The combination of the stretcher-bars A, constructed and arranged substantially as here- in described, with the revolving shaft *s*, guide-wheels C, secured to said shaft, wheels D, adapted to connect with said bars A, cams E, (carrying the wheels D,) loosely mounted upon the shaft *s*, holder or frame B, and the housing T, to which said holder or frame is attached, the latter adapted to receive the cams E and to be adjustably secured thereto, the whole arranged substantially as shown and set forth.

3. The stationary cam E, and the wheel D, provided with connections *d*, mounted thereon, in combination with the driving-shaft *s*, guide-wheels C, stretcher-bars A, and holder or frame B, substantially as shown and set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

OTIS E. DROWN.

Witnesses:

GEO. H. REMINGTON,
WILLIS H. HEATH.