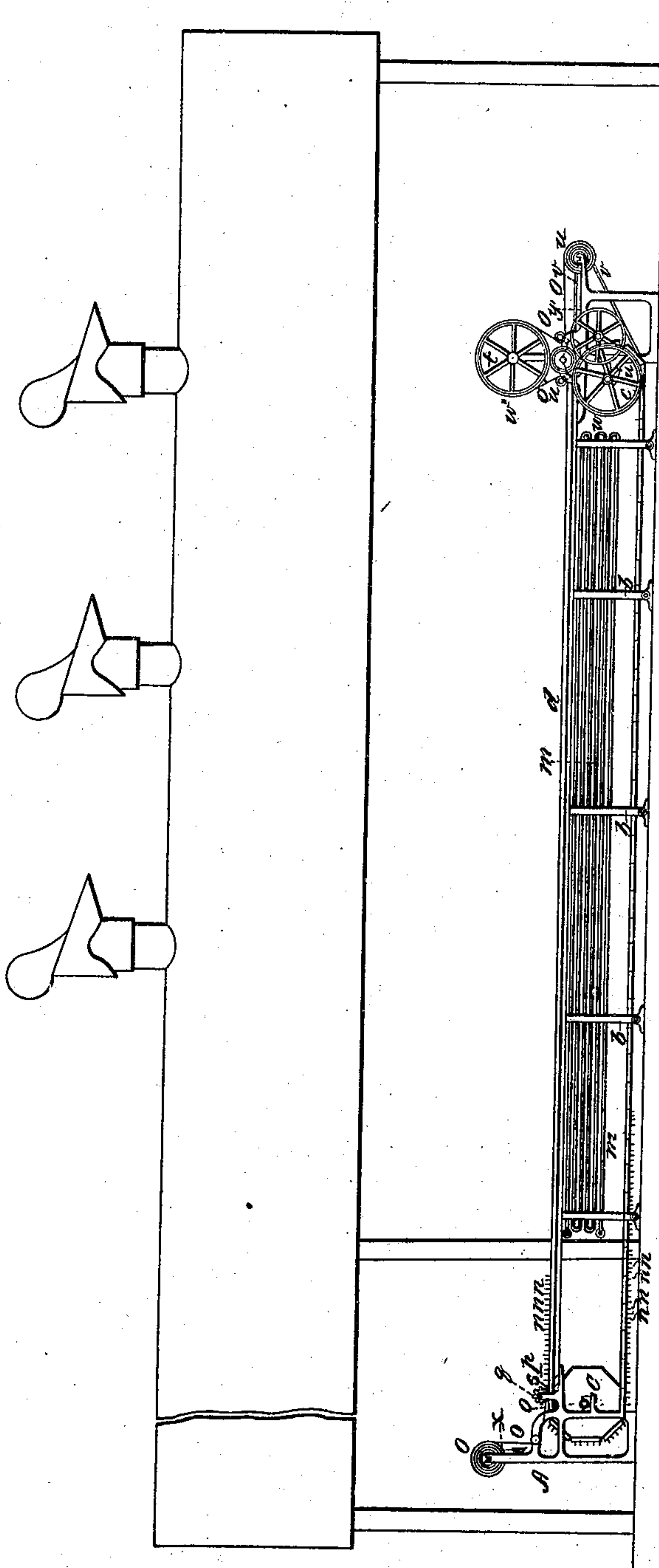


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Cloth Stretching.

N^o 5,754

Patented, Sept. 5, 1848.

Fig. 1



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Fig. 7.

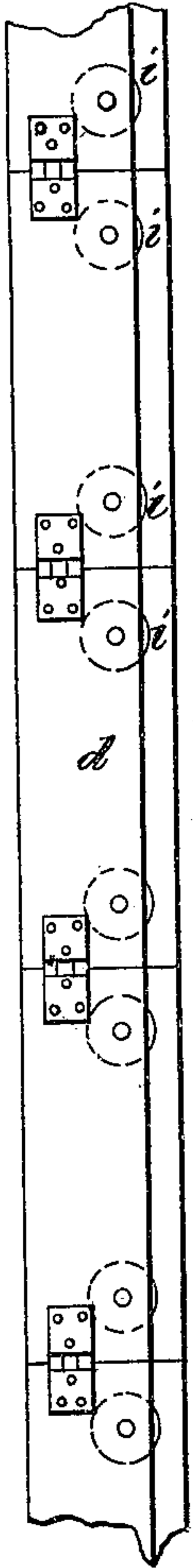


Fig. 2.

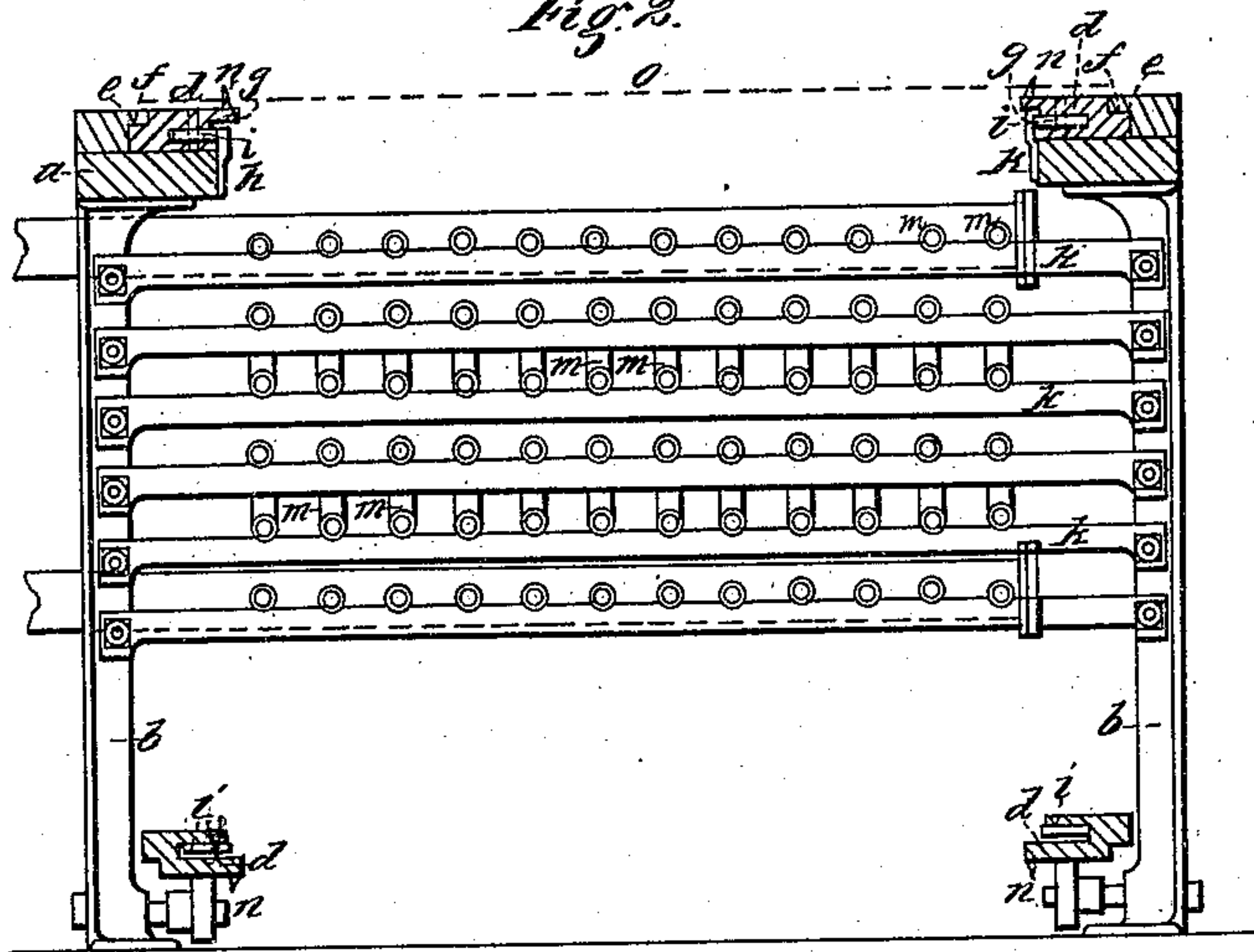


Fig. 6.

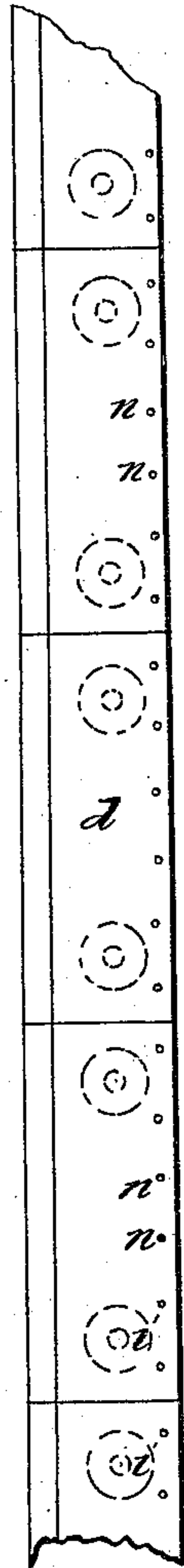


Fig. 4.

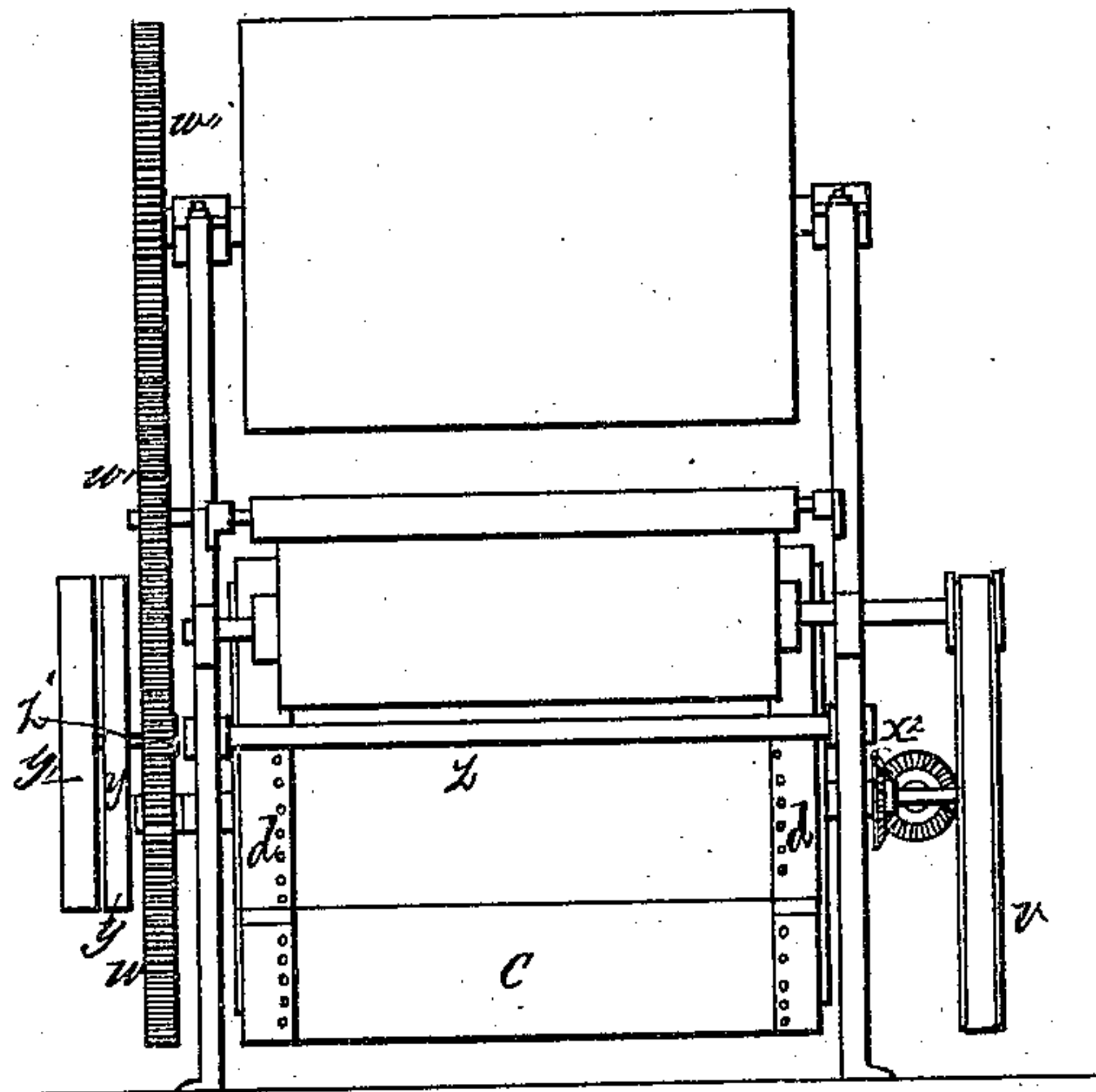
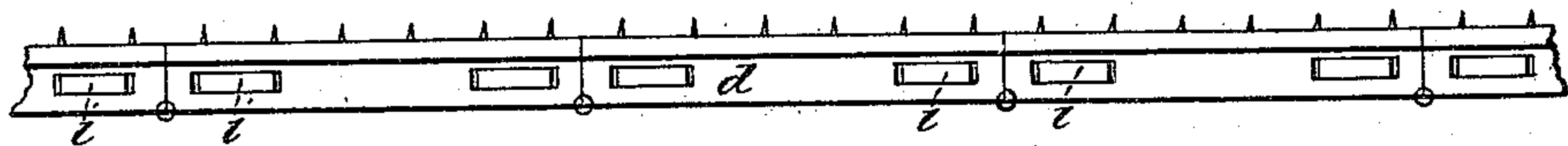


Fig. 5.



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Fig. 3.

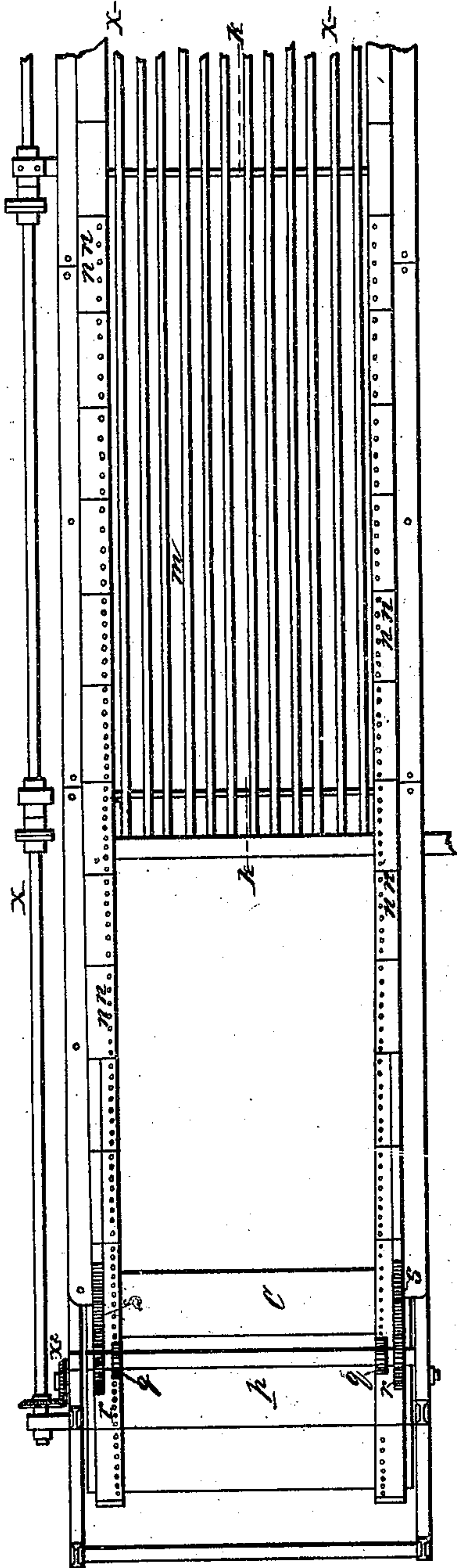
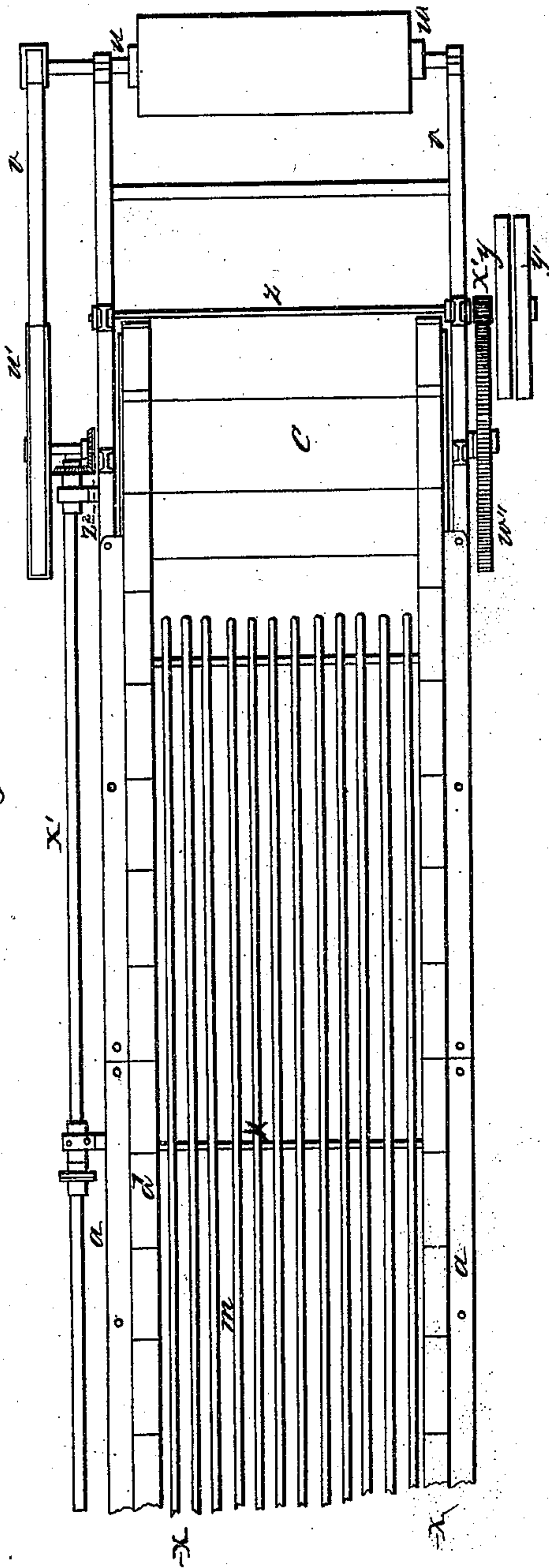


Fig. 3. a.d.



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UNITED STATES PATENT OFFICE.

E. B. BIGELOW, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR STRETCHING AND DRYING CLOTH.

Specification of Letters Patent No. 5,754, dated September 5, 1848.

To all whom it may concern:

Be it known that I, ERASTUS B. BIGELOW, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Revolving Endless Tenter-Hooks for Stretching and Drying Cloths, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the machine; Fig. 2, a vertical cross section; Fig. 3, a plan; Fig. 4, an end view; Figs. 5, 6, and 7, detached views of the chain enlarged.

The same letters indicate like parts in all the figures.

The nature of my invention consists in the employment of an endless chain of tenter hooks for stretching and drying cloth over a series of steam pipes or by air heated in any convenient way, instead of by stretching the cloth on stationary frames for that purpose as has been the practice heretofore.

The following is a description of the construction and operation of the machine: Two horizontal rails (*a*) are placed parallel with each other supported at sufficient height on posts (*b*) placed at proper intervals; at each end of these rails there is a prism (*c*) of sufficient size to present a surface on each face thereof equal to the segments of a chain or bar (*d*) in which the tenter hooks are fixed. There are two of these chains which traverse the rails above named, the segments of which are jointed together so that when straightened they form a continuous bar from one prism to the other, on each side resting on the rails, as shown in Fig. 3. This bar is rabbeted on the outer edge above at (*e*) (see cross section Fig. 2), and this part slides under a projection (*f*) on the rail (*a*). A rabbet is also cut in the inside of the bar (*d*) below at (*g*) against which a metal lip (*h*) attached to the rail (*a*) projects covered by the inner edge of the bar above on which the hooks (*n*) are fixed; in each of the segments of the bars or chains two friction rollers (*i*) are inserted that run against the lip (*h*) above named to relieve the bars from the friction occasioned by the cloth stretched between them. A row of horizontal cross braces (*k*) (Fig. 2) are

fastened one above another to each of the posts (*b*) that support the rails; on these braces a series of horizontal steam pipes (*m*) are laid, by means of which the cloth is dried as it is carried over them stretched on the tenter hooks. At one end of the rails there is a frame (*A*) in which a beam is supported that the cloth (*o*) to be dried is wound on; a friction band (*x*) is put around the roller to regulate the tension of the cloth; from this roller the cloth descends to the rails, and each edge thereof is caught on to the tenter hooks. At this point there is a shaft (*p*) bearing two spur wheels (*q*) of wood the teeth of which play in between the tenter hooks and press the cloth down on to them as it is drawn forward by the bars; this shaft is driven by a cog wheel (*r*) attached thereto that works into a rack (*s*) on one of the bars. After the bars pass this shaft they are gradually spread apart by the receding of the rails in which they run from each other, so as to stretch the cloth sufficiently for the purpose intended. When the cloth arrives at the opposite end of the rails (*a*), it may, if not sufficiently dry be passed over a steam cylinder (*t*) and thence wound onto a cloth beam (*u*) placed at the extreme end of the frame for that purpose; this roller is driven by a band (*v*) which allows a slip as it enlarges in size to adapt it to the motion of the tenter bars. The band connects with a pulley (*u'*) on the shaft of the prism (*c*) around which the bars (*d*) revolve. *W, W', W''* are gear wheels that communicate motion from the same shaft to the steam cylinder (*t*) the action of which is obvious without further description; (*y, y'*) are the fast and loose pulleys around which the band from the driving power passes; these are on a shaft (*z*) that communicates motion by means of a pinion (*z'*) there on to the gear wheel (*W*) above named on the prism shaft. The two prisms are geared together by means of a line shaft (*x'*) and beveled wheels (*x''*) of ordinary construction, as shown in Fig. 2.

The operation of the machine is as follows: The cloth descends from the beam at (*o*) and is hooked on to the tenter hooks on each side which are moving forward by passing under the wheels (*q*) that fix it firmly on the hooks, and it is then carried forward; the bars on which the hooks are fixed being made to recede from each other sufficient to stretch the cloth, it then passes

over the steam pipes (*m*) which are highly heated where it is dried. When it reaches the end of the rails (*a*) it is drawn off the hooks, and either passes up over the steam
5 cylinder to the receiving cloth beam (*u*) or is carried directly thereto, according to the finish to be given.

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

1. The endless chain of tenter hooks, constructed substantially as herein set forth, for conveying the cloth over the drying apparatus, in the manner above specified.

15 2. I claim in combination with the above a series of steam pipes, or other equivalent

device, for drying the cloth as it is made to pass over them, as above described.

3. I also claim in combination therewith the steam cylinder for completing the operation when required, all as herein set forth. 20

4. I claim the method of stretching the fabric on the tenter hoks by causing the endless chains to be separated from each other as they move forward as described. 25

5. I claim the employment of the wheels (*q*) for fixing the cloth onto the tenter hooks as hereinabove set forth.

E. B. BIGELOW..

Witnesses:

A. P. BROWNE,
CHS. M. KELLER.