

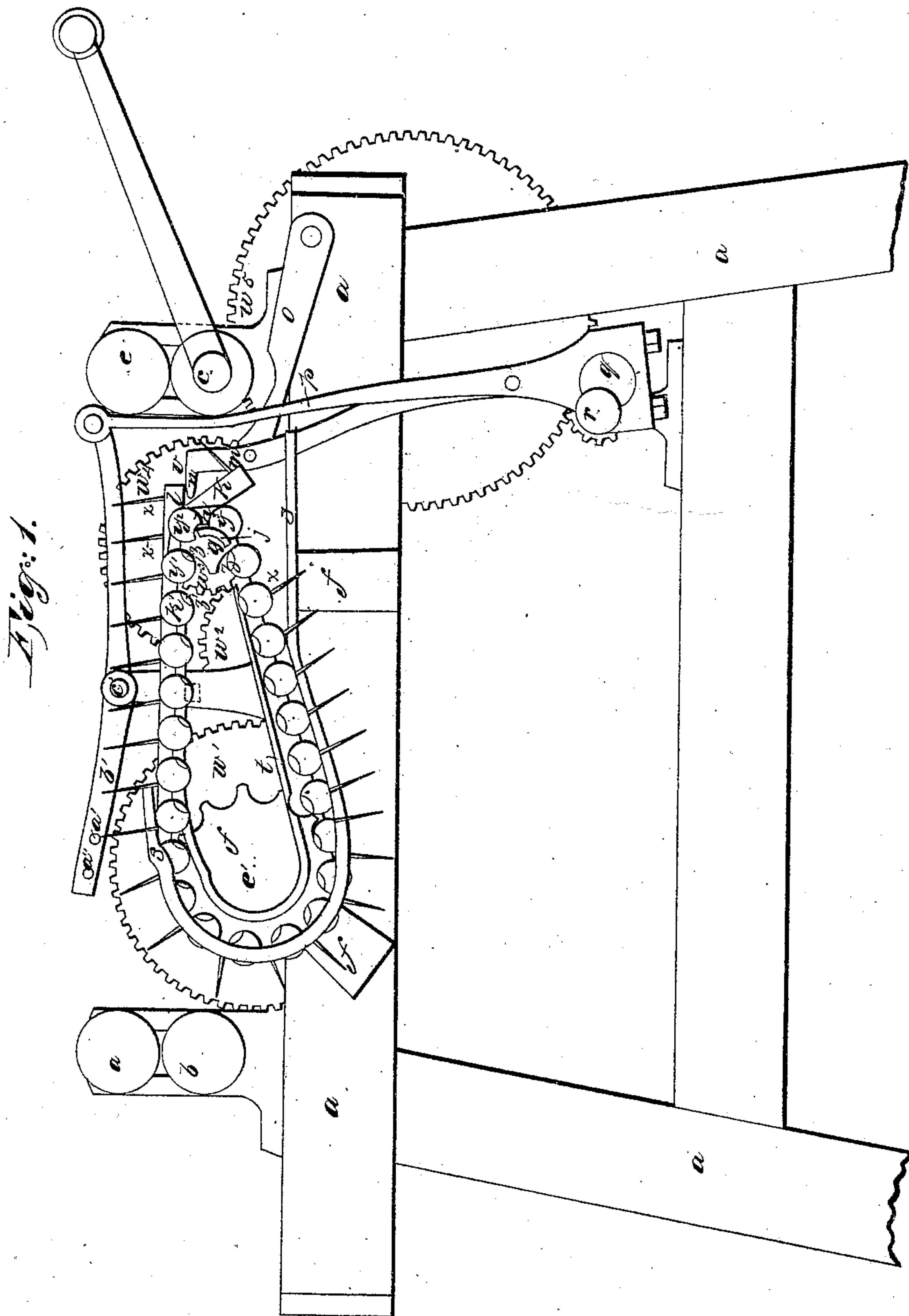
O. S. LEAVITT.

2 Sheets—Sheet 1.

Drawing Frame For Hemp, Flax, and Other Fibrous Substances.

No. 10,034.

Patented Sept. 20, 1853.

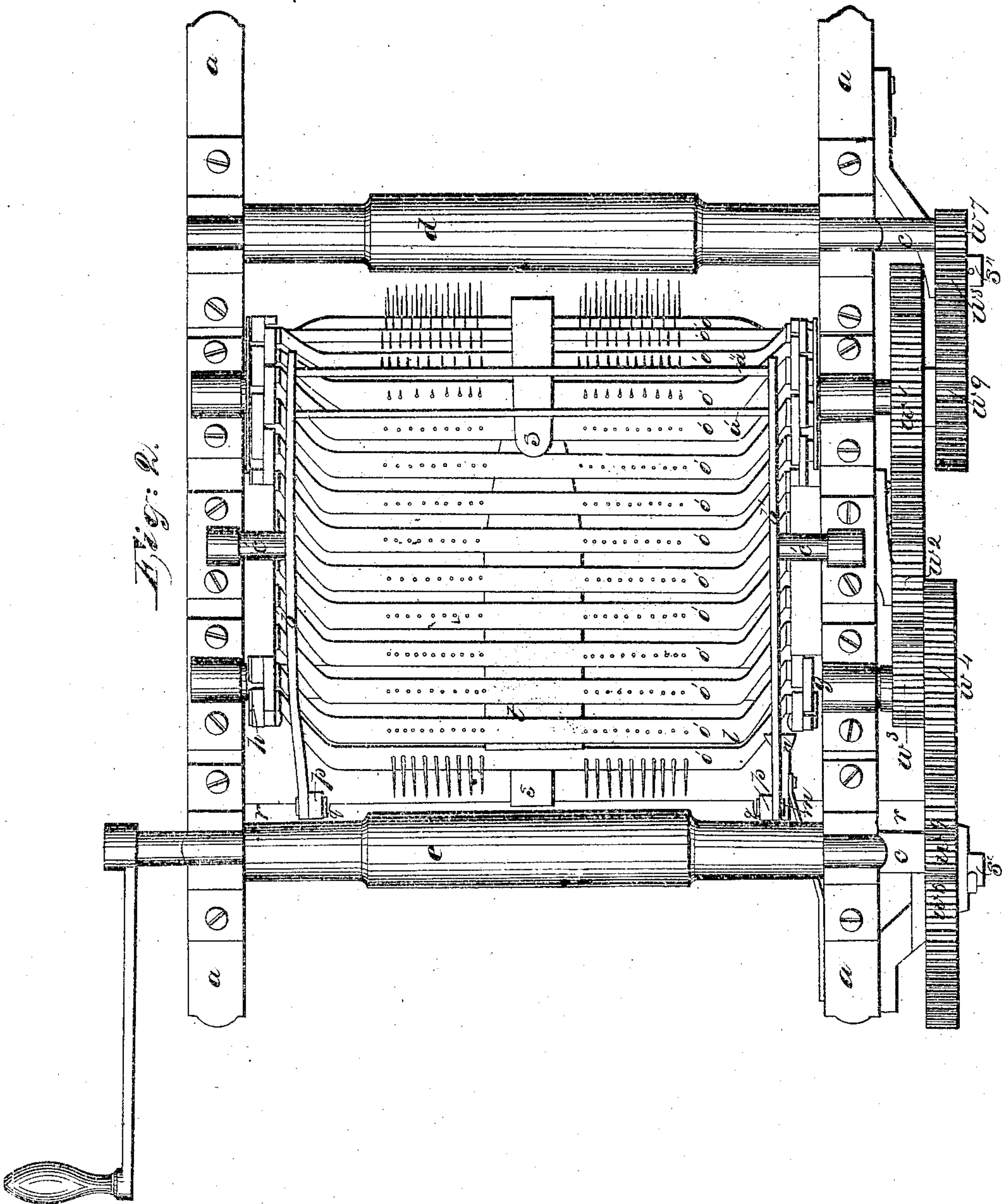


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Drawing Frame For Hemp, Flax, and Other Fibrous Substances.

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UNITED STATES PATENT OFFICE.

O. S. LEAVITT, OF MARCELLUS, NEW YORK.

IMPROVEMENT IN DRAWING-FRAMES FOR HEMP AND FLAX.

Specification forming part of Letters Patent No. 16,031, dated September 20, 1853.

To all whom it may concern:

Be it known that I, OLIVER S. LEAVITT, of Marcellus, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Machines for Drawing Hemp, Flax, and other Fibrous Substances; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal section, and Fig. 2 a ground plan, the same letters referring to like parts in both drawings.

The frame is represented by *a a a a*.

b d represent the holding-rollers, and *e e* the drawing-rollers, either of which may be made plain or fluted and in the usual manner, having such guides before the holding-rollers and such a condensing apparatus after the drawing-rollers as may be desired, not necessary here to represent. The set of gill-bars *o'* is propelled in the direction of the arrows by two chains, which pass over the wheels *f* and *g*, having cogs which work between the joints of the chain.

Connected with the gill-bars *o'* at each end are arms, as at *k*, reaching back to joints in the chain, through which pass pieces parallel to the gill-bars, by which the chains and bars are connected. The gill-pins attached to each bar penetrate the material, (hemp, flax, or other fibrous substance,) the slivers of which have been introduced by the holding-rollers *b d* after they pass round to the top of the wheel *f*, resting upon the slide *t*, which is made to extend forward toward the drawing-rollers *e e* as far as it is desired to have the pins remain in the material. Just as the bar has passed the end of the guide *t*, (represented by the dotted line at *v*, Fig. 1,) a piece, *n*, attached to the piece *m*, is brought down upon the gill-bar, or upon one or both of its arms by the action of the crank *q* upon the shaft *r*, and immediately connected with the pitman *p*. The bar, as at *k*, turns as upon a hinge, the joint being at *y'*. On the outside of the chain, at one end of the bars, a piece is attached to each bar having a notch cut out of its edge, as at *z z z z*, so that a point or dog is made to project, as at *i*.

Near the wheel *g* is a piece, *j*, firmly fastened in such a manner that the point *i* must

strike against it, the effect of which is to depress still more the bar, as at *k*, bringing it round, so as to be in the right position to move back underneath upon the guide *s s*, which keeps the bars in position until they pass around the wheel *f* and until the gill-pins connected with them enter the material. The action of the crank *q* as it rises moves the lever *b'*, with which it is connected at *d'*, which works upon a fulcrum at *c'* and depresses the two rods *a'* and *a''*, the effect of which is to make the pins enter the material to be drawn effectually, being raised by the descending motion of the crank *q* in time to clear the pins as they pass forward toward the drawing-rollers *e e*. The shaft *r*, upon which the cranks are, must make as many more revolutions than the shaft upon which the wheel *g* is placed as there are cogs upon *g*, so as to depress each bar at the proper time, and also to depress the rods *a'* and *a''* once for each bar as it passes beneath them, which may contain one or more rows of pins, as may be desired. The gearing connected with the wheel *W'*, placed on the shaft *e'* with the wheels *f*, on which the chains run, should be such as will correspond with the motion of said wheels *f* and *g*. If *g* has four cogs, as in this case, and the wheel *f* twelve, the wheel *W'* should be three times the diameter of the wheel *W''*, which is connected on the same shaft, or on shafts of the same speed with the wheels *g*. A pinion, *W''*, is placed on the shaft of the drawing-roller *e*, acting upon the intermediate wheel *W''*, which drives *W'* upon the crank-shaft *r*, and also *W'* upon the shaft containing *W''* and *g*. The intermediate wheel *W''* connects *W'* and *W''*, and the intermediate wheel *W''*, running on the stud *s''*, connects the wheel *W''* on the shaft with *W'* and *f* with a wheel, *W'*, on the holding roller-shaft *b*, so that the holding-rollers *b d* may introduce the material to the machine at about the same speed with the chain. The wheel *W''* runs upon a stud, *s'*.

The wheels *g* may be connected with gearing on the outside of the chain, if desired, dispensing with the shaft, which runs through under the gill-bars and inside the chains, and the top rollers may be geared with the lower ones, or be made to run by their traction thereto, increased by springs, weights, or levers, as may be desired. The gill-bars may be

attached to a wheel instead of a chain without varying materially the principle of their action.

I make no claim to the use of gill-bars attached to chains or wheels in drawing flax, hemp, and other fibrous substances, as this has been often done before; but

I do claim as new and desire to secure by Letters Patent—

1. The particular form of gill-bar described, in combination with the rocking lever *m*, the dog *i*, and the cam or tappet *j*, for the purpose of withdrawing the gill-pins from the ma-

terial, and directing the bar's backward movement, in the manner and for the purposes substantially as set forth.

2. The device by which the rods *a' a''* are pressed down, for the purpose of making the gill-pins penetrate effectually the material to be drawn, being operated by the lever *p* in the manner set forth.

OLIVER S. LEAVITT.

Witnesses:

CHESTER MOSES,
GEO. N. KENNEDY.