

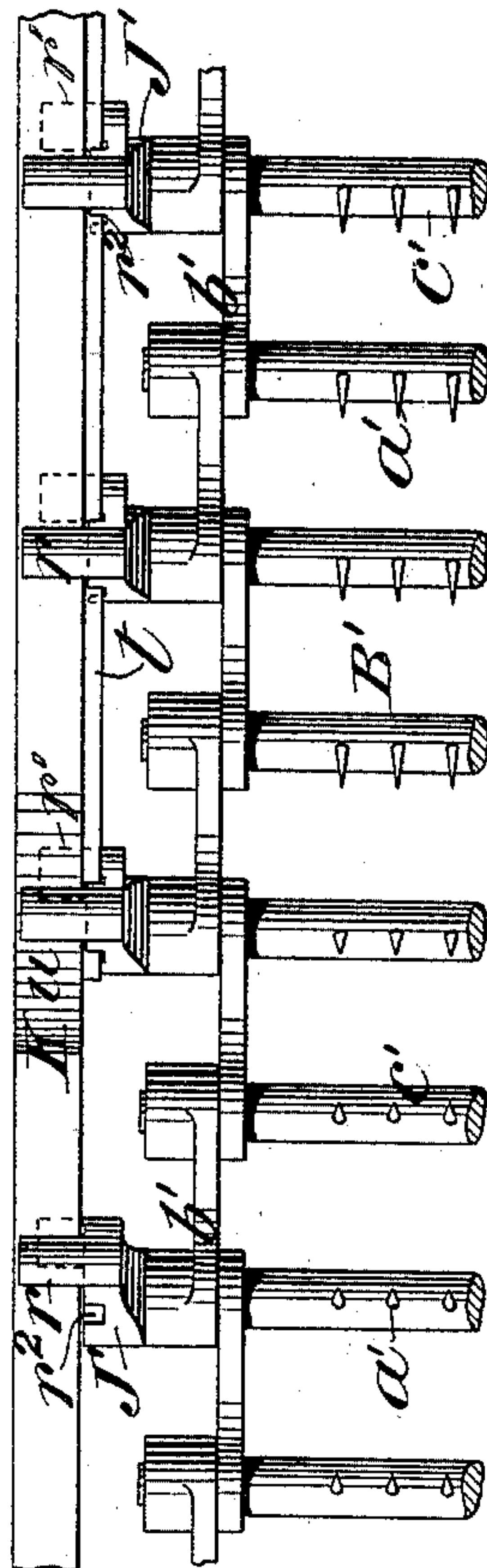
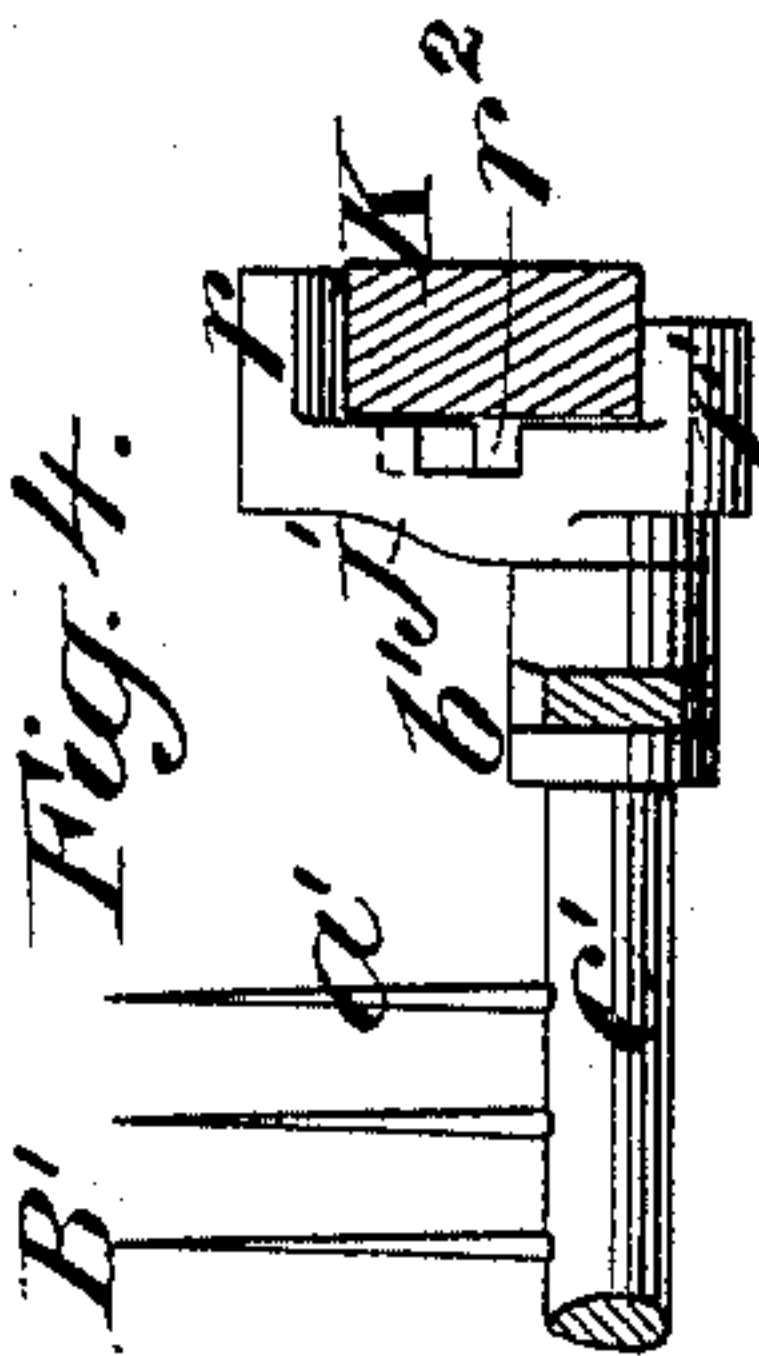
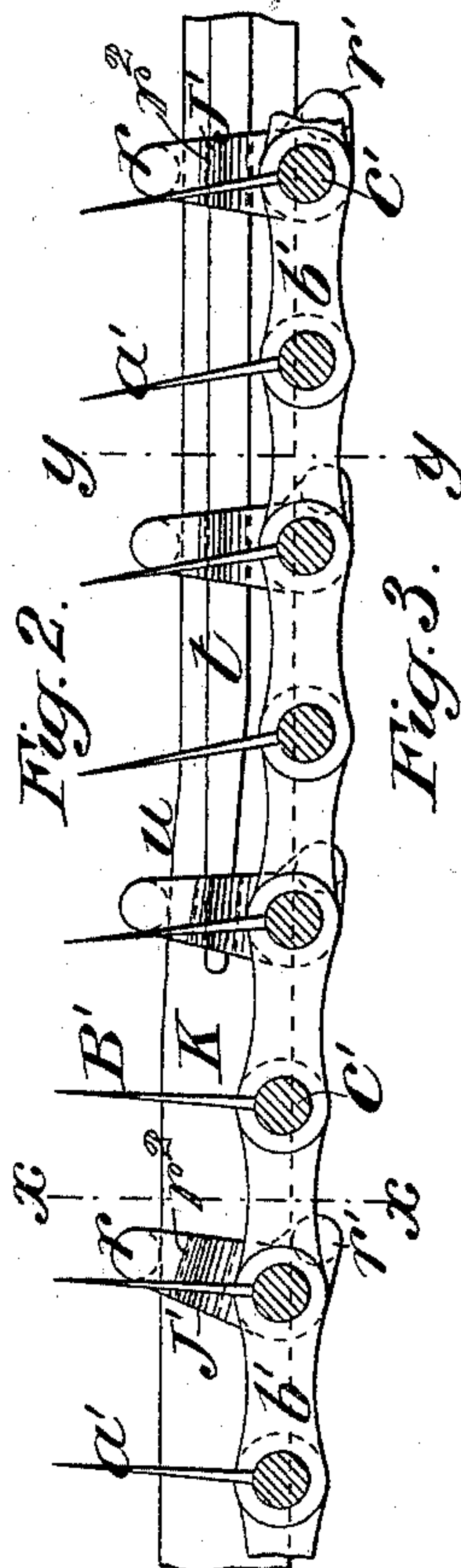
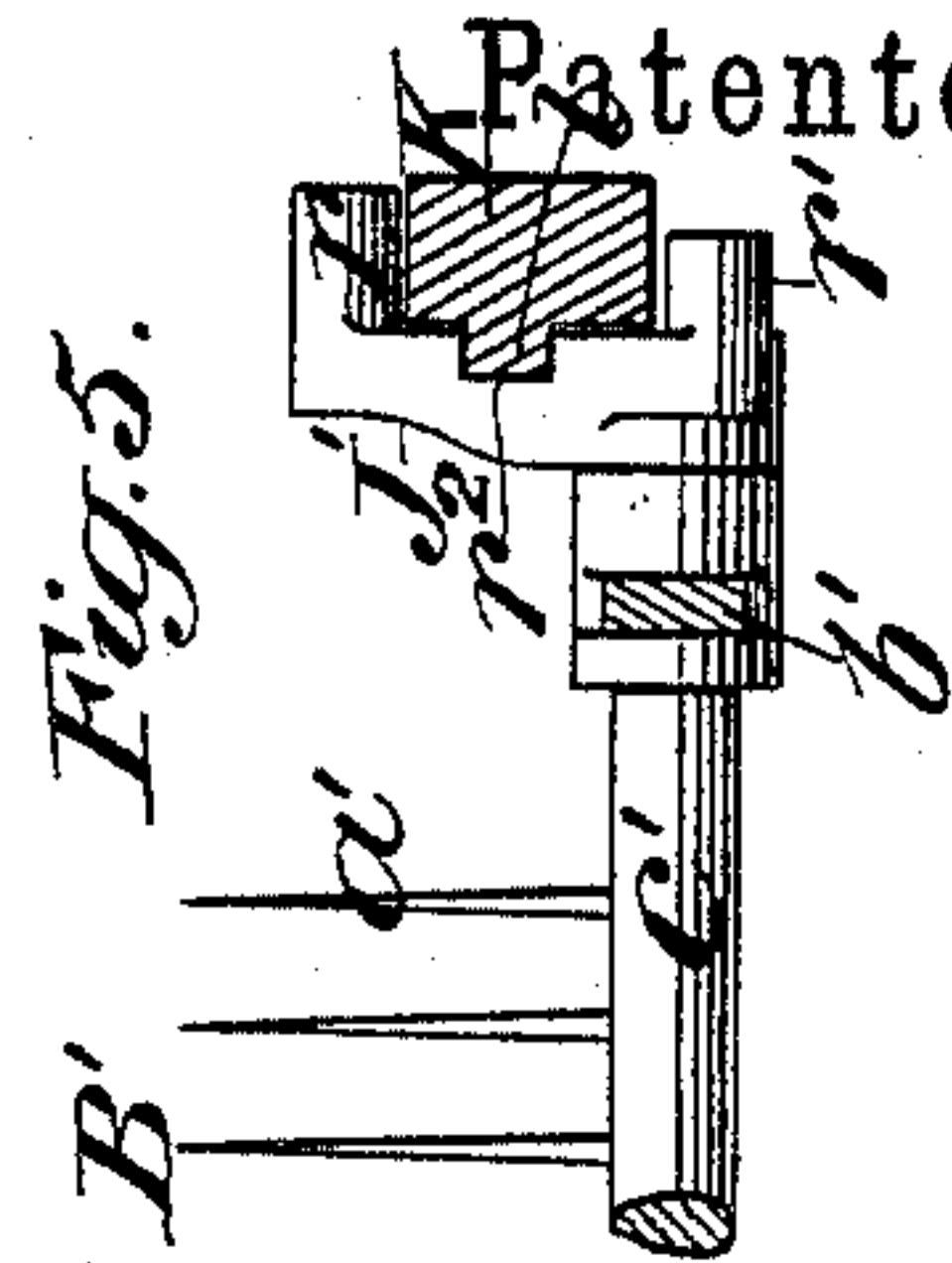
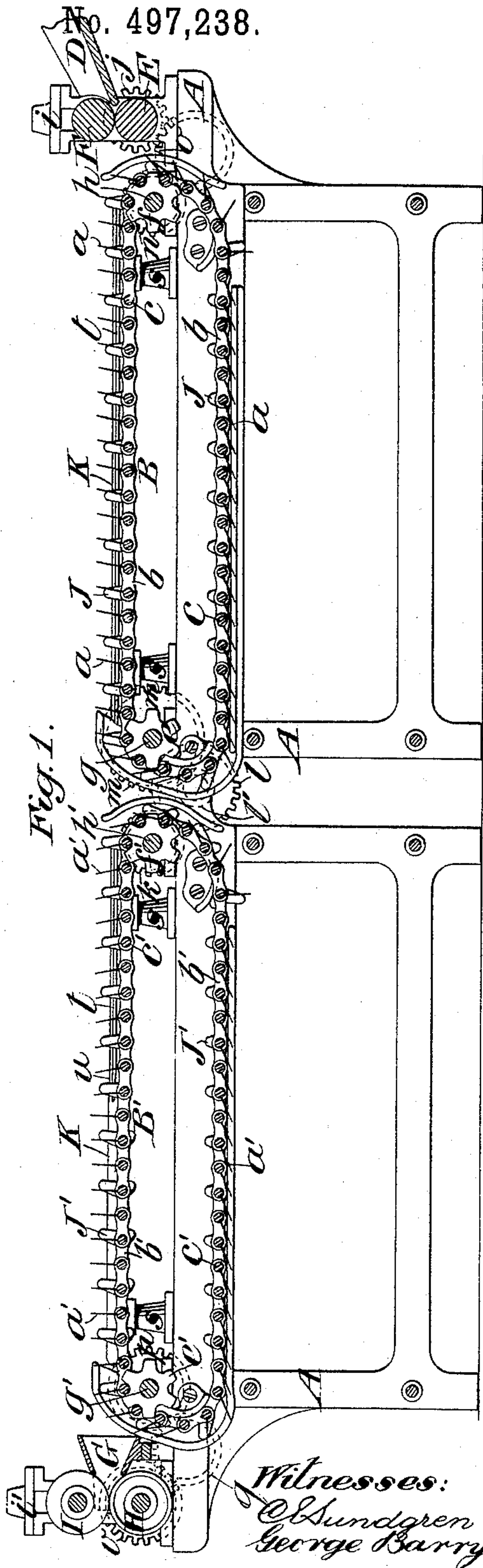
(No Model.)

J. GOOD.

MECHANISM FOR SPREADING AND DRAWING HEMP OR OTHER
FIBROUS MATERIALS.

No. 497,238.

Patented May 9, 1893.



Inventor:
John Good
by attorneys
Flower & Seware

UNITED STATES PATENT OFFICE.

JOHN GOOD, OF FAR ROCKAWAY, NEW YORK, ASSIGNOR TO THE JOHN GOOD CORDAGE AND MACHINE COMPANY, OF JERSEY CITY, NEW JERSEY, AND NEW YORK, N. Y.

MECHANISM FOR SPREADING AND DRAWING HEMP OR OTHER FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 497,238, dated May 9, 1893.

Application filed October 1, 1892. Serial No. 447,456. (No model.)

To all whom it may concern:

Be it known that I, JOHN GOOD, a resident of Far Rockaway, in the county of Queens and State of New York, have invented a new and useful Improvement in Mechanism for Spreading and Drawing Hemp and other Fibrous Materials, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to spreading and drawing machinery in which the operation is performed wholly or in part by means of or by the aid of gill-pins which are carried by a consecutive series of bars forming parts of an endless table. It is in some cases desirable
15 that at different stages in the operation of the gill-pins so carried the angle of the gill-pins to the face of the table should be varied according to the direction of the draft upon
20 the pins during such stages.

This invention consists in the novel means hereinafter described and claimed for the said variation in the angle of the pins.

Figure 1 represents a longitudinal vertical section of a combined spreader and drawing frame embodying my invention. Fig. 2 represents a longitudinal vertical sectional view showing a portion of one of the endless tables of the machine, the gill-pins carried by
30 said table and part of the guides for the said table on a larger scale than Fig. 1. Fig. 3 is a plan view corresponding with Fig. 2. Fig. 4 is a transverse sectional view taken in the line $x x$ of Fig. 2. Fig. 5 is a transverse sectional view taken in the line $y y$ of Fig. 2.
35

Similar letters of reference designate corresponding parts in all the figures.

A is the framing of the machine.

B and B' are two endless tables arranged
40 one before the other and comprising two sets of gill-pins $a a'$, the said tables consisting, as is common in such machines, of endless chains $b b'$ and connecting bars $c c'$ in which the gill-pins are held, and which are pivoted in the links of the said chains. The endless chains
45 b of the rearward table B are carried by sprocket wheels $e f$ on shafts $g h$ supported in bearings on the rearward portion of the frame A, and the chains b' of the forward table B'
50 are carried on sprocket wheels $e' f'$ on shafts

$g' h'$ in similar bearings on the forward portion of the said frame. Behind the endless table B are a feed-board D and pair of feed rollers E, F, the latter being arranged in suitable bearings in standards i on the framing A. In front of the endless table B' is a trumpet-mouthed conductor G and in front of the said conductor is a pair of drawing rollers H, I arranged in bearings in standards i' on the front part of the framing A.
60

The shaft g' above mentioned is the driving shaft and gives motion to the endless chains b' which give motion to the sprocket wheels f' and their shaft h' , the latter shaft carrying a spur gear k which through intermediate spur gears $l l'$ rotating on a stud on one side of the framing gives motion to a spur gear m on the sprocket wheel shaft e and drives the chains b . The latter chains drive the sprocket wheels f and shaft h . The feed
65 rollers are driven from a spur gear n on the shaft h through an intermediate gear o on a stud in the side of the machine, the said intermediate gear gearing with a spur gear j' on the lower feed roller E. The drawing rollers are
70 driven from a spur gear p on the driving shaft through an intermediate gear q turning on a stud in the side of the framing and gearing with a spur gear y on the lower drawing roller H. The several gears are so proportioned that
75 the first table B has a surface velocity equal to or very slightly greater than that of the feed rollers E, F, the second table B' moves in the same direction at a velocity considerably greater than that of the first one and
80 the drawing rollers H, I, have a surface velocity greater than that of the second table B'.
85

The gill-pin bars C of the rear table B are furnished at their ends with dogs J which run on guides on the sides of the framing for the
90 purpose of maintaining the pins a with a proper slight rearward inclination, but for the purpose of my invention these dogs and guides may be the same as the dogs and guides employed in other machines of like character
95 for the same purpose and therefore they do not here need any particular description. The dogs J' employed on the gill-pin bars C' may be and are represented as of a well known kind, but as the guides upon which the said
100

dogs run differ from those of other machines and consequently the said dogs have a different action on the bars for producing the change of the angles of the gill-pins to the operative planes of the tables which is an essential characteristic of my invention, it will be necessary here to describe the construction of the said dogs as well as that of the guides.

Referring particularly to Figs. 2, 4 and 5, it will there be seen that the dogs J' , which are fast on the gill-pin bars c' , consist severally of an elbow crank from one arm of which projects outward a stud or pin r and from the other of which projects a stud or pin r' . In the outer face of the first mentioned arm is a transverse groove r^2 . The guides K on which the said dogs run consist of straight bars one on each side of the machine supported parallel with the plane of the upper run or face of the table, on stands s s which are erected on the framing A between the bearings of the table shafts g' h' . The rearward portions of these guides, equal say to from one-third to one-half their total length, are constructed with straight projecting gibs t which fit the grooves r^2 in the dogs, and the said portions of the guide bars K are made of such depth or vertical thickness that while the gibs are contained in the grooves of the several dogs the studs r r' of the dogs will be out of contact with the guide bars and the dogs and the gill-pin bars will be guided by the said gibs alone and will give the gill-pins an inclination forward at an acute angle to the face of the table B' , as may be understood by reference to Fig. 1 and to the right hand half of Fig. 2. The portions of the said guide bars K in front of the said gibs are made of greater depth or vertical thickness, as shown in the left hand half of Fig. 2. The said greater thickness commences with an upward inclination u (see Fig. 2) opposite the ends of the gibs t , and the consequence of this is that after the dogs have passed the ends of the gibs their studs r r' are allowed to run against the top and bottom respectively of the guide bars as shown in Fig. 2, and so as to permit or cause the gill-pins to take a more backward set as may be understood by reference to Figs. 1 and 3, where the gill-pins in the forward part of the table B' are shown upright or at right angles to the plane of the table. It will thus be understood that the guide bars K constitute two consecutive sets of guides, one set consisting of the gibs t of the said bars and the other set consisting of the top and bottom surfaces of the said bars.

It may here be mentioned that the dogs are alternately on opposite ends of the gill-pin bars so that the dogs of alternate bars run on the guide bars on the one side of the machine

and those of the intervening gill-pin bars run on the guide bars on the other side.

In the operation of the machine represented and described, the fiber fed by the feed rollers E F to the rear table B is carried forward by the pins a of the said table to the front table B' , the forwardly inclined pins a' on the rear part of which operate in a well known manner in combination with the backwardly inclined pins a of the rear table to produce what is known as the "spreading" operation which prepares the fiber for the drawing operation to be performed by the drawing rollers H , I , operating in combination with the pins a' on the front part of the said table B' . In the spreading operation the draft of the fiber on the pins a' is in a backward direction, and therefore to perform the operation properly the pins must during this operation have the forward inclination or they would not take proper hold of the fibers and the latter would slip upward over and off them, but on the other hand if this forward inclination should continue as the pins arrive near the drawing rollers where the draft is forward, they would not hold back the fibers against the draft and the fibers would slip off; and it is to prevent this slipping off that a more backward set is given to the pins a a' as they approach the drawing rollers. In the drawing operation above described the pins or studs r r' of the dogs J are held in contact with the top and bottom of the guide bars K by the draft of the fiber on the pins, which causes the pins, as the dogs pass up the inclination u of the bars after leaving the gibs t , to gradually leave their inclined position and be set in a more backward direction, or in upright position.

In the mention of the pins a as having their points set in a more backward direction as they approach the drawing rollers, I have used the term "backward" only relatively to the forward inclination which the said pins have in the rear part of the table B' .

What I claim as my invention is—

The combination of a series of gill-pin bars and gill-pins thereon arranged in an endless table, guide bars having greater and less depth in different parts of their length and having on one edge an inclination between the parts of different depth and having also gibs on their narrower parts, and dogs on said gill-pin bars furnished with grooves to engage with said gibs and with pins or projections to engage with the edges of the deeper portions of the guide bars, substantially as and for the purpose herein set forth.

JOHN GOOD.

Witnesses:

FREDK HAYNES,
GEORGE BARRY.