

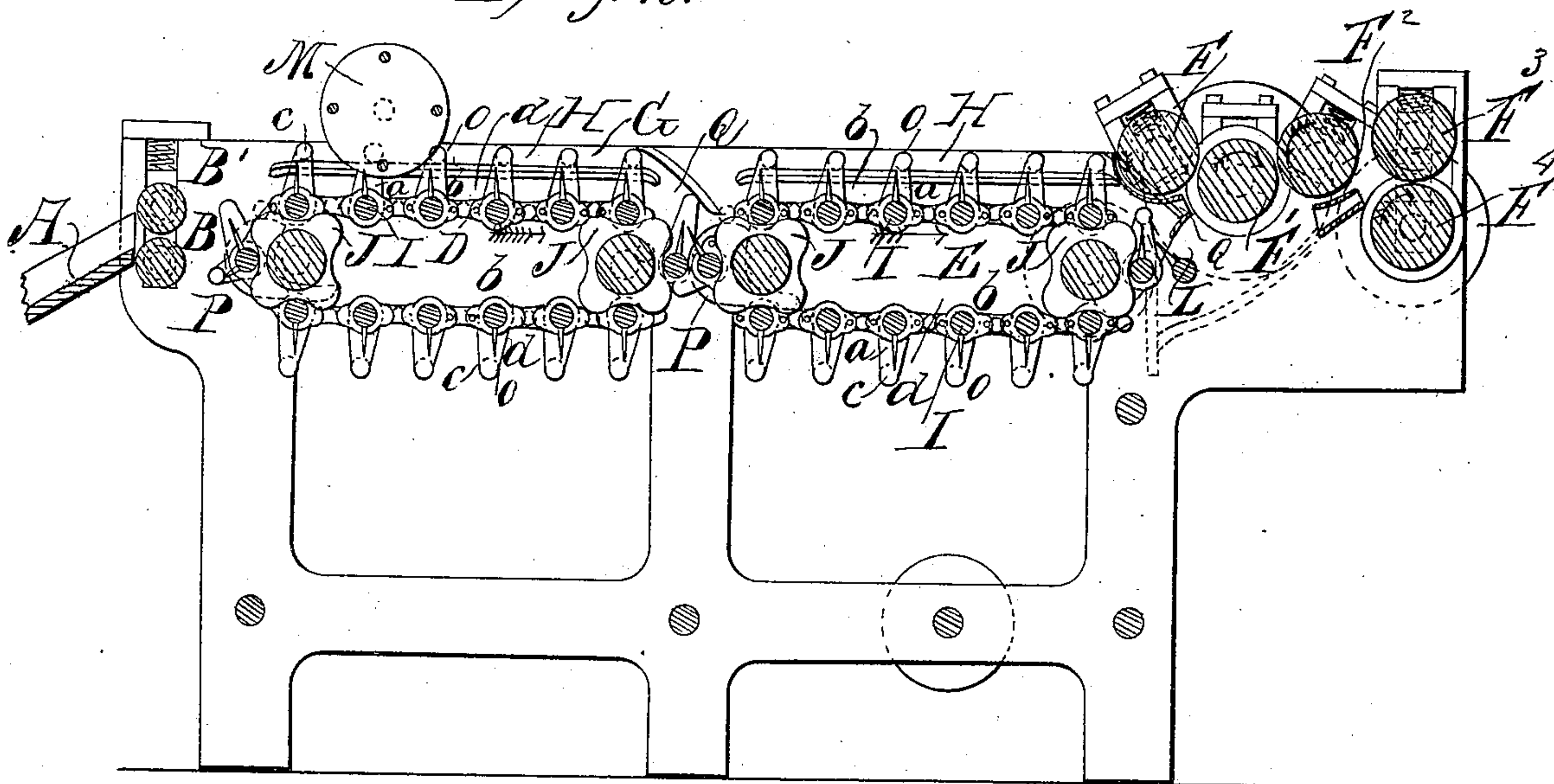
J. GOOD.

# MACHINE FOR DRAWING FLAX, &c.

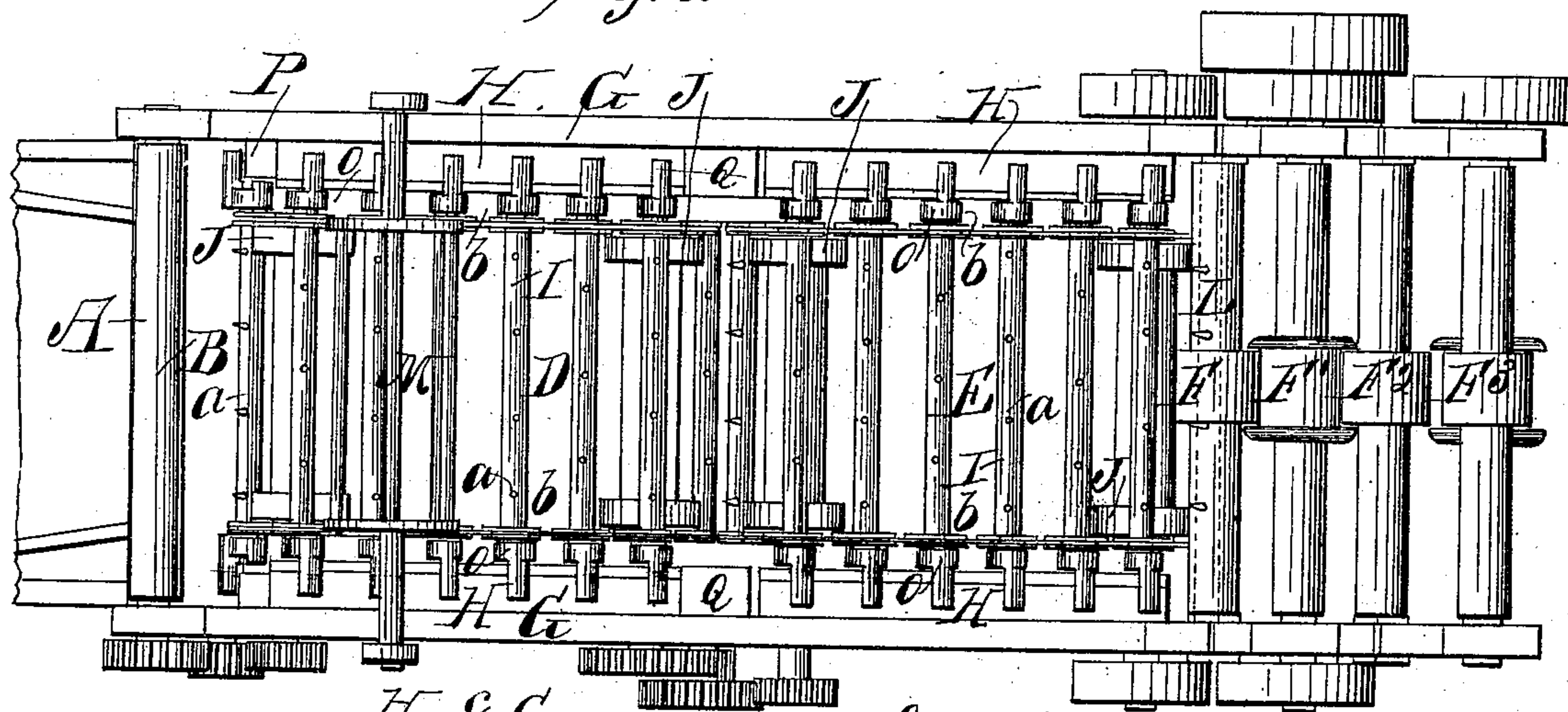
No. 95,462.

Patented Oct. 5, 1869.

*Fig. 2.*



*Fig. 1.*



*Fig. 3.*

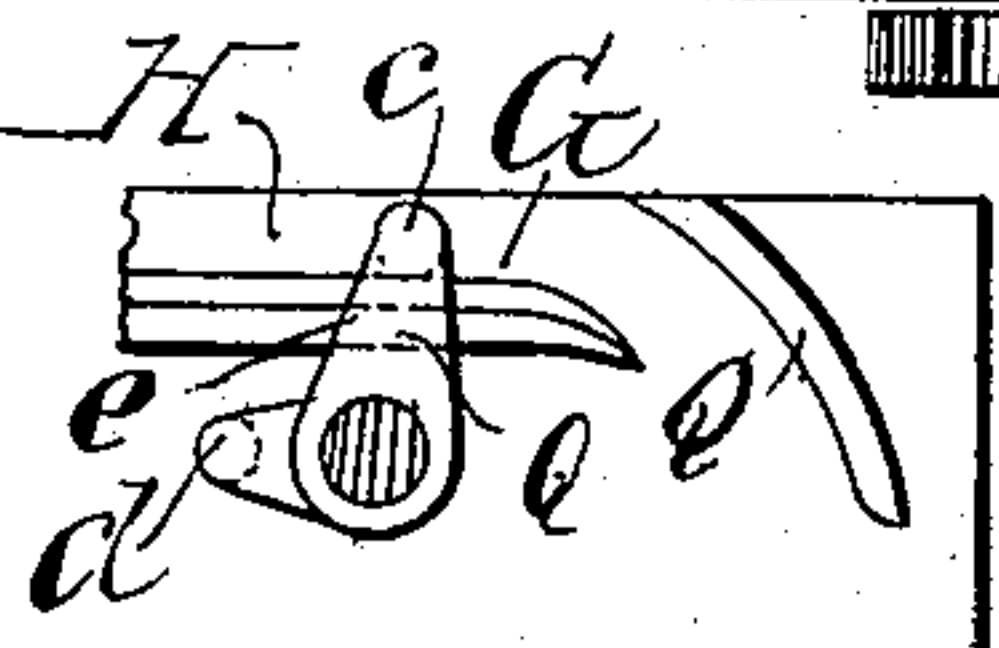
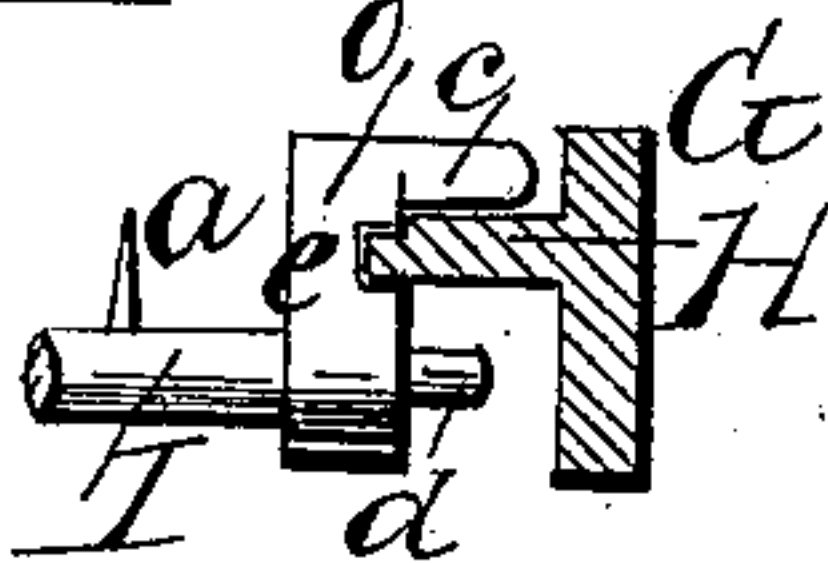


Fig. 4.



Witnesses:  
Fred Haynes  
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Inventor:  
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# United States Patent Office.

JOHN GOOD, OF BROOKLYN, E. D., NEW YORK.

Letters Patent No. 95,462, dated October 5, 1869.

## IMPROVEMENT IN MACHINES FOR DRAWING FLAX, &c.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, JOHN GOOD, of the eastern district of the city of Brooklyn, and county of Kings, and State of New York, have invented a new and useful Improvement in Machinery for Spreading Flax, Hemp, and other Fibrous Materials, and Forming the same into Slivers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a plan of a machine constructed in accordance with my improvement;

Figure 2, a vertical longitudinal section thereof; and

Figures 3 and 4, sectional views at right angles to each other, showing a portion of the upper part of the frame, and one of the cranks which direct the chains in gear therewith.

Similar letters of reference indicate corresponding parts.

In spreading hemp and various other fibres, and forming the same into slivers, the devices heretofore employed have been defective in practice, and involved the necessity of lapping. Thus, in machines as heretofore constructed, the spreading and stretching or straightening-action has been produced through a tight hold upon the hemp, by drawing-rolls, arranged to act in concert with a single endless chain of combing-pins, that, travelling at a reduced velocity to the rolls, conducts the hemp to the latter.

This causes great irregularity of stretch, is apt to form knots or bunches, and leave considerable tow behind between the combing-pins, and also necessitates the use of lappers, and is attendant with many other disadvantages, all adding to the cost and labor of heckling the hemp and forming it into slivers.

My invention obviates these objections, and secures proper combing and stretching or straightening of the hemp, successively at close distances or points during the travel of the hemp through or over the frame, before or in advance of the drawing-rolls, and whilst the hemp is free at both of its ends; and said invention consists in a combination of two or more series of combing or heckling-pins or teeth, arranged to travel at different velocities, and both series of which, or that series only which travels at the highest velocity, is carried by endless chains, and arranged so that the points of the pins are presented in or nearly in a plane-surface, while in operation, so that they operate upon the fibres while the latter are straight, and with an action like combing, and not with an action like carding, such as is produced by pins on the surface of a cylinder, around which the fibres are caused to hug, working in series, as specified, upon the hemp or other fibrous material.

### Referring to the accompanying drawing—

A represents the feed-board, on to which the hemp or raw material, as taken from the bale, without having recourse to lapping, is placed.

B B' are two feed-rollers, arranged on or over the forward end of the feed-board. The lower one, B, of these rollers rests in fixed journal-boxes, while the upper roller B' works in boxes made capable of sliding vertically under the control of springs, arranged between them and the caps of the bearings.

These rollers, or the one of them which works in stationary bearings, are slowly rotated by any suitable driving-gear, so as to cause them to draw on the material from the feed-board.

D and E represent endless chains of heckling-pins or teeth. These chains occupy a horizontal position, or thereabout, one in advance of the other, and connect, as it were, the feed-rollers with the pressing and delivery-rollers F F<sup>1</sup> F<sup>2</sup> F<sup>3</sup> F<sup>4</sup>, of which there may be any suitable number.

Said chains travel between the side frames G G of the machine, and are directed by fixed plates or guides H H, and other pertaining parts or devices, as hereinafter more fully described, the cross-bars I I of the chains gearing with chain-wheels J J, that are carried by horizontal cross-shafts, which are rotated by any suitable mechanism to give to said chains travel, as indicated by arrow in fig. 2, and so that the chain E is made to move faster than the chain D, but no faster, and preferably slightly slower, than the pressing-rolls, which draw or receive the heckled hemp from the chain E.

The most forward portion of the frame has arranged across it, immediately in front of the delivery-end of the chain E, a stationary clearing-bar, provided with pins L or teeth, between which the pins of the endless chain E work, and that serve to prevent the hemp from lapping round the chain.

The pressing-rolls F to F<sup>4</sup> rotate as indicated by their respective arrows. Certain of these only may be driven, and they should have in connection with them suitably-arranged tubular condensers or sliver-guides, to guide and condense the straightened fibres into a sliver-form, and finally deliver the same into a suitable receiving-can or cans.

By these means the sliver is formed directly from the raw fibre, by or through the one machine, and without having recourse to lappers, and in this connection the differential velocities of the chains D and E perform an important part, the heckling-chain E gently drawing upon the material from the chain D, and the fibres thus being combed and stretched, while loose or free at their ends, and before the same are taken hold of by the drawing or pressing-rolls.

M is a loosely-rotating reel or wheel, arranged



across and over the chains D, to prevent the stripping of the fibres from off the points of the heckling-pins of said chain.

Both chains D and E may be similarly constructed, the teeth or pins *a a* being secured in the cross-bars I I of the chains, which bars in each set or chain are united, at or near their ends, by the links *b b* of their respective chains, with freedom to turn freely in said links.

Rigidly fitted to both or opposite ends of these bars I I, are cranks O O, which have arranged on their outer faces guide-pins *c* and *d*, that may, if desired, work along suitable grooves in the guide-plates or sides of the frame, to keep the heckling-pins or teeth in vertical position throughout the horizontal travel of the chains, and that, in conjunction with fixed cams P and Q, turn and direct the bars I I in the end travels of the chains, so that the pins *a a* of each chain enter the hemp vertically, or thereabouts, and leave it in like position, which action prevents objectionable lift on entering, or drag downward on leaving the fibres.

Furthermore, it is preferred to form, in the outside face of each crank O, a slot, *e*, that, receiving within it a projecting edge of the guide-plates H, serves to

direct the endless chain, in its upper horizontal travel, so that their pins stand with their points uppermost, during their engagement with the material, and further serves to stiffen or hold the bars I I in a position to insure the same.

While it is preferable to arrange the two series of pins on endless chains, that both may present their operating-points in planes, the slower-moving series of pins may be arranged upon a cylinder, but it is absolutely essential that the quicker-moving series should be arranged to work in a plane.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination of the two or more endless belts of combing or heckling-pins, arranged one before the other, and running at different velocities with the mechanism, substantially as herein described, for presenting their operating-points in or nearly in a plane, substantially as herein specified.

JOHN GOOD.

Witnesses:

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