

No. 644,420.

Patented Feb. 27, 1900.

J. GOOD.

MACHINERY FOR PREPARING FIBROUS MATERIALS FOR SPINNING.

(Application filed Oct. 18, 1898.)

(No Model.)

2 Sheets—Sheet 1.

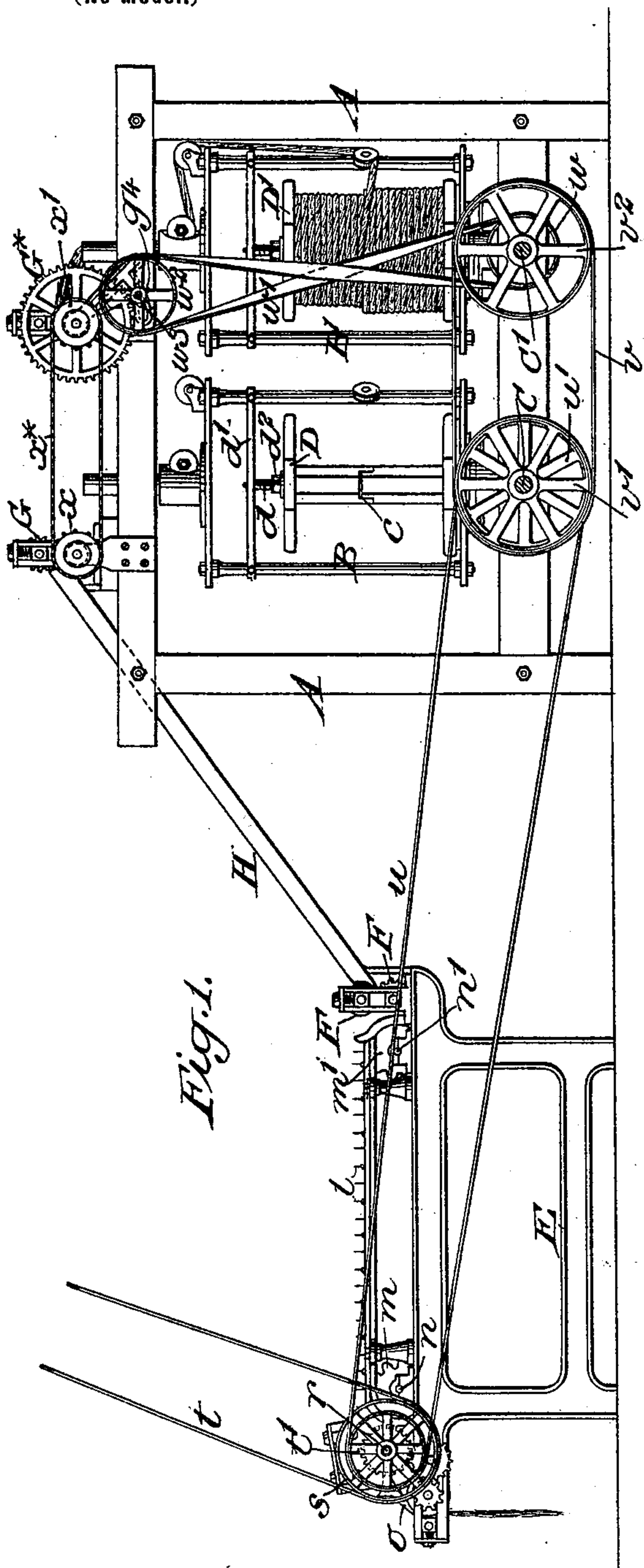


Fig. 1.

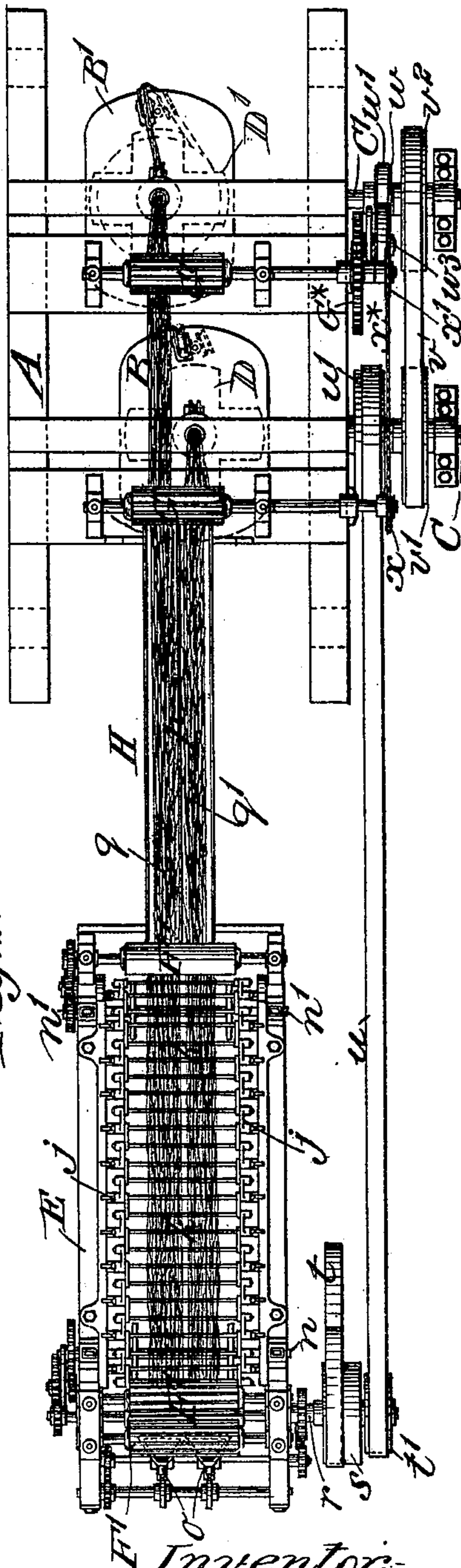


Fig. 2.

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Inventor:
John Good
By attorneys
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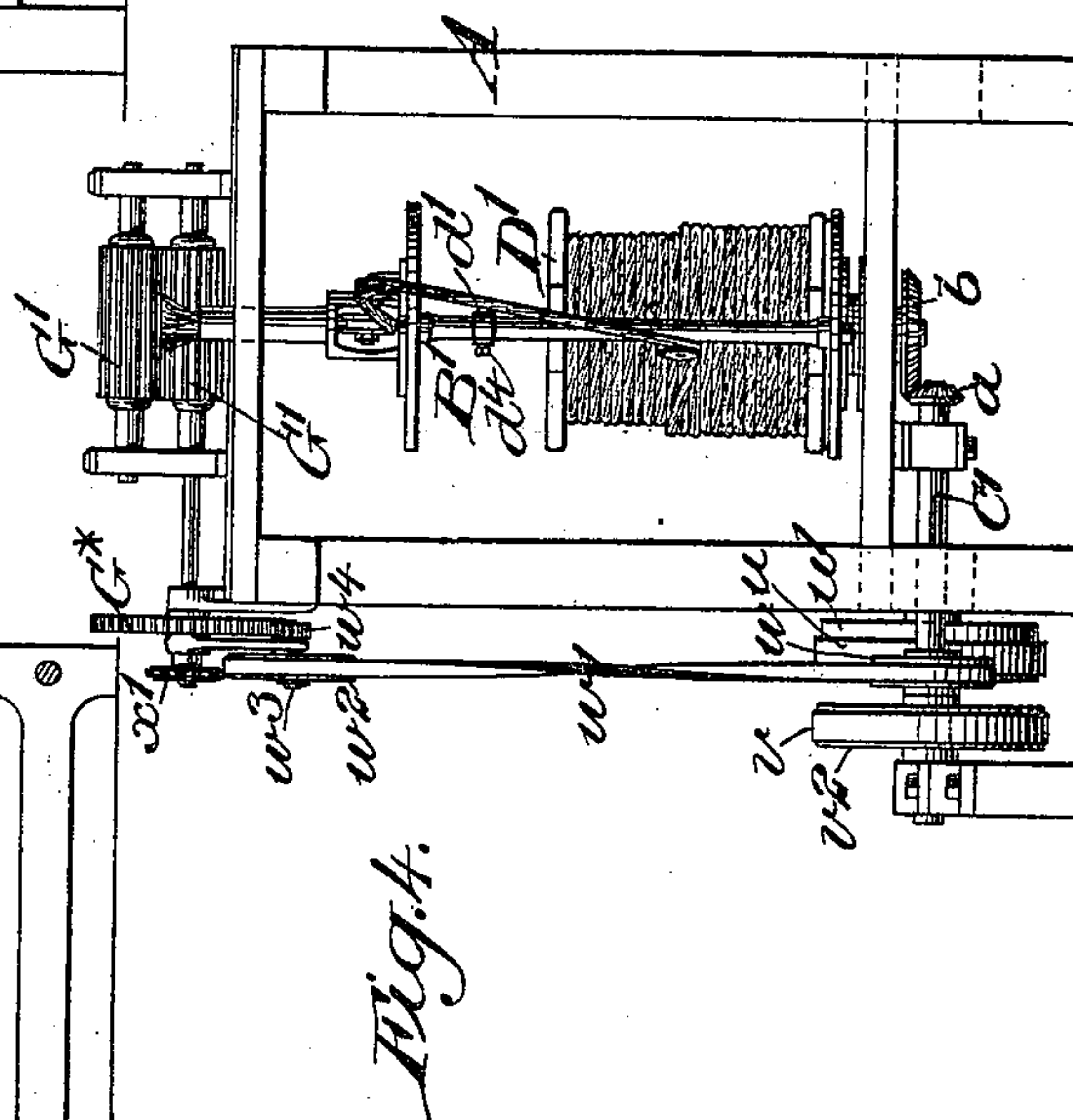
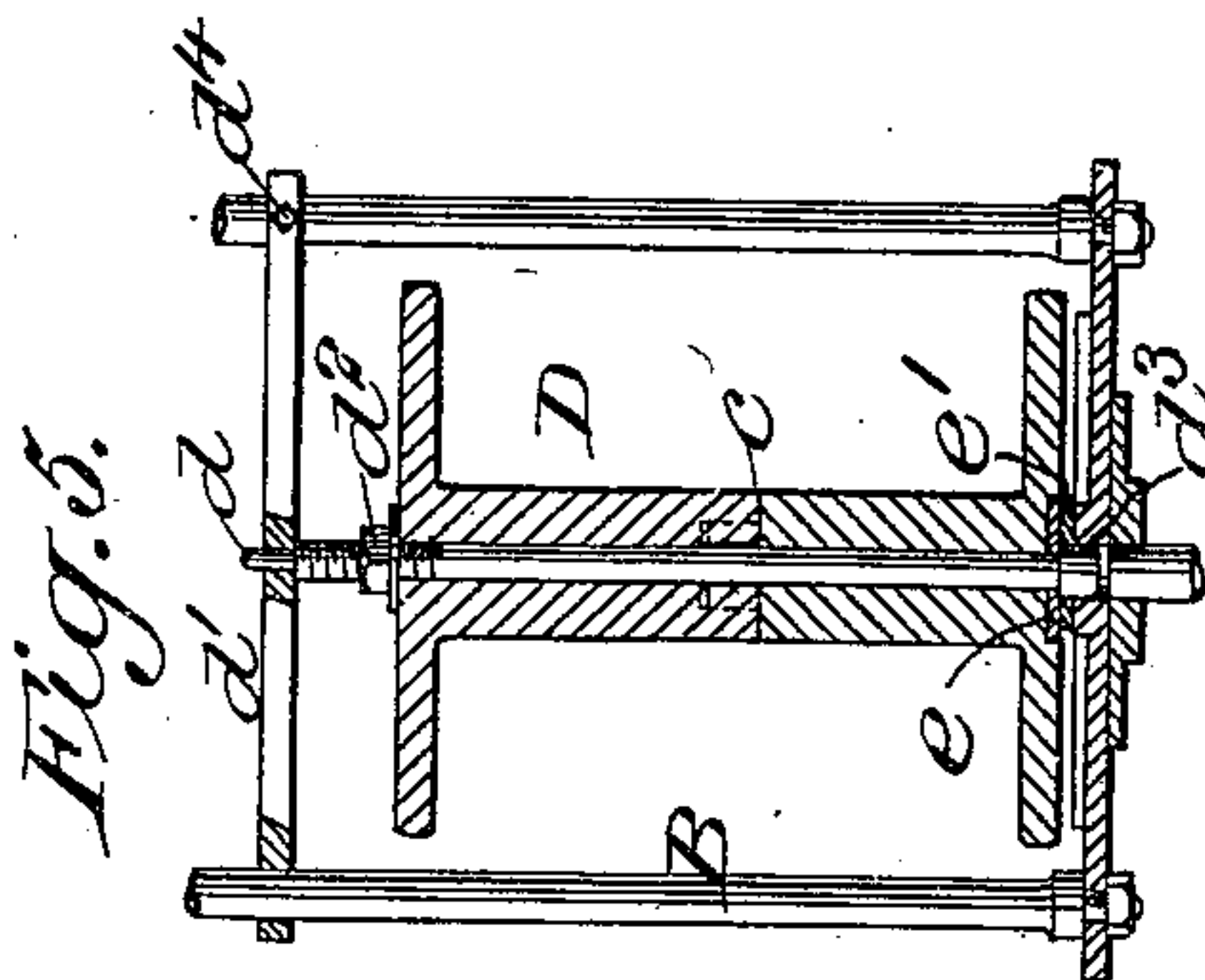
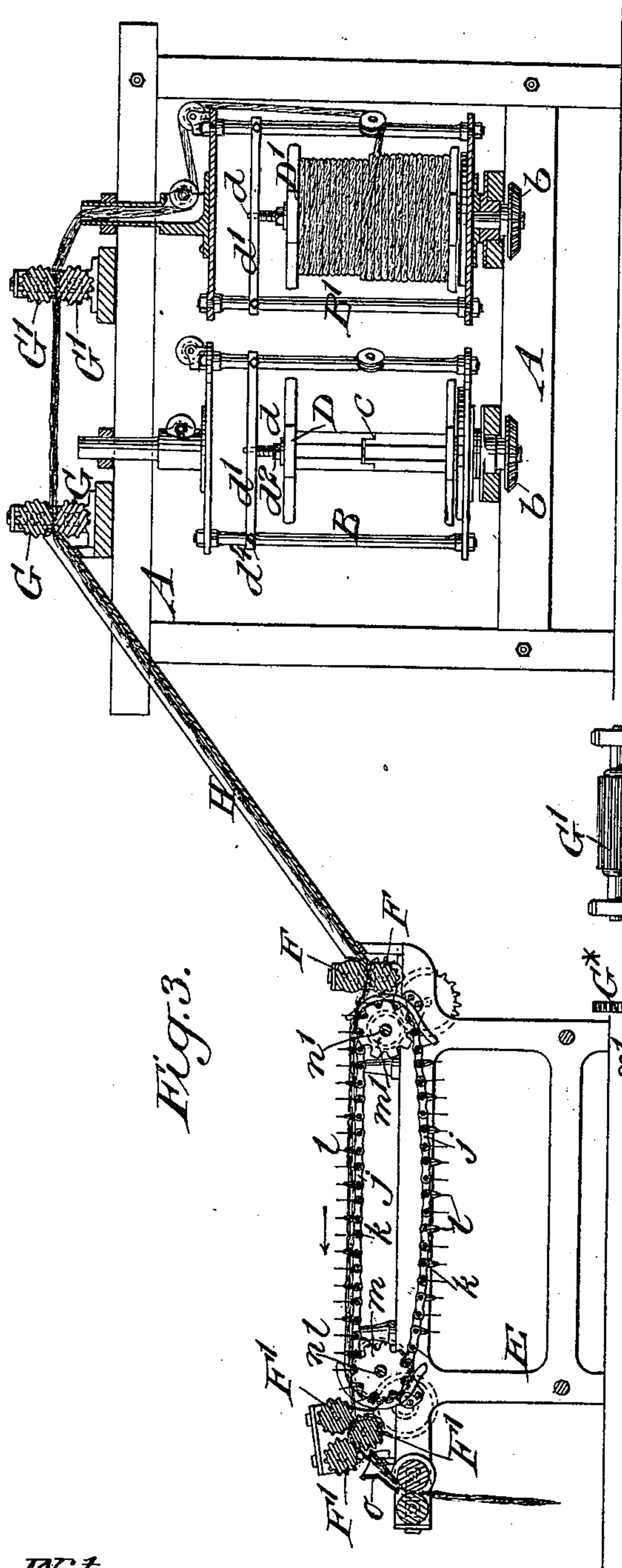
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Edward Kieser

Inventor:-
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UNITED STATES PATENT OFFICE.

JOHN GOOD, OF NEW YORK, N. Y.

MACHINERY FOR PREPARING FIBROUS MATERIALS FOR SPINNING.

SPECIFICATION forming part of Letters Patent No. 644,420, dated February 27, 1900.

Application filed October 18, 1898. Serial No. 693,864. (No model.)

To all whom it may concern:

Be it known that I, JOHN GOOD, a citizen of the United States, and a resident of the city of New York, (Far Rockaway,) in the borough of Queens, in the State of New York, have invented a new and useful Improvement in Machinery for Preparing Fibrous Materials for Spinning, of which the following is a specification.

10 This invention relates particularly to the preparation of fibrous materials in which the fibers are of considerable length—sisal, manila, and other kinds of hemp, for example. The fibrous material to be treated by my invention is in the form of a roving which is just twisted sufficiently to bear handling and baling and to permit it to be supplied at great length continuously or without interruption to any machinery by which it is to be heckled, 15 combed, or similarly treated preparatory to spinning. This roving may be obtained from any suitable source or prepared in any suitable manner, which it is not necessary herein to explain further than to mention that it will usually be received by the manufacturer for the purpose of this invention in the form of a coil.

My invention consists, essentially, in the novel means hereinafter described for untwisting a roving of a character substantially such as I have above mentioned and for presenting the untwisted fibers obtained from such roving to heckling, combing, or drawing devices, whereby they are prepared for spinning or to be subjected to such further treatment as may be necessary or desirable to bring them to the condition for spinning.

My invention further consists in the several combinations of details hereinafter described and claimed, of which the above-mentioned means of untwisting and drawing, heckling, or combing constitute elements.

I will proceed first to describe my invention with reference to the accompanying drawings of a machine in which it is embodied and afterward to point out its novelty in claims.

Figure 1 represents a side elevation of the machine; Fig. 2, a plan; Fig. 3, a longitudinal vertical sectional view; Fig. 4, an end elevation; Fig. 5, a central section of a bob-

bin and part of a flier employed in the machine.

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

A is a framing in or on which are bearings 55 for the journals of two large upright rotary fliers B B' and for the two horizontal shafts C C', through which motion is transmitted to the said fliers by bevel-gears *a* on said shaft and bevel-gears *b* on the lower journals of 60 the fliers. The said fliers and their contained bobbins D D', which are employed for the untwisting of the roving, are substantially like those used in machinery for twisting and spinning except that the bobbins for the convenience of inserting them into previously-prepared coils of roving are each made of two parts separable at *c*, Figs. 1 and 3, and the fliers, which are not provided with capstans, have in them a movable cross-bar *d'*, which 65 contains the bearing for the upper journal of the bobbin-spindle *d*. The two parts of the bobbin consist each of one of the heads and a portion of the body matched together at *c* in any suitable manner—for example, as shown 75 in Figs. 1 and 3—so that both must turn together. The said two parts are held together lengthwise by the central spindle *d*, which has near its lower end a shoulder and near its upper end a screw-thread, to which is fitted a nut *d*². The lower end of the spindle, which projects through the bobbin, constitutes the lower journal *d*³ of the bobbin and is fitted to turn in a bearing in the lower head of the flier. The upper end of said spindle, 85 which projects through the nut *d*² and is smaller than the screw-threaded portion, constitutes the upper journal, which fits a bearing in the movable cross-bar *d'*. The ends of this cross-bar are loosely fitted to the arms 90 or side rods of the flier and are secured thereto by set-screws *d*⁴, on the unscrewing of which said bar can be raised high enough to permit the removal of the bobbin and its spindle from the flier for the refilling of the bobbin with a fresh coil of roving when necessary, such refilling requiring the removal of the nut *d*² and the separation of the upper and lower parts of the bobbin, which will be inserted in the new coil from opposite direc- 100

tions. On the bottom of the bobbin there is a friction-plate *e*, which runs against a leather disk *e'* on the upper face of the flier-bottom.

E is a framing in or on which are supported the devices for drawing, heckling, or combing the fibers which have been untwisted by the fliers and bobbins. These devices are represented as consisting of endless chains *j j*, carrying bars *k k*, armed with gill-pins *l l* and supported and running upon chain-wheels *m m'* on shafts *n n'*, working in bearings in or on the framing E, the said shafts, wheels, chains, bars, and pins being such as are common in machines for drawing or heckling fibrous materials. The framing E is placed in convenient proximity to the framing A, and the shafts *n n'* are so driven, as will be hereinafter described, that the series of pins in the upper run of the chains run in a direction from the fliers.

F F are rollers in bearings on that end of the framing E nearest the flier for receiving the untwisted fibers from the bobbins and fliers and presenting them to the running series of gill-pins, the said rollers being geared to turn together. F' F' F' are delivery-rollers at the other end of the framing E, geared together for taking the drawn, heckled, or combed fibers from the series of gill-pins and delivering them in the form of a sliver through tapered condensing-tubes *o* to any suitable receptacle.

G G and G' G' are pairs of geared rollers arranged in fixed bearings on the top of the framing A for taking the slivers or untwisted collections of the fibers of the rovings which issue through the upper journals of the fliers and leading them to a stationary supporting board or trough H, which conducts them to the feed-rollers F F, which feed them to the moving train of gill-pins. This supporting board or trough is represented in Fig. 2 as divided by a longitudinal partition *p* to separate the slivers *q q'* coming from the fliers. Both slivers are represented as passing between the rollers G G; but that is immaterial.

The fliers and the chains *j j* and their respective shafts may be driven in any convenient manner at suitable relative speeds. All the other shafts and the rollers are represented as driven from the shaft *r* of one of the delivery-rollers F' F' F', which is furnished with a driving-pulley *s*, receiving motion through a belt *t* from any prime or counter mover and which by suitable gearing, such as is common in such machinery and not necessary to describe, gives motion to the chains and to the several rollers F and G. From a second pulley *t'* on the said shaft *r* a belt *u* runs and drives to a pulley *u'* on the flier-driving shaft C, and from another pulley *v'* on said shaft C a belt *v* runs to and drives another pulley *v²* on the flier-driving shaft C'. The directions of the several belts are such that while the upper pins of the train run away from the

fliers the fliers rotate in the proper direction to produce the untwisting of the roving. On the flier-driving shaft C' there is a pulley *w*, from which a belt *w'* runs to and drives a pulley *w²*, which runs loosely on a fixed stud *w³* and which carries a pinion *w⁴*, gearing with a spur-gear G* on one of the rollers G' G', and so drives said rollers. From a chain-wheel *x'* on one of the rollers G' a chain *x** runs to a corresponding chain-wheel *x* on one of the rollers G G, and so drives the latter rollers. The rollers G G and G' G', it is obvious, must run much slower than the rollers F F and their pin-bars.

The untwisting of the roving takes place between the fliers and their respective rollers G G and G' G', and it is obvious that said rollers and the fliers must rotate at such relative speeds that said rollers will take away the untwisted fibers exactly as fast as the rovings are untwisted, the bobbins being turned by the draft produced on the roving by the rollers G G and G' G', and the necessary drag on the bobbins by which the unwinding of the roving therefrom is controlled being produced by the friction, due to the weight of the bobbin, between the plate *e* on the bobbin and the disk *e'* on the flier-bottom. From the said rollers G G and G' G' the slivers resulting from the untwisted fibers pass down along the board or trough H to the rollers F F, whence they pass to the train of pins *l*, to be thereby drawn, heckled, or combed into a sliver, which may generally without further treatment be delivered to a jenny or other spinning-machine.

It is obvious that my invention is operative with a single flier and bobbin, though it is advantageous to use a plurality of them in one machine.

I do not confine myself to the particular devices herein described for drawing, heckling, or combing the untwisted fibers and bringing them to a condition for spinning, as I may use for the purpose any of the means known for drawing or heckling fibrous materials.

What I claim as my invention is—

1. The combination of an upright flier, an upright bobbin supported on and in frictional contact with the bottom of said flier, rollers outside of said flier for unwinding a roving from said bobbin, means for rotating said flier and rollers in the respective directions for the untwisting of the roving as it is unwound from said bobbin, means for heckling, drawing or combing the untwisted fibers of said roving and rollers for feeding said fibers thereto, and a board for supporting the fibers between said unwinding-rollers and feed-rollers, substantially as herein described.

2. The combination of an upright flier and an upright bobbin therefor, a journaled spindle for said bobbin, a bearing in the bottom of said flier in which the lower journal of the spindle is capable of turning, a movable cross-

bar fitted between the arms or side bars of
said flier and containing a bearing in which
the upper journal of said spindle is capable
of turning, and means for securing said bar
5 to said arms or side bars, substantially as
herein described.

In testimony that I claim the foregoing as

my invention I have signed my name, in pres-
ence of two witnesses, this 8th day of Octo-
ber, 1898.

JOHN GOOD.

Witnesses:

ABRAHAM G. JENNINGS,
JOHN L. MITPER.