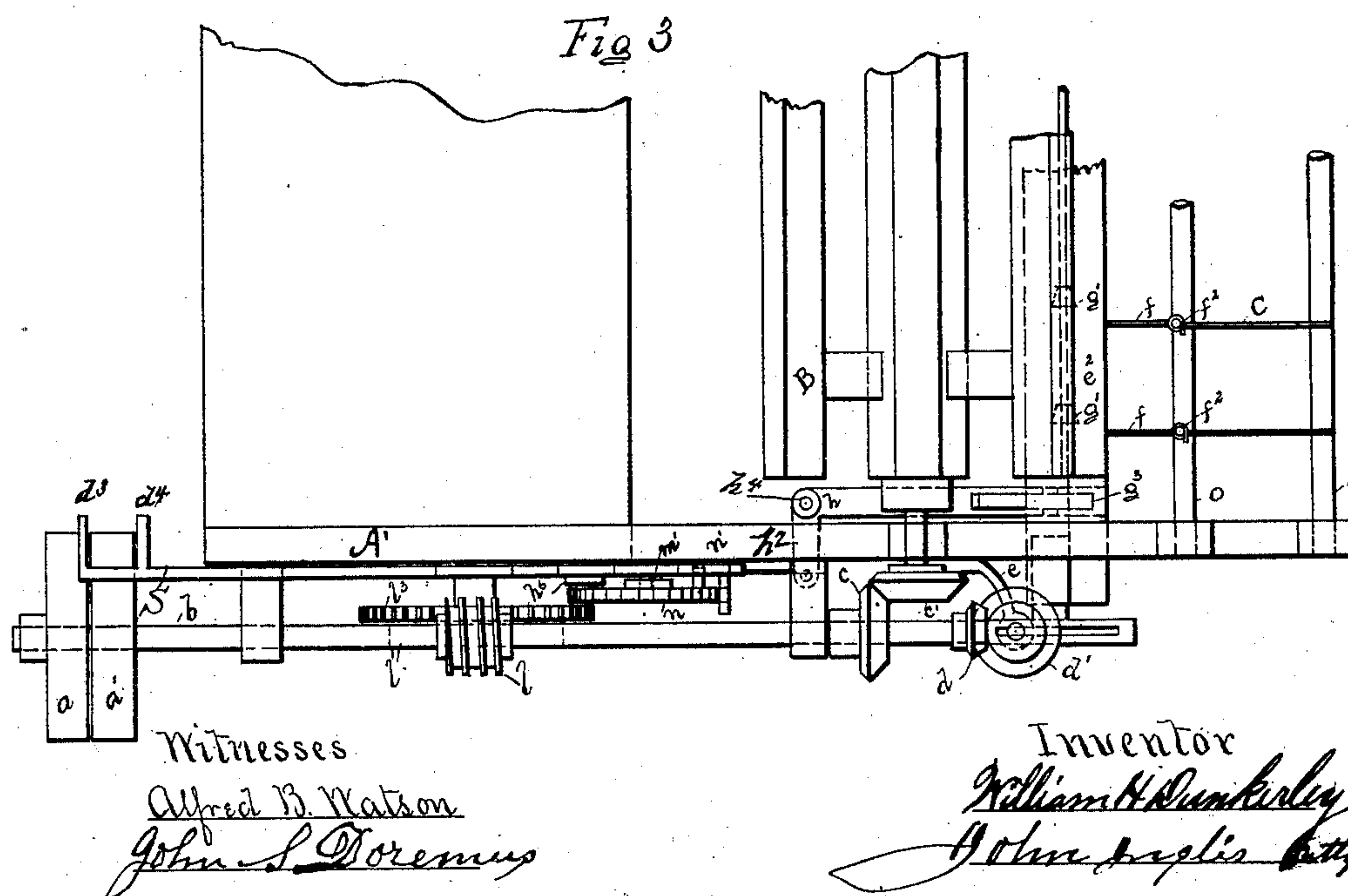
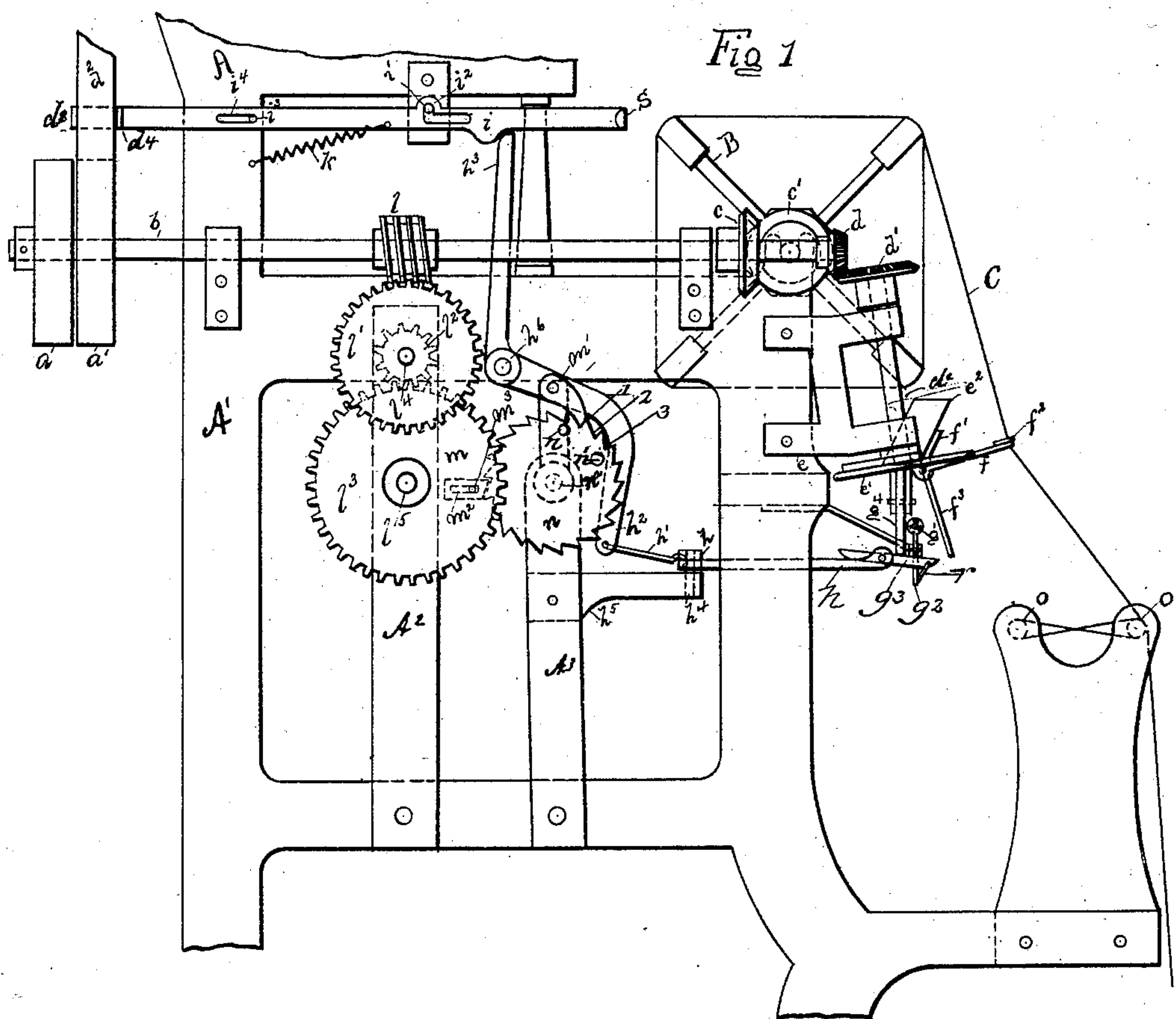


2 Sheets—Sheet 1.

REELING MACHINE.

Patented Nov. 30, 1886.



(No Model.)

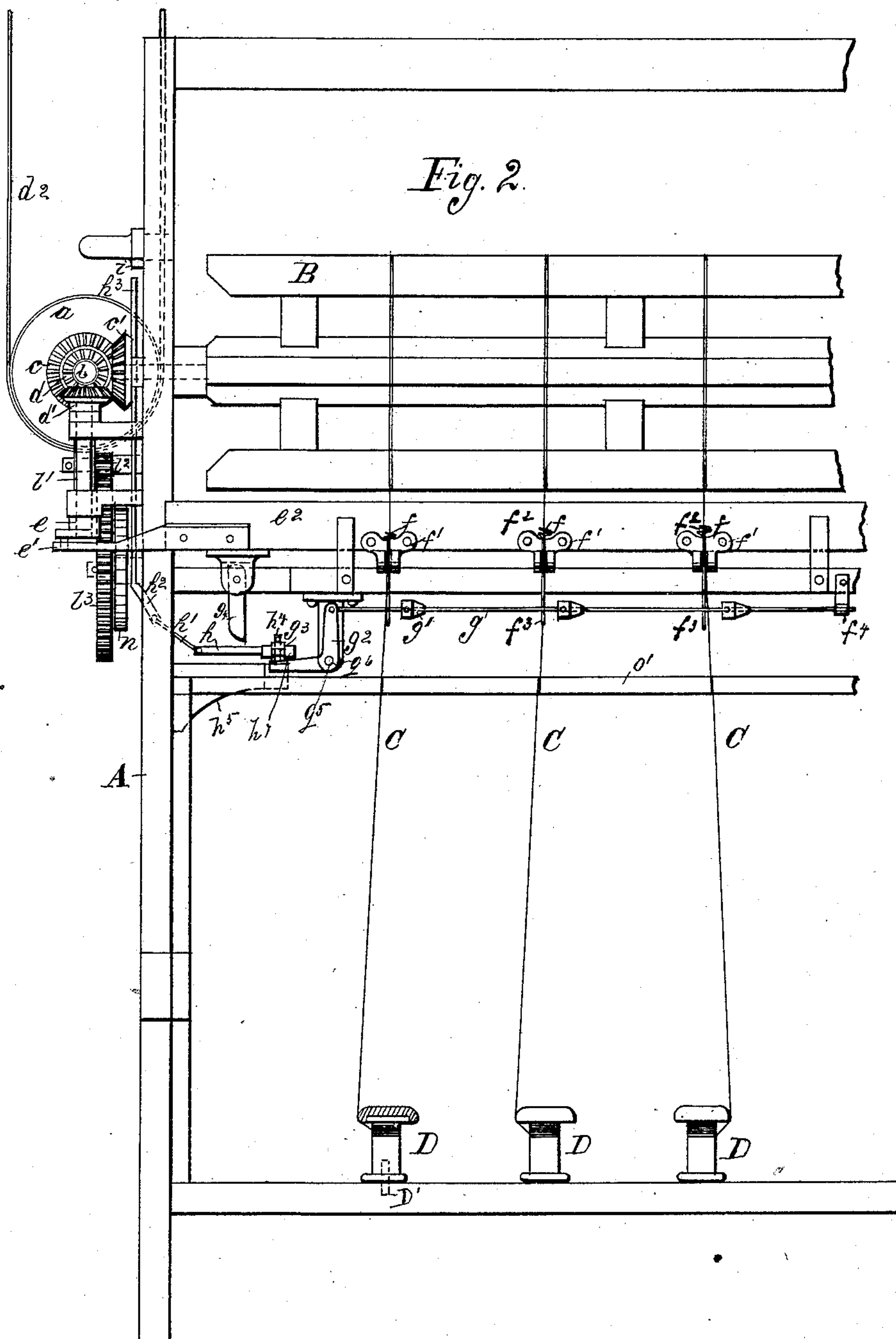
2 Sheets—Sheet 2.

W. H. DUNKERLEY.

REELING MACHINE.

No. 353,297.

Patented Nov. 30, 1886.



Witnesses
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James Dunbar

Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM H. DUNKERLEY, OF PATERSON, NEW JERSEY.

REELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,297, dated November 30 1886.

Application filed January 21, 1886. Serial No. 189,242. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DUNKERLEY, a citizen of the United States, residing at Paterson, Passaic county, State of New Jersey, have invented a new and useful Improvement in Reeling-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The object of my invention is to provide a reliable stopping and measuring mechanism for reeling-machines, whereby the machine will be stopped automatically when a thread breaks or when the reel has had wound thereon a given number of yards of thread, according to the arrangement of the measuring devices. I attain these objects by the construction shown, which will be hereinafter explained and claimed.

Figure 1 of the drawings shows in elevation one end of an ordinary reeling-machine having my invention thereon, in which figure the upper and lower portions of the machine-frame, &c., are removed. Fig. 2 shows in elevation part of the front of the machine with my invention attached, in which figure a portion of the machine-frame, reel, tension-rods, &c., are removed; and Fig. 3 is a part plan of the same.

A represents a portion of an ordinary reeling-machine having the usual frame, A', reel B, driving-shaft *b*, gear-wheels *c c'*, gears *d d'*, shaft *d'*, traverse-bar *e'*, crank arm *e*, slotted bar *e'*, and jack-pins D'.

The general machine, which is constructed the same as is usual with machines of the class, does not need to be further described herein.

On the traverse-bar *e'*, I pivot a lug, *g'*, and also arrange and secure thereon by screws or otherwise slotted brackets *f'*, in the slot of each of which brackets I pivot a drop-wire, *f*, having a guide-eye, *f'*, and a depending part, *f'*. The guide-eye *f'*, which is formed on the upper end of the drop-wire *f*, is adapted to receive and guide the thread C and be supported by the said thread C, while the depending part *f'* of the drop-wire *f* is adapted to engage a cone, *g'*, a series of which cones I arrange on a rod, *g*, to actuate said rod when a cone is engaged by the drop-wire *f'* during the reciprocation of the traverse-bar.

One end of the rod *g*, I pivot to the vertical arm of a bell-crank, *g'*, while the opposite end

of the rod I arrange to slide in a bracket, *f'*, that I secure to the machine-frame. The bell-crank *g'*, I pivot to a depending arm, *g'*, on a pivot-stud, *g'*. The lateral arm of the bell-crank I arrange to engage and actuate a balance-lever, *g'*, which lever I arrange and pivot for such engagement with the bell-crank *g'* in the bifurcated end of a crank-arm, *h*. The inner end of the lever *g'*, I link to the bell-crank *g'* by link *r*, while the crank *h'*, of which the arm *h* is a part, I pivot on a pivot, *h'*, to a bracket, *h'*, which bracket is bolted to the machine-frame. To the crank *h'*, I link by means of a link, *h'*, a lever, *h'*, having a rounded-off top part, *h'*, which lever I pivot to the machine-frame on a pivot-stud, *h'*. The rounded top part, *h'*, of the lever *h'* is adapted to engage and release a shifting-bar, *s*, having a shoulder, *i*, slots *i'* and *i'*, and shifting-pins *d'* *d'*. The shifting-bar I arrange to slide over studs *i'* and *i'*, which studs are secured in the machine-frame. To the shifting-bar *s*, I secure one end of a spring, *k*. The opposite end of the spring I secure to the frame A'.

On the driving-shaft *b*, I arrange and secure, by a key or otherwise, a worm, *l*, which meshes with and actuates a worm-wheel, *l'*, which wheel has integral with it a pinion, *l'*, which pinion meshes with and actuates a gear-wheel, *l'*, which wheel I journal on a stud, *l'*, while the wheel *l'* and pinion *l'*, I journal on a stud, *l'*, both of which studs are secured in a standard, A', of the machine-frame.

The gear-wheel *l'*, I provide with a tooth, *m*, having a slot, *m'*, to accommodate a bolt, *m'*, by means of which bolt I secure the tooth *m* to the wheel *l'*, and secure the said tooth adjustably to the said wheel by reason of the slot *m'*.

On a standard, A', of the machine-frame, I journal on a stud, *n'*, a ratchet-wheel, *n*, which wheel I provide with a stop-pin, *n'*, which pin I arrange in the wheel *n*, to engage and actuate the lever *h'* for stopping the machine when the reel B has had wound on the same the given number of yards of thread, according to arrangement of the measuring devices. The wheel *n*, I also provide with a pawl, *m'*, to keep the said wheel *n* from reverse motion.

The thread C having been taken from the supply-bobbin D, over and around the tension-rods *o* and *o'*, through the drop-eye *f'* to the

reel B, in the usual way, and as shown, and the measuring mechanism having been arranged, as shown, the stopping and measuring devices are in position for automatic action.

5 The machine is supposed to be in motion, and the operation is as follows: As the reeling operation proceeds the tension on the thread C supports in its elevated position the end f^2 of the drop-wire f , which throws the depending part f^3 of said drop-wire f forward and away from the cones g' , as shown. When a thread breaks, the end f^2 of the drop-wire f , for want of support, drops from its elevated position, when the part f^3 recedes to the rod g , and is carried by the traverse-bar e^2 into engagement with one of the cones g' . This carries rod g to the right, and by means of bell-crank g^2 actuates balance-lever g^3 , and places the same in position to engage lug g^4 , which lever, when thus engaged, and when moved by said lug by means of crank h^1 and link h' , draws inward the lower end of lever h^2 , which causes the upper end, h^3 , of said lever to engage the shoulder i of the bar s , which action elevates the end of the shifting-bar s until the stud i^2 has been removed from the vertical portion of the slot i' . When this is done, the spring k , which is distended, suddenly contracts, and draws outward the shifting-bar s over the studs $i^2 i^3$, and, by means of shifting-pin d^4 , shifts the belt d^2 from off the fixed pulley a' to its loose pulley a , thus automatically stopping the machine.

35 When the thread is restored, the attendant draws the shifting-bar inward, which action distends the spring k , and, by means of shifting-pin d^3 , shifts the belt d^2 from the loose pulley a to its fixed pulley a' , which action starts the machine. The rod g is pushed back in position, which action, by means of bell-crank g^2 and link r , moves lever g^3 out of engagement with lug g^4 . As the unwinding of the thread C from off the bobbins D and winding them on the reel B continues, and the reel B has had wound thereon its fixed number of yards of thread, according to the arrangement of the measuring devices therefor, the pin n' engages the lever h^2 and forces the lower end of the lever forward, which action on the lever causes the upper end, h^3 , of the lever to engage the shoulder i of the shifting-bar s and raise the end of the bar until the bar s is in position to slide over the studs $i^2 i^3$, which, when done, the spring k suddenly contracts and draws the shifting-bar s outwardly, and, by means of pin d^4 , shifts the belt d^2 from off the fixed pulley a' to its loose pulley a , automatically stopping the machine.

60 That my invention may be understood, I will

state that the ratchet-wheel n is supposed to have a measuring capacity of twenty thousand yards of thread wound on the reel, or one thousand yards for each one of twenty teeth on said wheel, the two extra teeth over the twenty being necessary to set the wheel, &c. The wheel l^3 is supposed to have a measuring capacity of one thousand yards of thread wound on the reel at each revolution of the wheel, and, by means of the tooth m , indicates its measurement of one thousand yards of thread wound on the reel by moving the ratchet-wheel n one tooth forward at each revolution of the said wheel l^3 , the pawl m' keeping the wheel n from reverse motions. The stop-pin n' is supposed to engage the lever h^2 when the cypher 0 and pawl m' meet.

If three thousand yards of thread is to be wound on the reel, the ratchet-wheel n , which is indexed, will be removed three teeth, in which case the wheel l^3 will be required to revolve three times, that the tooth m may take up the three teeth on the ratchet-wheel n , at which time the cypher 0 and pawl m' will meet, after which action the pin n' will engage the lever h^2 and stop the machine.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with brackets f' and drop-wires f , arranged in said brackets, of the traverse-bar e^2 , for reciprocating the brackets, lug g^4 , carried by bar e^2 , bar e' , crank-arm e , for actuating the traverse-bar, shaft d^2 , gears $d d'$, shaft b , rod g , and cones g' thereon, the crank g^2 , the lever g^3 , link r , crank h^1 , link h' , lever h^2 , bar s , spring k , and machine-frame, as described and shown, and for the purpose set forth.

2. The combination, with lever g^3 and lug g^4 , for actuating the lever, of the crank h^1 , for supporting lever g^3 , the bell-crank g^2 , link r , the rod g , and cones g' , and drop-wires f , brackets f' , rod e^2 , mechanism for actuating rod e^2 , stud h^4 , link h' , for actuating lever h^2 , lever h^2 , for actuating bar s , the bar s having rods i and slots, the studs $i^2 i^3$, and the spring k , as described, and for the purpose set forth.

3. The combination, with the wheel l^3 and tooth m , carried by said wheel to actuate an indexed ratchet-wheel, of the ratchet-wheel n and the pin n' , the stop-lever h^2 , the shifting-bar s , the spring k , and pinion l^2 , the wheel l^1 , the worm l , shaft b , gears $c c'$, reel B, studs $l^4 l^5$, stud h^6 , and machine-frame, substantially as described, and for the purpose set forth.

WILLIAM H. DUNKERLEY.

Witnesses:

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JAMES DUNKERLEY.