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PATENTED JAN. 31, 1905.

J. W. BLUNDELL, G. J. RAGSDALE & H. C. PLEDGER.

TOBACCO STRIPPING MACHINE.

APPLICATION FILED MAY 11, 1904.

3 SHEETS—SHEET 1.

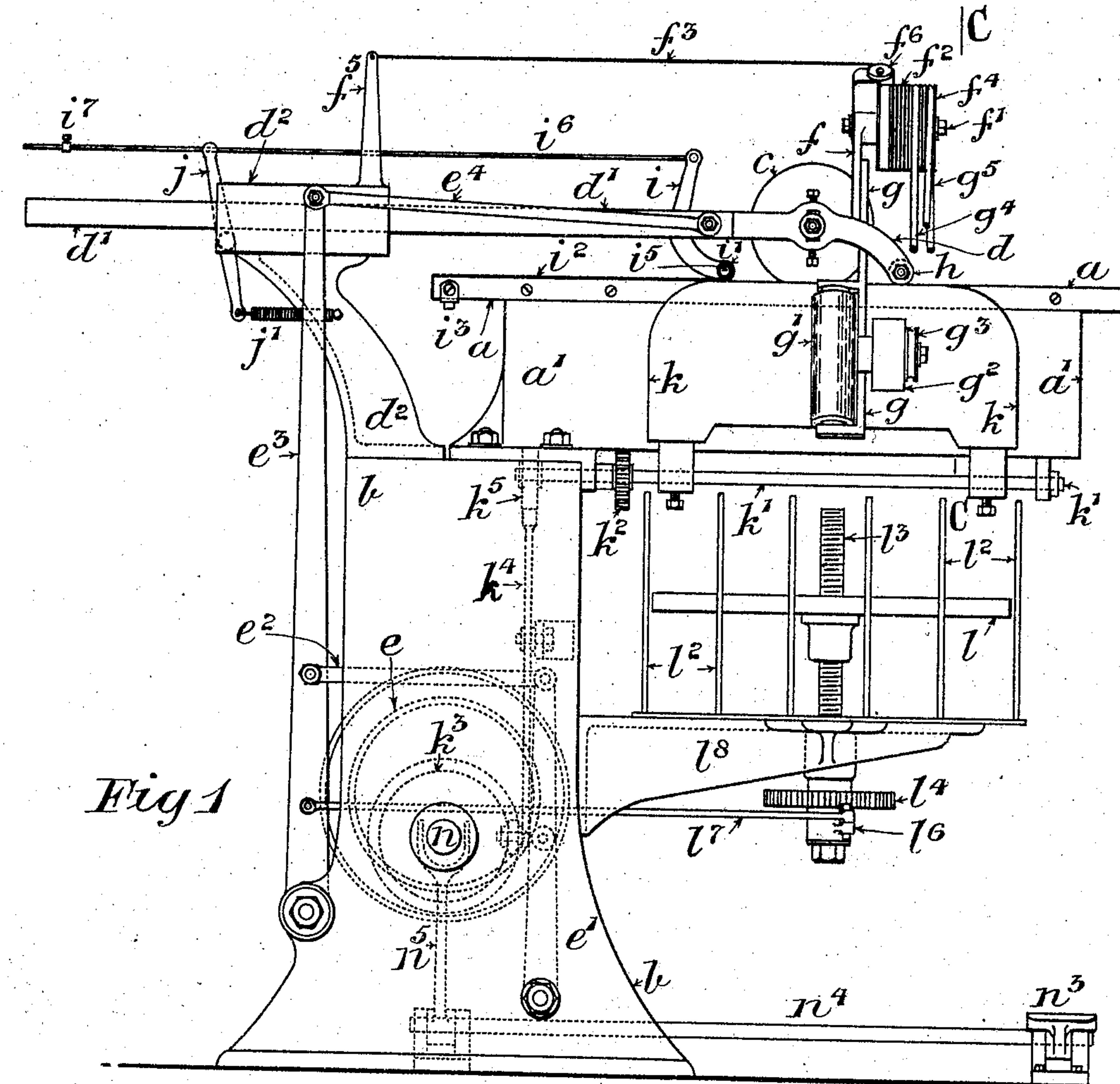


Fig 1

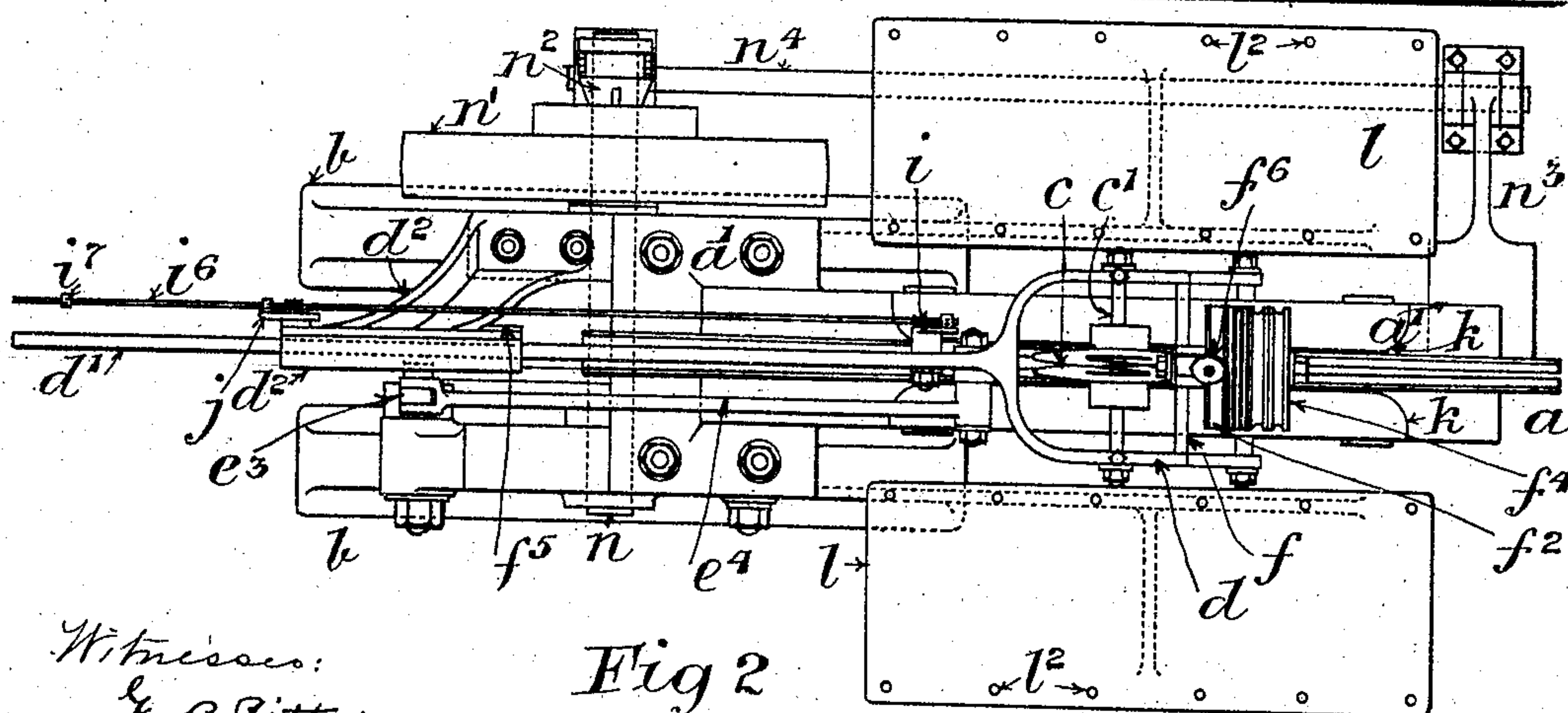


Fig 2

Witnesses:
Geo. B. Pitts,
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Herbert C. Pledger
By J. S. Barker Atty.

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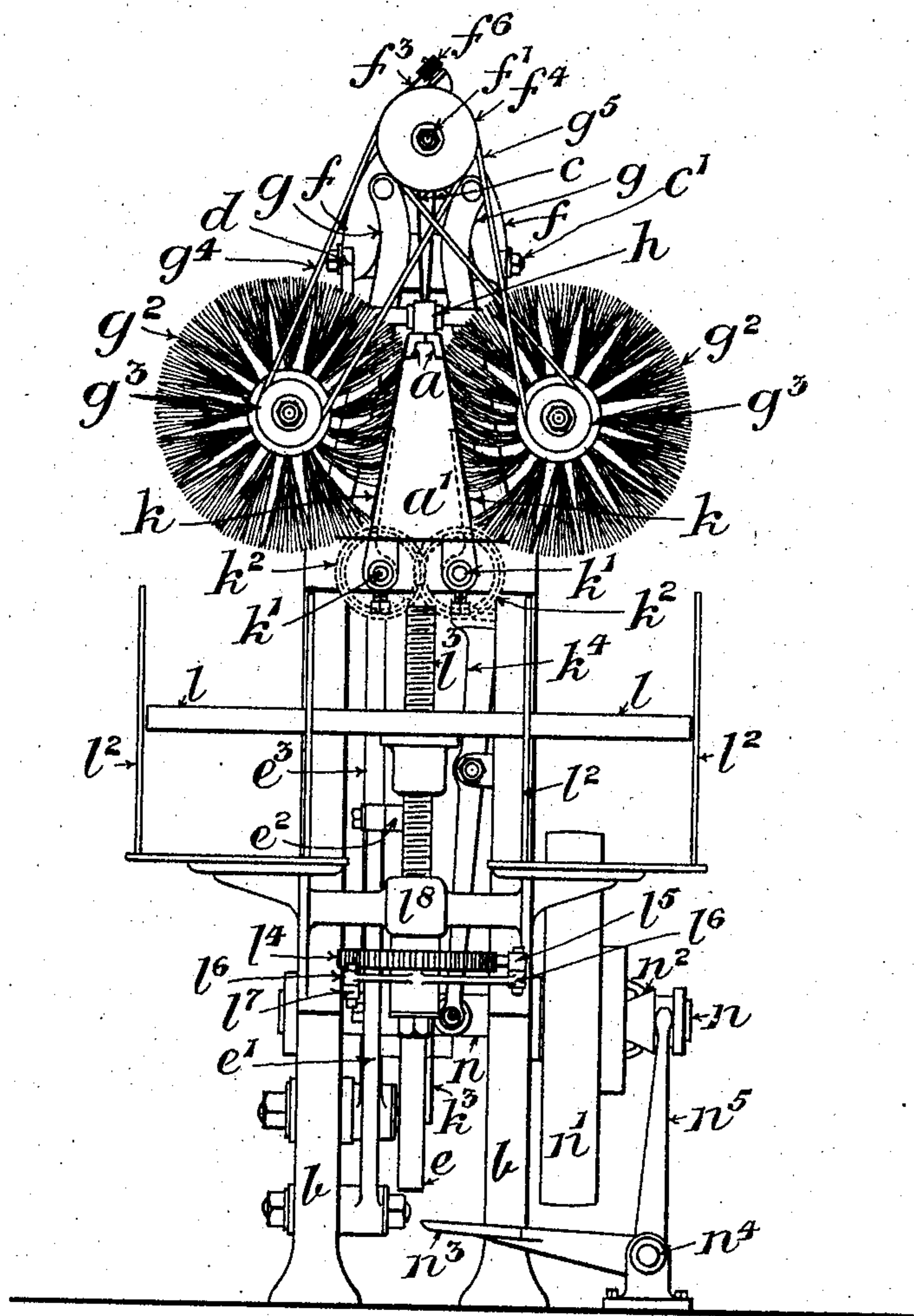


Fig 3

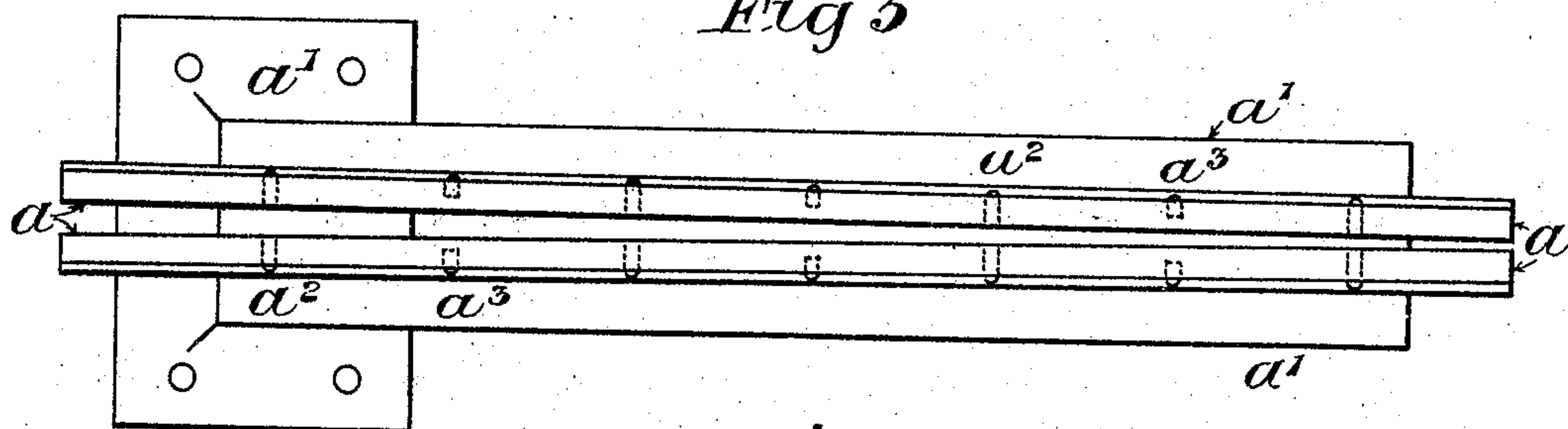


Fig 4

Witness:
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Inventors:
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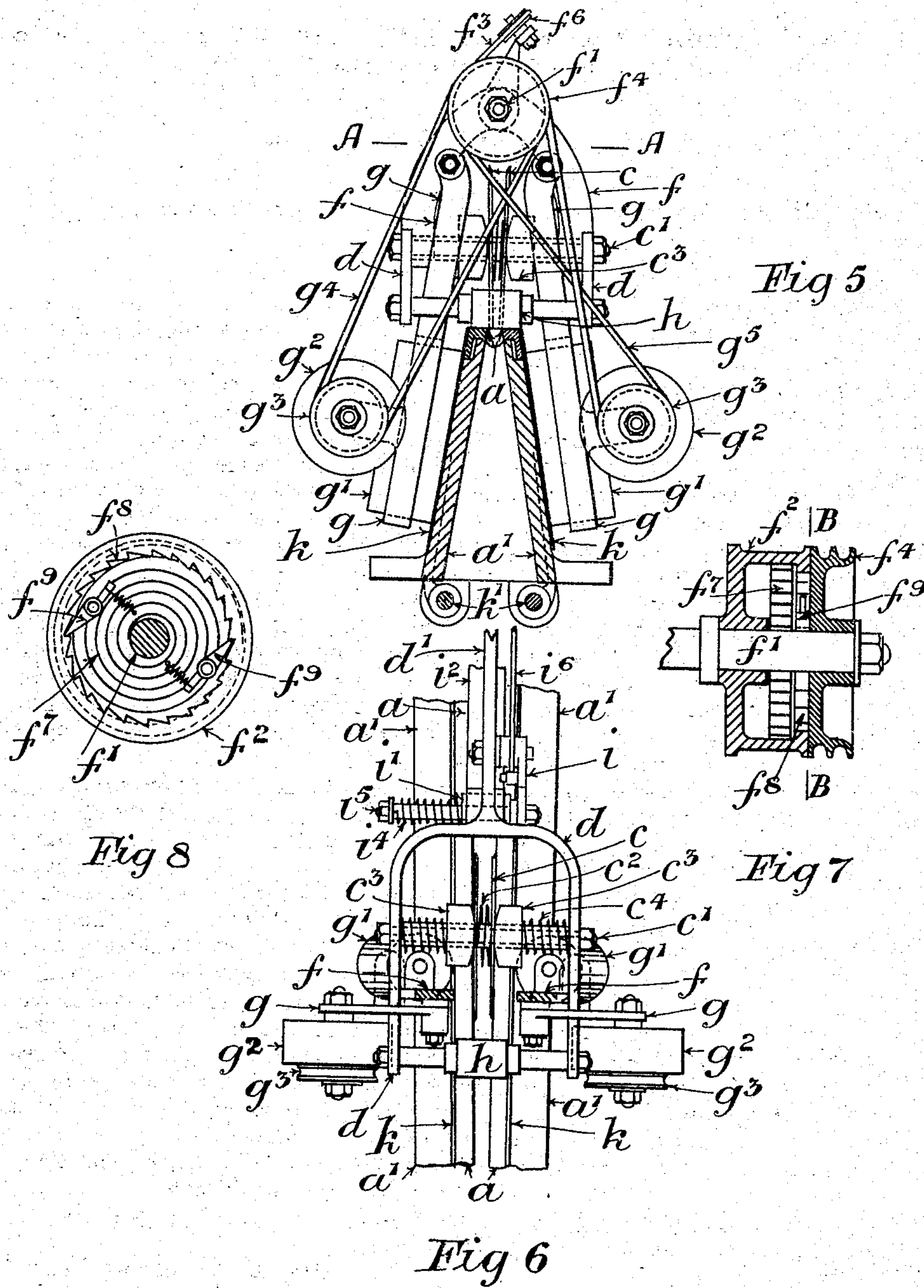
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3 SHEETS—SHEET 3.



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 H. N. Low

Inventors:
 John W. Blundell
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UNITED STATES PATENT OFFICE.

JOHN WILLIAM BLUNDELL, GEORGE JOSEPH RAGSDALE, AND HERBERT CHARLES PLEDGER, OF NOTTINGHAM, ENGLAND.

TOBACCO-STRIPPING MACHINE.

SPECIFICATION forming part of Letters Patent No 781,489, dated January 31, 1905.

Application filed May 11, 1904. Serial No. 207,396.

To all whom it may concern:

Be it known that we, JOHN WILLIAM BLUNDELL, GEORGE JOSEPH RAGSDALE, and HERBERT CHARLES PLEDGER, subjects of the King of Great Britain, and residents of the city of Nottingham, in the county of Nottingham, England, have invented new and useful Improvements in Tobacco-Stripping Machines, of which the following is a specification.

This invention relates to improvements in stripping-machines used in the tobacco industry for cutting the center stalk from the tobacco-leaf and packing or padding the half-leaves, the object of the invention being the construction of a machine by which a taper strip containing the stalk is cut from the leaf by movable knives which are traversed over the fixed knives, in which the leaf is held in position on the fixed knives while being cut, in which the half-leaves are delivered onto a table after being cut, and also improvements in the means and methods by which the various operations are performed.

In the accompanying drawings, which are referred to in the following detailed description of the invention, Figure 1 is a side elevation of a tobacco-stripping machine constructed according to this invention. Fig. 2 is a plan of the same. Fig. 3 is a front elevation. Fig. 4 is a plan of the fixed knives and brackets carrying the same. Fig. 5 is a sectional elevation, to an enlarged scale, on the line C C, Fig. 1. Fig. 6 is a sectional plan on the line A A, Fig. 5. Fig. 7 is a longitudinal section of the brush-driving drum and clutch; and Fig. 8 is a section on the line B B, Fig. 7.

According to this invention the fixed knives *a* are carried by a projecting bracket *a'* from the standards *b*, the knives *a* being secured to the bracket *a'* by fixing-screws *a²* and adjusting-screws *a³*, so that the angle between the knives (indicated in Fig. 4) may be varied according to the requirements of the leaf to be stripped. The movable knives *c* are in the form of thin steel disks mounted to revolve upon an axle *c'*, with a spring *c²*, rubber washers, or the like between them, the strength of the spring or its equivalent being sufficient

to hold the knives in cutting contact with the fixed knives *a*, while allowing the bottom part of the knives to move to and from each other as they traverse the taper space between the fixed knives, and there are large washers *c³* outside the knives and springs *c⁴* for holding the washers in contact with the knives. The axle *c'* is adjustably mounted in a frame *d* on the end of a slide *d'*, which is guided in the bracket *d²* and is actuated from the cam *e* through the cam-lever *e'*, link *e²*, lever *e³*, and a link *e⁴*, which is connected to the slide *d'*. The cam *e* is designed to give a rest to the knives *c* at both ends of their traverse to allow of a leaf being placed in position on the fixed knives by the operator and the halves of the cut leaf removed by the delivery-arms.

Attached to the front part of the frame *d* is a bracket *f*, carrying at its upper end an axle *f'*, on which is mounted a drum *f²* for the cord *f³* and a double-grooved pulley *f⁴*. One end of the cord *f³* is attached to a fixed arm *f⁵* and is guided by the pulley *f⁶* onto the drum *f²*, which is connected to a coiled spring *f⁷*, so arranged that the spring is put into tension as the cord is unwound from the drum by the forward movement of the slide *d'*, and the cord is wound up by the reaction of the spring as the slide moves backward. The pulley *f⁴* is driven from the drum *f²*, through the ratchet-wheel *f⁸* and pawls *f⁹*, these parts being so arranged that the pulley *f⁴* is rotated when the slide *d'* moves forward and remains stationary as the slide moves backward.

Pivotaly attached to the bracket *f* there are arms *g* on both sides of the machine, and these arms carry axles for the rollers *g'* and the brushes *g²*, the hub only of which is shown in Figs. 1, 5, and 6. These brushes have cord-pulleys *g³*, and the brush on one side is driven by a crossed cord *g⁵* and the brush on the other side by an open cord *g⁴*, by which arrangement both brushes rotate inward to straighten the leaf onto the delivery-arms, while the rollers *g'* hold the leaf during the cutting of the same by the knives *c*.

The front part of the frame *d* is provided

with a roller *h*, mounted upon an axle which forms a stay for the front part of the frame, and this roller holds down the leaf in front of the knives *c* and acts as a front guide to the slide *d'*.

At the back of the knives *c* and mounted on a pivoted lever *i* there is another roller, *i'*, carrying a band or tape *i''*, which is laid over the cut edges of the leaf as this is cut. One end of the band or tape is fixed at *i'''* to the under side of the knives *a*, and it is wound upon the roller as this moves backward by a spring *i''''*, one end of which is fixed to the roller-axle *i'''''* and the other end to the roller *i'*. The lever *i* is pivoted on the slide *d'*, and to its upper end a rod *i''''''* is connected and provided with a stop-collar *i'''''''*. This rod slides through a slot in the upper end of a lever *j*, which is pivoted on the fixed bracket *d''* and held in the position shown by a spring *j'*. When the slide *d'* approaches the end of its forward traverse and the leaf has been cut, the collar *i'''''''* comes into contact with the lever *j*, whereby the lever *i* is turned on its pivot and the band or tape is raised to release the cut edges of the leaf, the lever *j* being moved against the tension of the spring *j'* when the roller *i'* has been raised into contact with the slide *d'*.

Situated at both sides of the bracket *a* are the delivery-arms *k*, which are thin plates of metal securely fixed to rocking shafts *k'*. These shafts are geared together by the wheels *k''* and are actuated by a cam *k'''* through a toothed-sector-ended lever *k''''* and a toothed wheel *k'''''* on one of the shafts. The arms *k* deliver or pad the halves of the leaves onto tables *l*, which are fitted to slide in a frame of fixed pins *l''* and are intermittently lowered by a screw *l'''*, which is actuated by a ratchet-wheel *l''''* fixed thereto, pawl *l'''''*, and pawl-lever *l''''''* from the cam-lever *e'* through a link *l'''''''*, the table and its connected mechanism being carried by a bracket *l''''''''* from the standards *b*.

The cam *e* is mounted on a shaft *n*, which has bearings in both standards and is driven by the pulley *n'*, which is connected thereto by a friction-clutch *n''*, and this can be operated by a treadle *n'''* at the front of the machine through a rocking shaft *n''''* and lever *n'''''*, so that the operator can stop and start the machine as required.

When the parts are in the position shown, a leaf is laid by the operator over the knives *a* with the stem over the taper space between them and the thick end of the stem toward the back of the machine. The machine being started, the knives *c* move forward to cut out the stem, the brushes *g''* straightening the leaf onto the delivery-arms *k*, while the rollers *g'* hold the leaf straight during the cutting. At the back of the knives *c* the band or tape *i''* is being unwound from the roller *i'*, and as the knives *c* move forward they are pressed together at the bottom by the fixed knives to

vary the width of the cut made. When the stem has been cut from the leaf and the knives *c* are at the front end of their traverse, the band or tape is raised to release the cut edges of the leaf, and the two halves of the leaf are then delivered or "padded" onto the tables *l* by the delivery-arms, which may return to their normal position before or after the knives *c* commence or have completed their return traverse.

What we claim as our invention, and desire to secure by Letters Patent, is--

1. In a tobacco-stripping machine, the combination of the stationary knives the movable knives and a band or tape for laying over the cut edges of the leaf, substantially as set forth.

2. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, a tape, one end of which is supported adjacent to the movable knives and so as to move therewith, and means for laying the tape upon the cut edges of the leaf, substantially as set forth.

3. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, brushes in advance of the knives for smoothing the leaf, rollers for holding the leaf, and means for causing the movable knives, the brushes and the rollers to move together, substantially as set forth.

4. In a tobacco-stripping machine the combination of fixed knives inclined toward each other, with circular knives which traverse between the fixed knives, a frame and slide carrying and guiding the said knives, a band or tape for laying over the cut edges of the leaf and the delivery-arms substantially as herein set forth.

5. In a tobacco-stripping machine the combination of fixed knives with the movable knives, an axle on which the movable knives revolve, a spring between the knives, springs and washers outside the knives, a roller traveling in front of the knives, a frame and slide carrying and guiding the knives and roller, a band or tape for laying over the cut edges of the leaf, delivery-arms, the revolving brushes and the side rollers substantially as herein set forth.

6. In a tobacco-stripping machine the combination of the fixed knives a bracket carrying the same, screws for fixing and adjusting the position of the knives, circular knives, a bracket and slide carrying and guiding the circular knives, an upright bracket carrying the brush-driving pulleys, pivoted arms carried by the upright bracket, rollers and brushes carried by the pivoted arms, the band or tape a roller carrying the same, and delivery-arms substantially as herein set forth.

7. In a tobacco-stripping machine the combination of the fixed knives, a bracket carrying the same, the circular knives, the slide carrying the same, a cam actuating the said slide, levers, links and connections between

the cam and slide, the brushes and rollers, arms carrying the same and the delivery-arms substantially as herein set forth.

8. In a tobacco-stripping machine the combination of the fixed knives the bracket carrying the same, the circular knives and slide, the upright bracket carrying the brush-driving pulleys, the brush-driving pulleys, a ratchet-clutch between the pulleys and a drum, the drum, the coiled spring within the drum, the cord for rotating the drum and pulleys substantially as herein set forth.

9. In a tobacco-stripping machine the combination of the fixed knives, a bracket carrying the same, the circular knives and their slide, the cam and connections for traversing the slide, the band or tape, the tape-roller, a spring for winding up the tape, the delivery-arms and padding-tables substantially as herein set forth.

10. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, the slide carrying such knives, the band or tape, the brushes and rollers, the brush-driving mechanism, the delivery-arms, the receiving-tables, and frames round the said tables substantially as herein set forth.

11. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, the slide carrying such knives, the band or tape, the brushes and side rollers, the delivery-arms the shafts carrying such arms, gear-wheels connecting the said shafts, a gear-driving wheel on one of the shafts, the tooth-ended lever, and cam actuating the same substantially as herein set forth.

12. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, the slide carrying the same, the roller in front of the knives, the tape or band, the tape-roller, a lever carrying the same, a rod

connected to the said lever a stop-collar on the rod, spring-lever for raising the tape through the sliding rod, delivery-arms and padding-tables substantially as herein set forth.

13. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, the slide carrying the same, the tape and tape-roller, the brushes and side rollers, clutch mechanism driving the rollers, the delivery-arms, the padding-tables, frames surrounding the tables, screw for the tables and ratchet mechanism actuating the tables, substantially as herein set forth.

14. In a tobacco-stripping machine the combination of the fixed knives the movable knives, the brushes and side rollers, clutch mechanism driving the brushes, the tape and tape-roller, the delivery-arms, cam, gear-wheels and lever actuating the arms, padding-tables with frames and screw mechanism, the cam actuating the movable knives the driving-pulley and friction-clutch mechanism to the said pulley substantially as herein set forth.

15. In a tobacco-stripping machine the combination of the fixed knives, the movable knives, the roller in front of the knives, the tape and roller behind the knives, the brushes and side rollers, the delivery-arms, the padding-tables and surrounding frames, and the friction-clutch driving mechanism substantially as herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN WILLIAM BLUNDELL.
GEORGE JOSEPH RAGSDALE.
HERBERT CHARLES PLEDGER.

Witnesses:

NATHANIEL WALTER NEED,
WILLIAM HENRY POTTER.