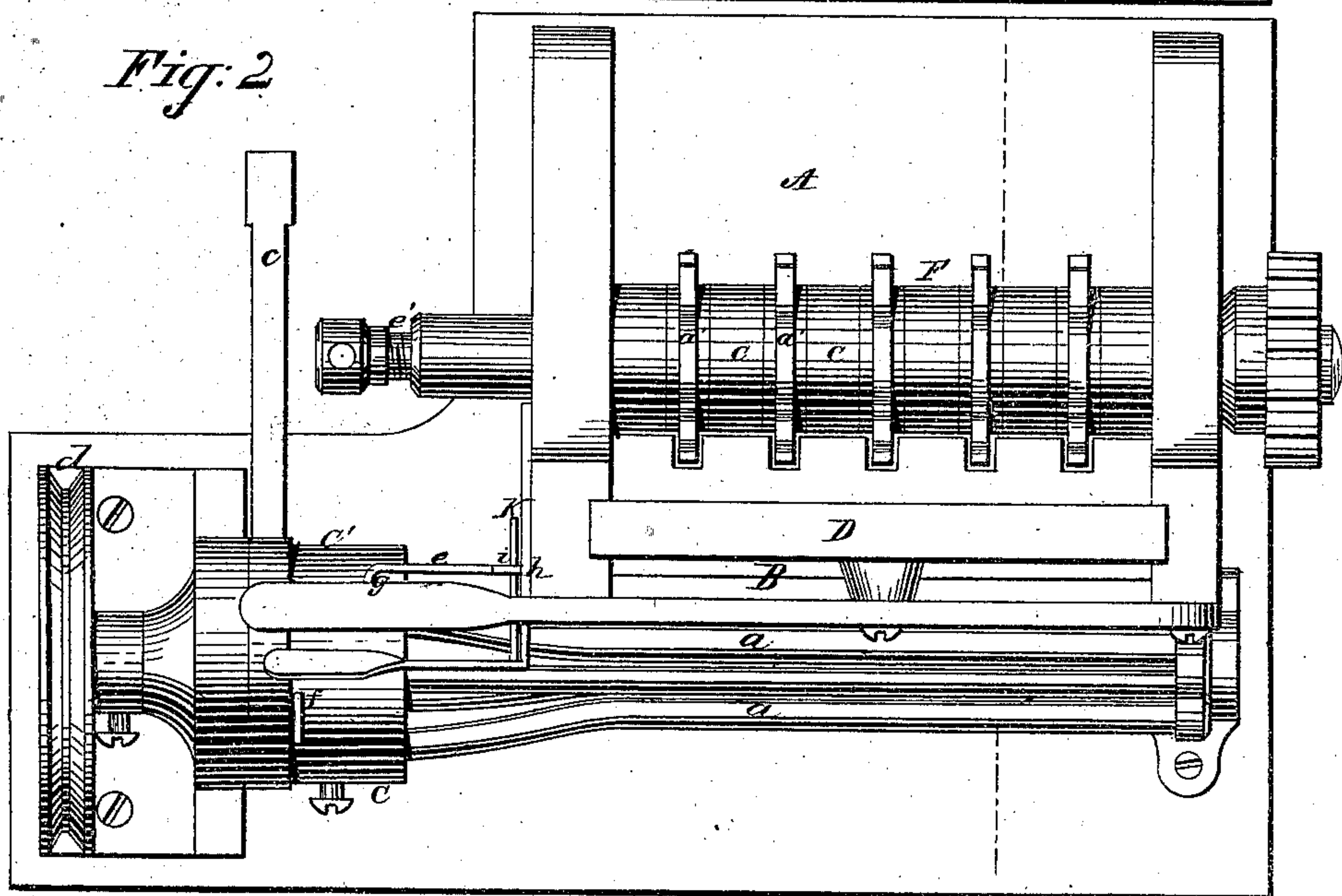
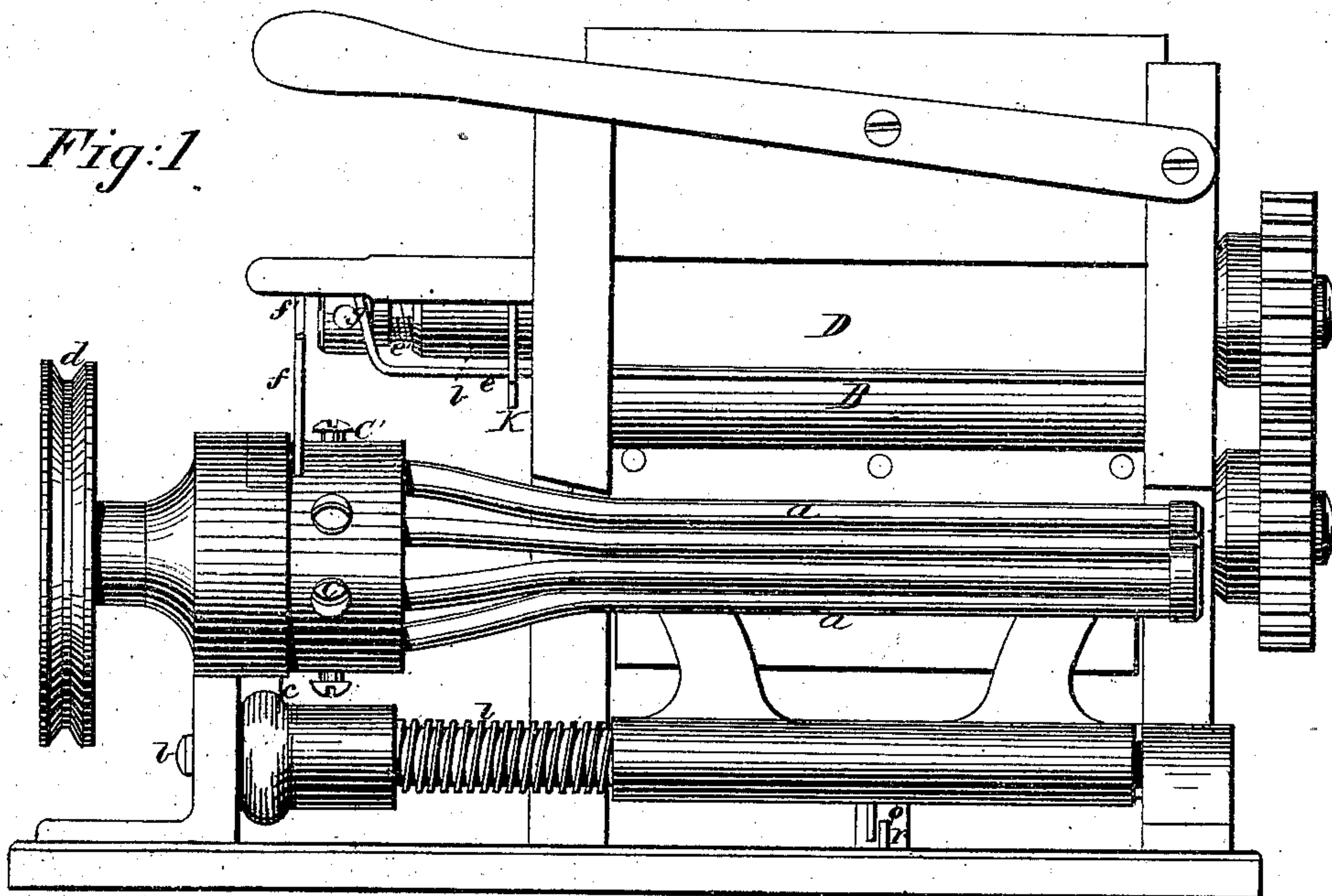


S. SCHOLFIELD.

Machine for Making Cigar Bunches.

No. 133,725.

Patented Dec. 10, 1872.



Witnesses:

Wm B. Rider
Thos. J. Shearman

Inventor:

Socrates Scholfield

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Fig. 10.

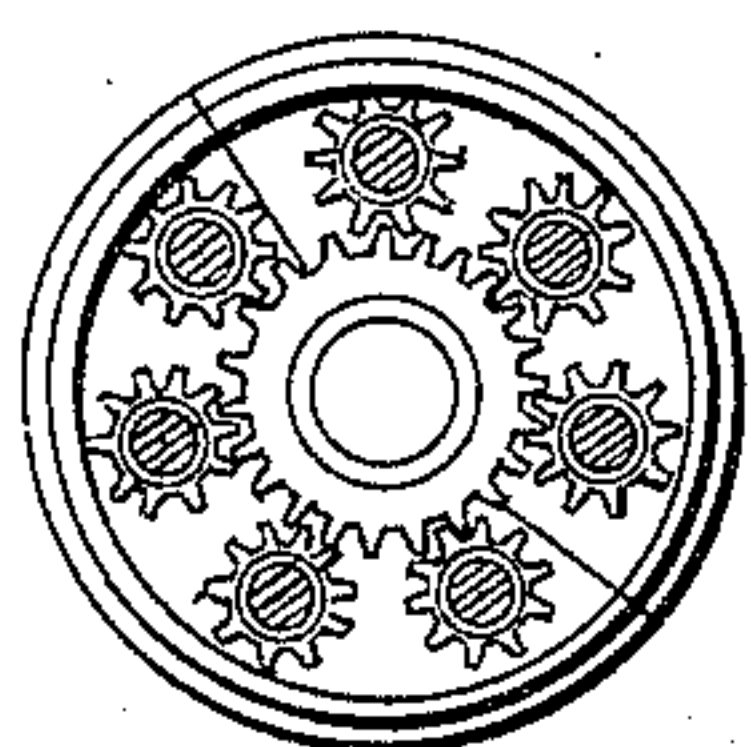


Fig. 9.

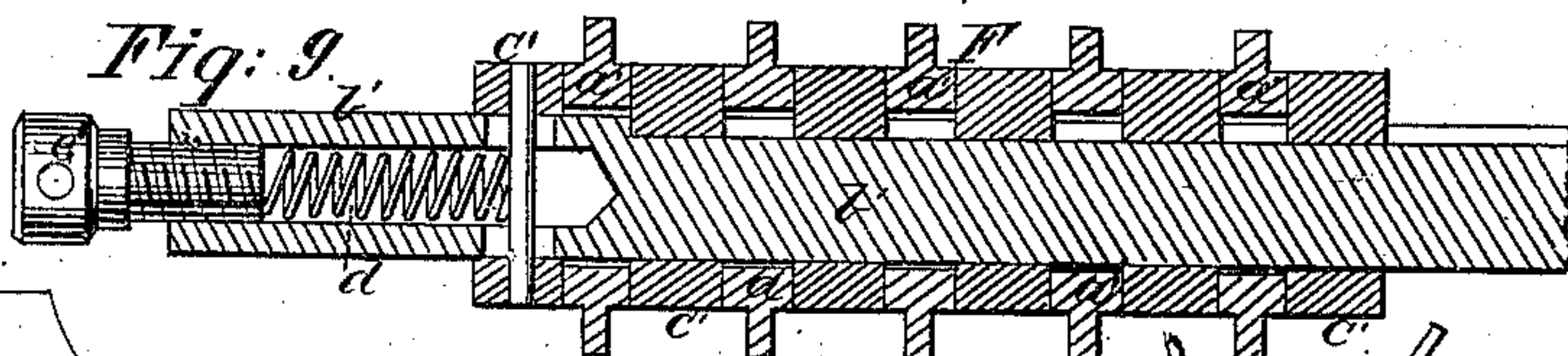


Fig. 4.

Fig. 5.

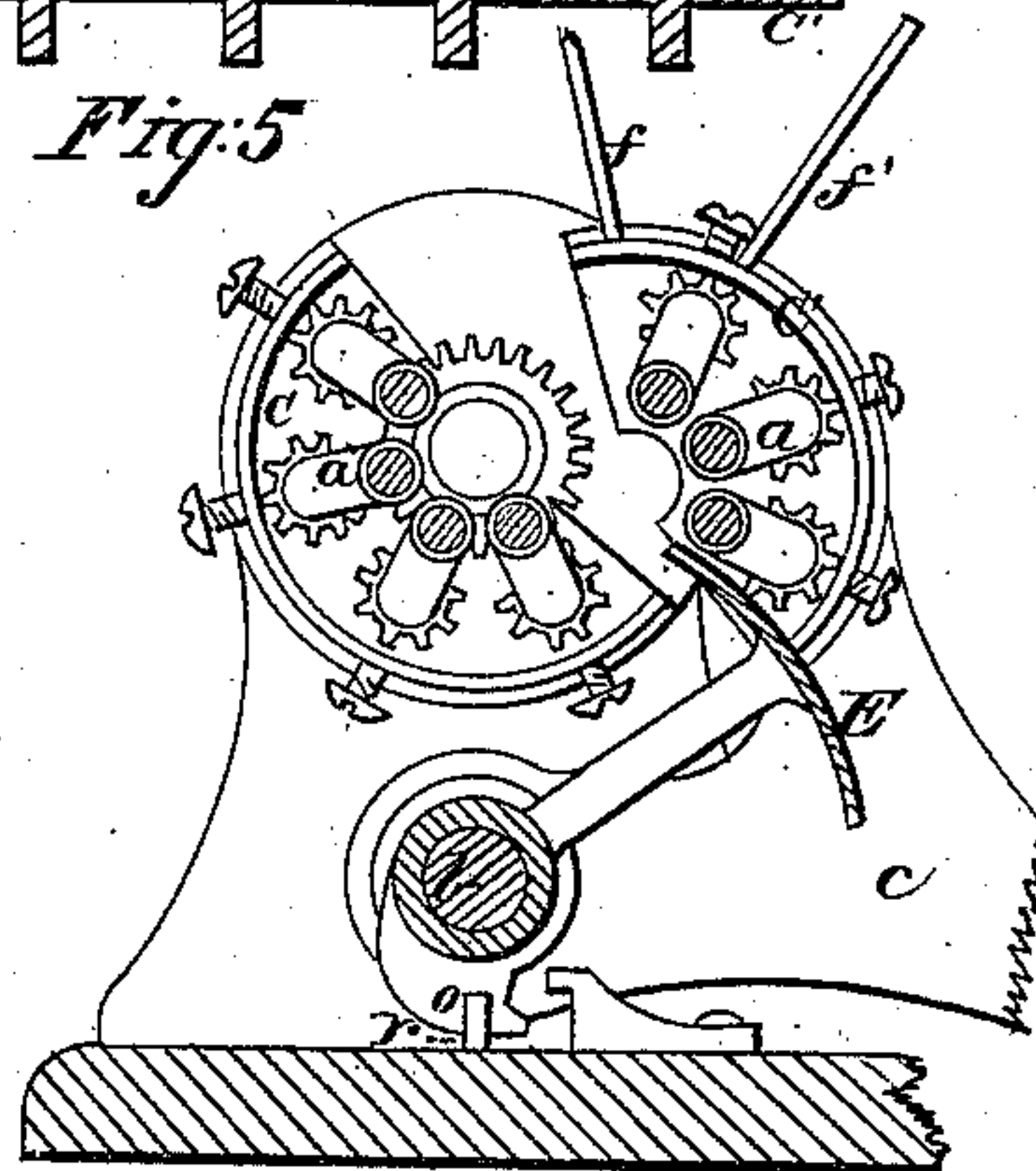
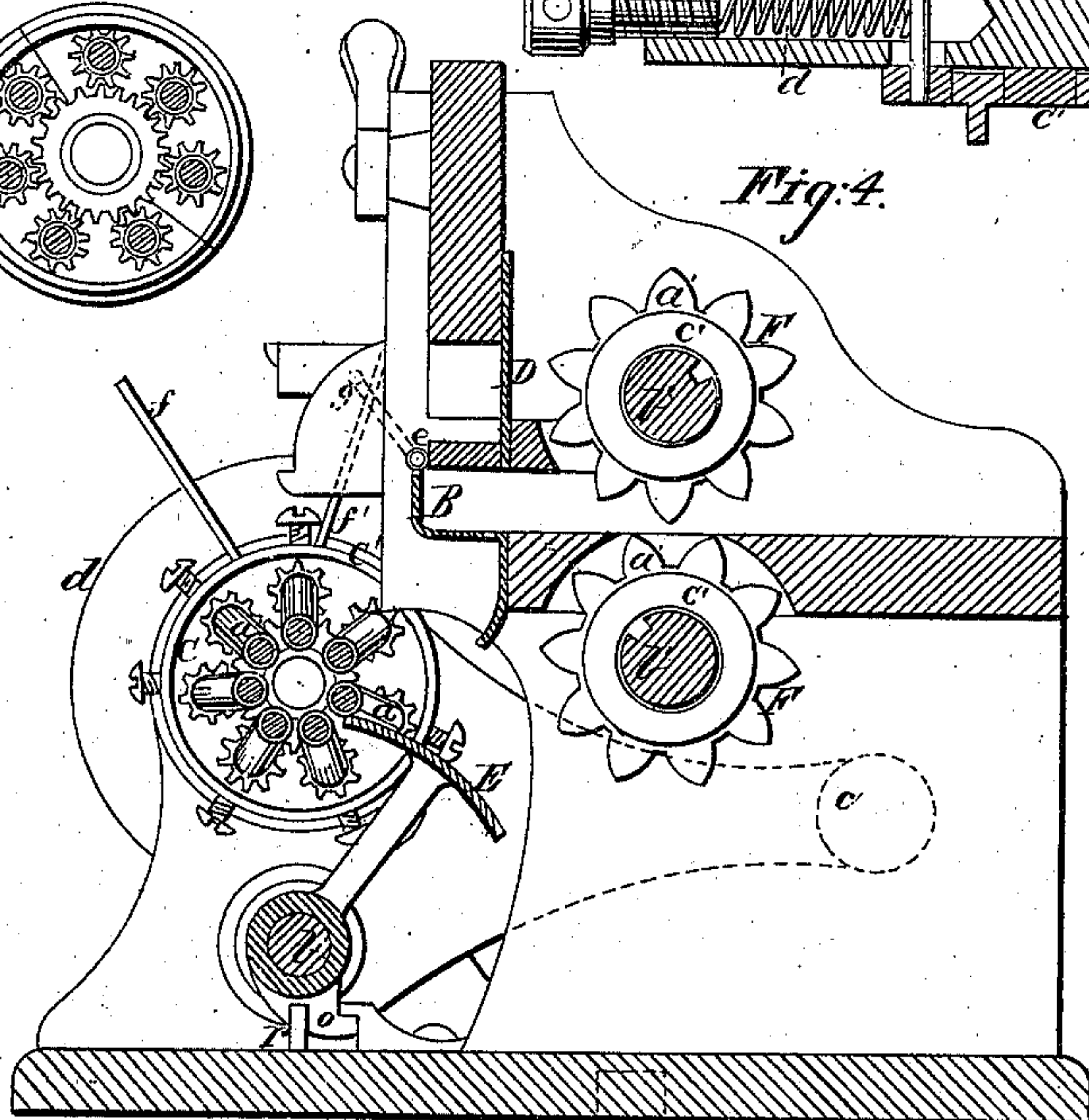


Fig. 6.

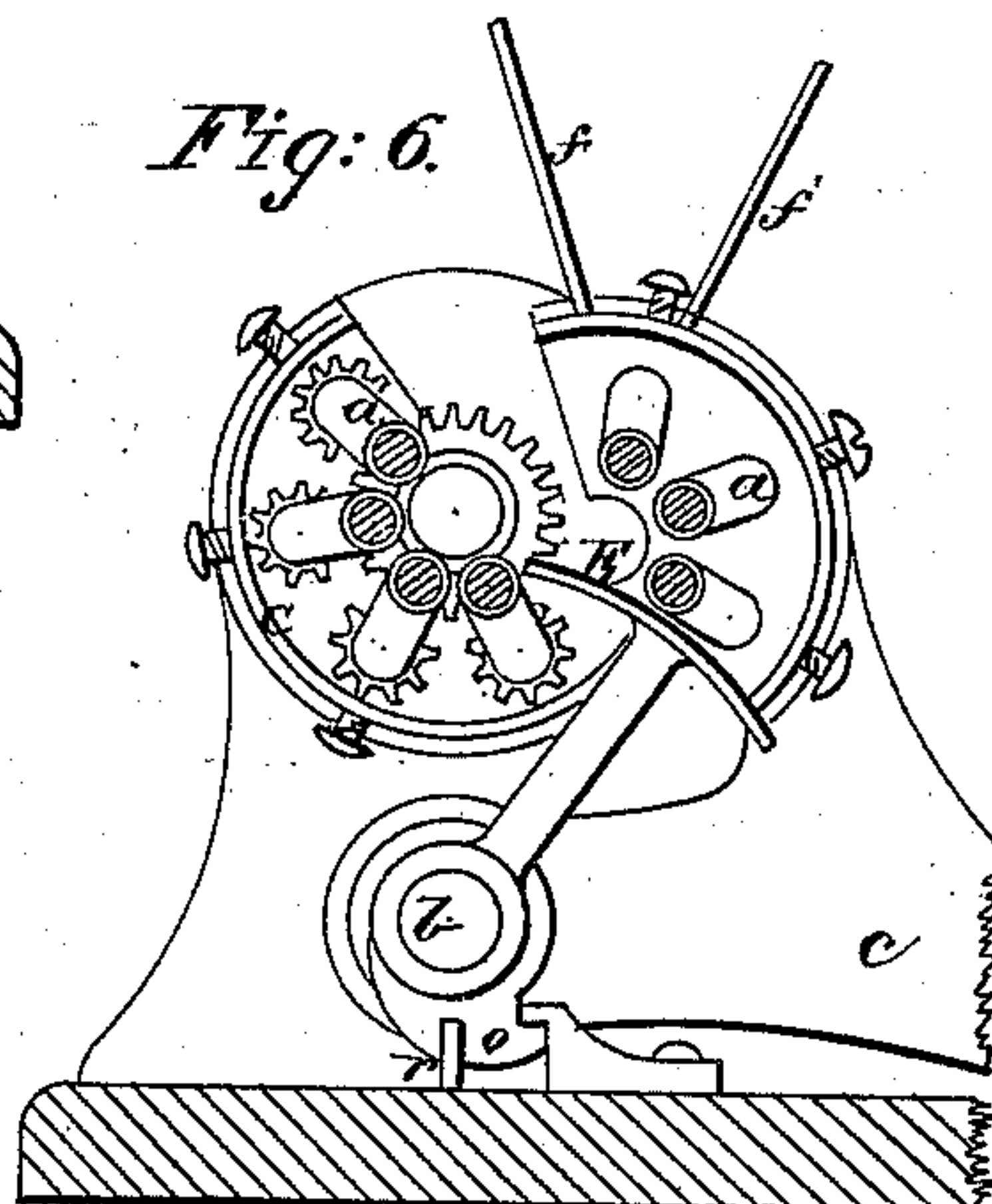
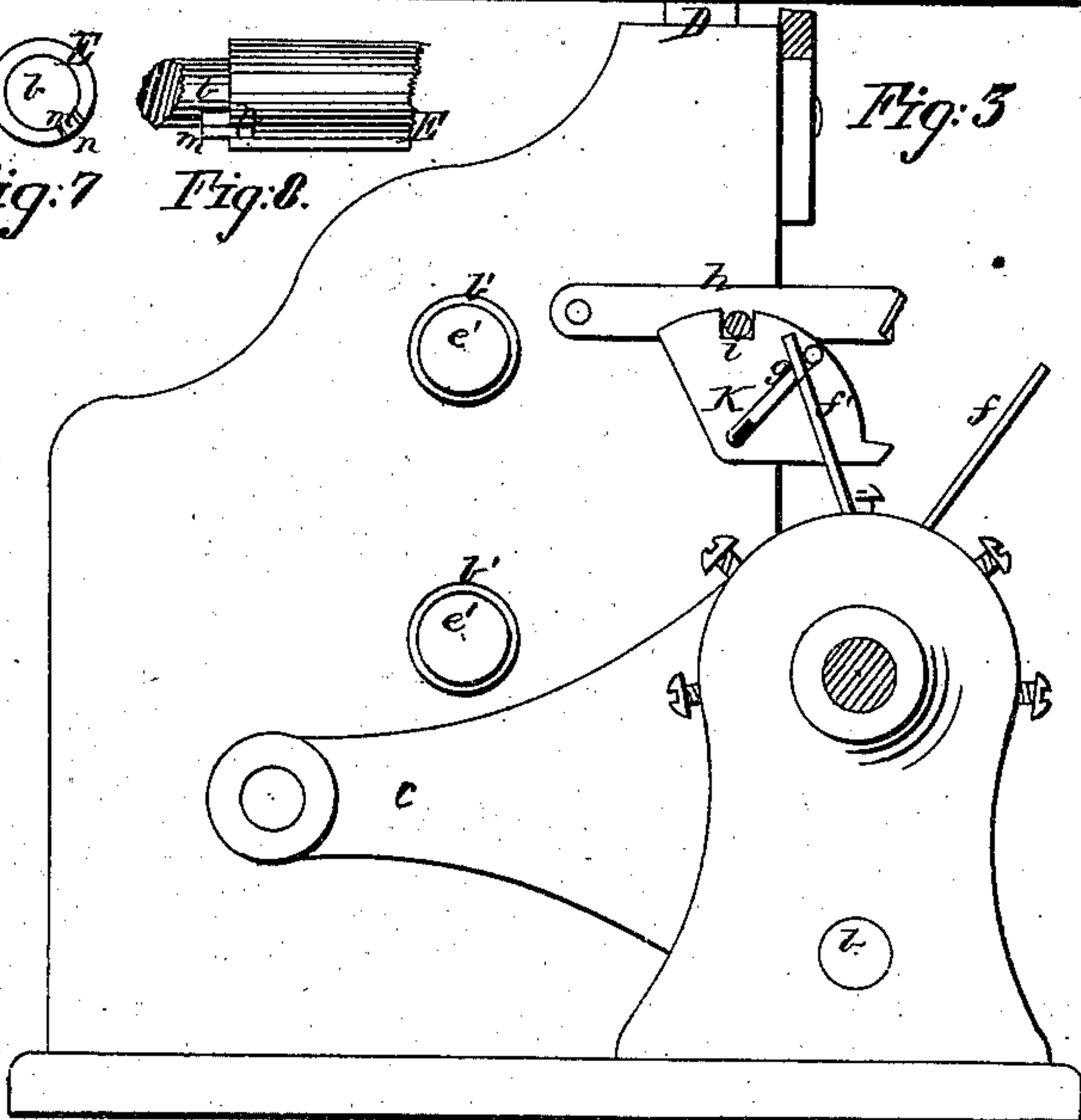


Fig. 7. Fig. 8.



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UNITED STATES PATENT OFFICE.

SOCRATES SCHOLFIELD, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
NATIONAL CIGAR-MACHINE COMPANY, OF NEW YORK CITY.

IMPROVEMENT IN MACHINES FOR MAKING CIGAR-BUNCHES.

Specification forming part of Letters Patent No. 133,725, dated December 10, 1872.

To all whom it may concern:

Be it known that I, SOCRATES SCHOLFIELD, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Making Cigar Bunches or Fillers, of which the following is a specification:

This invention mainly relates to that class of machines in which a nest or cluster of rolls is used, the same being arranged to rotate the tobacco or bunch within them for the purpose of giving it shape and compactness and for binding it, said rolls being carried by an opening and closing head or heads to receive the tobacco within them and to discharge the bunch when made. The first part of this invention consists in a combination, with said rolls, of an apron arranged to receive and hold the tobacco from dropping out between the rolls when the latter are thrown open and during the act of closing them, but which is temporarily displaced or moved back as the rolls are being opened to discharge the bunch. In carrying out this feature of the invention a combination of mechanism is preferably used which effects an automatic action of said apron in timely relation with the opening and closing rolls by causing the head that carries the rolls, or certain of them, in conjunction with a spring or weight applied to the apron, to lock and release the apron in and from its receiving position and to operate it as required. The invention also includes the employment of feeding-rolls or their equivalents, when operated and driven by means of a suitably-arranged frictional device, which feeding-rolls may be made either in one continuous length or in short sections, each having an independent frictional connection with the positive driving-power of the organized machine. The rolls when made in sections are specially adapted to making bunches of extra length, since the different parts of the roll, by acting independently of each other, are rendered capable of packing the tobacco in the receiving-chamber with greater uniformity. Another feature of the invention consists in an automatically-locking charging-chamber, operated by the opening and closing head or bunch-forming portion of the machine, said chamber having combined with it a knife that also operates as a gate to

shut off the supply of tobacco to the chamber when the charge is complete, the charging-chamber opening at the proper time to deliver its load into or between the bunch-forming rolls or devices, but being absolutely locked when receiving its charge.

Figure 1 in the accompanying drawing represents a front elevation of a bunch forming and binding apparatus constructed in accordance with my invention. Fig. 2 is a plan of the same. Fig. 3 is a side elevation thereof; Fig. 4, a section taken in a plane parallel with Fig. 3. Figs. 5 and 6 are sectional views, in part similar to Fig. 4, showing a receiving-apron in different positions relatively with the forming-rolls when opened or opening. Figs. 7 and 8 represent end and longitudinal views, in part, of the socket portion of the receiving-apron and shaft on which the apron works, in illustration of the means employed for locking it to operate in concert with the opening and closing portion of the machine. Fig. 9 is a longitudinal section of one of the frictional feed-rolls when made in separate parts. Fig. 10 is a face view of the gearing by which the bunch-forming rolls are driven.

Similar letters of reference indicate corresponding parts throughout the several figures.

A in the drawing represents the table over which the tobacco in a sheet is fed to the charging-chamber B, whence it is delivered into the bunch-forming portion of the machine when the same is opened to receive a charge. The devices for forming the bunch or filler and for putting on the binder may consist, as in other machines, of plain and straight rolls suitably geared, or of rolls *a a* made of flexible tubular coverings caused to revolve on curved stationary cores, or they may consist of any other suitable devices; but it will suffice here to describe such as a cluster of rolls, supported at their end or ends by a head or heads of divided construction to admit of the opening and closing of certain of the rolls relatively to the others in the cluster. C and C' show such a head, C' being the opening portion of the head pivoted as at *b*, but the same may be arranged, if preferred, to have a sliding or straight line of action. This opening portion C' of the head, with the rolls it carries, is under the control of the operator, as by a treadle-motion applied to

an arm, *c*, but the rolls *a a* are driven in a continuous manner as by belt applied to a pulley, *d*. The front portion of the charging-chamber B is pivoted as at *e*, and is thrown up or outward when a charge is required to drop into or between the rolls *a a* as the latter are opened to discharge the bunch and to receive a fresh supply of tobacco. It is opened toward the completion of the opening of the rolls *a a* by an arm, *f*, on the portion C' of the head, striking a cranked portion, *g*, of the turning-pivot *e*, to which the charging-chamber is attached, and is closed to receive a fresh charge as the rolls *a a* are closed by another arm, *f'*, on the head portion C', striking the crank *g* in a reverse direction. When said charging device B is closed it is automatically locked as by a drop-lever, *h*, falling into a notch, *i*, in a plate, *k*, attached to the pivot *e*, so that no tobacco can be forced or accidentally pass out till the forming-rolls *a a* are ready to receive a fresh charge. This locking-lever *h* is automatically tripped to discharge it from the plate *k* by the arm *f* during the opening of the head portion C', first striking and lifting said lever before it moves the crank *g* to open the charging-chamber. Instead of the arms *f* and *f'*, as above described, a slotted link may be used, connecting the arm *c* to the crank *g*, and the primary motion of such slotted linked connection may also be employed to raise the drop-lever *h* out of the notch *i* before the crank commences to move. The tobacco is admitted to and shut off from entering the charging-chamber B by a combined gate and knife, D, which is kept raised and open during the closed condition of the charging-chamber, and which is to be lowered and closed before the charging-chamber is opened to discharge its load. This combined gate and knife it is designed should be operated automatically in timely relation with the action of the charging-chamber and opening and closing forming-rolls. This may be effected by any suitable mechanism connected with the opening and closing portion C' of the head, of which the automatic clutch device shown in patent No. 121,298, dated November 28, 1871, and incorporated in its sixth claim, is an illustration, it being in this case similarly used to regulate and control the movement of the knife and gate, but said knife and gate are here shown as arranged for operation by hand. E is the apron, upon which the tobacco is delivered from the charging-chamber B when the forming-rolls *a a* are open, said apron being then in the position represented in Fig. 6. This is the normal and general position of the apron E; but when the forming-rolls *a a* are opened, or rather during the early portion of their opening, said apron is temporarily and automatically displaced or thrown back, as shown in Fig. 5, to admit of the made bunch or filler dropping out from between the rolls *a a*, after which the apron immediately resumes its original or receiving position. Such automatic action is effected by suitable mechanism connected with the opening portion C' of the ma-

chine, preferably as follows: Said apron is hung loose so as to have a rocking motion and longitudinal movement on the pivot or shaft *b*, to which the opening and closing portion C' of the head is attached. Arranged around this shaft is a coiled spring, *l*, which is connected at its one end with the socket of the apron E and at its other end with the shaft *b* or head portion C', and which exerts the double function of shooting the apron E forward into a receiving position and of pressing it longitudinally away from the portion C', so as to put it into lock with the shaft *b*, by a pin or projection, *m*, on the latter entering an end notch, *n*, in the socket of the apron. This gear of the shaft *b* with the apron E causes the latter, during the early part of the opening stroke of the portion C', to be thrown back so as to admit of the made bunch falling out of or from between the forming-rolls, but during the concluding portion of the opening of the rolls a cam, *o*, on the socket of the apron, is made to bear laterally against a fixed pin, *r*, which slides the apron on the shaft *b*, so as to effect its liberation therefrom by the notch *n* being shifted from clutch of the pin *m*, when the spring *l* will shoot the apron forward into its receiving position, and not until the head portion C' is completing its closing stroke again does the notch *n*, by the action of the spring *l*, lock again with the pin *m* to repeat the operation, when the forming-rolls are opened once more.

The tobacco may be fed to the machine over the table A by means of sectionally-constructed rolls F, which are composed of a series of rings or disks, *a'*, arranged side by side at suitable distances apart on their driving-shaft *b'*, upon which they are hung loose so as to be capable of independent rotation and of slight lateral or longitudinal movement. Said disks, which may either be plain or have spurs on their peripheries, are separated, the one from the other, by intervening collars *c'*, fitted to the shaft *b'* so as to turn with the latter, but capable of independent adjustment along it under the pressure or action of a spring, *d'*, arranged within the shaft *b'* and regulated by a screw, *e'*, so as to press with more or less force on the end collar of the series. Feed-rolls thus constructed, while receiving a positive motion, have their operating surfaces that come in contact with the tobacco driven by friction through the action of the collars *c'* on the feeding-disks *a'*, and each disk in the series is left free to operate in an independent manner, so that some may rotate while others remain still, according to the freedom of the delivery of the tobacco at different points in the width of the table, or any irregularity in the feed of it, whereby the forming up of the filler in front of the feed-rolls is made uniform throughout its length.

In making up short bunches, or bunches made in lengths sufficient to form a single cigar, the sectionally-formed roll above described may not be deemed necessary, and a single

roll, acting uniformly throughout its entire length, may be used, the whole being driven by friction in a manner similar to that shown for the separate disks before mentioned, or by means of an ordinary friction strap or band arranged upon one end of the periphery of the spur-roll or upon its driving-shaft; therefore I do not limit my claim to the end or side application of friction shown in the drawing, but include a similar application of adjustable frictional devices to the periphery of the roll or its attachments.

The binder is run upon the bunch in the usual manner while the latter is being rotated by the rolls *a a*.

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

1. The combination of the automatically operating apron *E* with the opening and closing rolls *a a*, substantially as specified.

2. The combination of the movable portion *C'* of the head with the shaft *b*, the spring *l*, the apron *E*, the pin *m*, the notch *n*, the cam *o*, and the pin *r*, essentially as described.

3. The feed-roll *F*, composed of loose annular sections *a'*, intervening sliding collars *c'*,

the shaft *b'*, and adjustable spring, arranged to produce a frictional pressure of the collars on the annular sections, substantially as specified.

4. The adjusting-screw *e'*, or its equivalent, and sliding collar *c'* operating against the end of the roll, or an equivalent clamping device operating upon the periphery of the roll or its attachments when interposed between the feeding-roll and the positively-driven parts of a cigar-machine, whereby the continuous positive movement of the machine will be caused to slip out at the roll and become changed to an intermittent yielding movement for exerting a uniform pressure upon the tobacco in the sizing-chamber, substantially as described.

5. The automatically-locking charging-chamber *B*, in combination with the opening and closing portion of the machine by which it is operated, and the gate or combined gate and knife *D*, essentially as herein set forth.

SOCRATES SCHOLFIELD.

Witnesses:

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R. A. BRIGHT, JR.