

(No Model.)

5 Sheets—Sheet 1.

F. A. GRAB.
CIGAR BUNCHING MACHINE.

No. 409,575.

Patented Aug. 20, 1889.

Fig. 1.

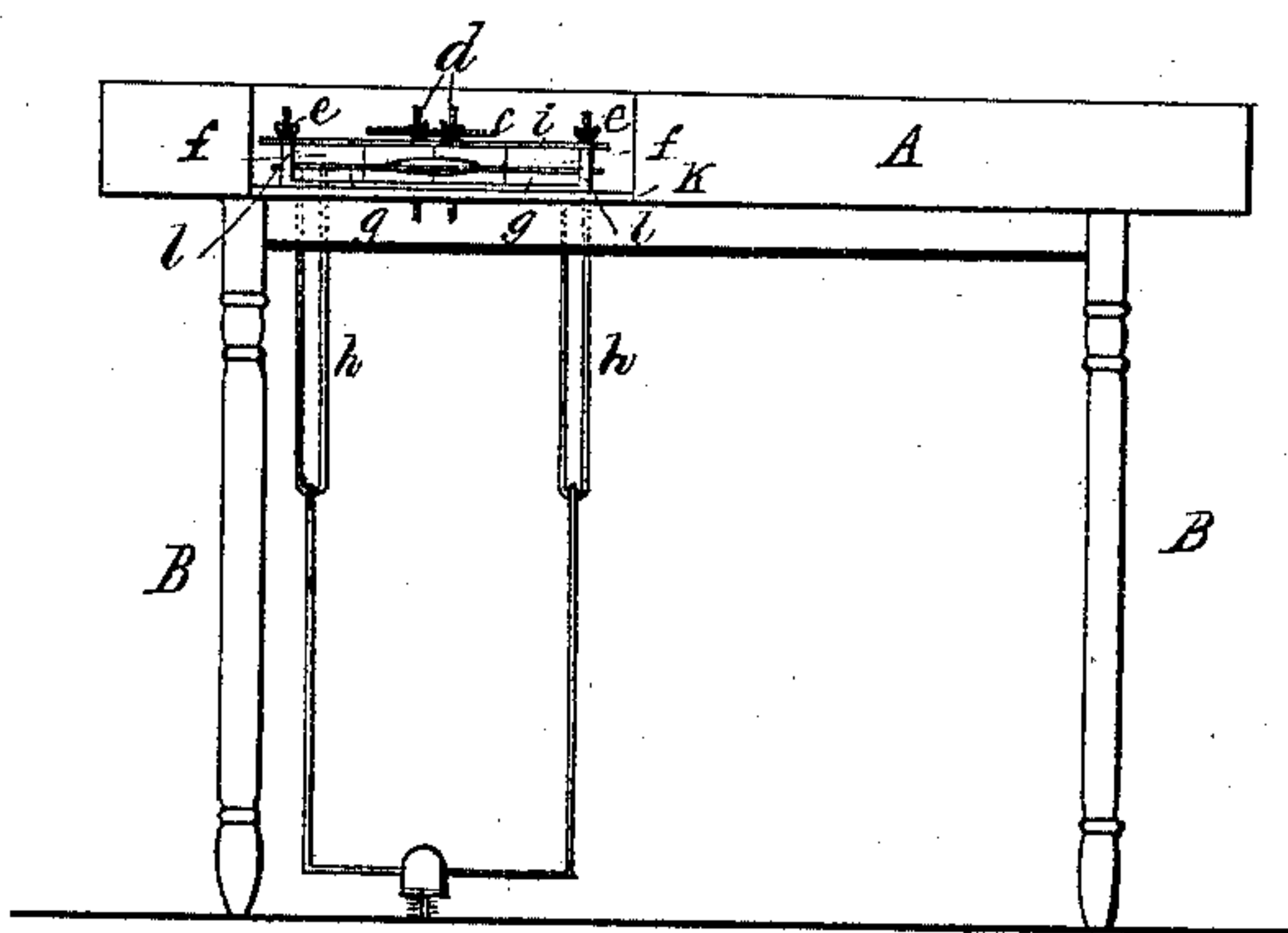
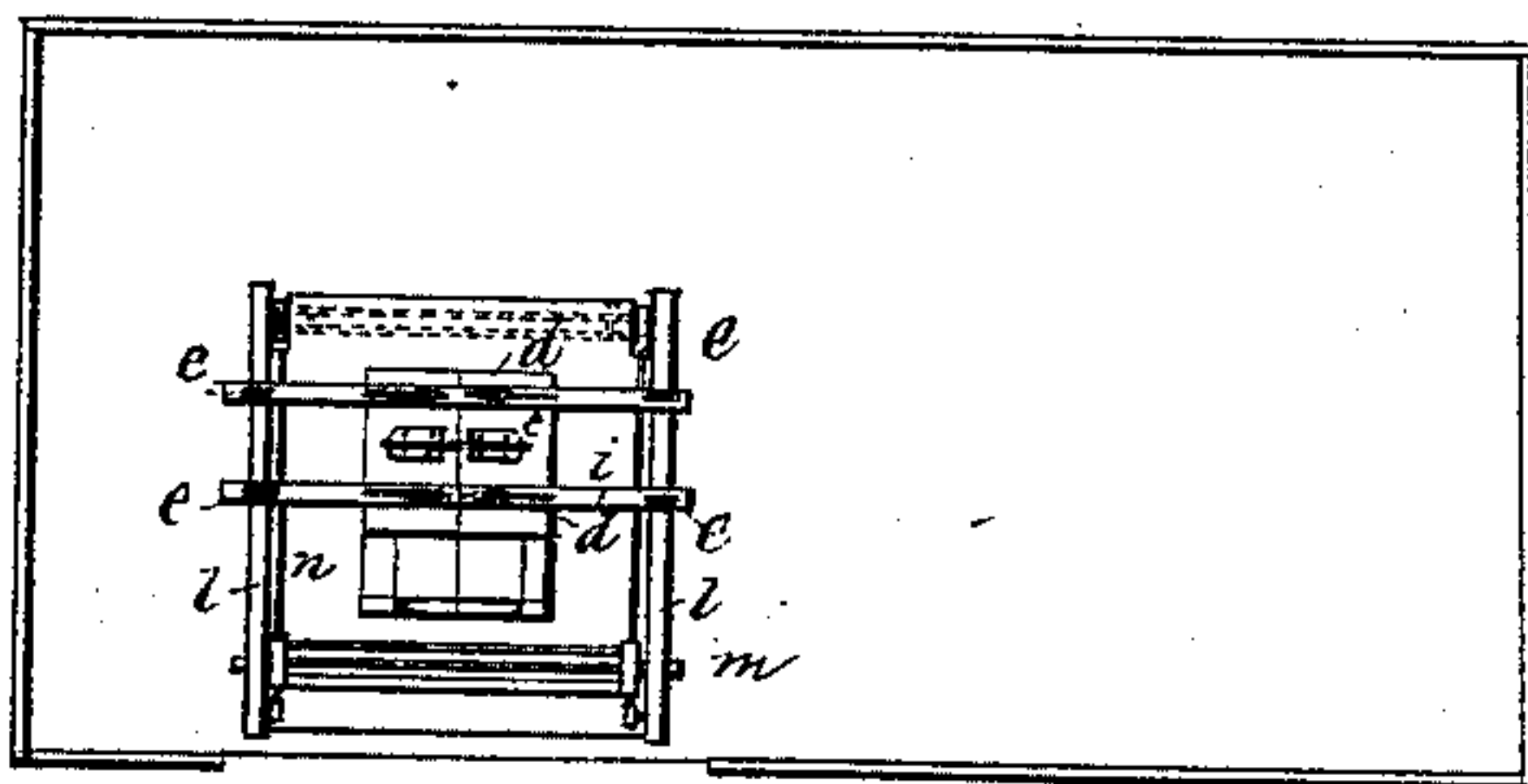


Fig. 2.



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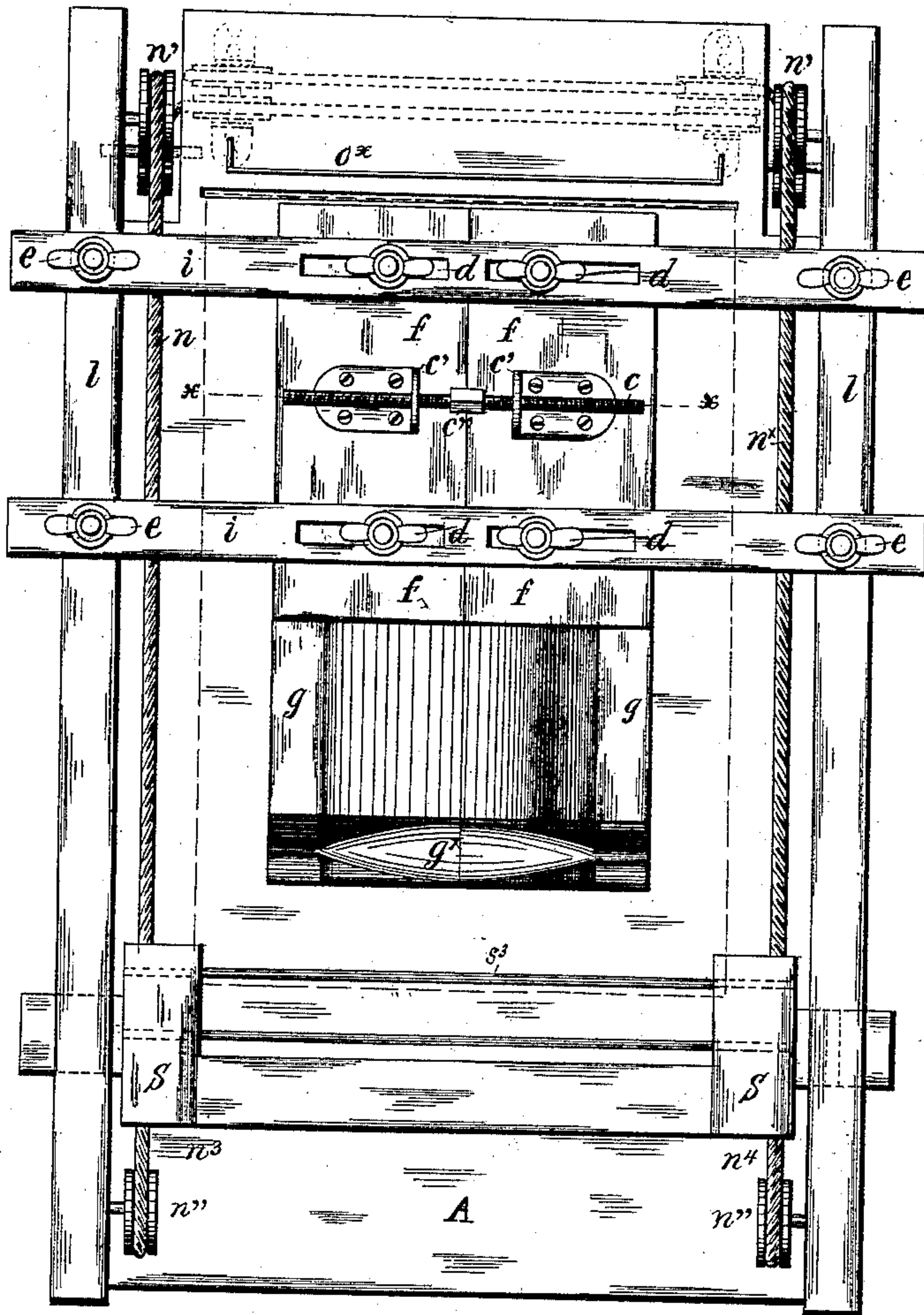
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Fig. 3.



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Fig. 4-

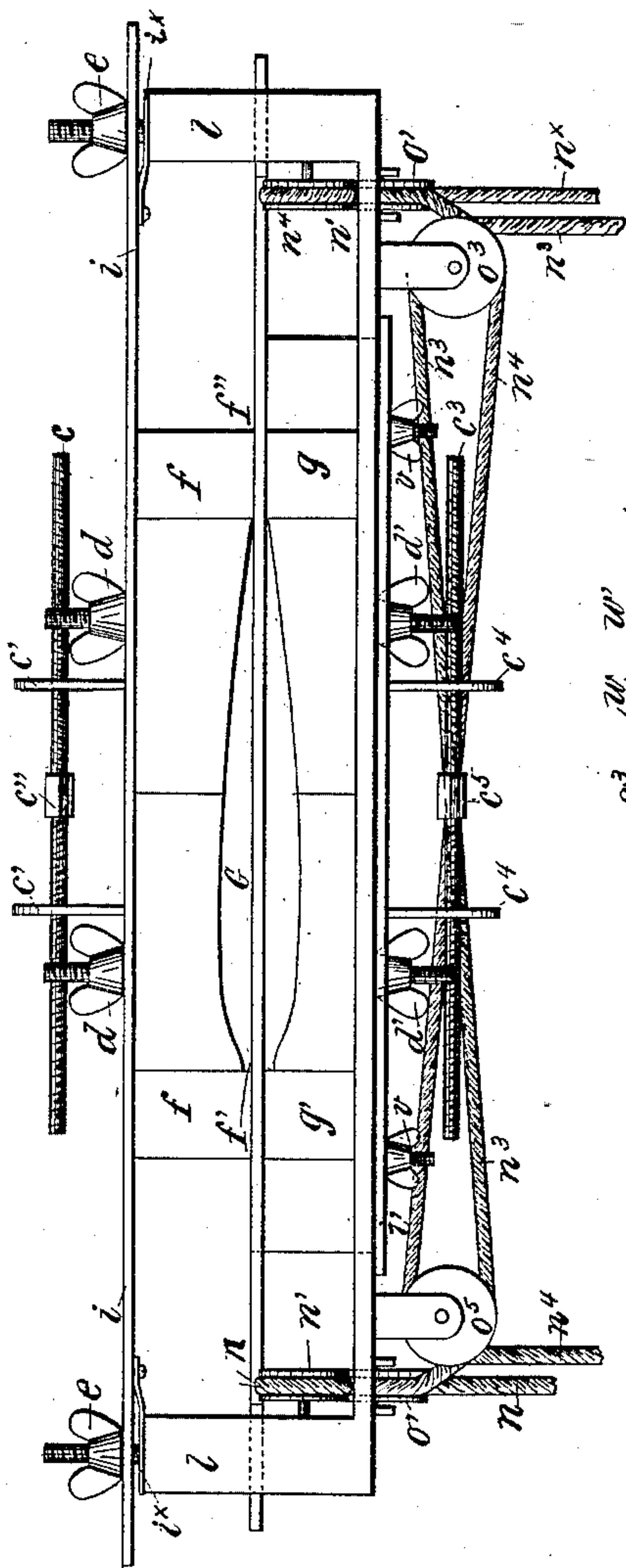


Fig. 7-

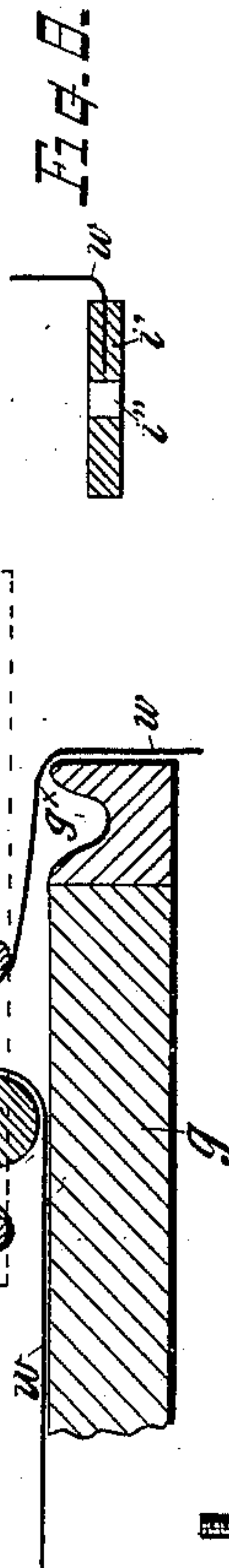
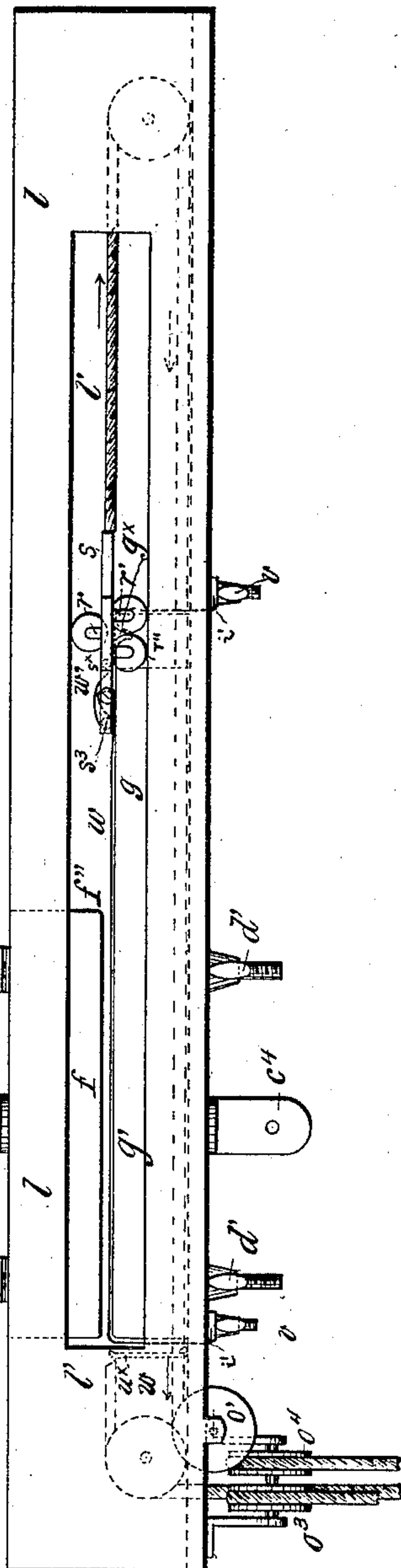


Fig. 5-



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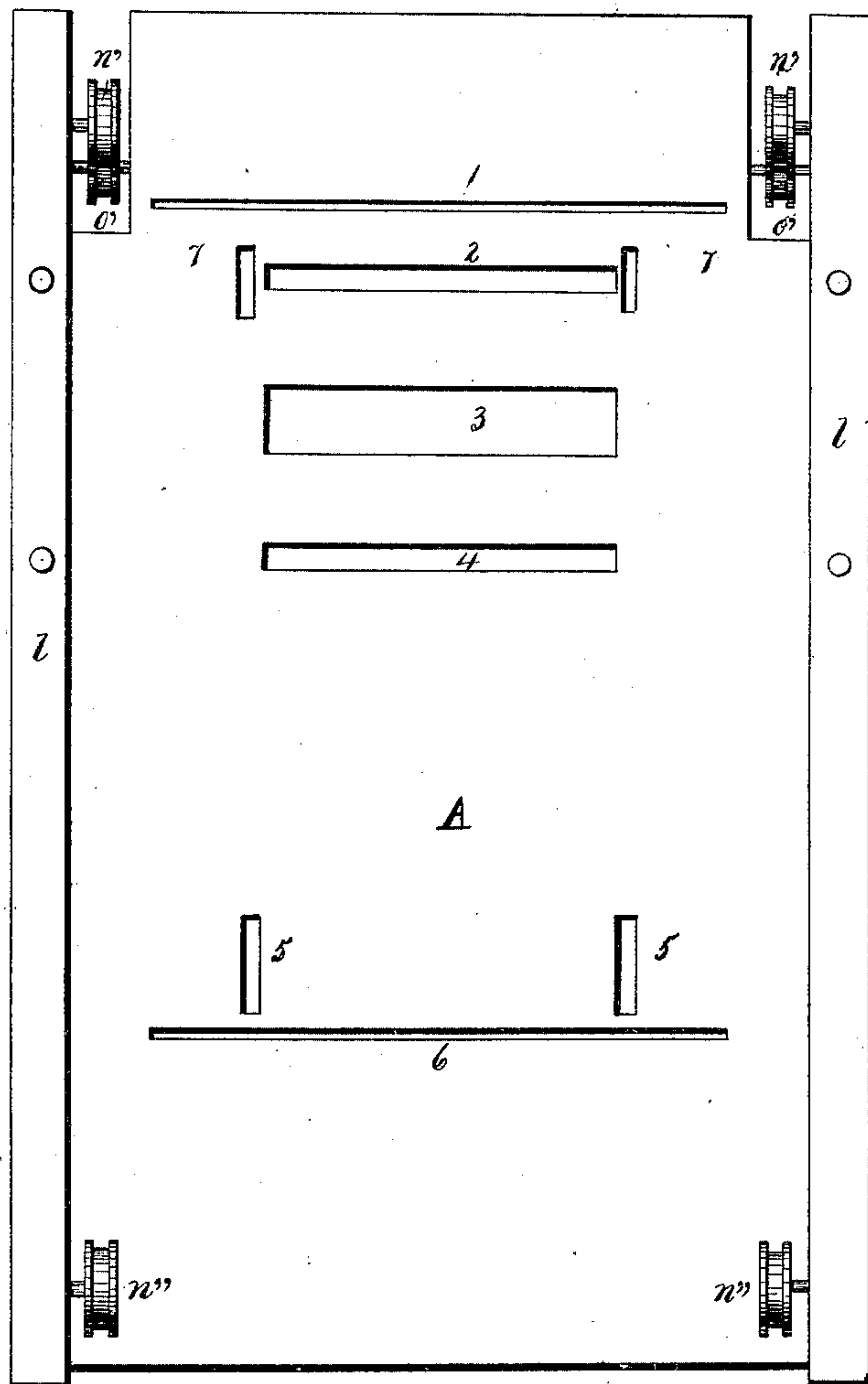


Fig. 5.

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Fig. 9.

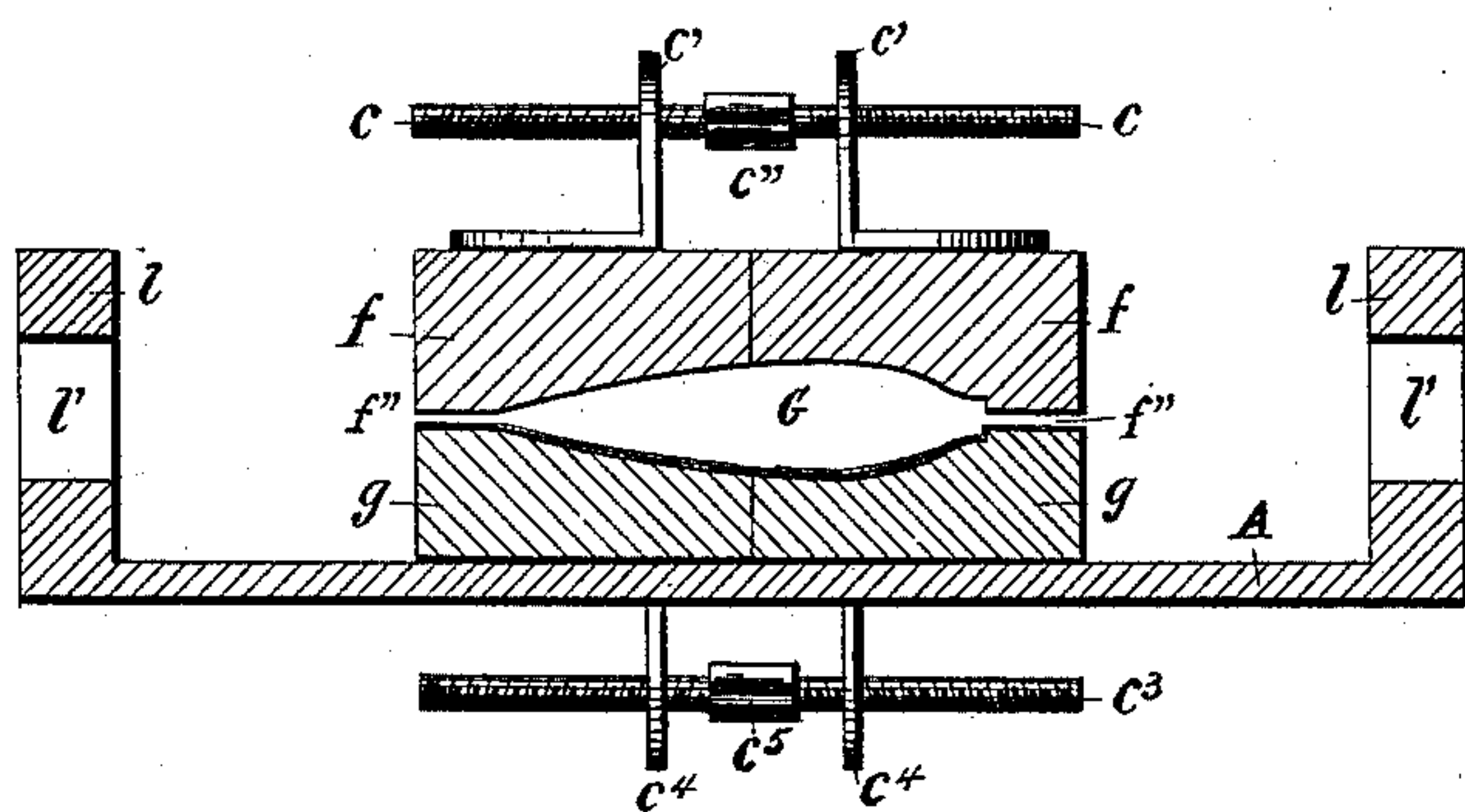
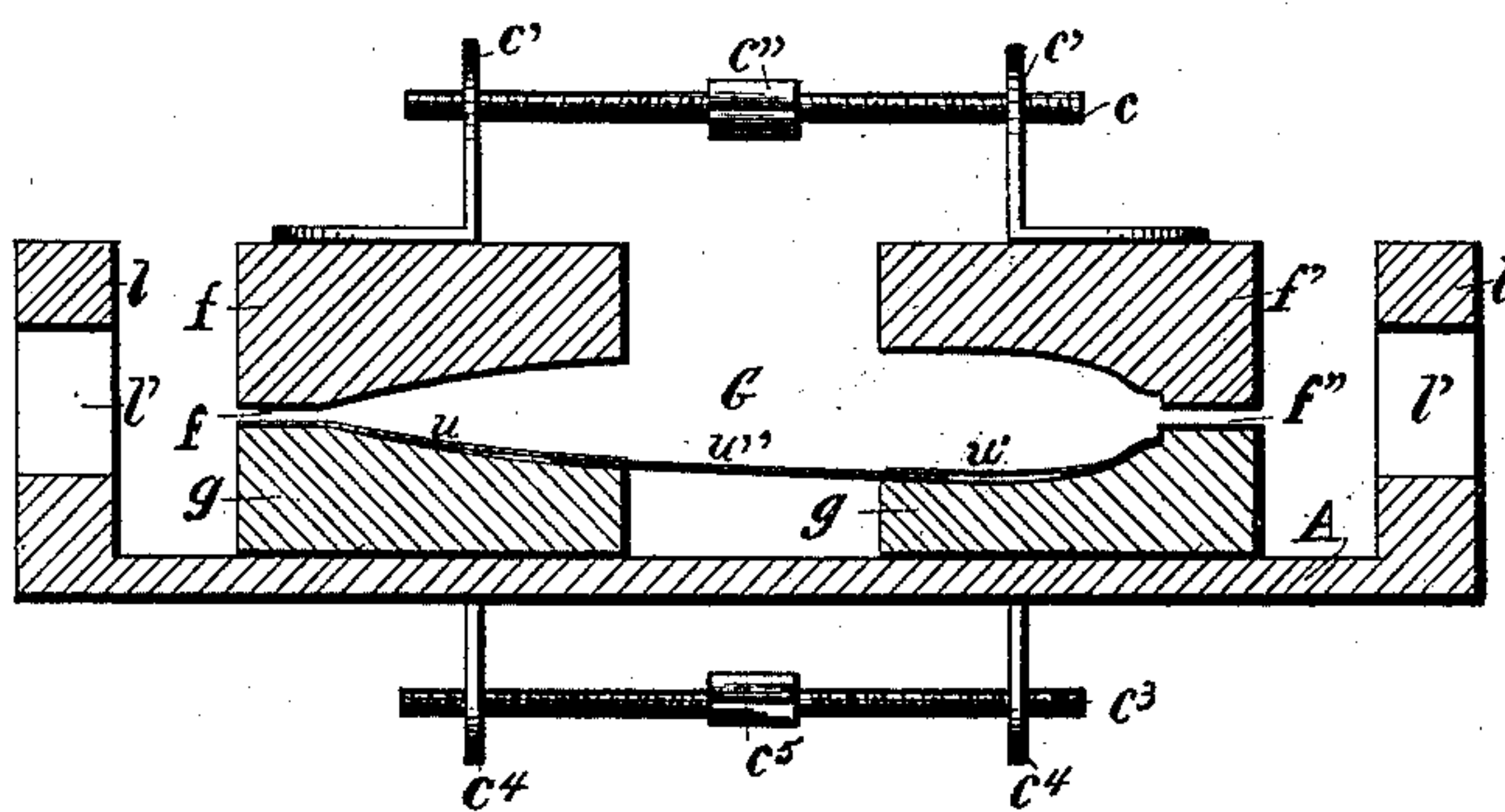


Fig. 10



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UNITED STATES PATENT OFFICE.

FREDERICK AUG. GRAB, OF NEW YORK, N. Y.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,575, dated August 20, 1889.

Application filed August 18, 1888. Serial No. 283,130. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK AUG. GRAB, a citizen of the United States, residing at the city of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Cigar-Bunching Machines, of which the following is a specification.

The object of the invention is to produce a cheap and available machine by which cigar-fillers may be formed and wound with a binder profitably and rapidly, the whole operation being performed by one operator.

The nature of the invention consists in the details of construction and combinations, substantially as illustrated in the accompanying drawings, hereinafter described, and subsequently pointed out in the claims.

Figure 1 is a side view of my invention upon the side at which the operator stands and upon a small scale. Fig. 2 is a plan view of the same, looking down upon the top thereof. Fig. 3 is a top view of the principal working parts of said machine upon a larger scale. Fig. 4 is an end view of the same, also upon a larger scale. Fig. 5 is a side view of the same, also upon a larger scale. Fig. 6 is a top view of the supporting-table without the machine upon it. Fig. 7 is a detail view illustrating a part of the rolling-table and the bight of the forming-apron. Fig. 8 is also a detail view illustrating how the ends of the forming-apron are fastened. Fig. 9 illustrates the mold of my machine as closed. Fig. 10 illustrates the same with the parts separate.

A designates the table on which my invention is mounted and B the legs thereof. Upon this table are mounted the rolling-table, designated by *g*, and the molds, designated by *f* and *g'*. The form within the molds is designated by *G*. These molds consist of an upper section *f* and a lower section *g'*. The lower section *g'* is integral with the rolling-table *g*, and this rolling-table and both of the mold-sections are separable, as hereinafter described. The rails *i*, which are above the mold, are supported at either end by the side pieces *l l* and held in place by the thumb-nuts and screws *e e*. To render this connection elastic, the spring *i^x* is interposed between the rail *i* and the side piece *l* at each end. In order that the two halves of the upper mold-section

may be adjustable, slots are cut through the rails *i i*, through which and into the halves of the upper mold-section pass screws. These screws are secured by the thumb-nuts *d*. Upon each half of this upper mold-section is also fastened a bracket *c'*. In these works the screw *c*, one-half of which is right-handed and the other half left-handed. This screw is turned, as may be required, by the use of a wrench upon the hexagonal collar *c''*. The lower mold-section *g'*, together with the rolling-table *g*, with which it is integral, is secured in the same way by the rails *i' i'*, thumb-nuts and screws *d'*, thumb-nuts and screws *v*, screw *c³*, and brackets *c⁴*, except that the rails *i' i'* do not have elastic bearings. This lower mold-section and the rolling-table are also separable.

A movable carriage, designated by *S*, is mounted on the wheels *r r' r''*. These wheels run in guides *l'*, formed in the side pieces *l*. This carriage carries two rollers. One *s³* is the bunching-roller, and the other *s^x* is a friction-roller to direct the apron *w*. This carriage is moved by the cords *n n³ n⁴ n^x*. The cords *n* and *n^x* are attached to the front end of the carriage, and, passing over the pulley *n' n'*, extend to a treadle below the table. The cord *n⁴* is attached to one end of the back side of the carriage, and, passing over one pulley *n''*, extends backward to one pulley *o'*, thence under the pulleys *o³*, thence over the pulleys *o⁵*, and thence downward by the cord *n* to the treadle. The cord *n³* is attached to the other end of the back side of said carriage, and, passing over the other pulley *n''*, extends backward to the other pulley *o'*, then under the pulleys *o⁵*, thence over the pulleys *o³*, and downward by the cord *n^x* to the treadle. This treadle and said cords are so arranged that by one motion of the treadle the carriage *S* will be carried forward between the upper and lower mold-sections and backward again. The upper and lower mold-sections are placed apart far enough to give room for the said carriage to pass between them. As the said treadle forms no part of my present invention, I will not here describe it further.

Each half of the lower mold-section *g'* and the corresponding half of the rolling-table *g* are integral, so that when the two halves of this mold-section are separated the halves of

the rolling-table will separate with them. In the outer end of this rolling-table is formed a cavity g^x , of the proper size and form to hold the filler of a cigar. The parting of the rolling-table is transversely through the middle of this cavity.

A forming-apron w , which may be of gum-cloth, leather, or any other suitably strong and flexible material, extends over the cavity g^x , the bunching-roller s^3 , and the whole length of the rolling-table g , and the lower mold-section g' , between the upper and lower mold-sections. The ends of this apron pass through the slots 1 and 6 of the table, and are fastened in slits in the rails v' , as illustrated in Fig. 8. These rails are provided with slots v'' , through which the screws v pass, so that the rails may be slipped a little to vary the length of the apron w , as may be required.

If the molds are to be used with the edges of each section together, then each set of molds would only make cigars of one length, and the molds could be made of wood only without any lining; but if on account of making cigars of different lengths it be required to separate the halves of each mold-section, as illustrated in Fig. 10, then each half of the lower mold-section and the rolling-table is provided with a lining, designated, respectively, by u and u' . These linings may be formed of sheet metal, and under these is placed another thin lining, designated by u'' , which may also be of sheet metal, and so arranged that when the two parts of this section of the mold and the rolling-table are parted this under lining will fill up the space between the two parts, presenting a uniform surface on which the cigar-bunch is rolled and formed.

If it be required to make cigars of different forms, molds of the contour of such differing forms may be made, so as to be interchangeable in said machine.

To use my invention, the carriage S is drawn backward so as to be entirely from over the lower mold-section and the rolling-table. Then the operator, standing or sitting in front of and facing the machine, lays the end of a binder on the apron w in the cavity g^x . Upon this end of the binder he lays a filler of proper size. Then he presses the treadle with his foot. At once the carriage S begins to move forward, forming a fold or bight in the apron around the front side of the bunching-roller s^3 . As soon as this roller has passed over the filler in the cavity g^x the apron w will lift the filler and its accompanying binder out of the cavity, and as the carriage moves forward the fold of the apron will still remain upon the bunching-roller, and a bight in which the cigar-bunch is retained will be formed in the apron w a little behind the bunching-roller on the rolling-table, as illustrated in Fig. 8, in which g designates the rolling-table, g^x the cavity therein, S the carriage, s^3 the bunching-roller,

s^x the guiding-roller, w' the cigar-bunch, and w the apron folded upon said bunching-roller and forming its bight around the cigar-bunch. As the carriage moves forward it carries the cigar-bunch with it, rolling it in the bight. As the carriage passes between the upper and lower sections of the mold the cigar-bunch is still rolled in the bight, and in passing through takes the form of the mold, the head being in the direction of f' and the tuck toward f'' until, having passed through, it comes out at the other end of the mold and falls behind the spring u^x , from whence it may be lifted by the hand of the operator, to be trimmed and wrapped as may be required.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cigar-bunching machine, the combination, with a supporting-table and side pieces fastened on either side of said table, of rails extending from one of said side pieces to the other, a yielding connection attaching said rails to said side pieces, a separable upper cigar-mold section adjustably attached to said rails, substantially as specified, a separable lower cigar-mold section adjustably fastened, substantially as described, to said supporting-table directly below said upper mold-section, a separable rolling-table also adjustably attached to said supporting-table, each part of said rolling-table being integral with a corresponding part of said lower mold-section, adjustable therewith, and said rolling-table arranged for a cigar-bunch to be rolled thereon before passing through said mold, all substantially as and for the purpose set forth.

2. In a cigar-bunching machine, the combination, with a supporting-table, side pieces fastened upon either side of said table, rails extending from one of said side pieces to the other, a yielding connection attaching said rails to said side pieces, a separable upper cigar-mold section adjustably attached to said rails, substantially as specified, a separable lower mold-section adjustably fastened, substantially as described, to said supporting-table directly under but apart from said upper mold-section, and a separable rolling-table also adjustably attached to said supporting-table, each part of said rolling-table being integral with a corresponding part of said lower mold-section and adjustable therewith, and said rolling-table arranged for a cigar-bunch to be rolled thereon before passing through said mold, of a reciprocating carriage mounted on wheels running in guides formed in said side pieces and adapted to pass through the space between said upper and lower mold-sections, a bunching-roller carried by said carriage and cords attached to said carriage, and pulleys on which said cords run to actuate said carriage, all substantially as and for the purpose set forth.

3. In a cigar-bunching machine, the combination, with a supporting-table, side pieces fastened to either side of said table, rails extending from one of said side pieces to the

other, a yielding connection attaching said rails to said side pieces, a separable upper cigar-mold section adjustably attached to said rails, substantially as specified, a separable
 5 lower mold-section adjustably fastened, substantially as described, to said supporting-table directly under but apart from said upper mold-section, and a separable rolling-table having a cavity, substantially as described,
 10 formed in the outer end thereof and adjustably attached to said supporting-table, each part of said rolling-table being integral with a corresponding part of said lower mold-section and adjustable therewith, and said roll-
 15 ing-table arranged for a cigar-bunch to be rolled thereon before passing through said mold, of a reciprocating carriage mounted on wheels running in guides formed in said side pieces and adapted to pass through the space
 20 between said upper and lower mold-sections, a bunching-roller carried by said carriage, cords attached to said carriage to impart motion thereto, substantially as specified, a flexible forming-apron extending over said cavity
 25 in said rolling-table, over said bunching-roller, over said rolling-table, over said lower mold-section, between said upper and lower mold-sections, through slots in said supporting-table, and adjustably fastened by its two ends
 30 below said supporting-table, substantially as specified, and said carriage, bunching-roller,

and apron being so constructed and arranged that facility is afforded whereby a cigar-bunch may be first rolled upon said rolling-table in the bight of said apron, and then in the bight
 35 of said apron rolled through and between said molds to give it proper form, all substantially as and for the purpose set forth.

4. In a cigar-bunching machine, the combination, with a separable mold-section, sub-
 40 stantially as herein described, and a separable rolling-table, the parts whereof are integral with corresponding parts of said mold-section, substantially as specified, of a lining
 45 extending through the inside of said mold-section and said rolling-table, consisting of three pieces, and constructed and arranged so that when the parts of said mold-section and said rolling-table are separated to form cigars
 50 of different lengths a part of said lining is retained within each half of said mold-section and of said rolling-table integral therewith, and the third part of said lining fills the gap between the parts of said mold-section
 55 and of said rolling-table, all substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand in presence of two witnesses.

FRED. AUG. GRAB.

Witnesses:

FREDK. W. RUBREN,
 C. E. McDONALD.