No. 682,542. Patented Sept. 10, 1901.

C. GLOEDEN.

MACHINE FOR THE MANUFACTURE OF CIGARETTES.

(Application filed Apr. 9, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

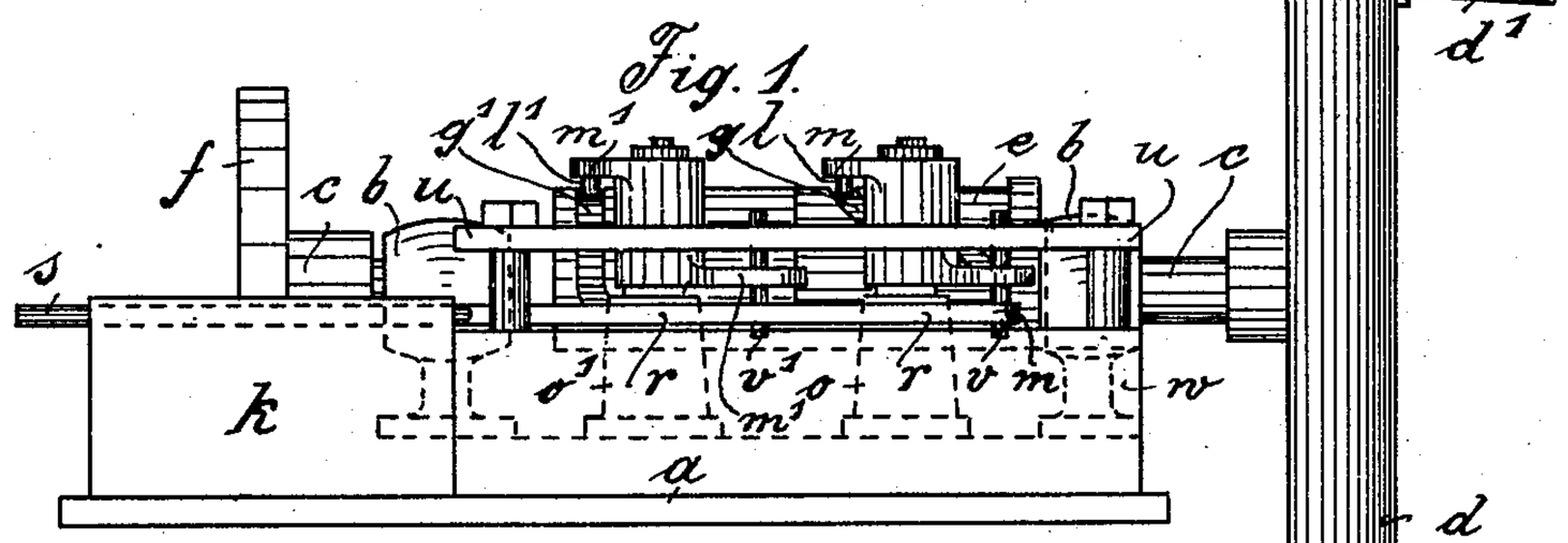

Fig. 4.

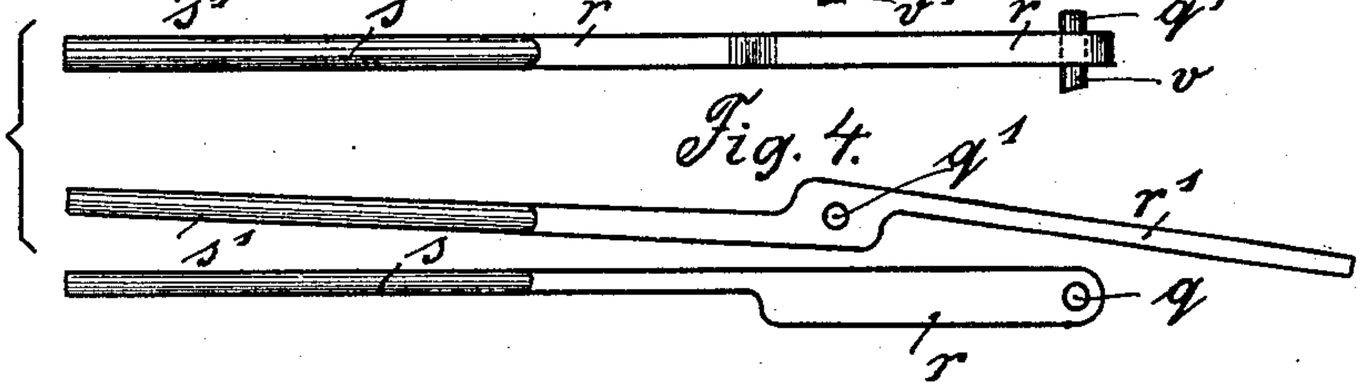

Fig. 2.

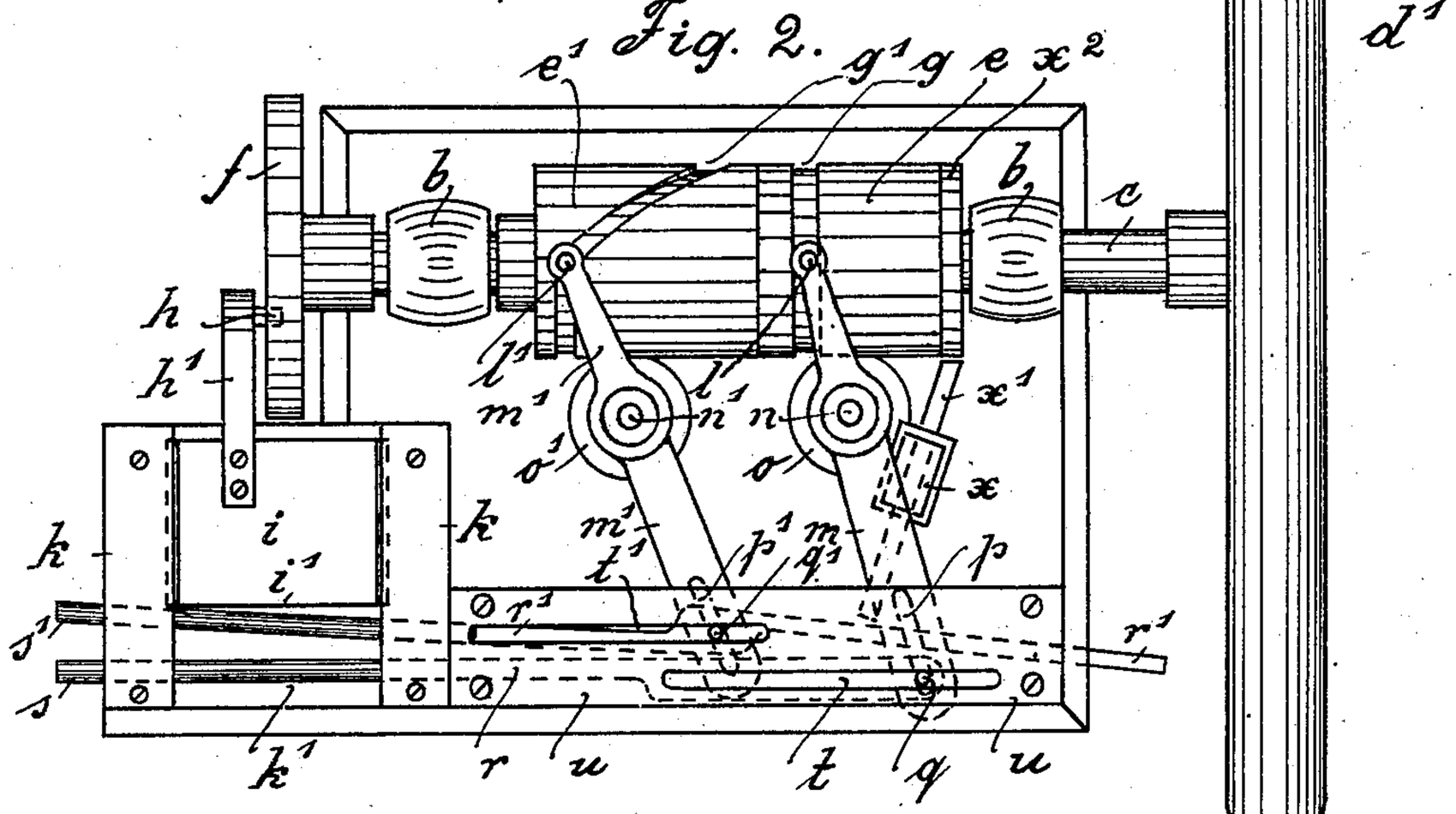

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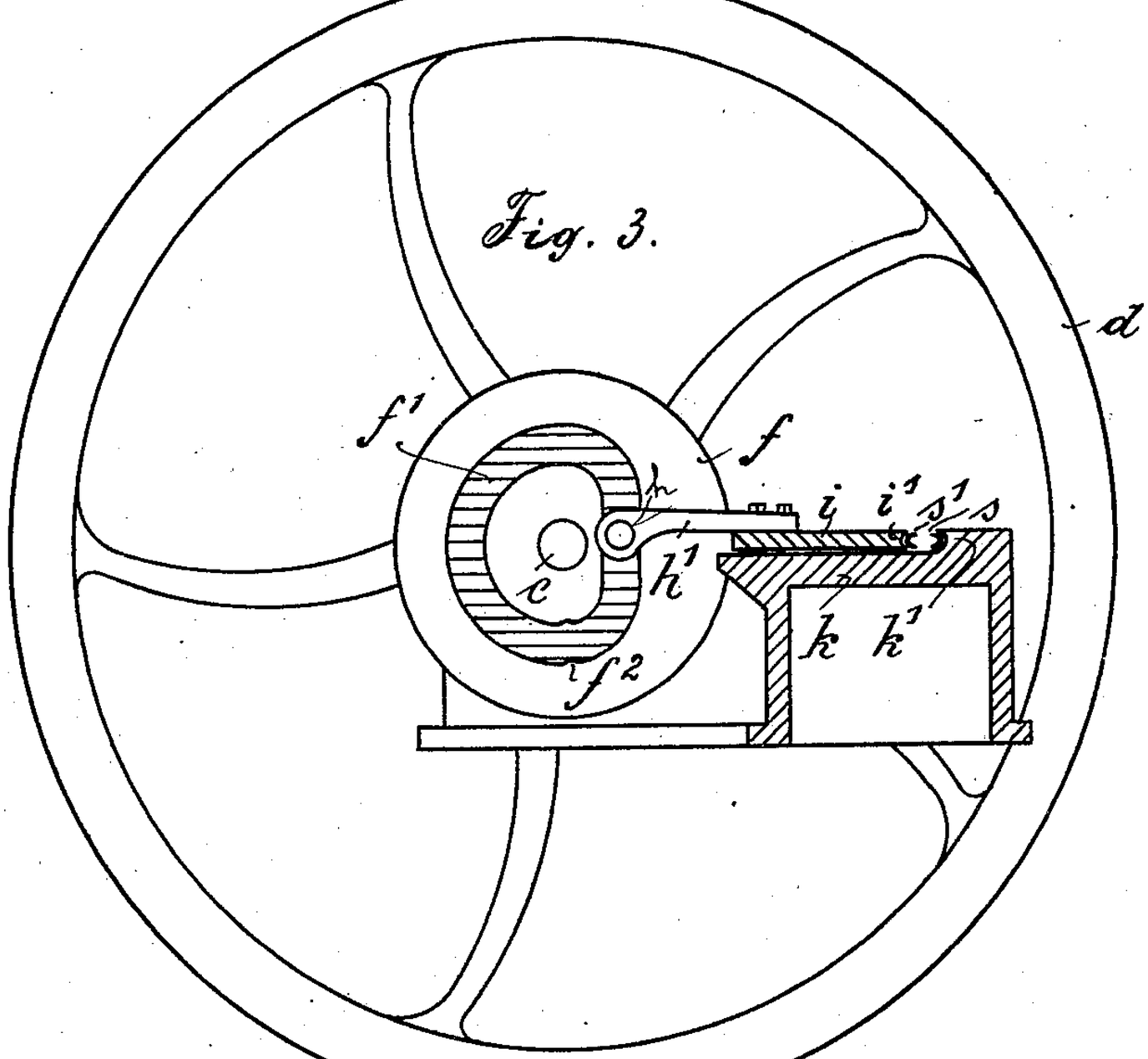
Fig. 3.



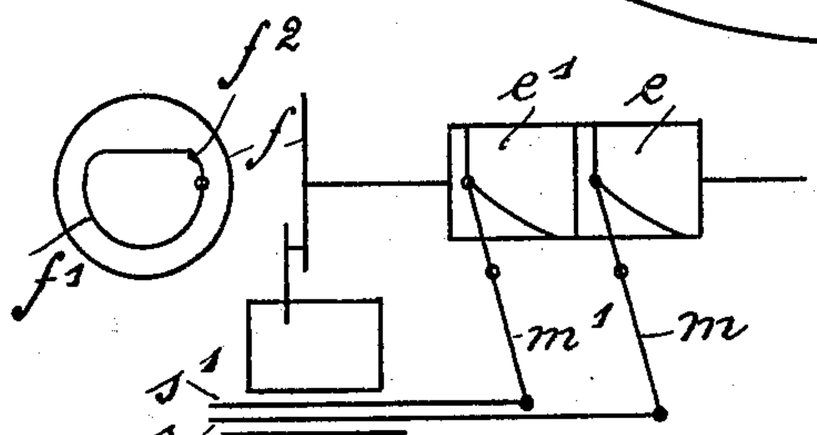


Fig. 5.

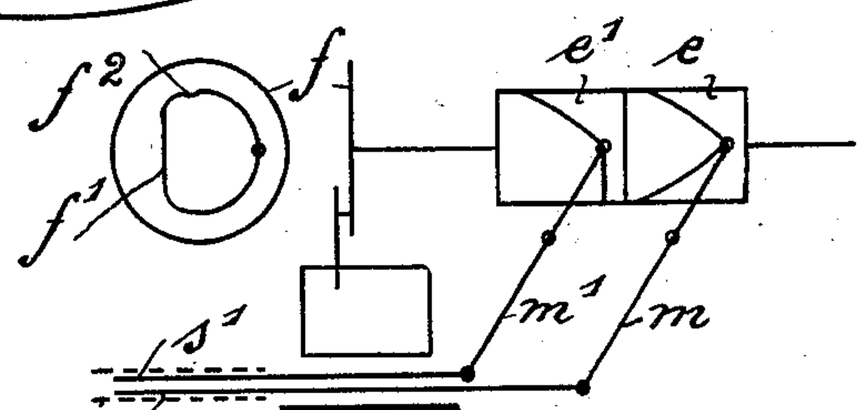


Fig. 6.

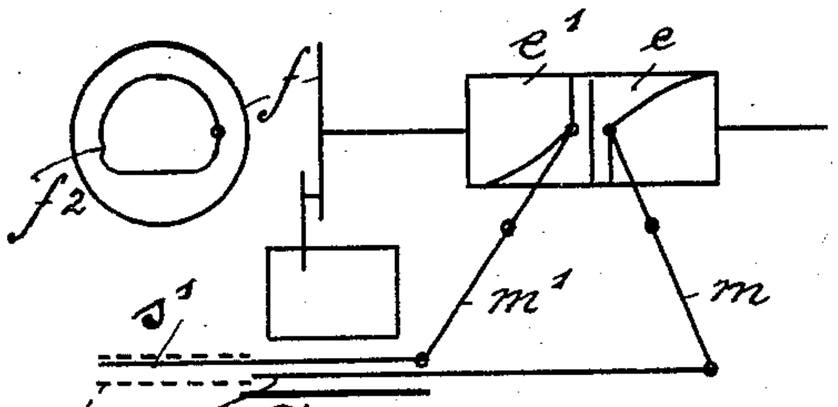


Fig. 7.

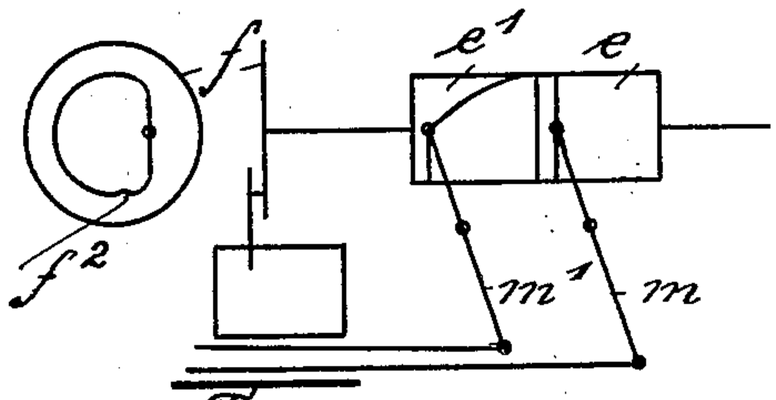


Fig. 8.

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UNITED STATES PATENT OFFICE.

CONRAD GLOEDEN, OF FRIEDRICHSHAGEN, GERMANY.

MACHINE FOR THE MANUFACTURE OF CIGARETTES.

SPECIFICATION forming part of Letters Patent No. 682,542, dated September 10, 1901.

Application filed April 9, 1898. Serial No. 677,089. (No model.)

To all whom it may concern:

Be it known that I, CONRAD GLOEDEN, manufacturer, a subject of the Emperor of Germany, and a resident of Friedrichshagen, near Berlin, in the Empire of Germany, have invented a certain new and useful Improved Machine for the Manufacture of Cigarettes, of which the following is a clear, full, and exact description.

The present invention relates to machines for making cigarettes, and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

In order that the invention may be more clearly understood, reference will be had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a front elevation. Fig. 2 is a plan, and Fig. 3 a cross-sectional view, of the machine. Fig. 4 is a detail showing the semicircular tubes separately in side and plan views, respectively. Figs. 5, 6, 7, and 8 represent the various phases of the operation.

On the base-plate *a* are mounted the bearings *b b* for the driving-shaft *c*. At one end of the shaft is provided the fly-wheel *d*, having a handle *d'*. In the center of the shaft are two cam-rollers *e e'*, and at the other end the disk *f* is mounted, said disk being provided with the endless groove or cam *f'*, which is formed partly circular and partly straight and bulges out at f^2. The cam-rollers *e e'* are likewise provided with guide-grooves or cams *g g'*, which run partly in an inclined and partly in a straight direction. The stud *h* engages in the groove *f'* and is connected by a link *h'* with the sliding block *i*. This sliding block carries the semicircular press-cheek *i'* and slides on the support *k*, provided with the fixed or stationary press-block *k'*. The studs *l l'* on the cam-levers *m m'* engage in the cam-grooves *g g'*, said cam-levers *m m'* turning on the upper pivots of the standards *o o'* and provided at the outer ends with the slots *p p'*. The studs *q q'* of the rods *r r'* engage in the slots *p p'*, said rods protruding in semicircular tubes *s s'*. The studs *q q'*, moreover, engage in guide-slots *t t'* of the upper frame-plate *u*. Furthermore, guide pins or pivots *v v'* are provided below the rods *r r'*, which engage in the guide-grooves of the frame-block *w*. Finally, another standard *x* is mounted on the frame *w*, through which a pin *x'* moves. This pin *x'* is situated between the interior rod *r'* and a cam x^2 of the cam-roller *e*.

The machine operates as follows: Motion being imparted, the wheel *d* rotates in such manner that the sliding block *i* and the semicircular tubes *s s'* assume the open position shown in Fig. 2. In this position the cam x^2 pushes the movable pin *x'* against the rod *r'*, so that the semicircular tube *s'*, pivoted on stud *q'*, is placed in an inclined position. The tobacco for one roll is now placed between the open semicircular tubes *s s'* upon the upper plate of the support *k* and distributed likewise. The hand-wheel *d* is now turned half around, whereby after the first quarter the position as shown in Fig. 5 and after the second quarter the position as shown in Fig. 6 of the parts is attained. The disk *f* turns in the first quarter-revolution, so that the flattened portion f^2 of its groove *f'* moves the stud *h* and sliding block *i* forward, whereby the semicircular tube *s'* is pressed against the semicircular tube *s* and the roll of tobacco thus formed. The rear tube attachment or rod *r'* has its pivot at *q'* and moves the pin *x'* backward, the cam x^2 being also rotated. In the second quarter-revolution the stud *h* and sliding block *i* are moved a little backward, since the groove *f'* passes behind the flattened portion f^2 and then runs in a circular direction. The semicircular tubes *s s'* now lie loosely between the press-block *i* and cheek *k'*, so that during the second quarter-rotation they may be easily forced together, the inclined parts of the grooves or cams *g g'* moving the studs *l l'* backward, Fig. 6. The paper wrapper *y* is then slipped onto the free end of the semicircular tubes *s s'* (now forming a complete tube) in any suitable manner and the wheel *d* further rotated until it has assumed its normal or starting position. During the third quarter-revolution an inclined part of the groove or cam *g* forces the stud forward, so that the rod *r* is moved backward and the semicircular tube *s* drawn from the paper wrapper. The parts *m'*, *l'*, *r'*, and *s'* are at this time stationary on account of the stud *l'* being in the straight part of the groove *g'*, Fig. 7. During the final quarter-revolu-

tion an inclined part of the groove g' again forces the stud l' forward, so that the semicircular tube s' is also drawn from the paper wrapper, and the finished or complete cigarette is delivered. Any well-known means may be provided to prevent the wrapped cigarette from being withdrawn with the tubes. The parts $l\ m\ r\ s$ are stationary on account of the straight parts of the groove g. The straight part of the groove f' again moves against the stud h and the cam z^2 against the pin x', so that the sliding block i' is drawn backward and the semicircular tube s' again placed in an inclined position, Fig. 8.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for making cigarettes, the combination of a pair of semicircular tubes one movable laterally and both longitudinally, a reciprocating presser-block and actuating means therefor to periodically bring said semicircular tubes coincident to compress a tobacco filling, and mechanism, substantially as described, for retracting said semicircular tubes one after the other, as set forth.

2. The combination in a machine for making cigarettes, of a support having a stationary press-cheek k' and a movable press-block i, a pair of semicircular tubes one movable laterally and both longitudinally between said press cheek and block, means for intermittently reciprocating said movable press-block to bring said semicircular tubes coincident to form a complete tube, and mechanism, substantially as described, for withdrawing said semicircular tubes one after the other, as set forth.

3. The combination in a machine for making cigarettes of a motive shaft, a disk fast upon said shaft, the cam-groove f' in said disk, a support having a stationary press-cheek and a movable press-block i, a pair of semicircular tubes, one movable laterally and both longitudinally between said press cheek and block a link operatively connecting said movable press-block with the cam-disk, and mechanism, substantially as described, for imparting a longitudinal movement to said semicircular tubes, as set forth.

4. A cigarette-machine having a pair of semicircular tubes arranged to close upon a tobacco filling to form the cigarette a presser block and cheek in operative connection therewith, and separate mechanism, for independently operating said presser block and cheek, and tubes, substantially as set forth.

5. The combination in a machine for making cigarettes, of a table, a shaft journaled thereon, cam-rollers upon said shaft a cam-grooved disk f rigid upon the shaft, a support having a stationary press-cheek and a movable press-block, a pair of semicircular tubes one movable laterally and both longitudinally between said press cheek and block, a link operatively connecting said disk and movable press-block to impart a reciprocating motion to the latter, and mechanism, substantially as described, for withdrawing said semicircular tubes one after the other, as set forth.

6. The combination in a cigarette-machine, of a table, a motive shaft journaled thereon, cam-rollers on said shaft, a drive-wheel at one end of the shaft, and a disk having a cam-groove in its plane surface at the opposite end of said shaft, a slotted support u, the semicircular tubes $s\ s'$ having the oblique arm r' movable in said support, a support k, a stationary press-cheek and a movable press-block mounted in said support and arranged respectively one at either side of the semicircular tubes, a link operatively connecting said movable press-block with the disk, and cam-levers $m\ m'$ for transferring motion from the cam-rollers to said semicircular tubes, as set forth.

7. The combination in a cigarette-machine, of a table, a motive shaft journaled thereon, cam-rollers on said shaft, a drive-wheel at one end of the shaft and a disk having a cam-groove in its plane surface, at the opposite end of said shaft, a slotted support u, the semicircular tubes $s\ s'$ having the oblique arm r' movable in said support, a support k, a stationary press-cheek and a movable press-block mounted in said support and arranged respectively at opposite sides of said semicircular tubes, a link operatively connecting said movable press-block with the disk, cam-levers $m\ m'$ for transferring motion from the cam-rollers to said semicircular tubes, to close the same, another cam-roller on the shaft, a standard x, and a pin movable in said standard adapted to be reciprocated by said cam-roller to open the tubes, as set forth.

8. The combination in a machine for making cigarettes, of a table, a motive shaft journaled thereon, a drive-wheel at one end of the shaft, and a disk having a cam-groove in its plane surface at the opposite end of said shaft, a slotted support u the semicircular tubes $s\ s'$ having the oblique arm r' movable in said support, a support k, a stationary press-cheek and a movable press-block mounted in said support and arranged respectively at opposite sides of said semicircular tubes, a a link operatively connecting said movable press-block with the disk, slotted cranks $m\ m'$ having studs $q\ q'$ movable in said slotted support, cam-rollers $e\ e'$ operatively connecting with said cranks to actuate the same, another cam-roller on the shaft, a standard x, and a pin movable in said standard adapted to be reciprocated by said cam-roller, as and for the purposes set forth.

In witness whereof I have hereunto signed my name, this 19th day of March, 1898, in the presence of two subscribing witnesses.

CONRAD GLOEDEN.

Witnesses:
C. H. DAY,
HENRY HASPER.