

No. 768,238.

PATENTED AUG. 23, 1904.

S. D. S. RAKOWITZKY.

MACHINE FOR INSERTING COTTON IN CIGARETTE WRAPPER TUBES.

APPLICATION FILED APR. 1, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

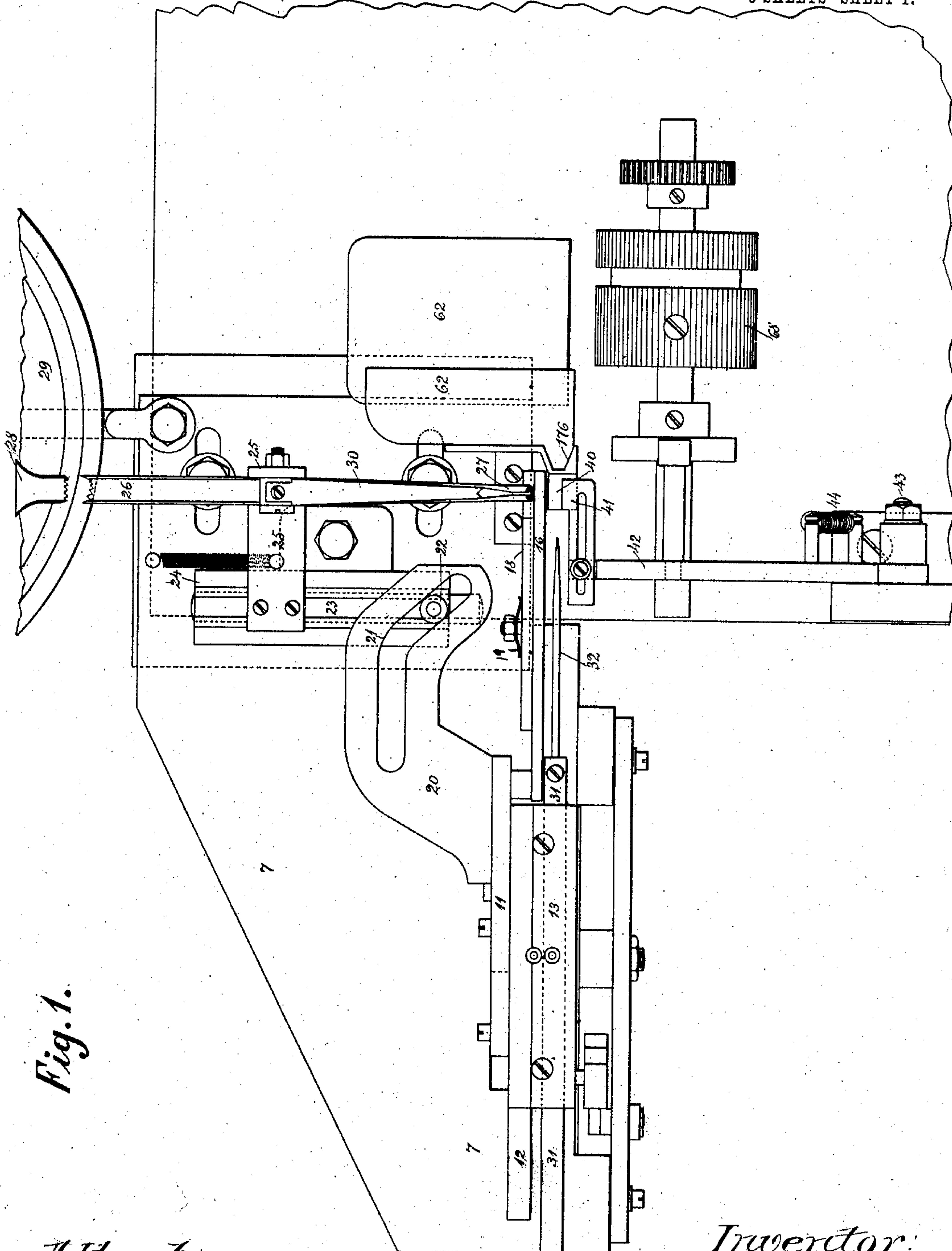


Fig. 1.

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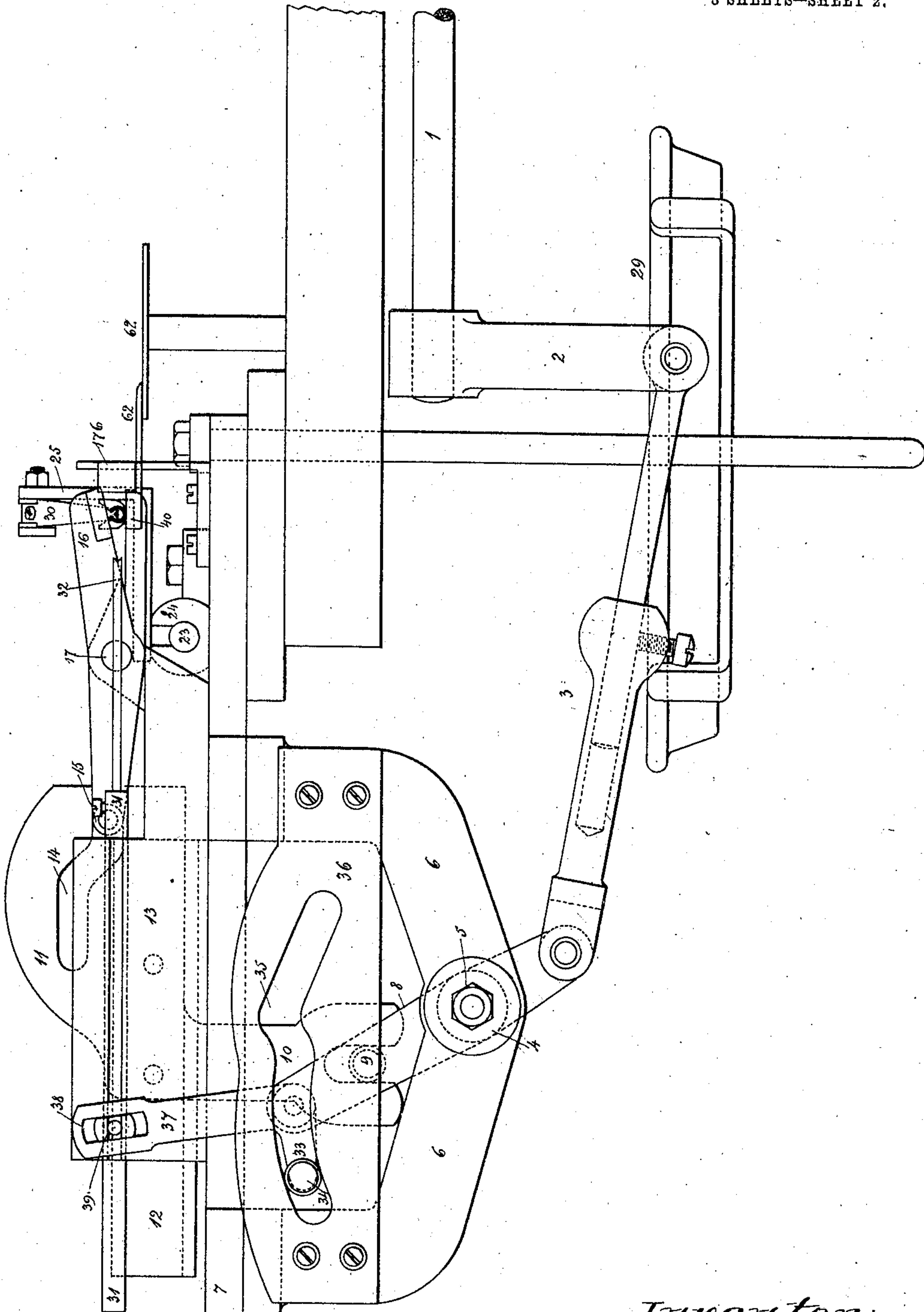
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NO MODEL.

3 SHEETS—SHEET 2.

Fig. 2.



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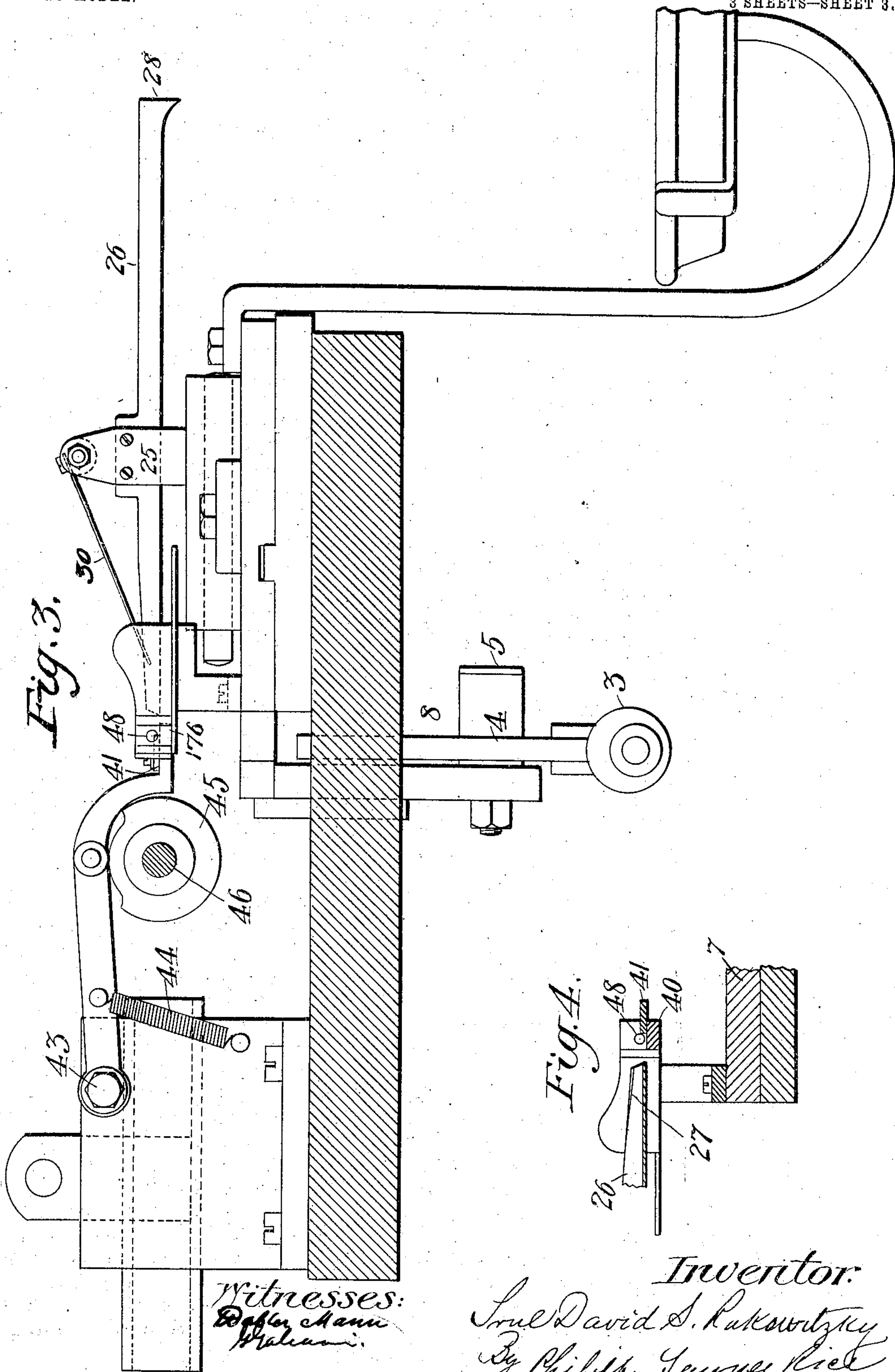
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NO MODEL.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

SRUL DAVID S. RAKOWITZKY, OF VILNA, RUSSIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN TOBACCO COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

MACHINE FOR INSERTING COTTON IN CIGARETTE-WRAPPER TUBES.

SPECIFICATION forming part of Letters Patent No. 768,238, dated August 23, 1904.

Application filed April 1, 1902. Serial No. 100,975. (No model.)

To all whom it may concern:

Be it known that I, SRUL DAVID S. RAKOWITZKY, a subject of the Emperor of Russia, residing in Vilna, Russia, have invented certain new and useful Improvements in Machines for Inserting Cotton in Cigarette-Wrapper Tubes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention has for its object to produce a machine which inserts into cigarette-wrapper tubes cotton or similar material, which acts to obstruct the escape of the tobacco from the end of the cigarette which is placed in the mouth and also absorbs the nicotine of the tobacco.

My invention consists in the various combinations of devices hereinafter fully described, and pointed out in the claims.

In order that my invention may be readily understood and carried into effect, I will describe the same fully in reference to the accompanying drawings, in which—

Figure 1 is a plan view of the machine containing my invention. Fig. 2 is a side elevation of the same. Fig. 3 is an end elevation of the same, partly in section; and Fig. 4 is a vertical section, looking from the left from Fig. 1, through the clamps and part of the trough to be described.

1 is a rod which is reciprocated in any desired manner. It carries a depending arm 2, connected by a two-part rod 3, capable of adjustment, with a lever 4, pivoted at 5 to a stirrup 6, secured to the bed-plate 7 of the machine.

The upper end 8 of the lever 4 is provided with a wrist-pin 9, which works in the opening of a fork 10, depending from a plate 11, secured to a reciprocating slide 12, working in a head 13 on the bed-plate 7 of the machine. This plate 11 is provided with a cam-groove 14, into which projects a wrist-pin 15 on the end of one member, 16, of a pair of shears, such member being pivoted at 17 to an arm secured to the bed of the machine. The other member, 18, of the shears is secured to the

bed of the machine. The two members are pressed together by a spring 19, the pressure of which can be adjusted by a nut. Secured to the plate 11 is a horizontal plate 20, having a cam-groove 21, into which a wrist-pin 22 projects. This wrist-pin is secured to a reciprocating slide 23, moving in a head 24, secured to the bed of the machine. To the slide 23 is secured, by a bent arm 25, a trough 26, which reciprocates with the slide 23. The sides of this trough are gradually bent round toward the front end at 27, as shown, while at its rear end at 28 it is broadened out or funnel-shaped to enable the sliver of cotton to readily pass on to the trough. Placed under this end 28 is a receptacle 29, sustained from the bed of the machine to support the sliver of cotton fed to the machine. To the bent arm 25 is secured a spring 30 over the trough 26, the free end of which spring is bifurcated and rests in the trough 26 near its bent-oversides. Within the head 13 is another reciprocating slide 31, to one end of which is secured a rod 32, bifurcated at its front end for introducing the cotton into the wrapper-tubes.

To the upper end 8 of the lever 4 is pivotally connected a bell-crank lever, the short arm 33 of which has a wrist-pin 34, which works in a cam-groove 35 of a stationary plate 36, secured to the stirrup 6. The long arm 37 of this bell-crank lever has a slot 38, into which a wrist-pin 39 projects, which is connected to the reciprocating slide 31, to which the bifurcated rod 32 is secured. In front of the shears 16 18 is a pair of clamps, one member, 40, being stationary, while the other member, 41, is movable. The movable member 41 is secured adjustably to a lever 42, pivoted at 43 to a projection on the main bed of the machine. A spring 44 draws the movable member 41 toward the stationary member 40 when permitted to do so by the revolving cam 45 on the shaft 46, said cam raising the lever 42, and with it the clamp 41, at the appropriate time.

Directly in front of the path of movement of the bifurcated rod 32 is a V-shaped head

176, having a perforation 48 to permit such bifurcated rod to force the cotton therethrough into the end of the wrapper-tube which lies within the V-shaped head at this time. This V-shaped head, the cylinder 68, and the table 62 are parts of a machine for making cigarette - wrapper tubes with mouthpieces. (Shown and fully described in United States Letters Patent No. 721,087, dated February 17, 1903.) In this machine wrapper-tubes are delivered upon the table 62 and advanced until their ends are opposite the V-shaped head 176, when a mouthpiece is introduced, pushing the wrapper-tube into the V-shaped recess. The wrapper-tube is thus held a short time.

In my present machine the wrapper-tube can in this way be moved into position and held opposite the aperture 48 while the bifurcated rod 32 introduces the cotton into it. Such tube can, however, be fed into position and be held for such introduction of the cotton in various ways.

The operation of the machine is as follows:
 A sliver of cotton of a suitable diameter is led from a coil of the same in the receptacle 29, over the funnel-shaped end 28 of the trough 26, under the bifurcated spring 30, and under the bent-over sides at 27 of such trough, projecting far enough to be caught and held by the clamps 40 41. On the reciprocation of the rod 1 to the left the lever 4, through the adjustable rod 3, is vibrated, and through its wrist-pin 9, resting in the fork 10 of slide 12, the latter is moved to the right and with it the plate 20, whose cam-groove 21 moves the slide 23 to the rear and with it the trough 26 and bifurcated spring 30, the sliver of cotton during this operation being held by the clamps 40 41 and the spring 30 slipping over it until the end 27 of the trough is moved far enough back of the shears 16 18 to leave the proper length of cotton to be advanced between the clamps 40 41 on the next movement of the trough to the front. The trough then remains stationary for a short time, due to the dwell of the cam 21. At the same time the plate 11 has moved the slide 12, carrying the plate 11, to the right until the cam-groove 14, acting on the pin 15 of the movable member 16 of the shears, causes the latter to cut off a short piece of the sliver of cotton at the time the trough 26 has moved far enough to leave the desired length just referred to. At the time the shears have cut off such piece the bifurcated rod 32 (which has been moved to the right by its slide 31 through the bell-crank lever 33 37, pivoted to the lever 4, and the cam-groove 35, acting on the short end of such lever) in its further movement to the right catches the piece of cotton cut off and lying in its path as it is released by the raising of the clamp 41 by the cam 45 and pushes it through the aperture 48 (thus doubling it over) into the wrapper-tube held as before

described. On the movement of the rod 1 to the right the bifurcated rod 32 is moved to the left, as is the slide 12, and with it the plates 11 and 20, the cam-groove 14 of the former raising the movable member 16 of the shears, while the cam-groove 21 of the plate 20 moves the slide 23 to the front and with it the trough 26, the spring 30 catching the sliver of cotton and advancing it between the shears 16 and 18 and the clamps 40 and 41, when the movable member 41 clamps it against the stationary member 40 through the spring 44 acting on the lever 42 when the low part of the cam in revolving is under such lever. Another wrapper-tube having been placed in position in front of the perforation 48 the series of operations first described is then repeated.

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

1. The combination of a reciprocating feeding device for feeding cotton to cutting means, means for cutting off a portion of the cotton fed thereto, and means for inserting such portion into a wrapper-tube, substantially as described.

2. The combination of a reciprocating feeding device for feeding cotton to cutting means, means for cutting off a portion of the cotton fed thereto, and a reciprocating rod for pushing such cut-off portion from the cutting devices into a wrapper-tube, substantially as described.

3. The combination of means for feeding a continuous strip of cotton to cutting means, means for cutting off a portion of the cotton fed thereto, means for holding a wrapper-tube with mouthpiece, and means for inserting such cut-off portion of cotton into the wrapper-tube at the end opposite the mouthpiece.

4. The combination of reciprocating means for feeding a sliver of cotton to clamping means, clamping means for temporarily holding the end of the sliver while the feeding means are being withdrawn, means for severing a portion of such sliver, and means for inserting such portion into a wrapper-tube, substantially as described.

5. The combination of clamping means and means for feeding a sliver of cotton to said clamping means, means for severing a portion of said sliver, and means moving transversely to said feeding means for inserting such portion into a wrapper-tube, substantially as described.

6. The combination of means for feeding a sliver of cotton to clamping means, said feeding means comprising a reciprocating member adapted to permit the sliver of cotton to remain stationary during its return movement, clamping means for holding the end of the sliver while the feeding means are being withdrawn, and means for cutting off a portion of

such sliver, and means for inserting such cut-off portion into a wrapper-tube, substantially as described.

7. The combination of means for feeding a
5 sliver of cotton to clamping means, said feeding means comprising a guide and a reciprocating feeding-pawl, clamping means for holding the end of the sliver while the pawl is being withdrawn, and means for cutting off a
10 portion of such sliver, and means for inserting such cut-off portion into a wrapper-tube, substantially as described.

8. The combination of means for feeding a
15 sliver of cotton to clamping means, said feeding means comprising a reciprocating guide and a pawl reciprocating with said guide, clamping means for holding the end of the sliver while the guide and pawl are being withdrawn, and means for cutting off a por-
20 tion of such sliver, and means for inserting such cut-off portion into a wrapper-tube, substantially as described.

9. The combination of means for feeding a
25 sliver of cotton to clamping means, with such clamping means for holding the end of the sliver while the feeding means are being withdrawn, means for cutting off a portion of such sliver, means for inserting such portion into a wrapper-tube, and means for doubling back
30 such portion upon itself before it is inserted in such wrapper-tube, substantially as described.

10. The combination of trough 26 and spring
35 30 for feeding a sliver of cotton, clamps 40, 41, for temporarily holding the free end of the sliver, shears 16, 18, for severing a portion of such sliver, and a rod 32 for inserting such severed portion into a wrapper-tube, substantially as described.

40 11. The combination of feeding means comprising a reciprocating trough 26 and spring 30 mounted to move therewith, a clamp for holding the end of a sliver of cotton advanced by the feeding means, shears 16, 18, a recip-

45 cating rod 32, and a head having an aperture 48 in front of which the wrapper-tube is held and through which the severed portions of the sliver are pushed by the rod 32 into the wrapper-tube, substantially as described.

12. The combination of feeding means com-
50 prising a trough 26 for receiving a sliver of cotton and means for reciprocating said trough, a feeding-spring 30 mounted to move therewith, shears 16, 18, and reciprocating rod 32 for inserting the cotton cut off into a wrap-
55 per-tube.

13. The combination of feeding means comprising a reciprocating trough 26 and spring 30 mounted to move therewith, a clamp for holding the end of a sliver of cotton advanced
60 by the feeding means, shears 16, 18, a reciprocating rod 32, reciprocating plates 20 and 11, having cam-grooves 21 and 14 respectively for actuating the feeding means and the shears respectively, a stationary plate 36 having a
65 cam-groove 35, a lever 4, a slotted bell-crank lever 33, 37, carried by the lever 4, and having one arm connected to the rod 32, and having a stud on the other arm running in the cam-groove 35, and a cam 45 for actuating the
70 clamp, substantially as described.

14. The combination of feeding means comprising a reciprocating trough 26 and spring 30 mounted to move therewith, a clamp for holding the end of a sliver of cotton advanced
75 by the feeding means, shears 16 18, a reciprocating rod 32, a cam 35, a lever 4, a slotted bell-crank lever 33, 37 carried by the lever 4, and having one arm connected to the rod 32 and having the other arm engaged by the
80 cam 35, substantially as described.

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

SRUL DAVID S. RAKOWITZKY.

Witnesses:

M. B. PHILIPP,

ERNST LOEWENSTEIN.