

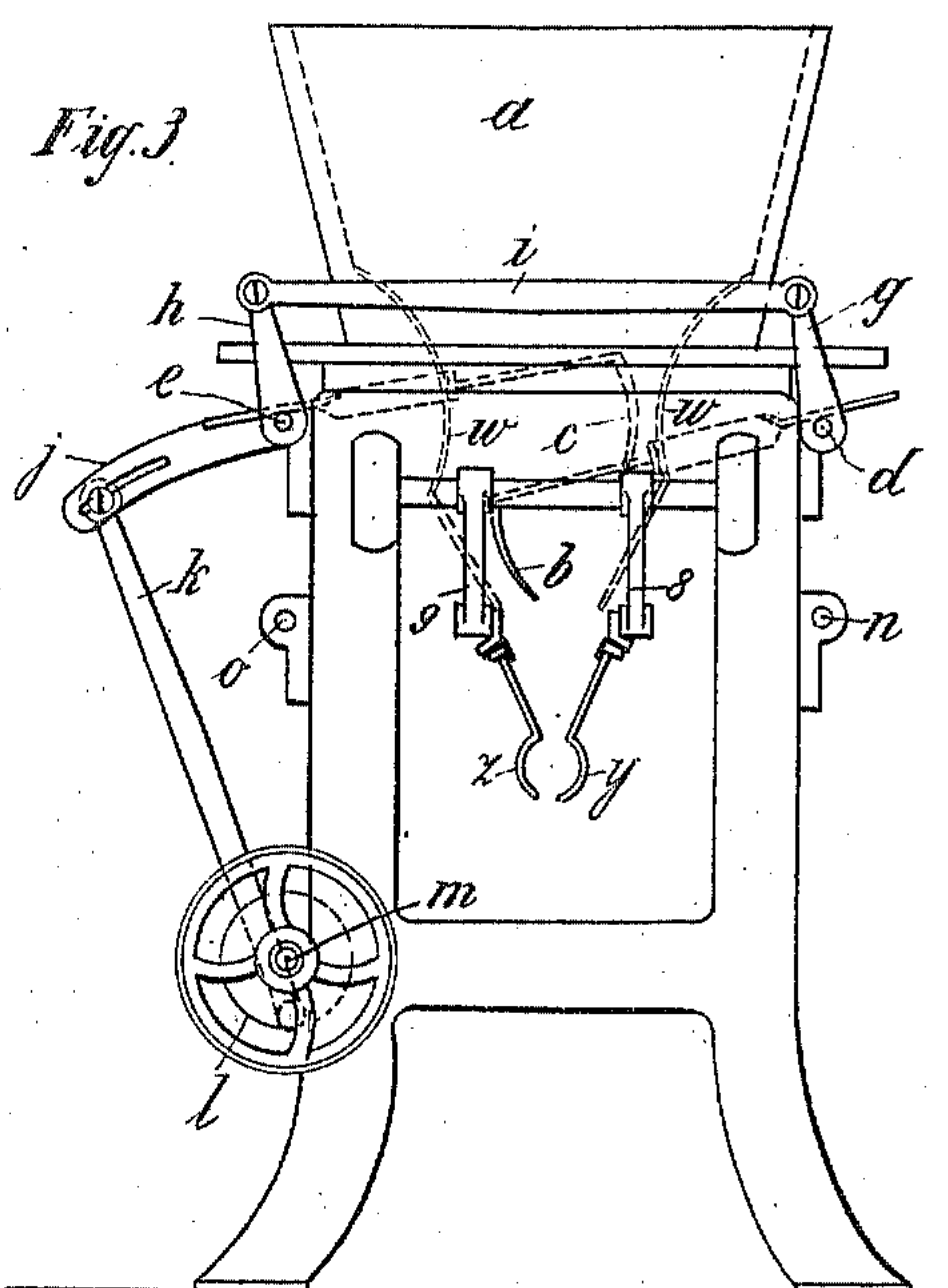
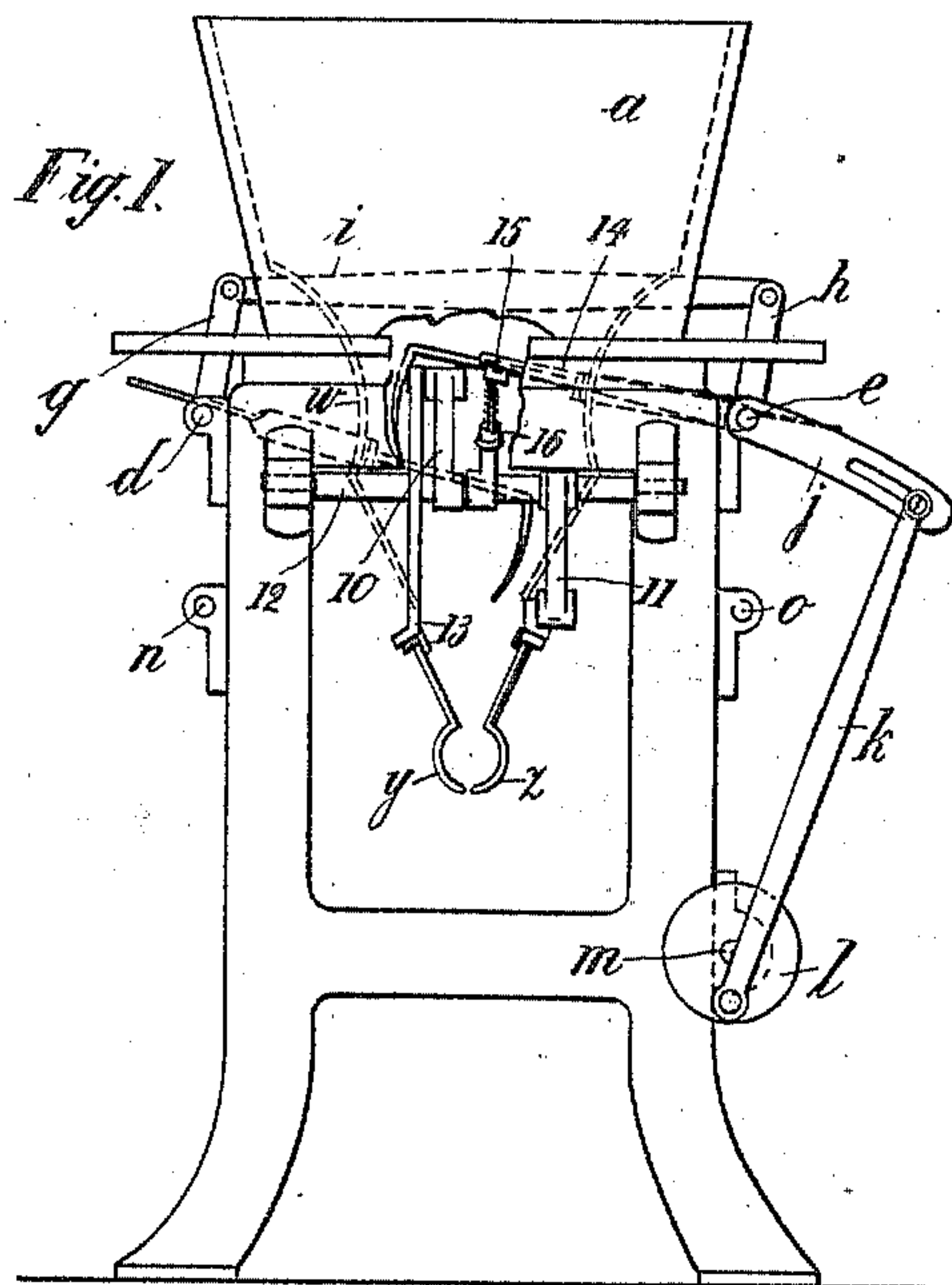
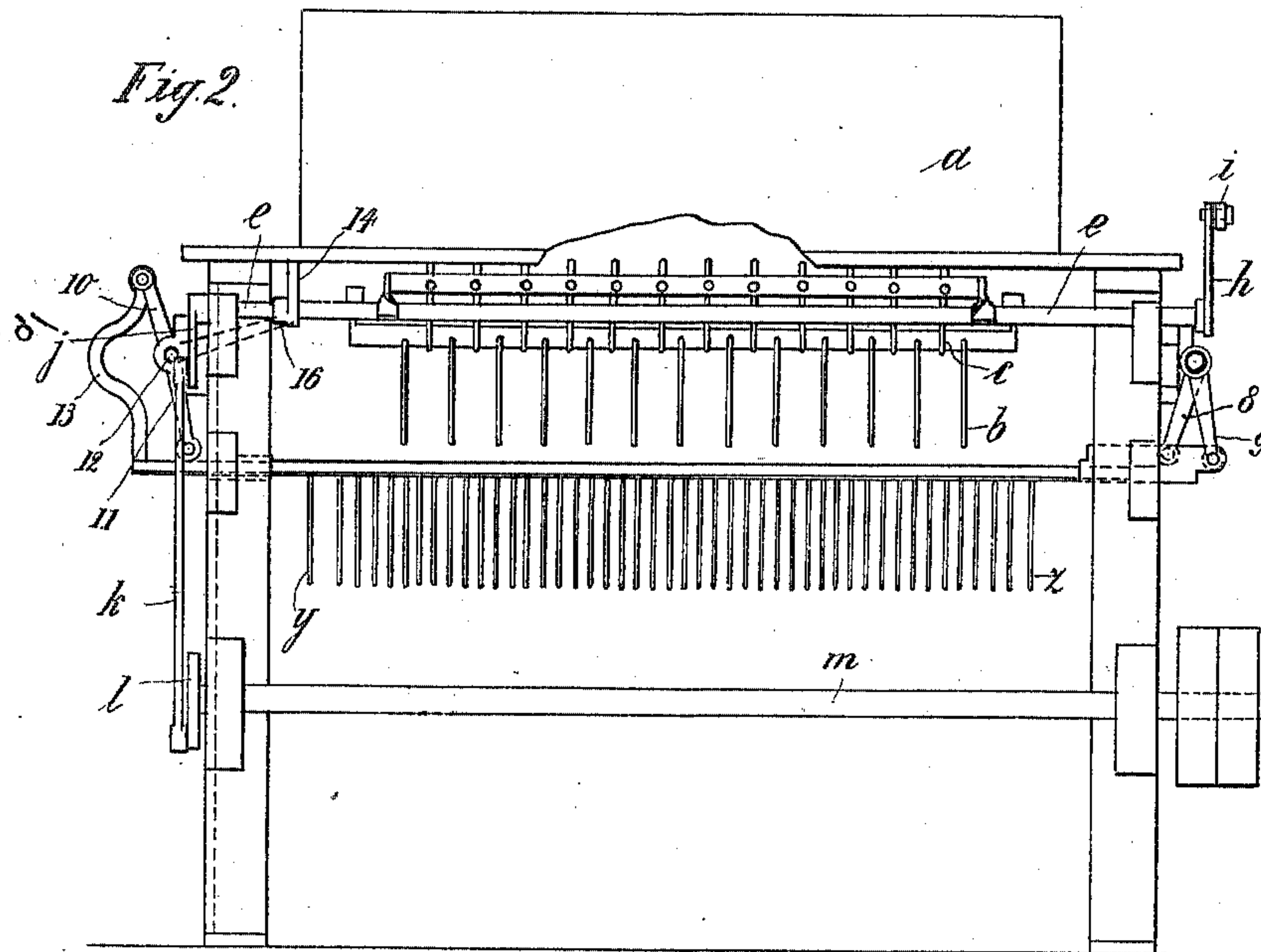
No. 817,354.

PATENTED APR. 10, 1906.

J. WOJCIECHOWSKI.
MACHINE FOR LOOSENING CUT UP TOBACCO.

APPLICATION FILED JUNE 16, 1903.

2 SHEETS—SHEET 1.



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Fig. 7.

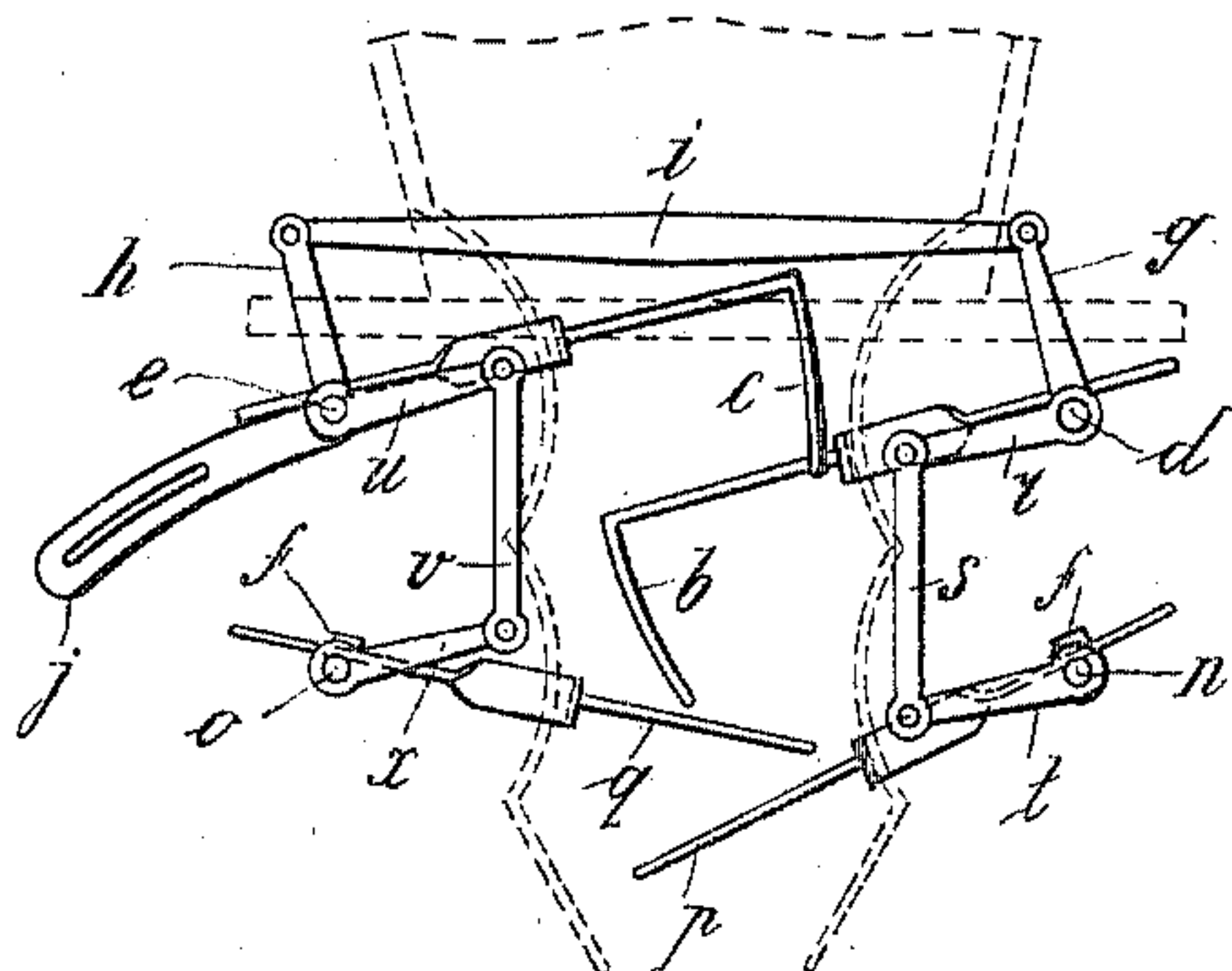


Fig. 4.

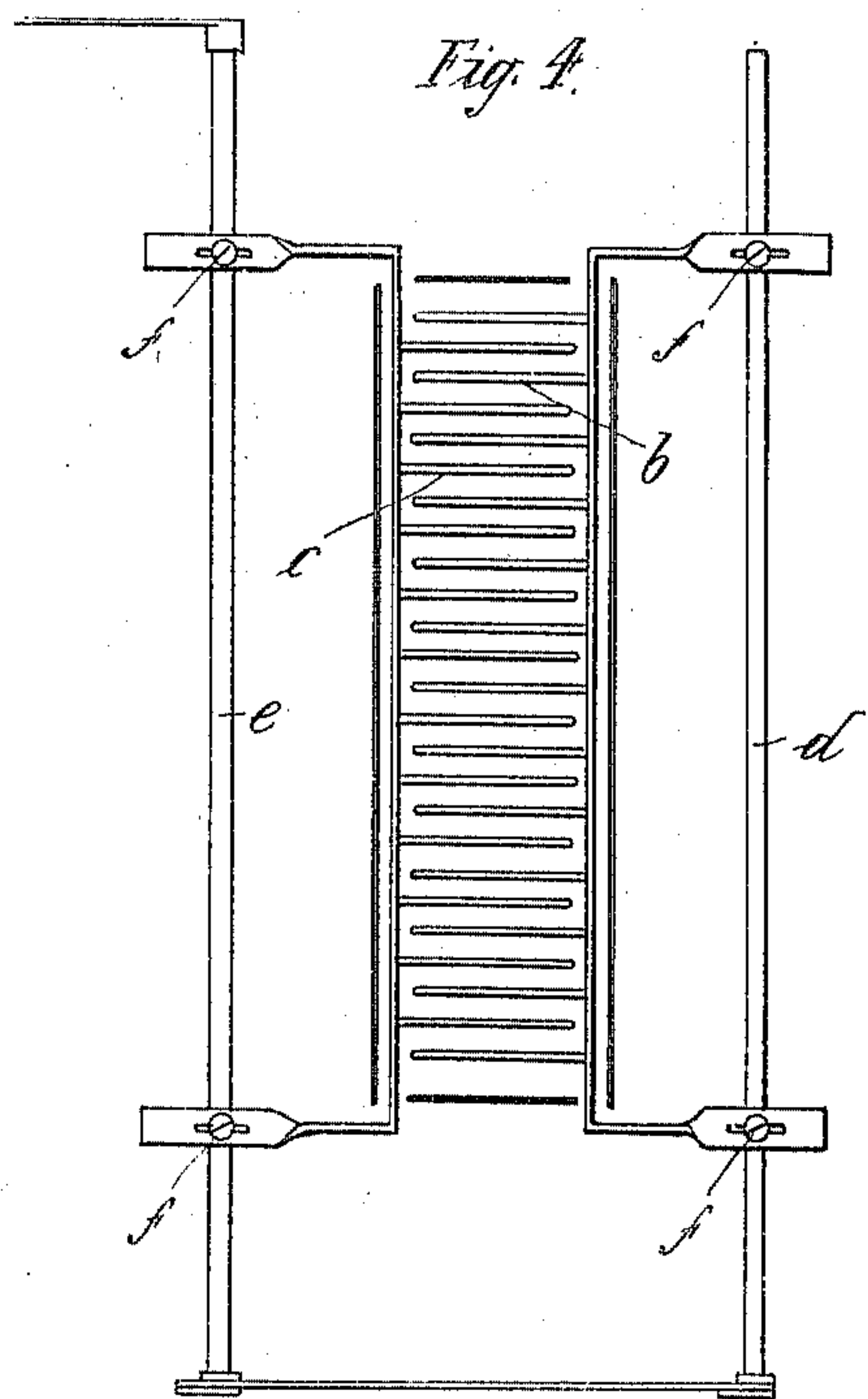


Fig. 5.

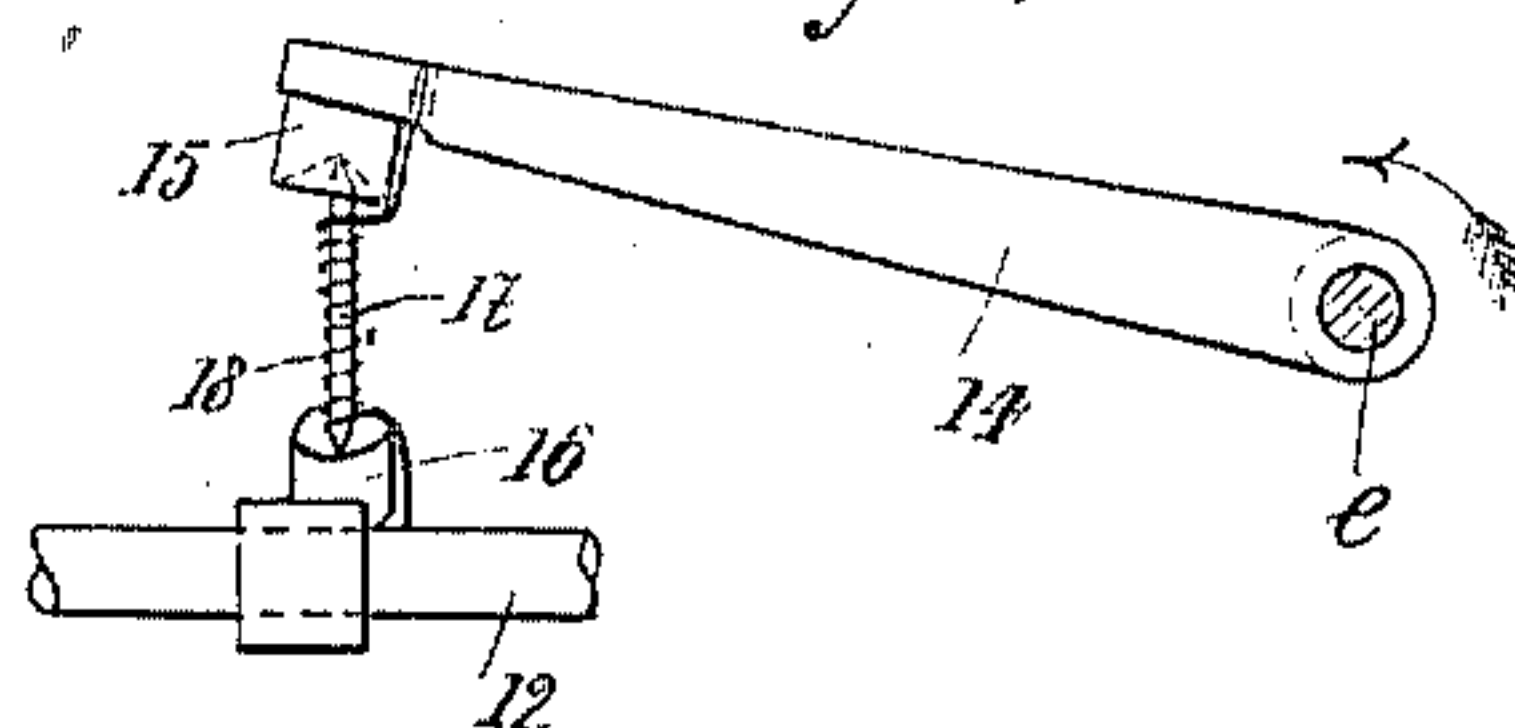
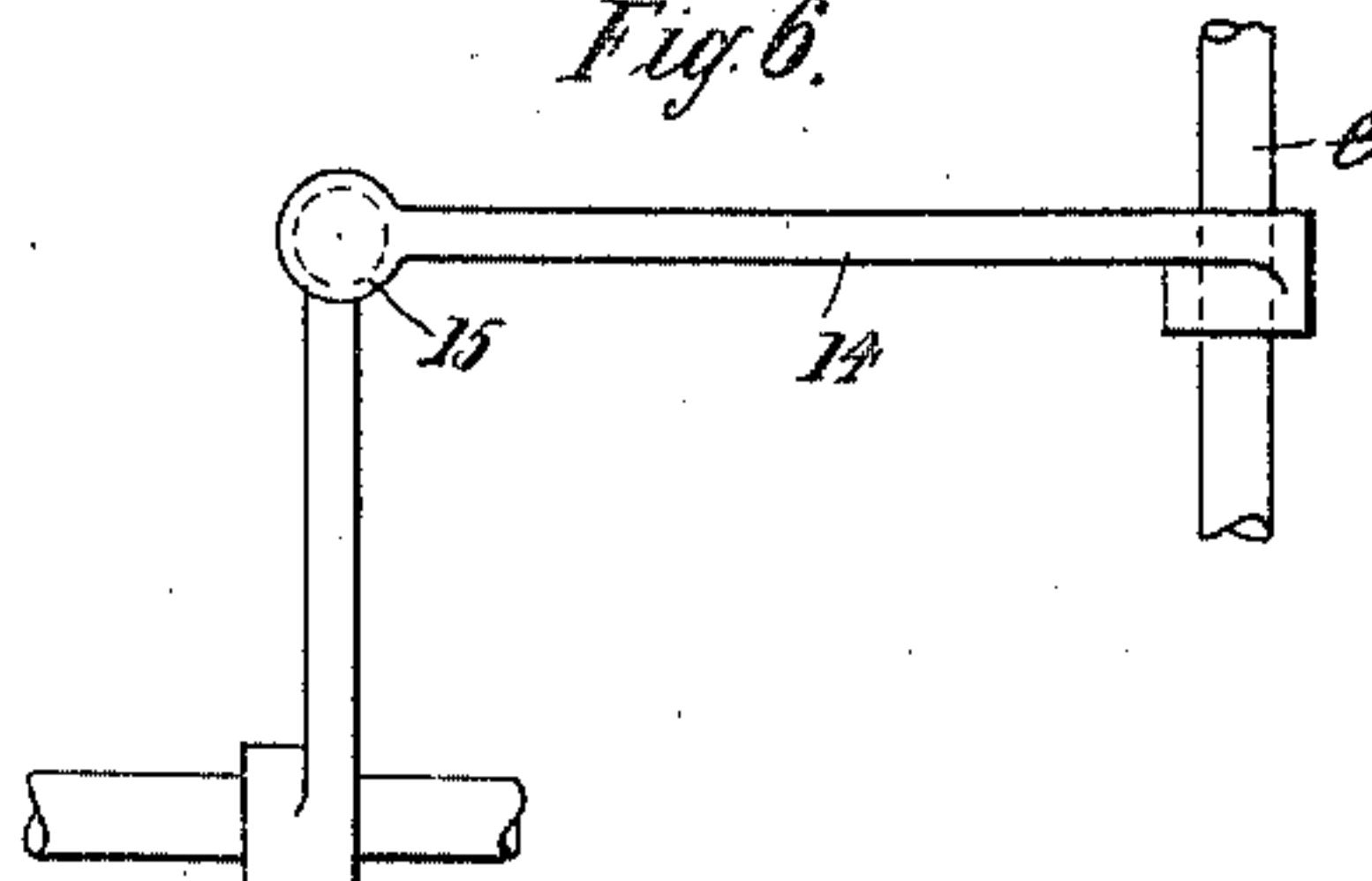


Fig. 6.



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UNITED STATES PATENT OFFICE

JAKOB WOJCIECHOWSKI, OF WARSAW, RUSSIA.

MACHINE FOR LOOSENING CUT-UP TOBACCO.

No. 817,354.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed June 16, 1903. Serial No. 161,731.

To all whom it may concern:

Be it known that I, JAKOB WOJCIECHOWSKI, mechanical engineer, residing at No. 64 Wronia street, Warsaw, Russia, have invented certain new and useful Improvements in Machines for Loosening Cut-Up Tobacco; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a machine for tousling or loosening cut-up tobacco.

The tobacco-leaves cut up in the cutting-machines leave the latter in somewhat-compressed rolls or parcels, which have first to be tousled or loosened to render the tobacco suitable for cigarette-making or for packing into boxes and tins as a market product. This loosening has hitherto been effected by hand, which affected the health of the operators, as they had to inhale the tobacco-dust produced, and, further, extraneous bodies found their way into the tobacco during the loosening, causing an injurious effect on the flavor of the tobacco.

The present invention removes all these defects, as it offers the possibility of loosening the tobacco automatically in a special machine in which the workman's labor is solely limited to the feeding into such machine of the pressed tobacco-rolls produced in the cutting-machine and the removal of the loosened tobacco.

The annexed drawings show the construction of the machine under submission, by way of example.

Figure 1 shows a side view of the machine—left-hand side view of Fig. 2; Fig. 2, a front view of the machine; Fig. 3, an end view—right-hand side view of Fig. 2. Fig. 4 is a plan view of the rakes for loosening the tobacco vertically. Figs. 5 and 6 are side and plan views, respectively, on an enlarged scale, of the transmission mechanism for the shaft of the rakes which loosen the tobacco in a horizontal direction; and Fig. 7 is a detailed side view of the rakes which loosen the tobacco in a vertical direction.

The machine comprises a hopper or feeder *a*, the bottom of which is composed of two series of rakes or fingers *b* and *c*, placed opposite one another and so arranged that the ends of fingers *b* project into the spaces between the fingers *c*, and vice versa. These

rakes *b c* rock in opposite planes on or round the shafts *d e*, respectively, to which they are attached by screws *f*, passing through their slotted ends. (See Figs. 4 and 7.) On the shafts *d* and *e* the arms or levers *g* and *h*, Figs. 1, 2, 3, are rigidly fixed, the upper ends of which, provided with pivots, are connected together by a rod *i*. On the shaft *e* in addition an arm *j* is arranged, Figs. 1 and 3, which is slotted and connected by a screw with one end of a rod *k*, the other end of which engages the crank-disk or cam *l*, receiving its motion from the main shaft *m* of the machine.

The hopper *a* has downwardly-extended sides *w w*, as shown by dotted lines in Figs. 1 and 3, which sides first describe an arc of a circle and are then carried straight inward without their lower ends meeting. If dry tobacco only is to be loosened, to the side shafts *n* and *o*, mounted in the frame, Fig. 3, the straight rakes *p* and *q*, Fig. 7, can be fixed, which work in common with the rakes *b* and *c*. For this purpose the shafts *d* and *e* are connected with said shafts *n* and *o* by means of jointed levers *r s t* and *u v x*, respectively. The rakes *b c* and *p q* are for the purpose of loosening the tobacco in a vertical direction.

For simultaneously loosening the tobacco in a horizontal direction, which is necessary with damp tobacco, rakes with curved fingers *y z* are provided. These rakes are suspended on one side (the right in Fig. 2) on the arms 8 and 9, oscillating in a vertical plane in the longitudinal direction of the machine, but on the other side are pivoted to the arms 10 and 11, which latter are firmly keyed to shaft 12 in opposite directions in such a manner that the upwardly-directed arm 10 is connected to the rake belonging thereto by the bracket 13, which is pivoted to the arm 10, but rigidly fixed to the rake. On a to-and-fro movement of the shaft 12 the rakes thus receive an alternate opposite movement in a horizontal direction. The shaft 12 is set in oscillating motion by shaft *e* by means of a transmission mechanism shown in Figs. 5 and 6. This mechanism can, for example, be so arranged that the lever 14, provided at its end with the cup 15, is mounted on the shaft *e*. At the corresponding part of shaft 12 a similar cup 16 is provided on a laterally-projecting rod. In both cups 15 and 16 the bar 17, surrounded by a helical spring 18, is loosely fixed. Consequently on the shaft *e* oscillating in the direction of the arrow, Fig.

5, the bar 17 is pressed into cup 16, thus rocking the shaft 12 to a certain extent. When shaft *e* returns, the helical spring 18 will bring the shaft 12 back to its original position. Another convenient transmission mechanism instead of that described may obviously be made use of.

The operation of the machine is as follows: The tobacco immediately on leaving the cutting-machine or dried first is placed by the workman into hopper *a* and the machine is started. Vertical rakes *b* and *c* throw the tobacco upward, thus loosening and tousling it, whereupon the loosened tobacco falls into boxes arranged underneath, whence it is removed as desired. When the tobacco is passed into the machine in a dry condition, the vertically-rocking rakes *b c* and *p q* are sufficient for the perfect loosening thereof. Moist tobacco, however, has also to be manipulated by the rakes *y z* moving in a horizontal direction.

(The above-described device may also be used as an automatic apparatus for uniformly feeding the tobacco into machines for filling cigarette-cartridges with tobacco.)

It is obvious that several minor details in the construction of the machine can be varied without departing from the spirit of the invention.

I claim—

1. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and adapted to cooperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of

the said arms together, and means for rocking the said shafts.

2. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake adjustably secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and adapted to cooperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of the said arms together, and means for rocking the said shafts.

3. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and adapted to cooperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of the said arms together, means for rocking the said shafts, further rock-shafts arranged below the first-mentioned rock-shafts, a rake secured at one end to each of said second rock-shafts and their opposite ends projecting toward each other and adapted to cooperate as set forth, the last-mentioned rakes being below the first-mentioned rakes, and jointed arms connecting the sets of rock-shafts together in the manner and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JAKOB WOJCIECHOWSKI.

Witnesses:

CLARENCE RICE SLOCUM,
HERNANDO DE SOTO.