J. HOOD & S. H. REYNOLDS.

GOLD FOIL CONDENSER FOR DENTAL USE.

No. 182,441. Patented Sept. 19, 1876.

Fig. 1.

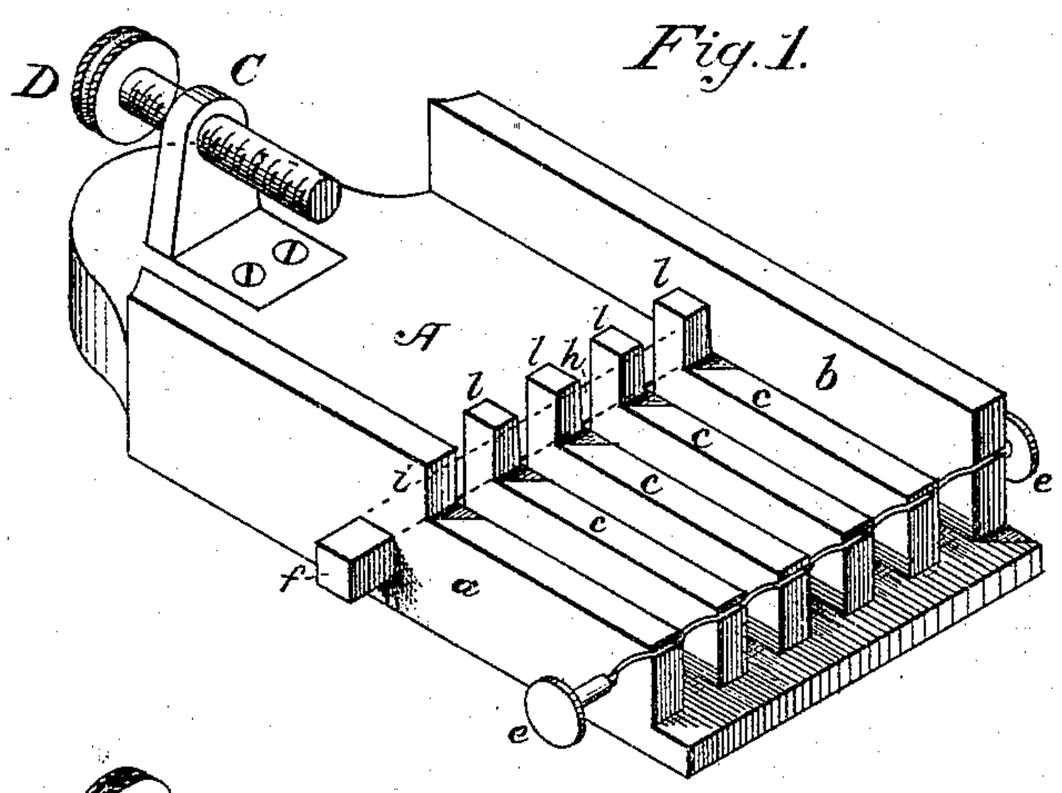


Fig. 2.

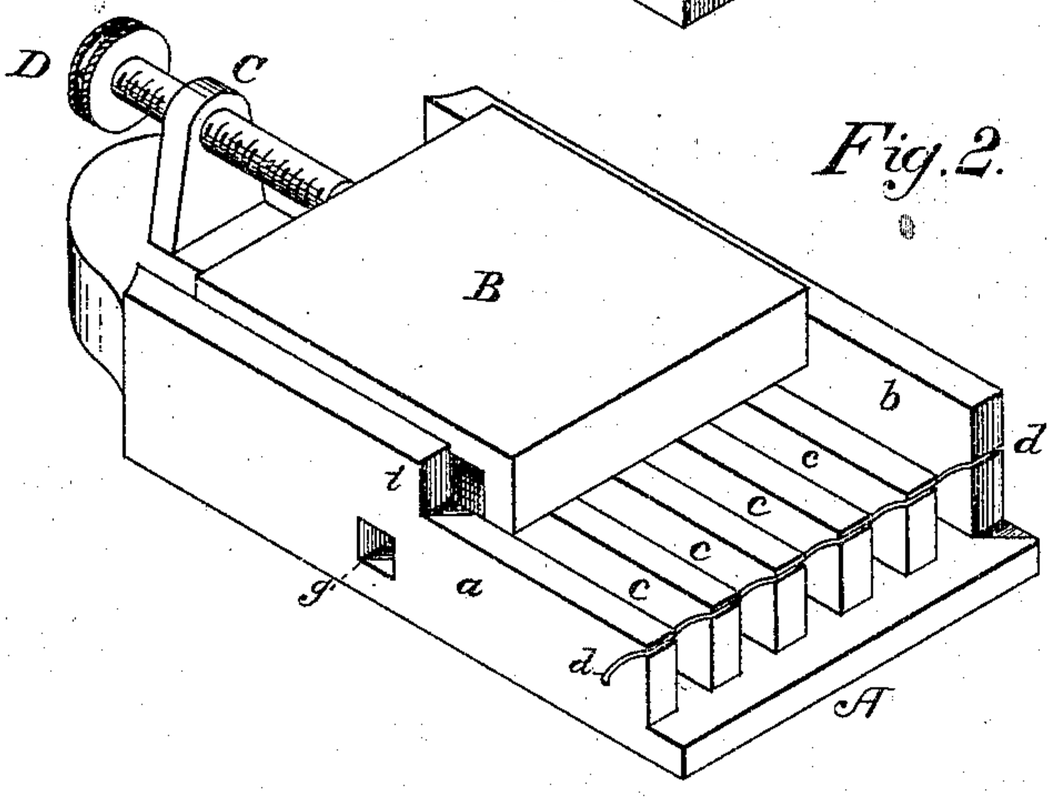


Fig. 4.

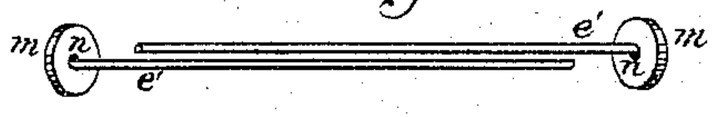
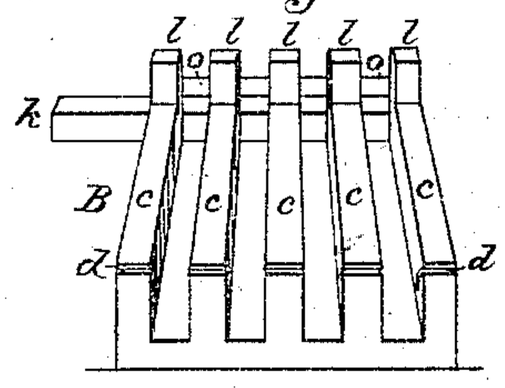


Fig. 3.



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JOHN HOOD AND STEPHEN H. REYNOLDS, OF HYDE PARK, MASS.

IMPROVEMENT IN GOLD-FOIL CONDENSERS FOR DENTAL USE.

Specification forming part of Letters Patent No. **182,441**, dated September 19, 1876; application filed February 5, 1876.

To all whom it may concern:

Be it known that we, JOHN HOOD and STEPHEN HENRY REYNOLDS, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Converting Metallic Foil into Pellets and Cylinders for Dental Purposes; and we do hereby declare that the following is a full, clear, and exact description thereof, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part this specification.

The object of this invention is to produce by machinery the small cylinders and pellets of gold, or other foil, used by dentists for the purpose of filling cavities in teeth, thus producing in a quick, regular, and uniform manner articles which have heretofore been imperfectly produced by hand; and the invention consists in the construction and arrangement of the different parts of the machine, as will be hereinafter fully described, and then specifically pointed out in the claims.

Figure 1 is a perspective view of the lower portion of the machine, showing the relative positions of the different parts when the machine is employed in making cylinders. Fig. 2 shows the machine as arranged for making pellets, the cross-bars and winding devices being removed. Fig. 3 represents the upper part of the machine in conjunction with the lower part in cutting the foil and for making pellets. Fig. 4 shows the devices, consisting of half-round wires, with milled knobs at the ends, upon which the foil is wound into cylinders.

A represents the bed of the machine, and is of a rectangular form, with an extension upon one end, which carries the adjusting-screw. This bed has a step or shoulder running across it near its middle, as seen at *h* in Fig. 1, and is further provided with an upwardly-projecting piece or ledge, *b*, which runs along one of its sides, the opposite side having a similar ledge, except that a portion of its upper side is removed, as seen at *i*, in order to allow the passage of the bar *k* during the operation of making pellets. At regular distances between the side pieces *a* and *b* are placed the projecting square and sharp edged cutting-bars *c*, all of them being provided at their inner ends with a stop, *l*, which also acts as a guide for the upper part of the machine in making pellets. A curved slot, *d*, is formed in the outer ends of the bars and side pieces for the reception of the winding-wires *e*, which have a semi-cylindrical section, and are each provided with a milled head or knob, by which they may be rotated. In each knob is a recess, *n*, which receives the point of the corresponding wire of a pair, thus causing them, when united and in place, as shown in Fig. 1, to form a perfect cylinder upon which to wind the foil. Upon the extension of the bed is secured a lug, C, through which passes the adjusting-screw D, used for the purpose of limiting the movement of the part B in the manufacture of pellets. This part is formed in a somewhat similar manner to that already described, it being composed of a back piece about one-half the length of the bottom part, to which is secured a series of cutting-bars, *c*, identical in construction with those already described as being attached to the bed A, they being provided with curved slots at one end for the reception of the winding-wires, and having stops *l* at the other. Through the side pieces *a* and *b* are formed mortises *g* for the reception of the cross-bar *f*, and a similar bar, *k*, is passed between the ends of the cutting-bars and the end piece *o* of the part B. The removal of these bars leaves a space, which forms a receptacle for the pellets when the machine is employed in making that article.

The method of operating the machine is as follows: In making cylinders of foil one of the winding-wires is first placed in the curved slots in the parts A and B; one or more sheets of gold, or other foil, is then laid upon the cutting-bars of the lower part of the machine. The upper part B is then placed upon it and forcibly pressed downward, its bars passing between those of the part A, and cutting the foil by a shearing-cut into strips corresponding in width with the spaces between the bars. The parts are then separated, one-half of the foil remaining in each, and lying between the bars with one end upon the winding-wire. Another wire is then introduced from the oppo-

site side, its end entering the recess in the one first inserted, the extremity of the strips of foil being between them. Now, by rotating the winding-wires through the agency of the knobs at each end, it is evident the strips of foil will be wound upon the wire into the form of a series of cylinders, which may then be annealed by the blow-pipe flame so as to lose their elasticity and retain the form given to them, after which the wires are withdrawn, one at a time, leaving the foil in the shape of tubular cylinders.

In making pellets the process is similar, so far as the cutting of the foil into strips with that just described; but no winding-wires are needed. The upper part of the machine is slid upon the lower until it strikes the adjusting-screw, when the pellets will have been formed. The cross-bars *f* and *k* are then removed, the adjusting-screw turned back, and the top piece of the machine pushed farther along into the space made by removing the cross-bar. The apparatus is then turned upon its side, when the pellets fall out through the mortises into a box, or other receptacle.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent, the following:

1. In a device for treating gold-foil, the bed A, provided with the side pieces *a* and *b*, in combination with the cutting-bars *c* and part B, as and for the purpose specified.

2. The bed A and cutting-bars *c*, provided with the curved slots *d*, in combination with the winding-wires, as and for the purpose set forth.

3. The bed A, cutting-bars *c*, cross-bar *f*, lug C, and adjusting-screw D, in combination with the part B, as and for the purpose specified.

4. The process of making cylinders for dental use by first cutting the foil into strips, winding the strips upon wires, so as to form cylinders, and then annealing them, as and for the purpose specified, and completing the process by removing the winding-wires, in the manner set forth.

In testimony whereof we have hereunto affixed our signatures this 28th day of January, 1876, in presence of two witnesses.

JOHN HOOD.
STEPHEN H. REYNOLDS.

Witnesses:
GEO. P. WHEELER,
SAML. H. BISHOP.