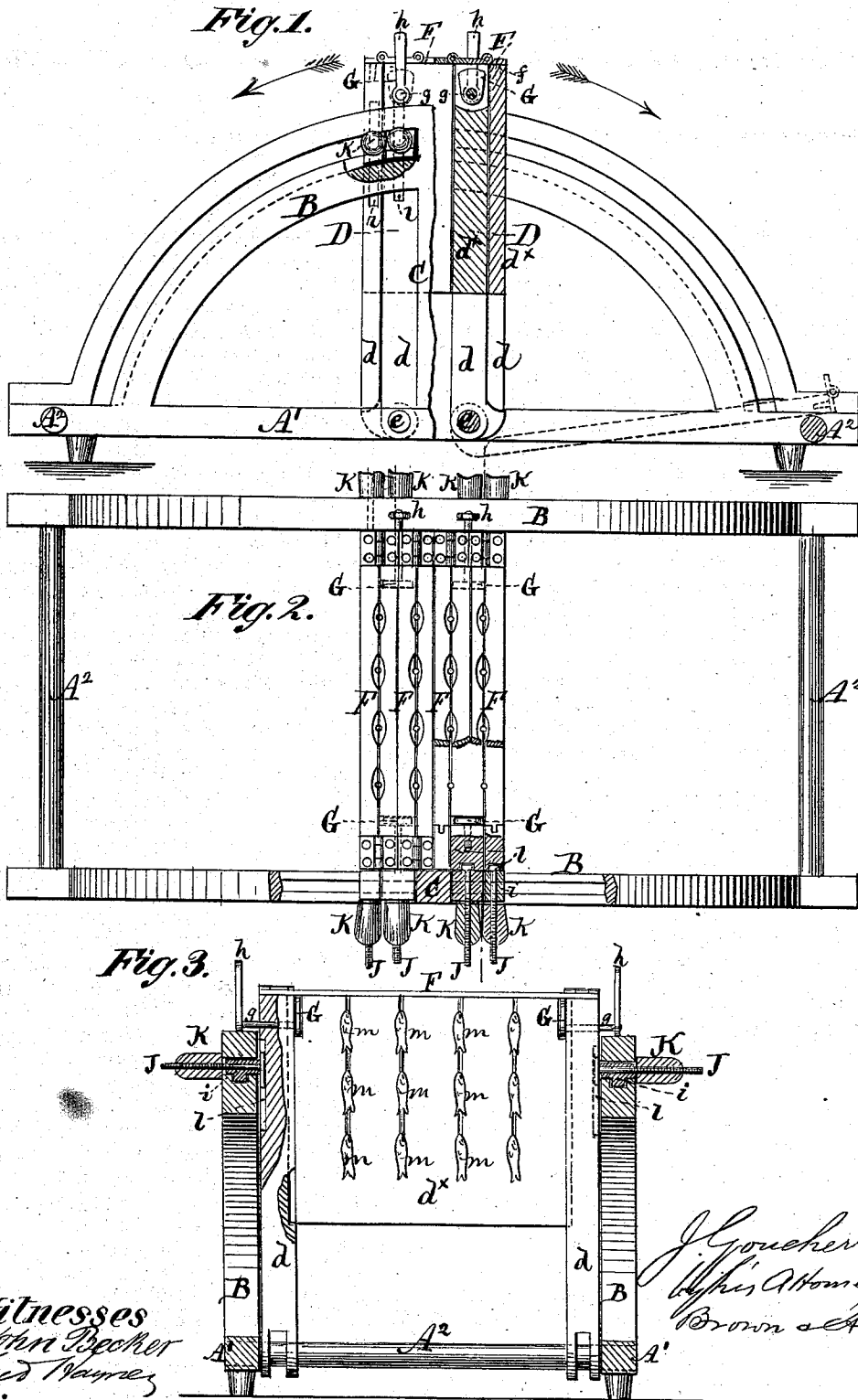


J. GOUCHER.

Machines for Making Toy-Confectionary.

No. 158,934.

Patented Jan. 19, 1875.



UNITED STATES PATENT OFFICE.

JAMES GOUCHER, OF STROUDSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING TOY CONFECTIONERY.

Specification forming part of Letters Patent No. **158,934**, dated January 19, 1875; application filed July 30, 1874.

To all whom it may concern:

Be it known that I, JAMES GOUCHER, of Stroudsburg, in the county of Monroe and State of Pennsylvania, have invented an Improved Machine for Making Toy Confectionery, of which the following is a specification:

My invention relates to certain improvements whereby the toys may be molded in sets, and the molds may be readily separated and placed in position for cooling. The invention consists in, first, a series of molds pivoted to the side frames of the machine, arranged in pairs, and provided with hinged plates at their upper edges for covering the openings in the molds; second, the combination, with the molds, of cams for separating the halves of each mold after the forming of the toys; third, the combination, with the molds and side frames, of set-screws for holding the molds in desired positions; fourth, the combination of the set-screws with grooves in the molds and slots in the frame, to allow of the molds being placed in the different desired positions.

In the accompanying drawing, Figure 1 is a side view, partly in section, of my improved machine. Fig. 2 is a top view. Fig. 3 is a transverse section taken in the line *x x* of Fig. 2.

The frame which supports the molds consists of two horizontal side pieces or rails, *A*¹, and two semicircular portions, *B*, connected at their ends by end pieces *A*². Near the central portion of the frame the molds *D* are attached. Each mold consists of two halves, the lower ends of which are pivoted to a rod, *e*, running transversely of the frame, and having its ends attached to the rails *A*¹, so that the two halves of the mold can be separated like the leaves of a book. Each half of the mold is composed of two iron or other hard-metal bars, *d d*, and a plate, *d*^x, of soft metal or composition, the lower ends of the bars *d* being pivoted to the rod *e*, and the plate *d*^x being attached to the bars by a tongue-and-groove joint of dovetail or other suitable form. The cavities or depressions *m*, for molding the toys, are formed in the plates *d*^x, one half of each cavity being formed in one of the plates, and the other half in the plate which comes face to face with it.

The cavities or depressions may be made to represent any desired form, such as animals, birds, fishes, or other suitable objects, such as toys are usually made to represent. The plates and bars composing the inner molds may be placed back to back, or they may be made of double thickness, with cavities on both sides for molding the toys. There may be any desired number of cavities in each mold, arranged in series, the cavities in each series communicating with each other by orifices between them.

At the upper edges of the two halves of each mold are plates *F*, each plate being composed of two parts hinged together, and lying over the mouths of the cavities or depressions, one part being provided with studs or projections *f*, engaging with depressions in the edge of the part of the mold upon which it rests, and the other part lying freely on the edge of the other half of the mold when the two halves are together. In the hinged plates are openings situated over the mouths of the cavities, so as to allow the confectionery to be dropped or poured into the cavities to mold the toys. Near the upper and outer edges of the molds are shafts *g*, provided with handles *h* on their outer ends, and having cams *G* on their inner ends, working in recesses in the plates *d*^x. These cams protrude through the recesses on either side when the handles are turned down, and their faces bear against the surface of one or the other of the adjoining halves of the mold. The curved side pieces *B* of the frame are slotted parallel with their edges for nearly their entire length. In these slots are blocks *i*, through which pass screws *J*, the heads of which engage with grooves *l* in the bars *d*. On the outer ends of the screws *J* are handles *K*, to facilitate the moving of the molds to different positions. These handles have internal threads formed in them, for engagement with the threads on the screws *J*, so as to serve as set-screws for holding the molds in different positions between the side pieces *B*. The central mold may be rigidly attached to the frame between the standards *C*, so as to remain stationary.

The remainder of the molds are arranged in two series, one on each side of the central mold, and each series having the pivot *e* as its

center. There may be any suitable number of molds in each series, but in the drawing I have represented a single pair on each side of the central mold as sufficient to illustrate the invention.

The curve described by the side piece B on each side of the central mold D may be an arc of a circle drawn from the pivot *e*, in which case the head of the screw J may be rigidly attached to the mold. In the form shown in the drawing the curves described by the side pieces B are not concentric with the pivots *e*, or either of them, and for this reason the grooves *l'* are provided in the bars *d* to allow the heads of the screws J to slide readily therein when the position of the mold is changed.

In using this machine the molds are all placed in an upright position, and held thus by the set-screws J K. The confectionery in a plastic state is poured or dropped into the molds, passing through the openings in the plates F, and entering the cavities *m*. When the toys have become sufficiently set in the molds the handles *h* are turned down toward the outer half of the mold, causing the cams G to protrude and bear against the surface of the adjoining half, and separate the two halves of the mold. The operator then grasps the handles K, loosens the set-screws, moves the mold to the desired position, (see dotted lines in Fig. 1,) and tightens the screws, so as to hold it in such position. The handles *h* are then turned in the opposite direction, causing the cams G to protrude from the opposite side and bear against the surface of the next ad-

joining mold, so as to separate the halves. The handles are then grasped, as before, and the mold placed and secured in the desired position. In this manner all the molds are successively separated and placed in different positions with relation to the central mold, so as to allow the toys to become dry and hard, after which the toys are removed from the molds, and the molds again placed in position for use. When the molds are separated by the cams the toys adhere to the outermost half, and remain there until sufficiently cool and hard to be removed.

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

1. The combination of the molds D, plate F, and side frame A¹B, substantially as shown and described.
2. The cams G, in combination with the molds D, substantially as and for the purpose shown and described.
3. The set-screws J K, in combination with the molds D and the side frames provided with the curved slots, substantially as and for the purpose shown and described.
4. The combination of the molds provided with the grooves *l*, the set-screws J K, and the side frames provided with the curved slots, substantially as and for the purpose shown and described.

JAMES GOUCHER.

Witnesses:

D. S. LEE,

C. H. HOWENSTEN.