

(No Model.)

M. M. SMITH.

APPARATUS FOR THE MANUFACTURE OF ALKALI BALLS.

No. 246,349.

Patented Aug. 30, 1881.

fig. 2.

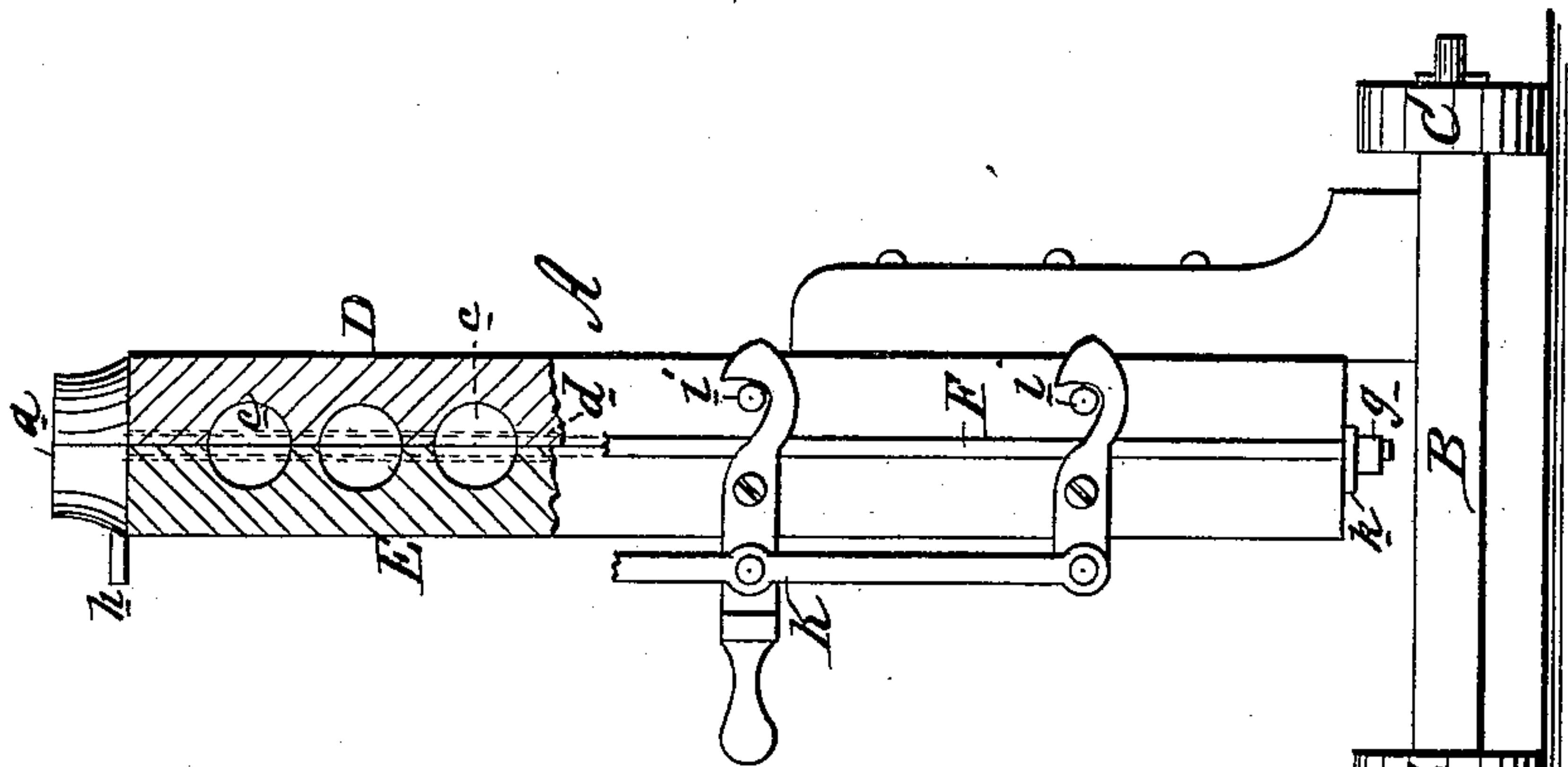


fig. 3.

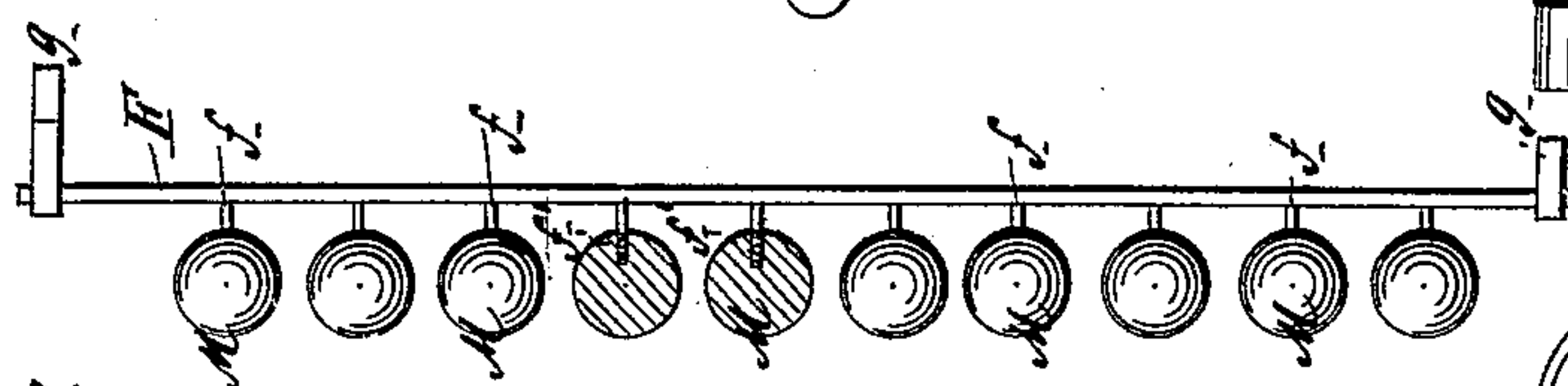


fig. 1.

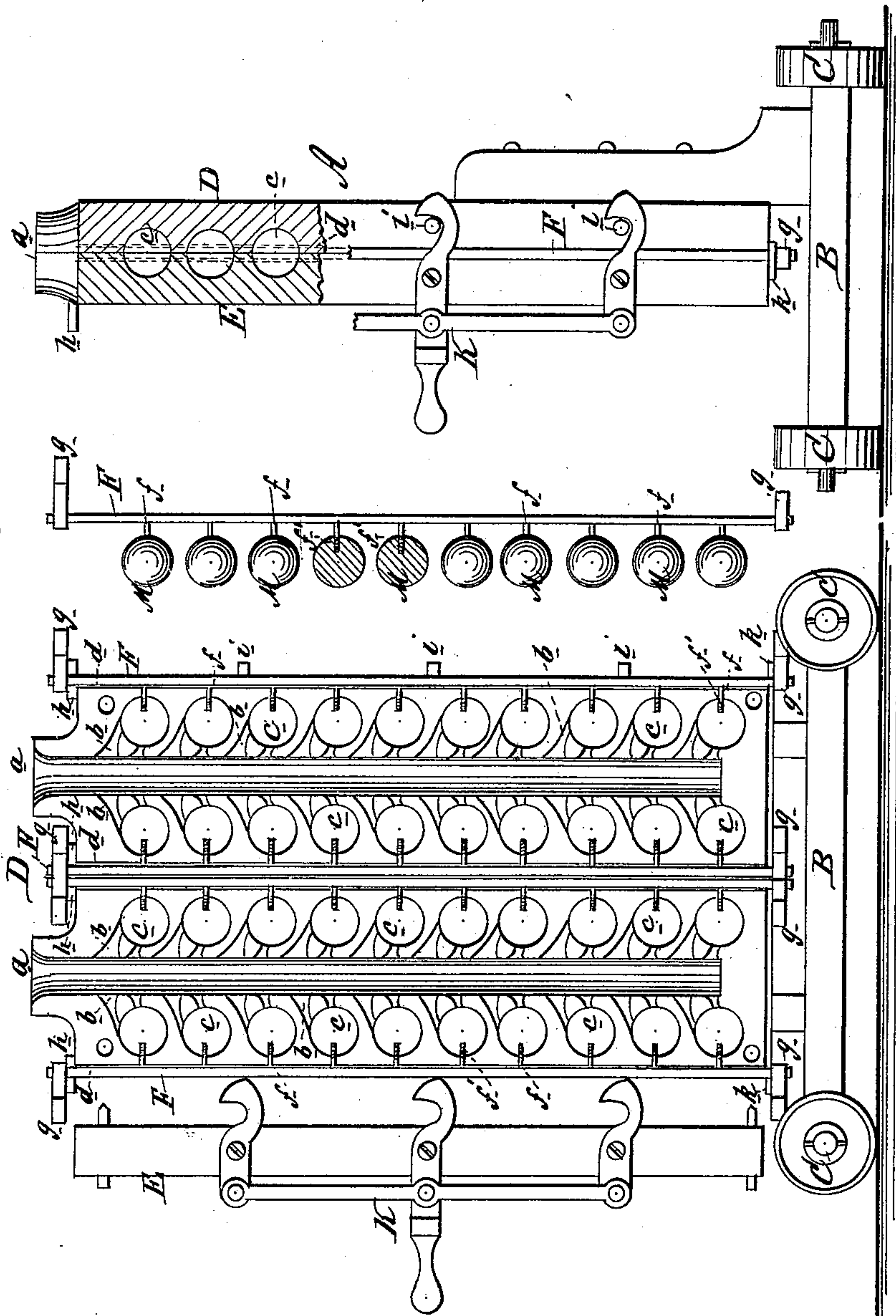
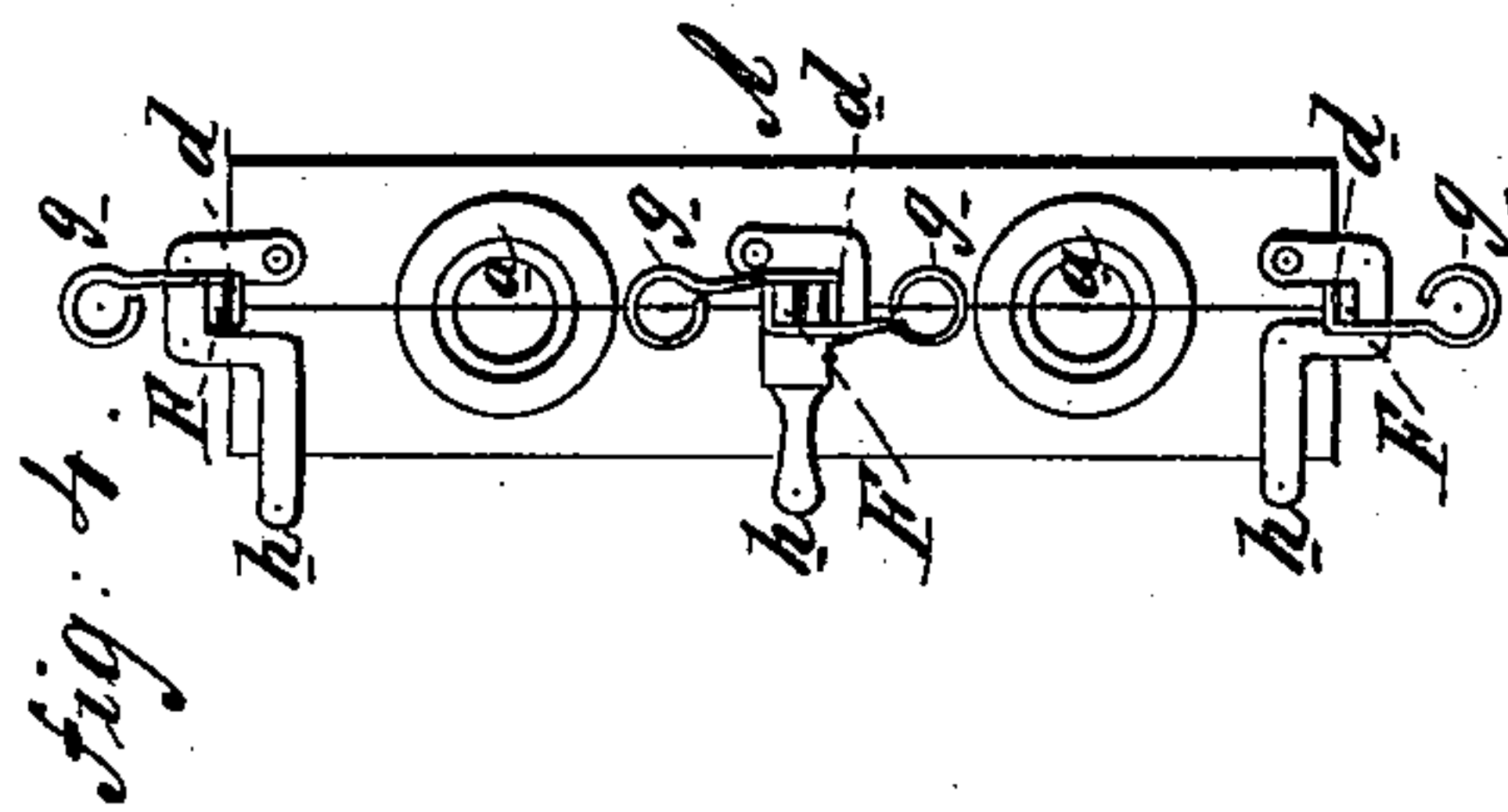


fig. 5.



WITNESSES:

A. Schehl.
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APPARATUS FOR THE MANUFACTURE OF ALKALI BALLS.

SPECIFICATION forming part of Letters Patent No. 246,349, dated August 30, 1881.

Application filed December 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, MINARD M. SMITH, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Alkali Balls, of which the following is a specification.

The object of this invention is to produce alkali balls without wires, thereby saving the cost of the wires and the trouble caused by their presence in the balls.

The invention consists in forming the balls on screws or screw-threaded pins, and in the combined pin-bars and pins used in the manufacture; and it consists, further, in making two runners to each ball-mold.

Figure 1 is a vertical elevation of the casting-flask partly open. Fig. 2 is a side elevation of the flask, closed and partly in section. Fig. 3 is an elevation representing a number of alkali balls cast on one bar. Fig. 4 is a plan of the flask, showing the bar-locking devices on the top thereof. Fig. 5 is a plan of the locking device of the lower ends of the pin-bars.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the flask; B, the base thereof, supported, for convenience of the flask, on wheels C. D is the stationary or fixed part of the flask, and E the hinged part, each part having formed in it the semi-tubular ingates *a a*, the conical runners *b*, two to each mold, and the hemispherical molds *c*, so that when the two parts or sections D E are closed together they form a flask containing tubular ingates and runners and spherical molds.

It is found that in molds with but one runner the alkali balls cast are often imperfect because of the failure of the air to escape from the mold as the melted alkali enters therein; and to obviate this difficulty I have provided two runners to each mold, so that as the alkali enters the one runner the air may escape by the other, and these runners *b* are made as small as may be at their junction with a mold, *c*, as shown, in order that the sprues may readily be broken from the balls without breaking the latter.

In each half of the flask A, between the central vertical rows of molds *c*, and outside of the

outer molds *c*, are vertical grooves *d*, for the reception of the bars F, that carry the laterally-projecting screw-threaded pins *f*. These bars F being set in the grooves *d d*, the screw ends of the pins *f* project into the molds *c* from one-quarter to one-third of the diameter thereof. Said pins *f* are about a quarter of an inch in diameter, and the screw-threads on them, as shown at *f'*, are about six or eight to the inch.

The pin-bars F are provided at each end with ears *g*, projecting therefrom at right angles, and said bars F are locked in position in the flask A by hooks or clamps *h*, that are pivoted on the top of the flask A, and are turned under the said upper ears, *g*, as shown in Fig. 4, and by a bent bar, *k*, that is extended beneath the flask A and holds the lower ends of said pin-bars F, as shown in Fig. 5.

On the front edge of the section E of the flask is pivoted the treble latch *k*, which holds the two parts or sections D E together by engagement with the pins *i i*, that project from the edge of the fixed section D of the flask.

In the old methods alkali balls are cast upon wires, and the said wires are afterward cut off close to the balls, leaving each ball with a piece of wire embedded in it, which wire is often a cause of trouble and annoyance when the ball is used.

My improved method of casting the balls is as follows: The screw-ends of the pins *f* are lightly coated with oil and lamp-black or other suitable substance, to prevent the adhesion of the alkali balls, and the bars F are then fixed in place in the grooves *d d*. The flask is then closed, and the melted alkali poured into the ingates *a* flows into the molds *c* through the runners *b*, and in each mold *c* a ball of alkali hardens about the pin *f*. When the flask A is opened the bars F are withdrawn, with the alkali balls M adhering to the pins *f*. The bars F are then placed in dipping-frames, and lowered into the usual waterproofing substance for the coating of the balls M therewith in the usual manner. The said balls M are then removed and dried on the pins *f*, and are then readily unscrewed from the pins *f*. The result of this process is that wireless alkali balls M are produced, a product that has never before

been obtained in any of the ordinary modes of manufacture; hence these wireless balls M form an improved article of manufacture.

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

1. In the manufacture of alkali balls, the combination, with the bars F, of the screw-pointed pins *f*, substantially as herein shown
10 and described, whereby wireless balls may be manufactured, as set forth.

2. The combination, with the flask A, provided with grooves *d d*, of the bars F, provided with lateral screw-pointed pins *f*, substantially as and for the purpose described.

MINARD M. SMITH.

Witnesses:

I. I. STORER,

C. SEDGWICK.