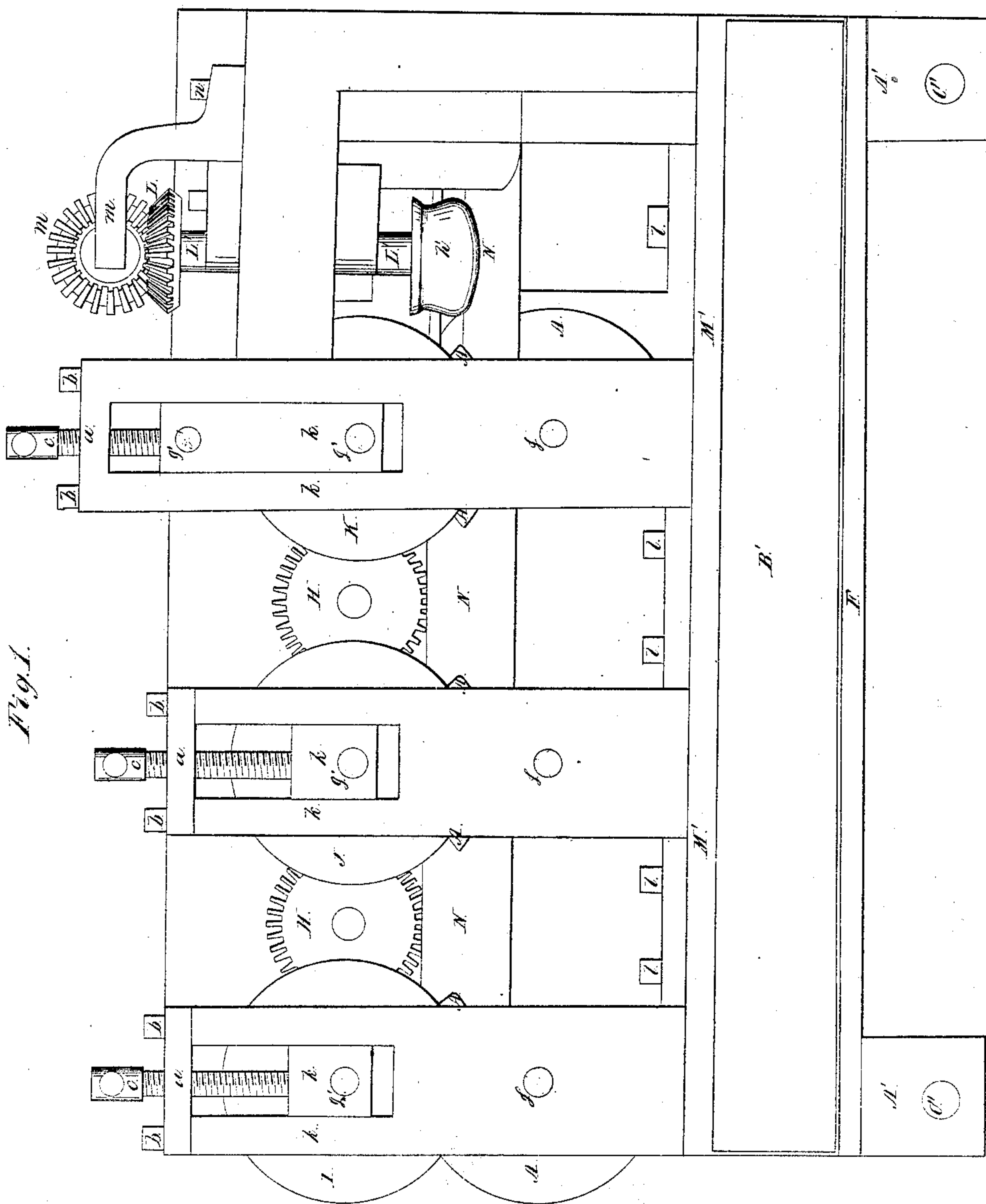


A. Johnson,

Making Metal Moldings,

N^o 18,906.

Patented Dec. 22, 1857.



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Fig. 1.

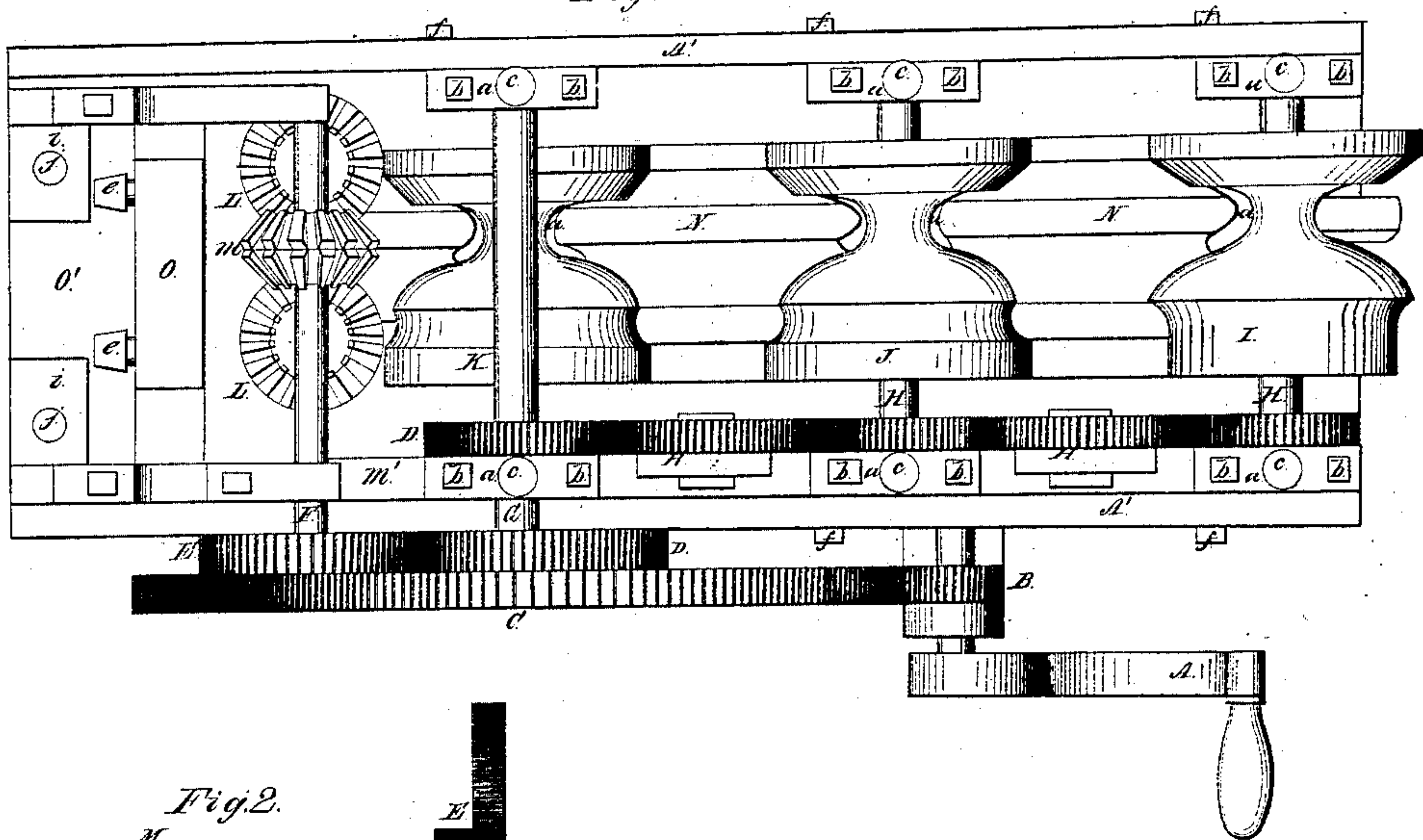


Fig. 2.

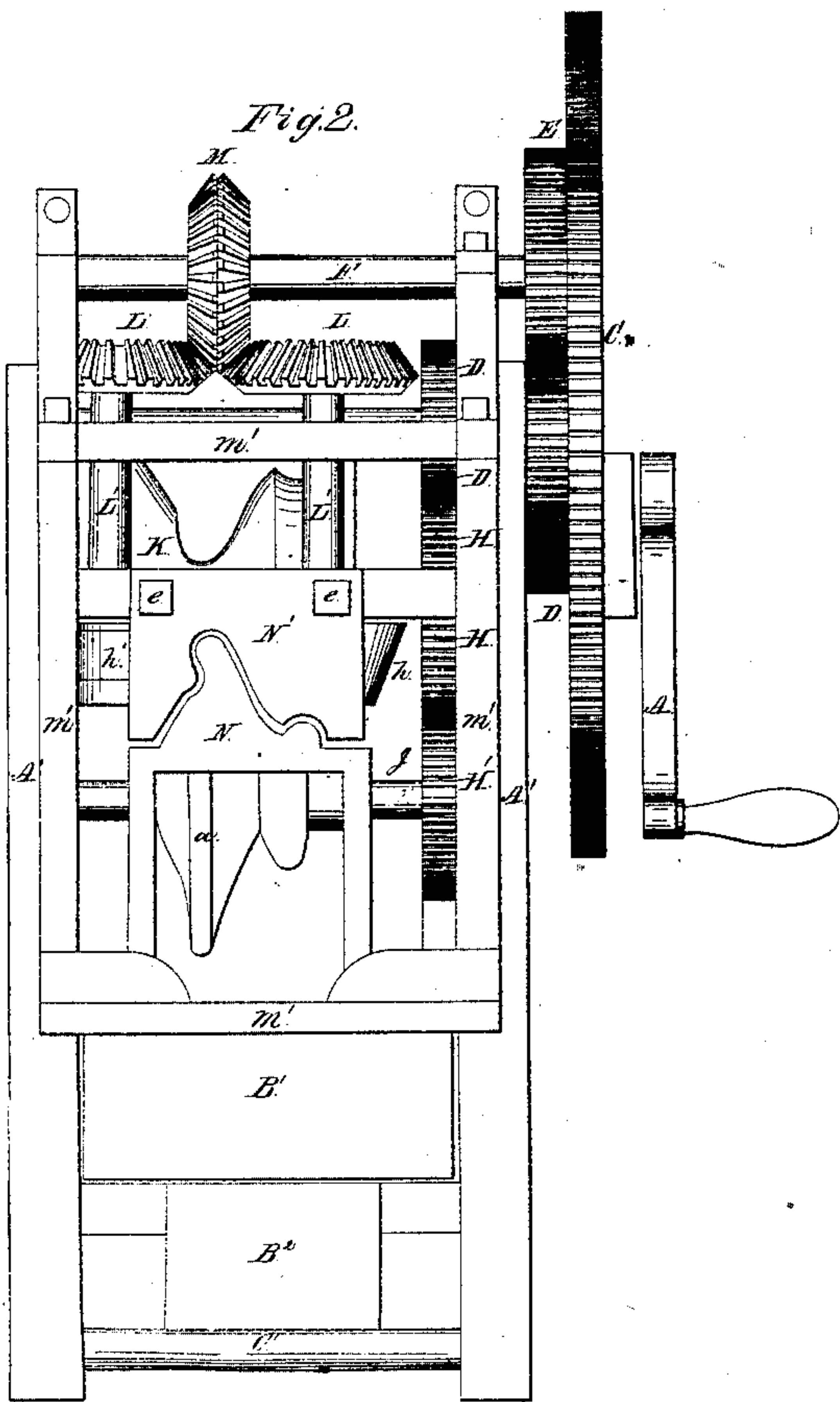
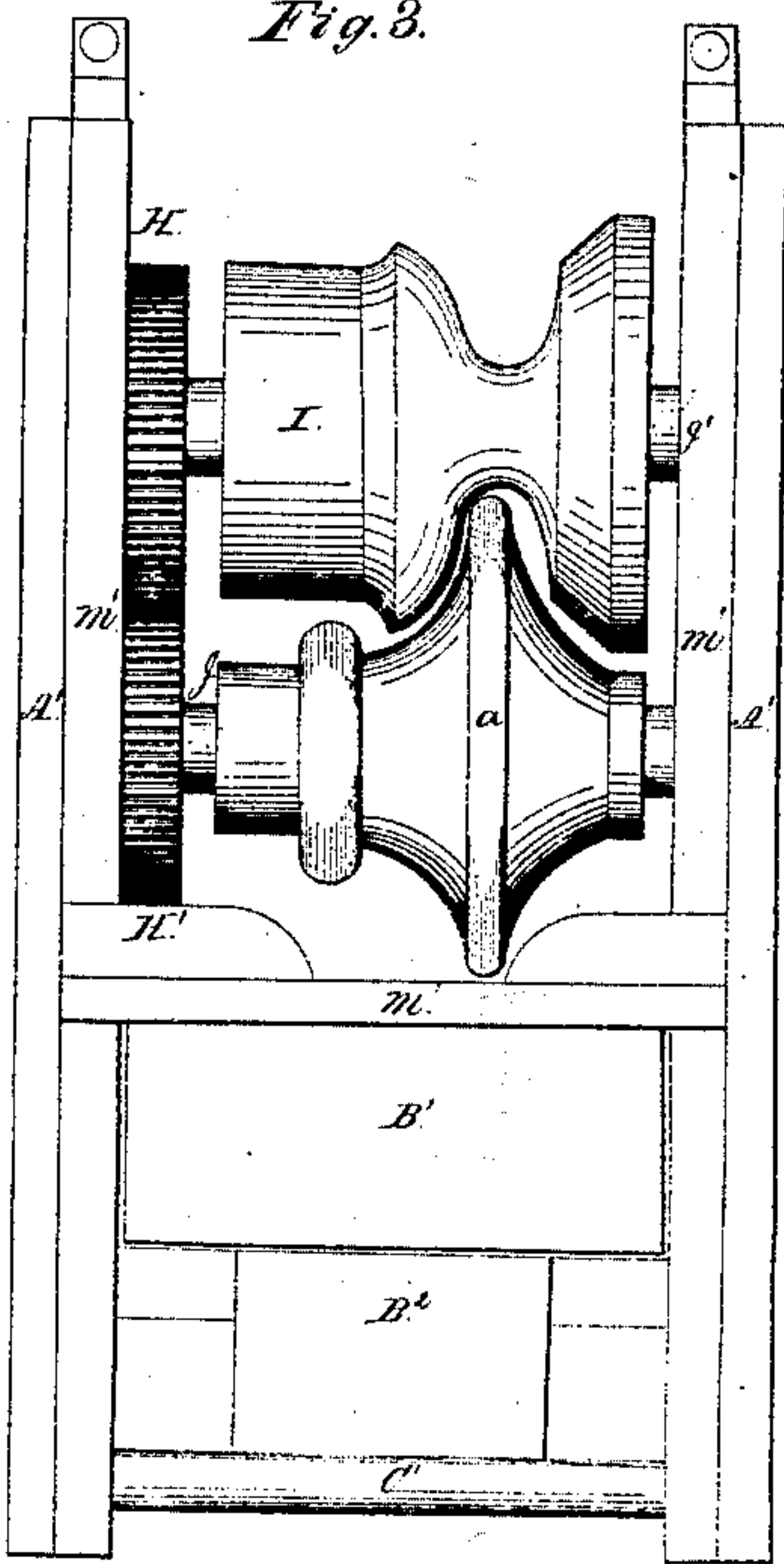


Fig. 3.



UNITED STATES PATENT OFFICE.

ASA JOHNSON, OF CAIRO, NEW YORK.

IMPROVED MACHINE FOR ROLLING CORNICES.

Specification forming part of Letters Patent No. **18,906**, dated December 22, 1857.

To all whom it may concern:

Be it known that I, ASA JOHNSON, of Cairo, county of Greene, and State of New York, have invented an Improved Machine for Making Metallic Cornices, Gutters, and other Moldings; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a plan view, Fig. 2 an end view, of the machine. Fig. 3 is the reverse end view. Fig. 4 is a side view of the same.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its operation and construction.

In the construction of my invention I use any of the known materials for such purposes.

In Fig. 1, A is the crank and crank-shaft; B, the gear-wheel on crank-shaft; C, the main driving-wheel; D, the gear-wheel on shaft G, which gives motion to all the upper set of rollers by means of the gear-wheels H, and to the lower set of rollers by means of the lower set of gear-wheels, H'; I, the first upper roller; J, the second roller; K, the third upper roller; L, bevel gear-wheels on a vertical shaft, L', to which is attached rollers *h'* and *h*. M is a double bevel gear-wheel on shaft F, and which receives motion from gear-wheel E. N is the guide for directing the course of the metal and to assist in forming the cornice; O, the die through which the cornice passes after leaving the rollers and guide; *e*, screws for attaching said die to inner frame; *m'*, the inner frame; *a*, the top of the lower rollers appearing through guide N; *b*, the screws for fastening the caps on the inner frame; *a*, the caps; *c*, the set-screw for raising or lowering rollers; *f*, screws for fastening the outer to the inner frame; O', the main bottom plate, to which is firmly attached the inner frame of the whole machine; *i*, a portion of the frame or uprights; *j*, screws for attaching the same to plate O'.

In Fig. 2, A is the crank; C, the driving-wheel; D D, main gear-wheels on shaft G; E, upper gear-wheel on shaft F; K, upper roller; L, horizontal bevel gear-wheels; L', vertical shafts passing through said wheels, and to which are attached rollers *h* and *h'*, for pressing

the cornice laterally as it passes through the machine; M', the sides of the inner frame; N, the guide; N', the die; H, the upper gear-wheel; H', the lower gear-wheels; *a*, the lower roller; J, the shaft passing through said roller; B', the boiler for heating the oil and metal; B², the furnace; C', the right-and-left screw for fastening outer sides; C, screws for fastening the die to the frame; A', the outer frame.

In Fig. 3, A' is the outer frame; M', the inner frame; G', shaft through roller I; J, shaft through roller A; H, upper gear-wheel; H', lower gear-wheel; B', boiler; B², furnace; C', screws for firmly fastening outer frames together.

In Fig. 4, H is the upper gear-wheels; I, first roller; J, second roller; K, the third roller; L, bevel gear-wheel on shaft L'; M, bevel gear-wheel on shaft F in Fig. 1; *m*, the bearing of shaft F; N, screw for fastening bearing to inner frame; *h'*, roller on vertical shaft L'; K K, sliding boxes for the journals *g'* to work in, and which are adjusted by set-screws *c*; *a*, caps on the sliding boxes; *b b*, screws for fastening the caps to the sliding boxes; G', journals of upper rollers; J, journals of lower rollers; *l*, screws for fastening the guide N to the main frame; M', the inner frame; B', the boiler; F', the projection on the inside of the plate A', on which the boiler rests; C', the screw-bolts for fastening the outer frames together.

In the operation of my invention I put oil in the boiler B', which is to be made much longer in the practical machine than in the model. Sufficient length, breadth, and depth, so that the sheets of metal from which the cornice is to be made, may be placed in it under the rollers, and long enough so that the sheets can be drawn back on a carriage and raised up to rollers H A without being removed from the boiler, and it is to be made sufficient height to hold oil sufficient to cover the metal as it passes through between the rollers. The oil is heated by means of fire being placed in the furnace B². The machine is then put in motion by turning crank A, which gives motion to the driving-wheel C and gear-wheels E and G, thus putting the whole machine in motion by means of the other gear-wheels, caus-

ing the whole to operate. The sheets of metal are then drawn back onto a carriage and placed in contact with the rollers H A, and by them drawn in and guided through the machine by means of rollers *a* and guide N, which serve to keep the metal straight as it passes through between the rollers, and by them is gradually formed when it passes rollers *h* and *h'*. Then the gutter is formed, each set forming a part, until it is formed and passes out between the dies, which gives it perfect shape. If different styles of moldings are required, different shape rollers may be used, corresponding with the shape required, and a sufficient number of them to gradually form it without cracking the metal.

If I wish to form corrugated ogees or any other shaped moldings, I cut my last series of rollers lengthwise to the corrugated shape desired, making them male and female, through which the cornice or molding passes, thus forming them into any required corrugated shape. The guide and wheel A form a solid bottom, and pass through the entire length of the machine, and are of the shape of the rollers and made to correspond with them. At the discharge end of the guide I form a female die, which fits snugly to the guide N, which is a male die, when the two are made to operate conjointly. This die gives to the molding or cornice its finish. The roller I on the first series is differently formed from the rollers J and K. This is for the purpose of only partially forming the cornice or molding by the first series of rollers. The rollers J and A are set closer than the first set of rollers, and the rollers K and A are set still closer, thus causing a gradual forming of the cornice by a succession of rollers.

I do not confine myself to any number of series of rollers, but will use as many as I may deem necessary to form my cornice gradually. The rollers *h* and *h'* on the two vertical shafts L' assisted in forming the cornice. The rollers *h* holds the metal in its proper position, while roller *h'* forms the gutter. As long as I form any one kind of molding I do not change the rollers, but use the same rollers, guide, and dies until it becomes necessary to form a different-shaped cornice or molding. Then I change the roller, guide, and dies, which is done by lifting out the slides K in boxes *k*, which are attached by screws to the frames A', where all the rollers can be taken out and another set put in. The rollers are adjusted by means of the set-screws C, which raise or lower the rollers by moving the slide K in the box *k* up and down, as required. By this arrangement I am able to make cornice and moldings out of metal of all sizes or shapes required, and to make them much cheaper than they have been made heretofore out of wood.

Having thus fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

The arrangement of the series of rollers I *a*, J *a*, and K *a*, guide N, and rollers *h* and *h'*, and die N', for the purpose of forming sheet metal into cornice and gutters for buildings while hot and passing it through the machine in boiling oil, as described, and for the purposes set forth.

ASA JOHNSON.

Witnesses:

T. G. CLAYTON,
SAML. M. TUDER.