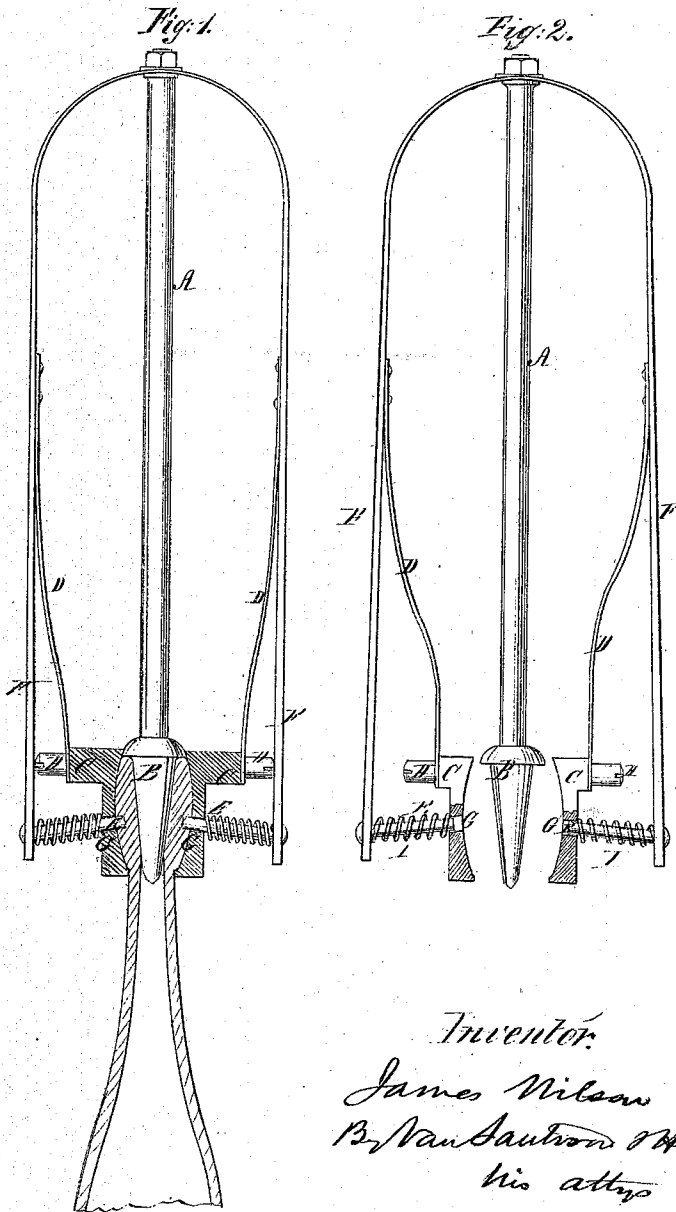


*J. Wilson,*

*Glass Tool.*

*No. 104,390.*

*Patented June 14, 1870.*



*Inventor.*

*James Wilson  
By Van Santon & Haug,  
his attys*

*Witnesses.*

*C. Mahler  
E. F. Hastenhuber*

# UNITED STATES PATENT OFFICE.

JAMES WILSON, OF NEW YORK, N. Y., ASSIGNOR TO ELIZABETH MATTHEWS,  
JOHN MATTHEWS, JR., AND GEORGE MATTHEWS, OF SAME PLACE.

## IMPROVED TOOL FOR MAKING BOTTLES.

Specification forming part of Letters Patent No. 104,390, dated June 14, 1870.

### *To all whom it may concern:*

Be it known that I, JAMES WILSON, of the city, county, and State of New York, have invented a new and useful Improvement in Tools for Making Bottles; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which drawings—

Figure 1 is a side view of my invention as it appears in operation. Fig. 2 is a like view as it appears when out of operation.

Similar letters indicate corresponding parts.

This invention relates to tools for forming sockets in the necks of bottles, and is applicable, especially, for bottles wherever it is desired to use the fastening patented by Henry and James Wilson, July 24, 1866, in Letters Patent No. 56,653.

My improvement consists in spring-punches for forming sockets in the necks of the bottles for receiving the ends of the wire loop of such fastening.

In this example of my invention I have shown it combined with a tool for forming the neck and mouth of the bottle; but it can be used separately therefrom, if desired.

The letter A designates a stem, on whose end is formed a plug, B, for forming the head and mouth of the bottle, and C C are formers, which are arranged on opposite sides of the plug in such a manner that they can be pressed against the outside of the mouth or neck, in order to give to it the desired shape outside. The formers are mounted on spring-arms D D, which are fastened at one end on the inside of the elastic arms F F, which constitute the handle of the tool. The arms F F are made in this instance of one piece, being bent together in the middle, where the stem A is fastened to it, so as to form a single tool.

E E are punches for forming sockets in the neck of the bottle, on its outside, while the glass is in a sufficiently soft condition to be impressed or indented. The said punches are mounted on the spring-arms F F in such a manner as to come on opposite sides of the

bottle, and they work in guides, which direct and guide them while they are being forced into the glass, and are provided with stops or gages, which limit the depth of the punctures to be produced, so as to prevent the punches from going entirely through the glass. In this example I have formed the guides in the bodies of the formers C by perforating them with holes G G, through which the ends of the punches work, and I have arranged stops H on the backs of the formers, against which the arms F F strike when the punches are pressed into the glass, and thereby arrest their further movement. The position and arrangement of the stops are adjusted with regard to the length of the punches and the degree of motion required for them to make the required indentations in the glass without allowing them to be driven through it. The elasticity of the arms on which the punches are mounted serves to withdraw them from the glass and within the holes G, when the pressure which forced them inward is taken off, and in addition to that provision for withdrawing them I have placed around them spiral springs I I, which bear against the backs of the formers and tend to restore the punches to their proper positions after every operation.

I do not restrict myself to any particular method of mounting the formers or the punches in the tool, nor to any particular method of arranging their spring-arms D D with each other.

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

1. Spring-punches E, arranged to work in guides and limited by stops which govern their movements toward each other, substantially as and for the purpose described.

2. The combination of punches E with the formers and plug for forming the head and neck of a bottle, substantially as described.

This specification signed by me this 20th day of April, 1870.

JAMES WILSON.

Witnesses:

W. HAUFF,  
E. F. KASTENHUBER.