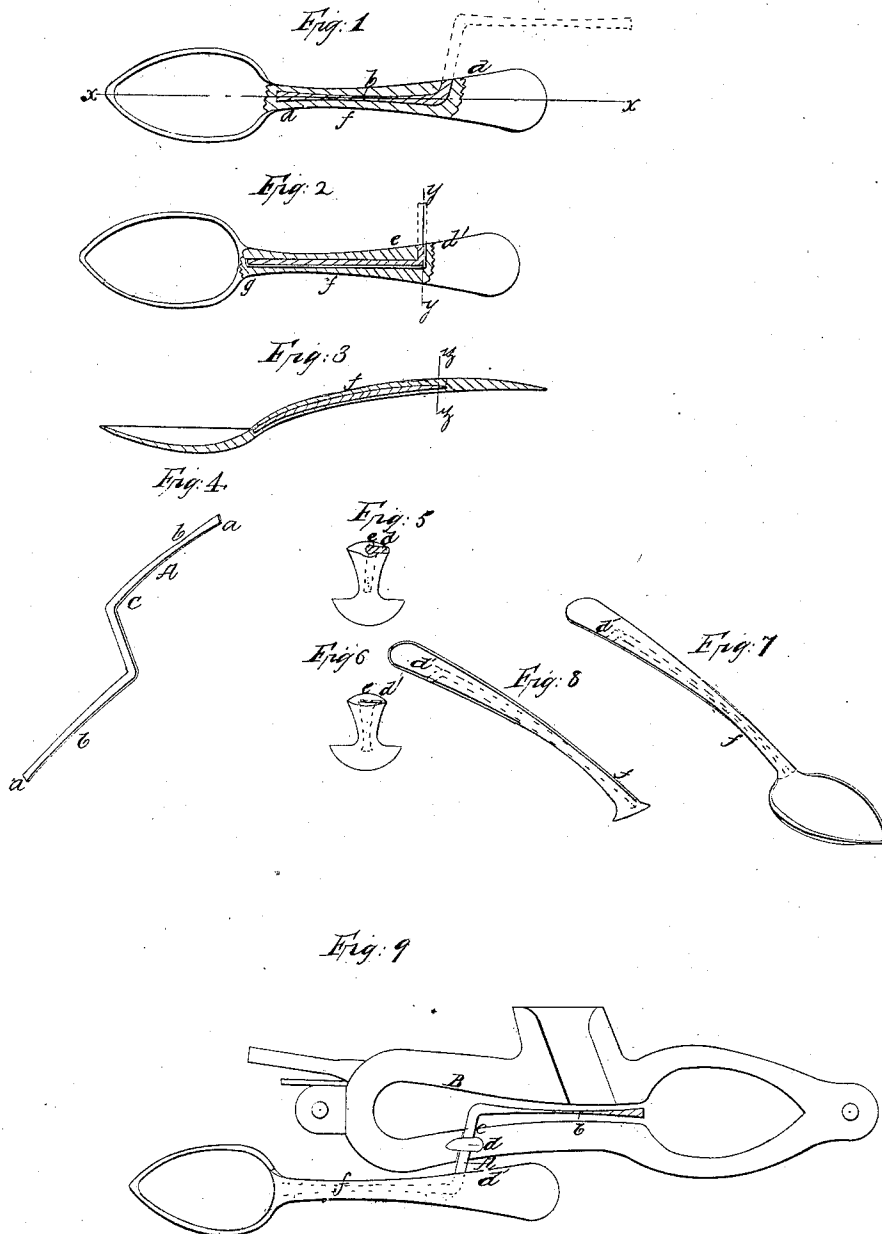


G. I. Mix,
Casting Spoons.

N^o 31,555.

Patented Feb. 26, 1861.



Witnesses:
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UNITED STATES PATENT OFFICE.

G. I. MIX, OF WALLINGFORD, CONNECTICUT.

IMPROVEMENT IN MANUFACTURE OF SPOONS.

Specification forming part of Letters Patent No. 31,555, dated February 26, 1861.

To all whom it may concern:

Be it known that I, G. I. MIX, of Wallingford, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Wiring and Strengthening Cast-Metal Spoons; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a face sectional view of my invention. Fig. 2 is a face sectional view of a spoon wired in the ordinary way. Fig. 3 is a longitudinal section of Fig. 1, taken in the line *xx*. Fig. 4 is a detached perspective view of the wire used in my invention. Fig. 5 is a transverse section of Fig. 2, taken in the line *yy*. Fig. 6 is a transverse section of Fig. 3, taken in the line *zz*. Fig. 7 is a perspective view of a spoon wired according to my invention. Fig. 8 is a perspective view of the handle of a spoon wired in the ordinary way. Fig. 9 is a plan or top view of the lower part of the mold in which the spoons are cast, showing the manner in which the wire is inserted in the mold.

Similar letters of reference indicate corresponding parts in the several figures.

Spoons which are cast of soft metal require to have their handles strengthened by a wire, and these wires have hitherto been round and fitted in the mold by means of pliers, the metal being cast around the wire in the mold. The ordinary mode of wiring is attended with some disadvantages. The first is, that the wire being round or cylindrical weakens the handle at its upper part, where it is broad and flat, as the wire allows but a small mass of metal at that point, and nearly divides the handle for a distance of half its width. The second disadvantage is, that the round or cylindrical rod or wire admits of the handle of the spoon bending after being cast, as the metal will slip over or around it, and consequently a cavity will be left or allowed in the handle at its junction with the bowl, and this cavity greatly weakens the spoon at the point specified. The third disadvantage is, that the wire being adjusted in the mold by pliers considerable time is expended in the proper prosecution of this work. My invention obviates all of these difficulties, as will hereinafter appear.

To enable those skilled in the art to fully

understand and construct my invention, I will proceed to describe it.

A represents a piece of wire of suitable dimensions and bent in a zigzag form, as shown clearly in Fig. 4. This wire is of flat form, and its ends *aa* are flattened out broader than at points *b* above it, and the center part, *c*, of the wire is also made flatter. This piece of wire A forms the wire for two spoons, but it is not divided until after the spoons are cast. The mold B, which is shown in Fig. 9, may be of the usual construction, and one-half of the wire is adjusted in the mold, as shown in the said figure, one of the ends *a* being at the junction of the handle and bowl, and the flat part *c* passing out at the side of the mold. By this arrangement it will be seen that one part of the wire A will serve as a handle to adjust the other part in the mold B, and when a spoon is cast on one part of the wire A, the spoon will serve as a convenient handle to adjust the other part of the wire in the mold to cast a succeeding spoon, as will be fully understood by referring to Fig. 9. The wire A may be held in proper position in the mold by a clamp, *d*, arranged in any proper way. The flat part *c* of the wire, it will be seen, passes out at the upper and flat part, *d'*, of the handle, and consequently does not weaken the handle in the least, (see Figs. 6 and 7,) while the round rod or wire *e* hitherto used greatly weakens said part *d'*, as will be seen by referring to Figs. 5 and 8. The central part, *f*, of the handle of the spoon being thicker and approximating to a spherical form, the wire A has its part *b* rather thicker than elsewhere, in order to give the handle of the spoon the requisite degree of stiffness.

When a spoon is cast with my improved form of wire, it will be seen that the handle cannot slip longitudinally over the wire, for the broad terminals *a* will prevent it. This result generally adds to the stiffness of the handle. The round or cylindrical wire *e* being of equal diameter throughout, will admit of the metal of the handle slipping over it longitudinally as the handle is bent. This result causes an opening or cavity at the lower part of the handle at its junction with the bowl, as shown at *g* in Fig. 2, and consequently the spoon will be much weakened at this point as well as at the upper part of the handle, *d'*. My invention not only obviates these difficulties, but also greatly fa-

cilitates the casting of the spoons, as the wires A may be adjusted in the mold very expeditiously and in a very accurate manner. The wires being struck between two steel-tempered dies to give them their thin form, are of course perfectly uniform, the mold being fitted to them so that when the beak or clamp is brought down on the wire it uniformly finds a central position in the mold without any adjusting, which enables the caster to throw out at least one-third more spoons per day than by the old way, in which each wire has to be very carefully fixed after it is put into the mold before the caster is prepared to pour the metal. It may be too high or too low, and frequently so much time is lost that the mold cools off so much that the casting will be imperfect. By my invention the spoons need no other manipulations after they are cast than to cut off the flattened wire close to the handle before they go to be polished and finished in the ordinary way.

Spoons have been cast with a wire or rod round, square, or flat, running the whole length of the handle, and they have been cast hollow and a wire afterward put into the cavity. In

all the above modes it was necessary to cast the handle larger than the finished article was designed to be, and the handle pressed into shape with dies, and the excess of metal driven out at the sides and then clipped off.

In all the old modes, including the old way of turning the wire out at the side short of the end of the handle, there is at least from three-fourths of an inch in length to one-fourth inch more wire wasted than in my improved way, which makes a very imperfect stem.

I do not claim, broadly, the casting of spoons with strengthening-wires in the handles; but,

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

The employment, in the manner and for the purpose herein shown and described, of the zigzag wire A, formed as set forth, in combination with the molds B and spoons *ff*, all as specified.

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Witnesses:

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