

J. F. HARRIS.

MANUFACTURE OF WATCH CHAIN SWIVELS.

No. 179,112.

Patented June 27, 1876.

Fig. 1.
Reduced.

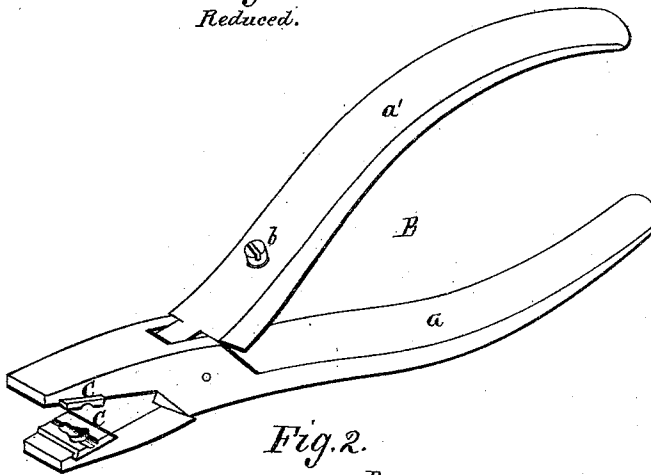


Fig. 2.

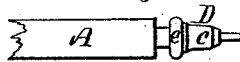


Fig. 3.

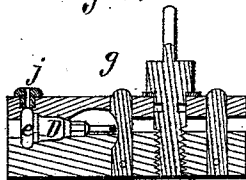


Fig. 4.

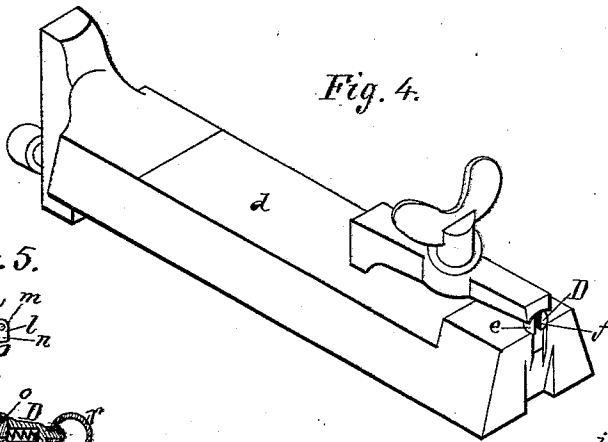


Fig. 5.

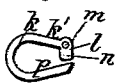


Fig. 6.

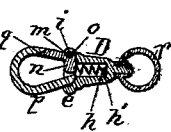
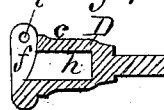


Fig. 7.



Witnesses.
W. Boardman.
Geo. Clark

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UNITED STATES PATENT OFFICE.

JOHN F. HARRIS, OF NORTH ATTLEBOROUGH, MASSACHUSETTS, ASSIGNOR
TO EDWARD E. BARROWS, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF WATCH-CHAIN SWIVELS.

Specification forming part of Letters Patent No. **179,112**, dated June 27, 1876; application filed
May 11, 1876.

To all whom it may concern :

Be it known that I, JOHN F. HARRIS, of North Attleborough, Bristol county, Massachusetts, have invented a new Method of Manufacturing Watch-Chain Swivels, of which the following is a specification:

The main purpose of this invention is to lessen the cost of production of watch-chain swivels or hooks, which I effect by the method of manufacture hereinafter stated; but the swivel which is produced by this method is superior in many respects to those made in the ordinary manner.

The drawings accompanying this specification represent in Figure 1 a perspective view of the dies and their holder, by which the body of the swivel is "roughed" out of the wire rod in the first stage of the manufacture. In Fig. 2 a view of the body of the swivel as roughed out from the wire rod. Fig. 3 is a section of the "jig," in which the swivel body is held while drilling the pocket which receives the spring. Figure 4 is a perspective view of the slide rest or jig, in which the body of the swivel is supported and fed up to the milling-tool in the act of cutting the channel to receive the loop. Fig. 5 is a view of the yoke-shaped piece of metal from which the hook and latch of the swivel are produced. Fig. 6 is a section of the body. Fig. 7 is an enlarged section of the body portion of the swivel.

In carrying out my invention I provide myself with a piece of metal wire or a long rod, A, (usually of bars) which I insert in the bore of the tubular arbor of the lathe in which the greater part of the labor in producing the swivel is carried out. The end of the rod A is gripped by the chuck attached to the lathe-arbor, with a sufficient portion protruding from the latter to produce the desired body of the swivel. I next employ a pair of tongs or pinchers, B, to the jaws of which I secure sectional twin dies C C, which together constitute a female die whose interior conformation is that to which the body D of the swivel is to be reduced. Grasping the instrument B in the right hand, and putting the lathe in revolution, I inclose the end of the rod A between the dies C C, and force such dies to-

gether. The result is that the edges of the dies act upon the rod to turn or reduce it, and the pressure is usually maintained until the dies meet, or until one handle, *a*, of the instrument B brings up against an adjustable stop, *b*, projecting from the opposite handle *a'*, when the end of the rod A will be found to have been turned to the requisite shape, as shown at *c* in Fig. 2 of the drawings. The purpose of the stop *b* is to provide a uniform gage to which a large number of swivel bodies may be reduced, and in this manner adapt the instrument to the turning of bodies of varying sizes. The body D is now cut from the rod A and is inserted shank first within a jig, *d*, shown in Fig. 4 of the drawings. The slide rest or jig *d* is now fed up to a rotary cutter or milling-tool, and the latter cuts in the head *e* a channel, *f*, as shown in Fig. 4 of the drawings, to receive the base of the latch, to be hereinafter described. The body D is now removed from the jig *d* and secured within a second jig or clamp, *g*, as shown in Fig. 3 of the drawings, and a pocket, *h*, is drilled axially in such body D, the clamp being adapted to the lathe before named, or to a drilling-machine, in such a manner that pockets of uniform depth are bored. I next drill a small hole, *i*, through the end of the body D, and at one side thereof, this hole intercepting the channel *f* at right angles and serving to receive the pivot of the latch. A hole, *j*, is created in the jig *g*, through which the drill passes to bore the hole *i*. I now provide myself with a yoke-shaped bar or piece of metal, *k*, shown in Fig. 5 of the drawings, the extremity of one arm, *k'*, of such yoke being formed into an enlargement, *l*, in which I drill a hole, *m*, to coincide with the hole *i* before named, while, making part of the enlargement *l*, is a spur, *n*, against which a spring acts, as hereinafter explained. Proceeding, I drop within the pocket *h* a coiled spring, *h'*, and I next insert the enlargement *l* of the yoke *k* in the deepest part of the channel *f* of the head D, and pass a pivot, *o*, through the coinciding holes *i* and *m*. I now spring the opposite extremity or arm *p* of the yoke *k* into the opposite side of the channel *f*, and solder it rigidly therein. I now sever

or cut through the yoke *k*, with an oblique cut, *q*, as shown in Fig. 1 of the drawings, and the swivel is complete, so far as my invention relates to it, though the ordinary loop or eye is added to its stem, as shown at *r* in said Fig. 6.

It will be seen that the effect of the cut *q* is to provide, by the portion *p* of the yoke *k*, a rigid hook, by which the chain is secured to the ring of the watch, while the portion *k'* becomes a yielding spring-latch to enable the chain to be readily attached to or removed from the said ring.

By means of my method of manufacturing swivels, as above stated, I greatly economize the time required to produce these articles as

compared with the method heretofore practiced, while I produce a strong, durable, and convenient swivel.

I claim—

1. The method of manufacturing swivels, substantially as herein stated.

2. The instrument for fashioning or turning from the rod the body of the swivel, such instrument consisting of the pinchers *B*, with the female semi-dies *C C*, substantially as and for purposes stated.

JOHN F. HARRIS.

Witnesses:

THOS. G. SANDLAND,
HENRY E. CAPRON.