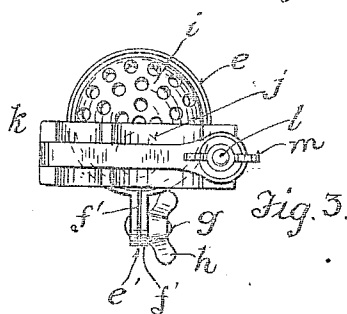
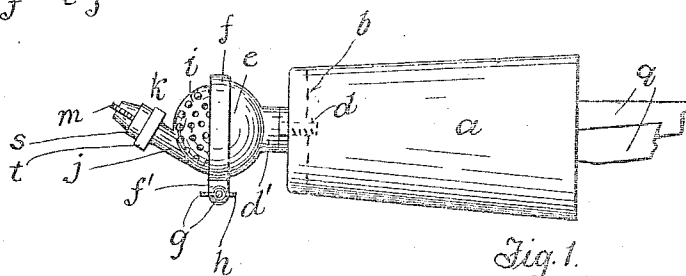
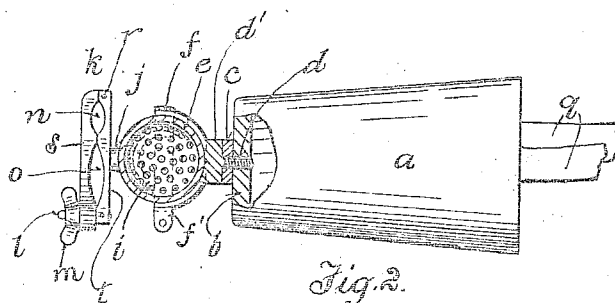
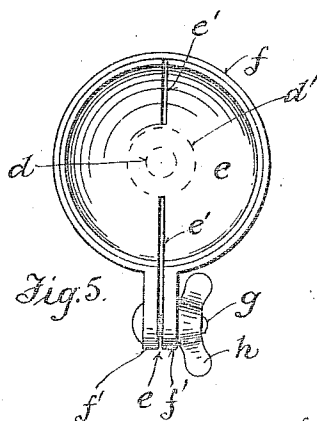
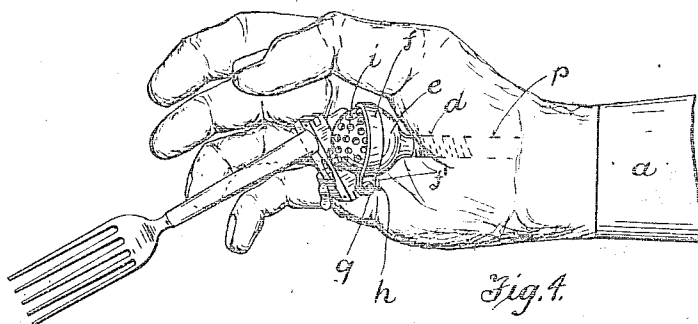


D. W. DORRANCE.
 ARTIFICIAL HAND OR TOOL HOLDING ATTACHMENT FOR AMPUTATED ARMS.
 APPLICATION FILED SEPT. 10, 1909.

953,821.

Patented Apr. 5, 1910.



Witnesses:
 John Sperk
 Ella Hays

Inventor:
 David W. Dorrance
 by Z. H. Seiler Atty.

UNITED STATES PATENT OFFICE.

DAVID W. DORRANCE, OF PORTLAND, OREGON.

ARTIFICIAL HAND OR TOOL-HOLDING ATTACHMENT FOR AMPUTATED ARMS.

258,821.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed September 10, 1909. Serial No. 517,143.

To all whom it may concern:

Be it known that I, DAVID W. DORRANCE, a citizen of the United States, and a resident of the city of Portland, in the county of Multnomah, State of Oregon, have invented a new and useful Improvement in Artificial Hands or Tool-Holding Attachments for Amputated Arms, of which the following is a specification, reference being had to the accompanying drawings as constituting a part thereof.

This invention has for its object to obtain a gripping device adapted to be fixed to an arm stump, serving as the hand thereof, and which is adapted to hold an implement such as a fork, knife, or working tool.

It is further my object to make such device simple of construction and easily adjusted; and to that end my invention embodies the specified features hereinafter more fully set forth.

In the drawings: Figure 1 is an elevation of my artificial hand; Fig. 2 is a top view with parts in section; Fig. 3 is an enlarged front end view with the socket part of my device omitted; Fig. 4 shows my device embodied in the form of a human hand; and Fig. 5 is an enlarged end view of the socket part of my device, more clearly illustrating the construction of the same.

Referring in the first instance to the construction of device as illustrated in Figs. 1 and 2: My device comprises a socket *a*, provided with a head plate *b*, having a threaded perforation in which to receive the threaded shank *d*, projecting from a boss, *d'* of the semi-globular socket *e*. Between the abutting parts is preferably placed a washer *c*, of resilient material such as rubber. The socket *e* is made with aligned splits *e'* radiating from the center and rendering the socket slightly compressible. On one of the split sections of the socket *e* is affixed a band *f* having projecting ear-ports *f'*, *f''*, one of which is provided with a threaded stud *g*, projecting through the registering perforation of the other ear, and on such stud *g*, is a wing nut *h*, by which the ears *f'*, *f''*, and therewith the split portions of the socket *e*, are drawn together, so as to clamp in place the ball *i*, which is rotatable in the socket *e*.

To lighten its weight, the ball *i* is made hollow and perforated. The ball *i* is provided with the integral tangential shank *j*, on the outer end of which is provided a clamping device, *k*, consisting of two mem-

bers hinged together, one thereof provided with a pivoted, threaded pin, *l*, projecting through a registering perforation of the companion member, and on which threaded pin is a wing nut, *m*, for adjusting the movable member of the clamp device. The opposed faces of the clamping contrivance *k*, are provided with concavities *n* and *o*, one larger than the other, in which to insert the implement that is to be held by my device. The ball *i*, being rotatable in the socket *e*, permits the adjustment of the clamping contrivance *k* to any position convenient for holding the implement to be used.

In Fig. 4 I have illustrated my device as combined with, or embodied, as it were, in an artificial form of a human hand. The construction of the parts is just the same as above described and the parts have been lettered accordingly. The screw shank *d*, in this instance, instead of being inserted in the head plate *b* of the socket *a*, is inserted in the palm of the hand form, the latter being made with a threaded hole, *p*, to receive said screw shank.

The socket *a* is provided with straps *q*, arranged as convenient for securing such socket on the arm stump in the usual manner.

I claim:

1. An artificial hand comprising a device adapted to be attached to the amputated arm, a semi-globular compressible socket affixed to said attaching device, means for compressing the socket, a ball rotatable in the socket; a shank projecting from the ball, and a clamp on the extremity of the shank.

2. An artificial hand comprising, a device adapted to be attached to the amputated arm, a semi-globular compressible socket affixed to said attaching device, means for compressing the socket; a ball rotatable in the socket, a tangential shank projecting from the ball, a clamp on the extremity of the shank, and said clamp consisting of a member rigid on the end of the shank, an opposed member hinged thereto, and means for tightening the hinged member upon the fixed member of the clamp, the opposed faces of said clamp being provided with a recess or recesses.

3. An artificial hand comprising, a device adapted to be attached to the amputated arm, a semi-globular split socket adapted to be compressed, affixed to said attaching device; means for compressing the socket,

a ball rotatable in the socket, a shank projecting from the ball, and a clamp on the extremity of the shank.

4. An artificial hand comprising, a device
5 adapted to be attached to the amputated arm,
a semi-globular split socket adapted to be
compressed, affixed to said attaching device,
a band encompassing the mouth of the socket
and attached thereto, means for tightening
10 the ends of said bands to compress the
socket; a ball rotatable in the socket, a
shank projecting from the ball, and a clamp
on the extremity of the shank.

5. An artificial hand comprising, a device
15 adapted to be attached to the amputated
arm, a semi-globular split socket adapted
to be compressed, affixed to said attaching
device; a band encompassing the mouth of

the socket and attached thereto, said bands
having projecting ear portions, means for 20
clamping said ear-portions together so as
to compress the socket, a ball rotatable in
the socket; a tangential shank projecting
from the ball, a clamp on the extremity of
the shank; and said clamp consisting of a 25
member rigid on the end of the shank, an
opposed member hinged thereto, and means
for tightening the hinged member upon the
fixed member of the clamp, the opposed
faces of said clamp being provided with a 30
recess or recesses.

DAVID W. DORRANCE.

Witnesses:

ELLA J. HAYS,
JOHN SPERR.