No. 26,378.

PATENTED DEC. 6, 1859.

W. SELPHO & J. WALBER.

ARTIFICIAL ARM AND HAND.

Fig. 1.

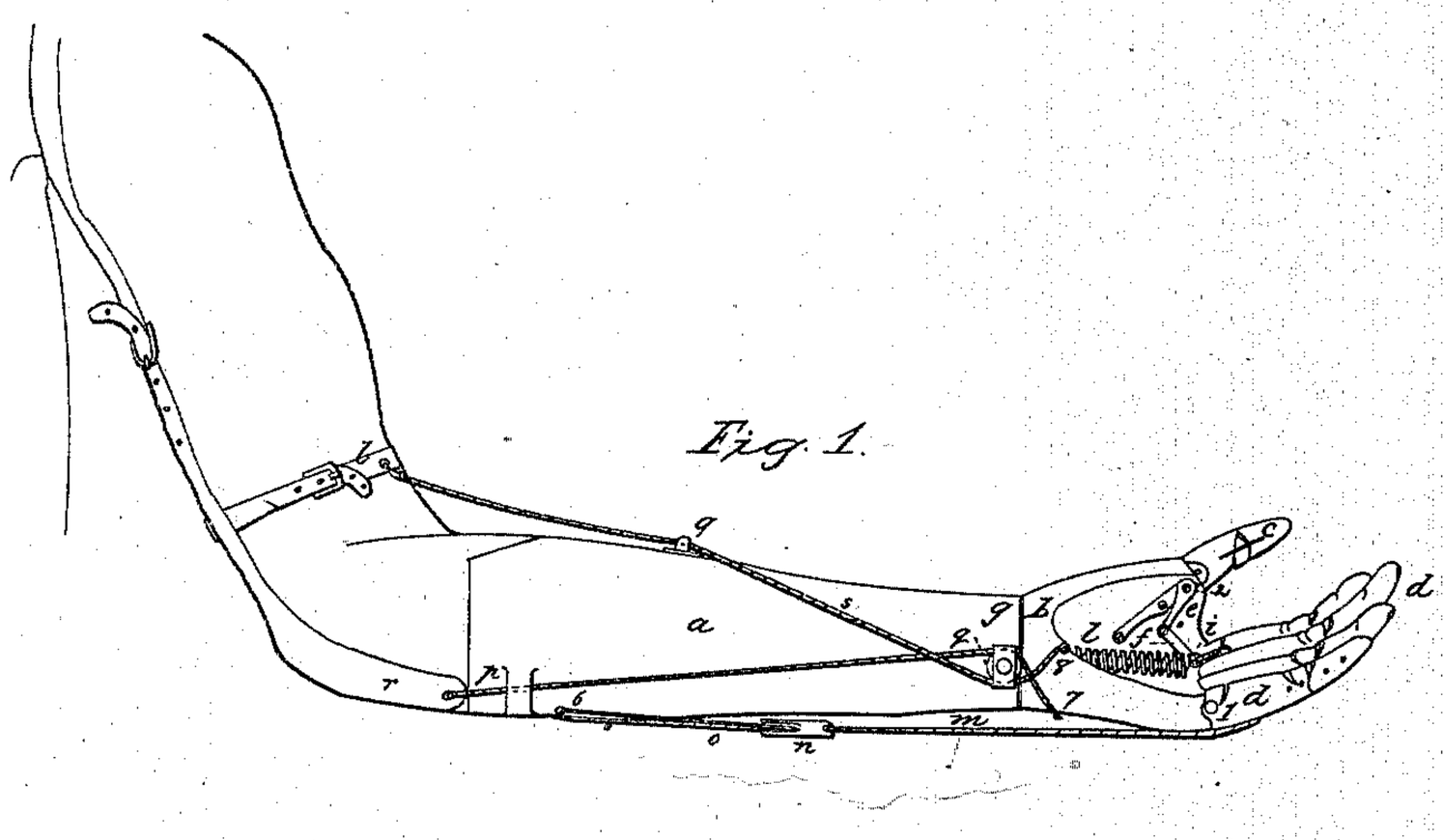


Fig. 2.

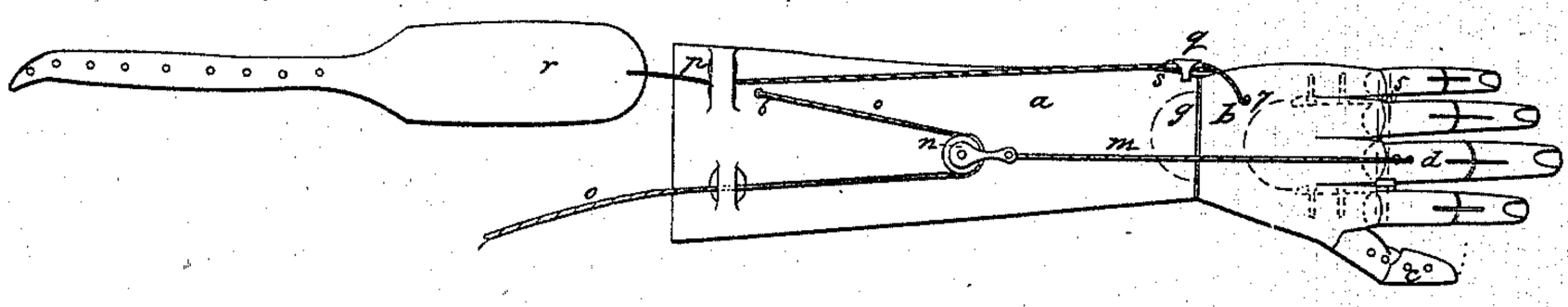
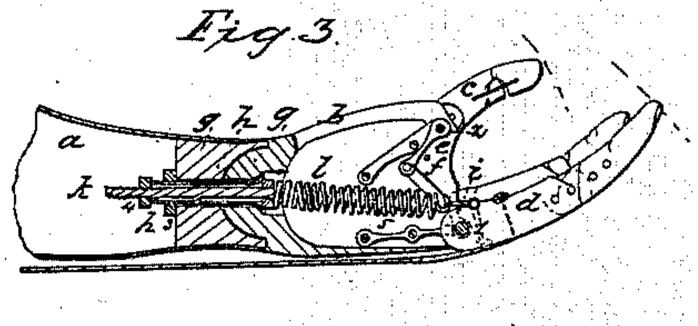


Fig. 3.



Witnesses:

Chas. Geo. Harvell

Chas. A. Smith

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The drawing in this pate
is not in print.

UNITED STATES PATENT OFFICE.

WM. SELPHO AND JAMES WALBER, OF NEW YORK, N. Y.

IMPROVEMENT IN ARTIFICIAL HANDS.

Specification forming part of Letters Patent No. **26,378**, dated December 6, 1859.

To all whom it may concern:

Be it known that we, WILLIAM SELPHO and JAMES WALBER, of the city and State of New York, have invented, made, and applied to use certain new and useful Improvements in Artificial Hands; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a side view of our hand as in use. Fig. 2 shows the back of the hand, and Fig. 3 is a section of the hand and wrist.

Similar marks of reference indicate the same parts.

The nature of our said invention consists, first, in arranging a double purchase for opening the fingers and hand from a motion derived from the shoulder of the other arm through the medium of a strap; second, in constructing the wrist-joint so that it can be tightened when required, and also the spring-connection through said wrist-joint; third, in applying a connection to the wrist in such a manner that the hand receives a turning motion as the arm is raised similar to that of the natural hand upon raising up food to the mouth, thus giving a person greater facility than with those artificial hands heretofore constructed.

In the drawings, *a* is the socket, adapted to receive the forearm.

b is the hand, and *c* the thumb.

d d are the fingers, attached to the rod 1, which is sustained in eyes 5 on the hand so that a limited motion is allowed to the fingers, which all move together on and with this rod 1.

c is the thumb on the joint 2, at which point a compound motion can be given to said thumb. It can be turned toward or moved from the fingers on the joint 2, and can also be moved on a rule-joint back, as in Fig. 2, or turned in against the inner parts of the fingers.

e is a crank-arm from the joint 2, and *f* is a link to the short crank *i* on the rod 1, so that when the fingers *d* are opened the thumb *c* is also moved away from the fingers, giving a life-like appearance to the hand.

g is the wrist, formed as a ball entering a socket, *g'*, at the end of the forearm. The ball and socket are connected by a pipe, *h*, formed as a screw on the outside; and 3 is a nut taking said pipe and tightening the ball and socket to prevent them wearing loose.

k is a rod through the pipe *h*. At one end the spring *l* is attached, and the other end is provided with a nut, 4, to regulate the tension of the spring *l*, said spring *l* being attached to the inner end of one of the fingers *d*, so that it tends to confine any article between the thumb *c* and fingers *d d*.

m is a cord or catgut attached to the middle finger *d*, and running at the back of the hand to the pulley *n*; and *o* is a cord or gut attached at 6, passing around the pulley *n* and through the eye, whence it is led to a strap around the shoulder of the other arm, (as in the patent of W. Selpho, August 18, 1857,) so that a double purchase is given by the moving pulley *n* in opening the hand.

q is a double sheave, attached to the forearm *a* near the wrist, through which a catgut, *p*, passes and is attached to the hand at 7.

r is an elbow-pad formed of a piece of leather or similar material, extended up and strapped around the shoulders. It will be apparent, therefore, that as the forearm is raised the pad *r* will keep the end of *p* stationary; but the motion will produce a pull on the cord *p*, that gives a turning motion to the hand at the wrist, which would turn a fork or other article upward toward the mouth in a natural manner. The reverse movement may be given by a spring or otherwise as the arm is distended. We however prefer and use the cord *s*, that is attached to the hand at 8 and passes through sheave *q* in the reverse direction to the cord *p*; and 9 is an eye guiding said cord to the strap *t* around the arm, which gives the reverse motion to the hand by detaining the cord *s* as the forearm is extended.

Having thus described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the cords or catguts

m and *o* and the pulley *n*, as set forth, for applying a double purchase in opening the hand, as described and shown.

2. The arrangement of the wrist-joint and hand-spring *l*, whereby the said spring *l* can be adjusted by the rod *k*, that passes through the pipe *h*, in the manner specified.

3. The cord *p* or its equivalent, passing from the elbow-pad *r* and giving motion at the wrist *g*, for the purposes and as specified.

In witness whereof we have hereunto set our signatures this 25th day of July, 1859.

WILLIAM SELPHO.
JAMES WALBER.

Witnesses:
THOS. GEO. HAROLD,
CHAS. H. SMITH.