A. E. SMITH.
Curd-Knife.

No. 206,629. Patented July 30. 1878.

Fig 1.

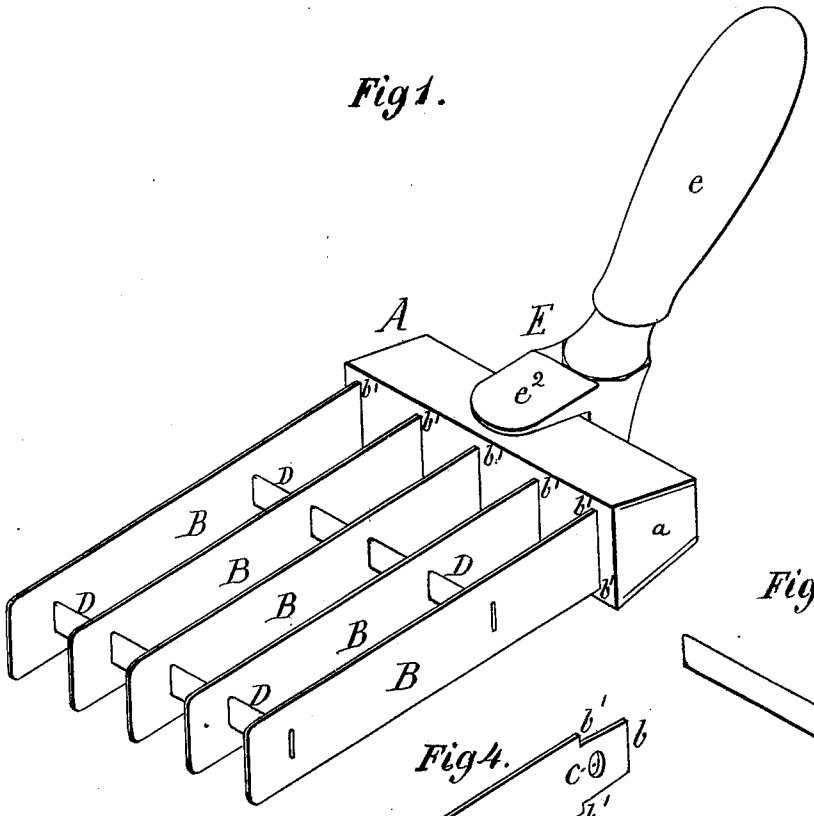


Fig 5.

Fig 4.

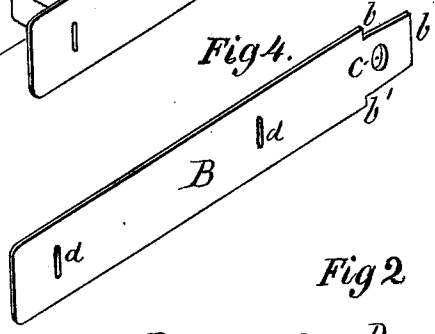


Fig 2

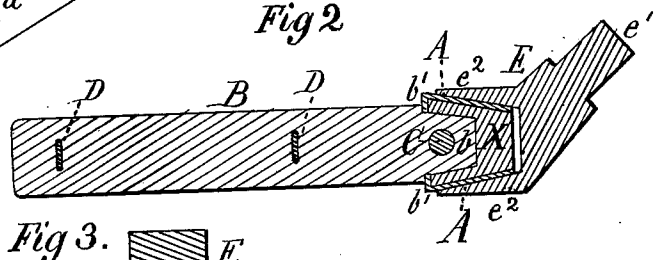
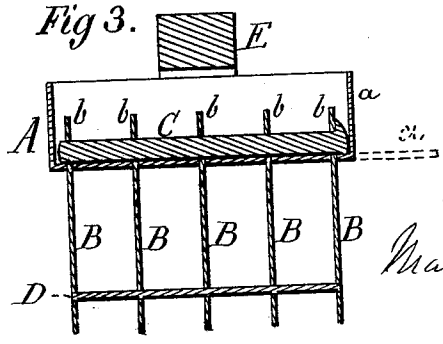


Fig 3.



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UNITED STATES PATENT OFFICE.

ALFRED E. SMITH, OF UTICA, NEW YORK.

IMPROVEMENT IN CURD-KNIVES.

Specification forming part of Letters Patent No. **206,629**, dated July 30, 1878; application filed May 31, 1878.

To all whom it may concern:

Be it known that I, ALFRED EDWARD SMITH, of Utica, in the county of Oneida and State of New York, have invented a new and useful Improvement in Curd-Knives; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved curd-knife; Fig. 2, a vertical central longitudinal section of the same; Fig. 3, a horizontal section of the same, a portion only of the length of the blades being shown; Fig. 4, a detail view of one of the knife-blades; and Fig. 5, a detail view of one of the lateral connecting-bars used to steady the knife-blades, and also aid in dividing the curd.

The nature of my invention consists in a curd-knife having a hollow thin metal head, with a number of knife-blades secured to its front side, in slots through which the shanks of the knife-blades are introduced into the interior of the head, and held in place by means of a transverse wire or pin passed through the shanks inside the hollow head, and by means of a metallic filling of either soft or hard metal poured, in a melted state, into the head, around the inserted shanks of the blades and the said wire, which metallic filling in cooling renders the hollow head solid and strong and insures a very firm and durable means of connection and unity for the knife-blades and head.

My invention also consists in an improved clasp and handle attachment, in combination with the hereinafter-specified head and knife-blades.

In the accompanying drawings, A represents a hollow head cut out in one piece from a sheet of metal, so as to be suitably bent into a prismatic form, and when so bent its rear longitudinal side shall be open, while all its other sides are closed, as represented in Fig. 3. The front side of the said head is provided with suitable vertical parallel slots, through which the reduced rear ends or shanks, *b*, of a number of shouldered blades, B, are introduced into the head. The shoulders *b'* of the knife-blades are firmly held against the outside of the head A, while a pin or wire, C, is passed through holes *c* in the shanks *b*, in such a manner that the wire or pin bears snugly against the inner side of the front of the head A, and holds the shoulders *b'* in close contact with the outside. The introduction of the pin or wire C into the head A is facilitated by having one of the ends *a* of this head bent forward on a plane with the front side, as indicated by dotted lines in Fig. 3.

After the pin C is inserted the end *a* is bent back so as to close the end of the head and confine the pin C in position. The interior of the head A is next filled with molten metal, as indicated by the letter X, such as hard metal, lead, or a suitable alloy. This filling surrounds the pin C and the shanks *b*, and in cooling it unites the head A and blades as solidly as when these parts are made in one piece.

To steady the knife-blades B, one or more bars, D, having flat sides and rounded edges, are passed through suitable holes *d* of the blades in a transverse direction and fastened, by soldering or otherwise, to the blades, as represented in the drawings. I ordinarily use two such rods, D; but I do not intend to confine myself to that number.

The head A, thus constructed, may be provided with an ordinary handle; but I have found the construction of handle shown in Figs. 1, 2, and 3 of the drawings to be superior to others heretofore adopted. This improved handle consists of a wooden gripe, *e*, fastened to a metal holder, E, by means of a central pin, e^1, which is a part of the holder, and a forked clasp, e^2, which is also a part of the holder, and is fitted to the upper and lower longitudinal sides of the head A in a central position, and fastened to the same by soldering, riveting, or otherwise, as indicated in Figs. 1 and 2. This construction affords a direct connection with the outer and harder metal of the head A on two or more sides, and it does not interfere with the softer metallic filling, while the wide prongs of the clasp e^2 preserve the shape of the head against strains which would tend to bend it during the operation of cutting the curd.

The round-edged rods D, with their flat sides, offer but little resistance to the descent of the knives through the curd, and in fact these rods act as knives for dividing the curd trans-

versely, and thereby an accumulation of curd on top of the knife proper is prevented, and the curd always left in a smoothly-divided condition.

What I claim is—

1. In a curd-knife, the combination of the hollow thin metal head A, having a soft or hard metal as a filling, the knife-blades B, having shoulders b', shanks b, and holes c, and the pin C, substantially as and for the purpose set forth.

2. The combination of the curd-knife head A, made of thin outer metal and a soft or hard inner metal filling, and the holder E, having a pin, e^1, and clasp e^2, substantially as and for the purpose described.

Witness my hand this 29th day of May, A. D. 1878, in the matter of my application for a patent on an improved curd-knife.

ALFRED E. SMITH.

Witnesses:

F. E. SMITH,

WILLIAM WRIGHT.