Feb. 28, 1939. H. H. STOCK 2,149,193

KNIFE

Filed Sept. 16, 1937

Fig. 1

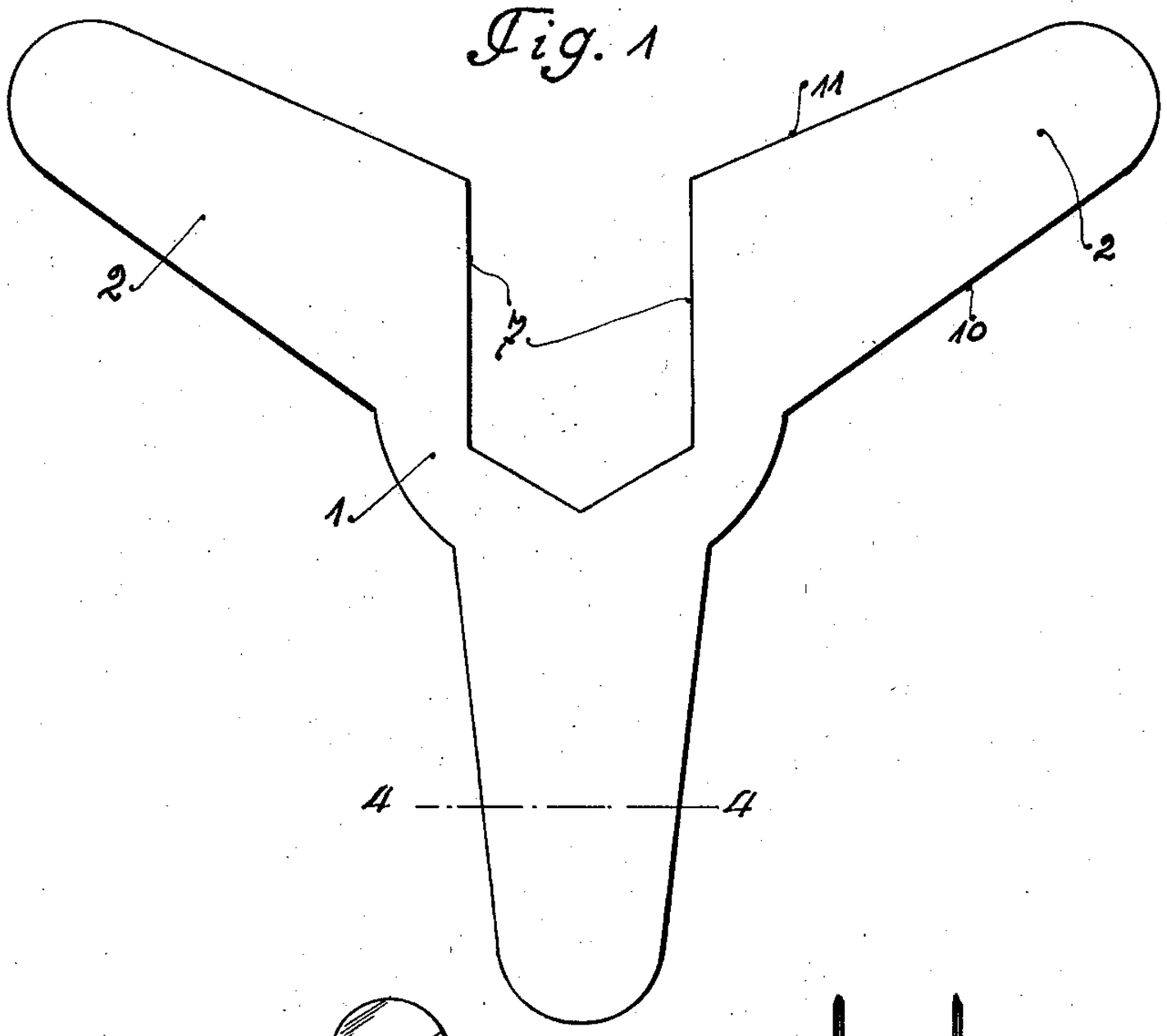


Fig. 2

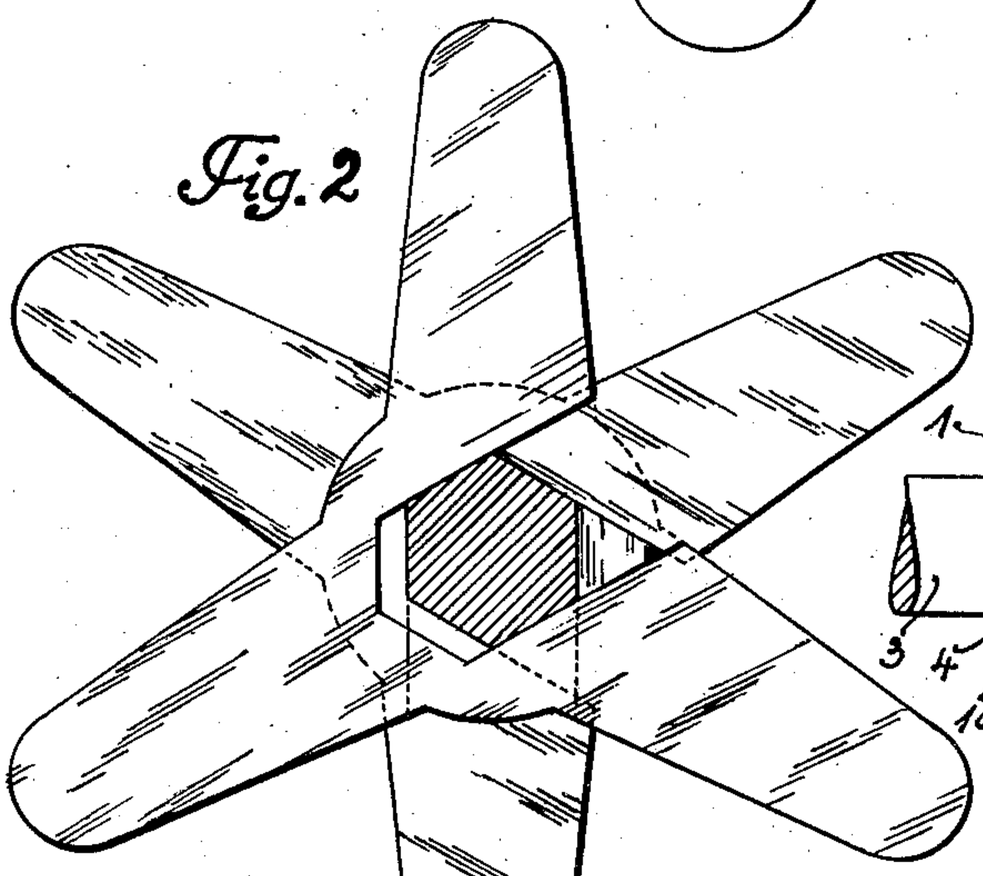


Fig. 3

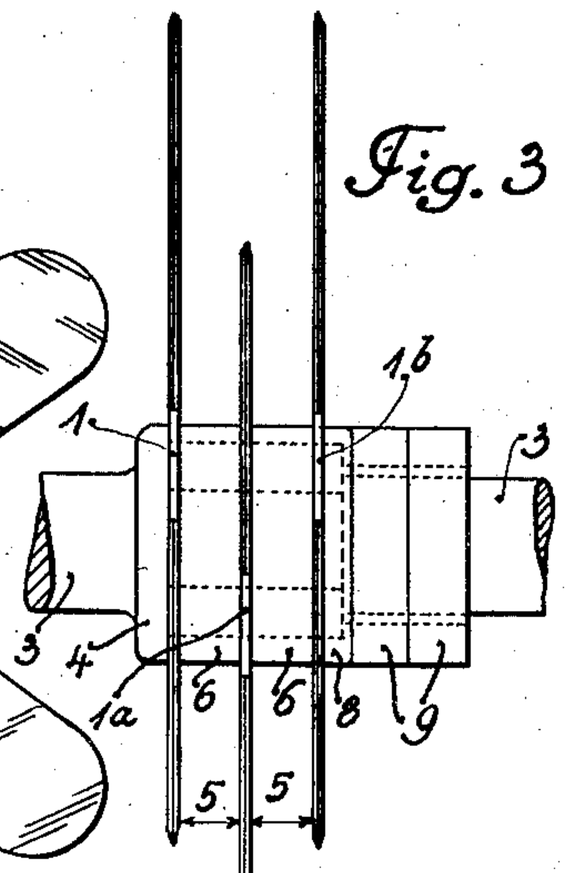
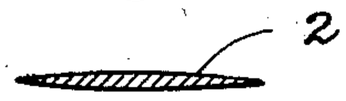


Fig. 4.



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2,149,193

KNIFE

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2 Claims. (Cl. 146—121)

This invention relates to a knife in meat cutting and mixing machines.

A knife of known type for machines of this class consists as a rule of a single blade having two parallel cutting edges which are connected by a front edge, so that the latter together with the longitudinal edges of the blade forms a continuous edge.

This type of knife is open to the objection that it can carry out only a single cutting stroke in one and the same cutting plane during a revolution of the knife shaft.

The invention overcomes this defect by providing a plurality of knife blades vertically to the knife shaft in one plane on the knife body. This construction affords the advantage that all blades arranged in the same plane become successively operative with the result that at each revolution of the knife shaft a number of strokes corresponding to that of the blades is carried out, whereby the output is increased without involving undue heating of the material to be cut.

Another feature of the invention is that each blade consists of very thin material to which the necessary stability is imparted by the high speed of the knife shaft. Furthermore, this construction insures minimum friction during the passage of the blades through the material to be cut and requires very little material, since the knife body with the blades may for instance be punched out of thin steel plate, whereby the cost of production is also considerably reduced.

By way of example, the invention is illustrated in the accompanying drawing, in which Figure 1 is a view of the new knife and shows the cross section of a blade; Fig. 2 shows three knives of the type shown in Fig. 1 arranged on a common shaft; and Fig. 3 is a side view of Fig. 2.

Referring to the drawing, the knife body **1** serves as carrier for a plurality of blades **2** of which three are shown which form a unit with the body **1** and are disposed with it in the same plane. The knife bodies **1**, *1a*, *1b* with their blades **2** are staggered relative to one another and disposed at a distance **5** amounting to 20 to 30 mm. on a common shaft **3** having a collar **4**. The distance **5** between the knife bodies is maintained by means of the distance rings **6**. The shaft **3** is hexagonal at the point where the knife bodies **1**, *1a*, *1b* are received, and each body is recessed at **7** to such an extent that the knife body with the blades, even if they are worn off by repeated regrinding, can be so adjusted that at least two blades always extend to the bottom of the trough of the machine. In front of the outer knife body *1b* a distance piece **8** is positioned against which nuts **9** that are screwed to the shaft **3** press so as to fix all knife bodies **1**, *1a*, *1b* between the collar **4** and the distance rings **6** and **8** and permit easy exchange thereof. The longitudinal edges **10**, **11** of each blade are not parallel but diverge, so that the free end of each blade forms a rounded point.

Since the knife shaft makes 1200 to 1500 revolutions per minute and in the example shown three knife blades operate in one plane at each revolution, at least 3600 cutting strokes will be carried out in one plane, so that the efficiency of the machine is considerably increased by the knife according to the invention without increasing power consumption, as only one blade operates at the time. Each blade, moreover, during each revolution, is in contact with the material to be cut for a very short time only, which is thus not unnecessarily heated. The resulting greater output obtained per unit of time facilitates the work of users to a considerable extent.

As shown in Fig. 1, each blade has a slightly curved cross section which can be produced by a corresponding formation of the cutting edge during grinding. Each blade can be quite thin, as stiffness is imparted to it by the high speed of the revolving shaft.

The blades of several knives may further be arranged on the knife shaft so as to cover one another.

I claim:

1. A knife for use in meat cutting machines including a central portion and a series of knife edged arms radiating from said central portion, said arms being equally spaced about the axis of said central portion, said central portion having a parallel sided notch extending inwardly of the central portion from between a pair of adjacent arms, the longitudinal center line of said notch bisecting the angle between said pair of arms.

2. A knife for use in meat cutting machines including a central portion and a series of knife edged arms radiating from said central portion, said arms being equally spaced about the axis of said central portion, said central portion having a parallel sided notch extending inwardly of the central portion from between a pair of adjacent arms, the longitudinal center line of said notch bisecting the angle between said pair of arms, there being an odd number of arms, and said center line of the notch coinciding with the longitudinal center line of one of the arms.

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