W. BAKER.

Manufacture of Knife-Scales.

No. 206,919. Patented Aug. 13, 1878.

Fig. 1.

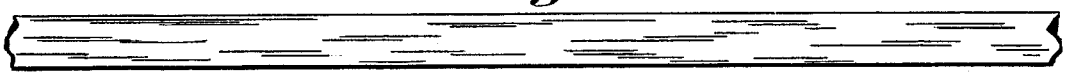


Fig. 2.

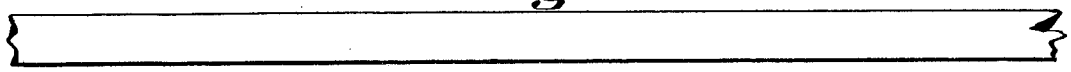


Fig. 3.

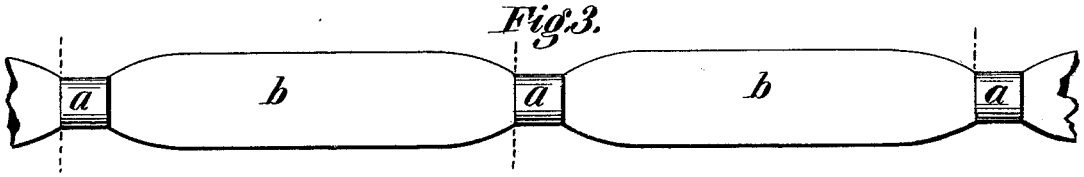


Fig. 4.

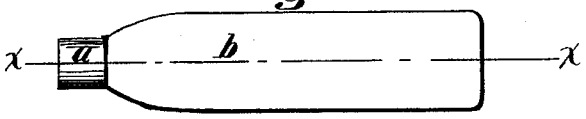
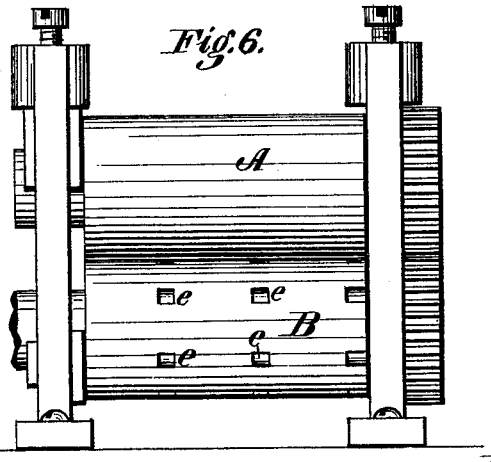


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

WALTER BAKER, OF ILION, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF KNIFE-SCALES.

Specification forming part of Letters Patent No. **206,919**, dated August 13, 1878; application filed May 1, 1878.

To all whom it may concern:

Be it known that I, WALTER BAKER, of Ilion, in the county of Herkimer and State of New York, have invented certain Improvements in the Manufacture of Knife-Scales, of which the following is a specification:

This invention relates to the manufacture of what are technically termed "knife-scales;" and the invention consists in taking the rod or bar of iron from which the scales are to be made and preparing it by the process known as "tumbling" or scouring, and then by means of rolls suitably prepared passing said rod cold between the rolls, and thereby forming the scales with the bolsters thereon all at one operation, the scales and bolsters both being formed of a single solid piece of metal, as hereinafter more fully described.

In the drawings, Figure 1 represents the rod of metal before being tumbled; Fig. 2, the same after it has been tumbled; Fig. 3, the same after it has been passed through or between the rolls; Fig. 4, a face view of a scale, and Fig. 5 a longitudinal section of the same on the line *x x* of Fig. 4; Fig. 6, a front elevation of the rolls used to make the scales.

In the manufacture of pocket-knives the inside or lining of the handles consists of a couple of thin metal pieces termed "scales," and usually made of brass or iron, these being either cut from sheet metal or drawn from a rod or small bar. The bolsters, which are the thicker pieces of metal at the end where the blades are secured, are made separate from the scales, and then secured thereto by brazing or riveting. The usual plan is to make the bolster with a projection on its inner face, which projection is inserted in a hole in the scale and then headed or riveted down.

This is not only a slow and expensive process, but the scale is soft and bends easily, and has much less rigidity and strength than when made by my plan.

Efforts have been made to produce these scales by rolling them from a heated rod; but this was unsuccessful, for the reason that the scales of the heated rod cut and wore the dies of the rolls, so that they were soon destroyed, and hence all such efforts have been abandoned, and the plan above described is continued to the present time.

The object of my invention is to overcome these difficulties, and enable the manufacturer to make the scales and bolsters at one operation by means of rolls, and at the same time produce a stronger or stiffer and therefore better article.

To make the knife-scales on my plan I first procure a rod or bar of metal, as it is found in the market, of any suitable shape and size. These rods or bars are covered more or less with the scale which forms on all iron or steel when heated and allowed to cool, as is necessarily done in the process of rolling the metal into rods or bars at the rolling-mills.

To remove this scale I put the rods into a tumbler with sand, gravel, cobble-stones, or any suitable material which will serve to scour off or remove the scale, and I continue the tumbling process until the rods are entirely deprived of the adhering scale and are left smooth and bright, when they are ready for the rolls.

The rolls used are represented in Fig. 6. As there shown, one of the rolls, A, is simply a plain smooth roll, while the other has recesses *e* formed in its surface, these recesses being of the proper size and form to receive sufficient metal to form the bolsters, and being located at such distances apart circumferentially as to form a bolster at every length of a knife-scale. These rolls, being mounted in the usual manner and provided with means for adjusting them, are set so as to leave between them a space equal to the thickness of the scale to be made. The prepared rod is then taken cold and passed between the rolls, from which it comes in the form shown in Fig. 3, in which the part *b* forms or represents the thin flat scale, and *a* the bolster, the latter being formed solid with and as part of the scale, as shown more clearly in section in Fig. 5. In this manner the rod, by the single operation of passing it once through the rolls, is converted into a continuous series of scale and bolster blanks. These are then separated by simply cutting them apart close alongside of the bolsters, as indicated by the dotted lines in Fig. 3, when each piece will constitute a complete scale with solid bolster, as shown in Figs. 4 and 5. These are then trimmed to the proper width, and, having the

necessary holes punched or drilled in them, are ready for use.

By this plan I am enabled to produce the scales and bolsters by means of rolls with perfect success; and, as the rolling of the metal cold renders it far more rigid and compact, the scales thus produced are much stronger, and also much smoother and better finished, than are those made in the usual way. By this method they can also be made with rapidity and cheapness.

It is obvious that any form, size, or style of bolster can be produced by simply making the recesses *e* in the roll of the proper shape and size. While iron is the material ordinarily used for common knives, it is obvious that scales with bolsters may be made of brass, German silver, or any ductile metal that can be rolled by this plan.

Having thus described my invention, what I claim is—

As an improvement in the manufacture of knife-scales, the herein-described method of making the same by rolling them from bars or rods of cold metal from which the scale has been previously removed, with rolls, one of which is provided with suitably-shaped dies, for forming the bolsters at the same operation, substantially as described and shown.

WALTER BAKER.

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