

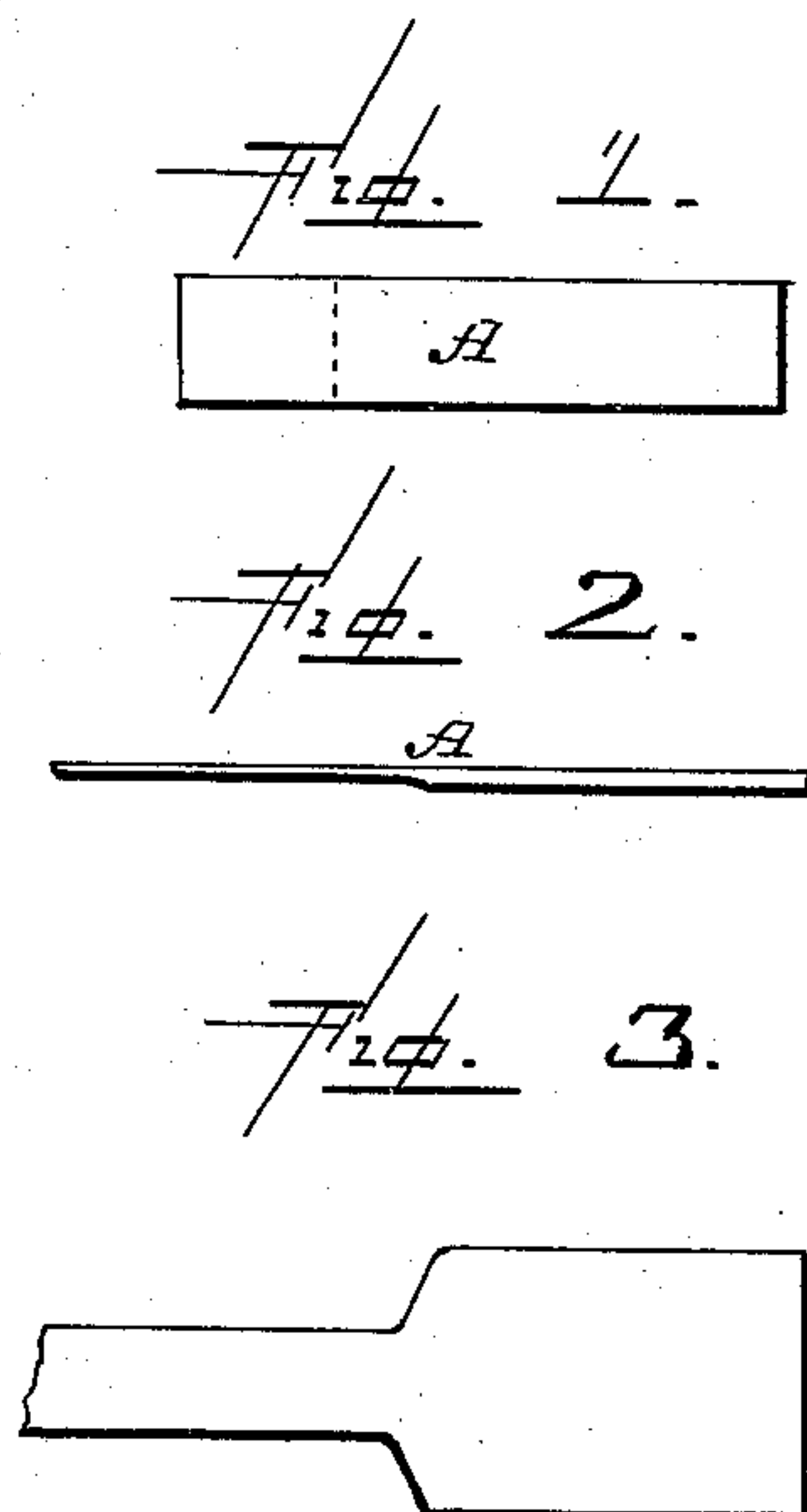
(No Model.)

J. C. RUSSELL.

MANUFACTURE OF SHOVELS, SPADES, &c.

No. 376,398.

Patented Jan. 10, 1888.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JAMES C. RUSSELL, OF BEAVER FALLS, PENNSYLVANIA.

## MANUFACTURE OF SHOVELS, SPADES, &c.

SPECIFICATION forming part of Letters Patent No. 376,398, dated January 10, 1888.

Application filed July 30, 1887. Serial No. 245,707. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. RUSSELL, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in the manufacture of blanks for tubular-socket or hollow-back shovels, spades, and scoops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in the manufacture of blanks for tubular-socket or hollow-back shovels, spades, and scoops; and it consists in forming the blank from a flat heated steel or iron plate, which has previously been rolled so as to have the same width as the strap which is to be formed and about twice the thickness of the plate, and then passing one end of the plate between rolls for the purpose of lengthening the plate and forming the strap, and then passing the opposite end of the blank at right angles to the other end between the rolls to form the blade, whereby the blade end is widened and an almost finished blank is produced, as will be more fully described hereinafter.

The object of my invention is to take finished plates, which have already been rolled to the required length and thickness, so as to avoid having to reduce a billet into a blank for each shovel that is formed, and thus greatly quicken and cheapen the process for forming blanks and shovels, to avoid loss of material arising from reducing billets, and to form the strap and blade in one solid piece, so as to avoid the use of rivets in fastening the socket to the blade, and prevent the shovel from being weakened.

Figure 1 is a plan view of the bar from which the blank is to be formed. Fig. 2 is an edge view of the same after the strap has been rolled. Fig. 3 is a plan view of the blank complete.

I take an iron or steel plate, A, of uniform width, and which has the width of the strap which is to be formed and about twice the thickness of the blade. This plate is previously rolled into the exact width desired, so as to avoid the necessity of having to reduce the bar or billet for each blank that is formed. Upon this plate A is marked the length of the portion which is to be used in the strap. The plate,

after having been properly heated, is passed endwise between suitable rolls, so as to lengthen out the strap to the required length. In rolling this end of the plate it is simply lengthened out, but not widened. The strap portion having been rolled, the plate is turned, and the other portion, which has not been subjected to the rolls, is passed sidewise between them, to be laterally expanded until this portion assumes the width of the blade and is also reduced to the proper thickness. The two rollings may be performed between the same rolls or different ones, and at the same heat, or at different ones, as may be desired. It is immaterial which end of the plate is first subjected to the action of the rolls, for either end may be acted upon first, just as may be desired. Whether the portion of the plate intended for the blade on the blank or the portion that is to form the socket-strap is to be first rolled is a mere matter of convenience, and does not affect the process. The rolls used to finish the straps are preferably to be eccentric-rolls, as they are best adapted for the purpose, owing to their varying capacity, and plain rolls for the blades.

It will be seen that the blanks are formed without loss of any material whatever, and that the blade and socket portions are formed in a single piece, so as to dispense with all necessity for rivets. After the plate A has been rolled it is only necessary to first heat it; second, pass one end in one direction between the rolls, and, third, to pass the opposite end at right angles through the rolls, and an almost finished blank is produced.

Having thus described my invention, I claim—

The method herein described of making shovel-blanks, consisting in, first, taking a heated plate which has been previously rolled, and which has about twice the thickness of the finished blade, but the same width as the finished strap, to form a tubular socket; second, passing one end of the said blank between rolls to lengthen out the strap, and, third, passing the opposite end of the blank at right angles between the rolls to form the blade, whereby an almost finished blank is produced, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

Witnesses: JAMES C. RUSSELL.  
G. L. EBERHART,  
S. S. GRIMM.