No. 869,144. PATENTED OCT. 22, 1907.

J. C. ROSS.

SHEET METAL SHOVEL.

APPLICATION FILED MAR. 9, 1907.

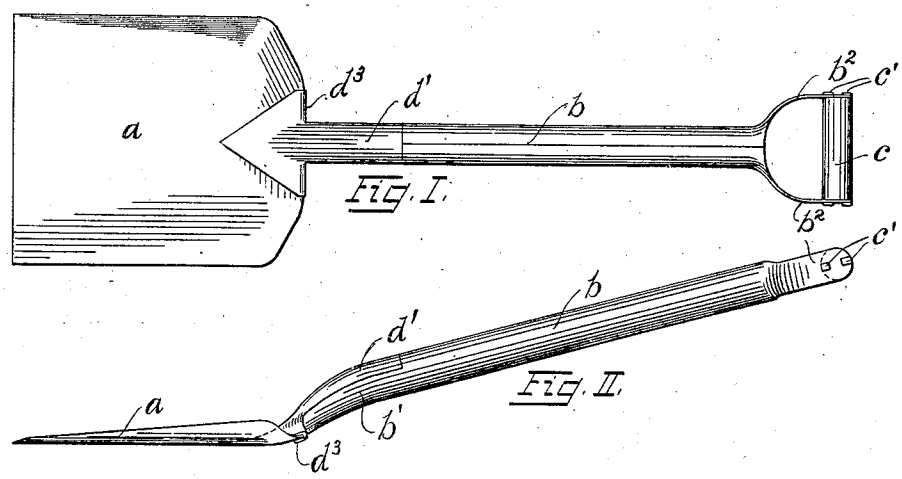


Fig. I.

Fig. II.

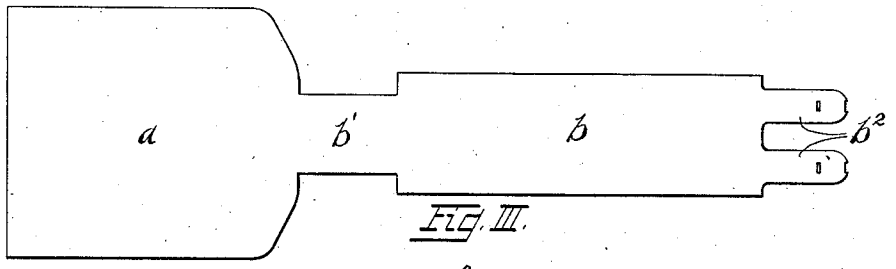


Fig. III.

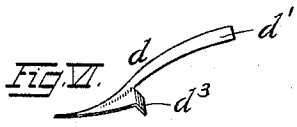


Fig. VI.

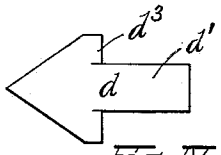


Fig. IV.

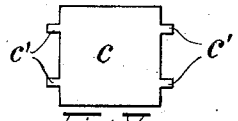


Fig. V.

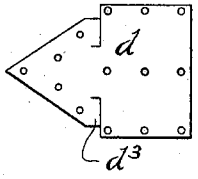


Fig. IX.

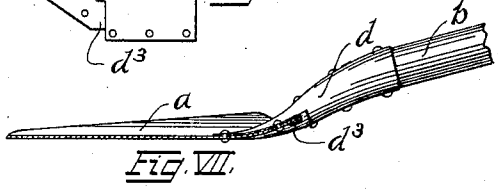


Fig. VII.

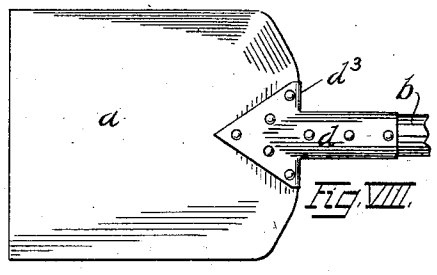


Fig. VIII.

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UNITED STATES PATENT OFFICE.

JOHN C. ROSS, OF ELYRIA, OHIO, ASSIGNOR TO THE ROSS STAMPING COMPANY, OF ELYRIA, OHIO, A CORPORATION OF OHIO.

SHEET-METAL SHOVEL.

No. 869,144. Specification of Letters Patent. Patented Oct. 22, 1907.

Application filed March 9, 1907. Serial No. 361,574.

To all whom it may concern:

Be it known that I, JOHN C. ROSS, a citizen of the United States of America, and a resident of Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Shovels, of which the following is a specification.

My invention relates to improvements in shovels, spades and like implements, and has for its object the production of a simple, cheap and extremely strong shovel, and one especially adapted for certain classes of work.

More particularly, my invention relates to the type of shovel stamped out of sheet metal, preferably with an integral tubular handle portion formed during a single continuing operation.

Shovels formed from suitable sheet metal blanks, of requisite gage, are found to require additional strength at the point of juncture between the integral handle and the blade, and there has developed a type known as the "hollow back" shovel, which affords the necessary strength at this point through the convexity provided by continuing the tubular form of the handle to a greater or less extent into the body portion of the blade.

The "hollow back" shovel, however, possesses a disadvantage in that the tubular handle portion is liable to become filled with any soft material, and moreover, the lower face of the shovel-blade is not smooth, so that it will readily pass through the material to be handled. When asphalt or particularly adhesive clays are being handled, for example, this difficulty becomes a really serious one, since the open handle and concave portions fill up with a body of the material, which will persistently cling to the shoveled material and add to the labor, out of all proportion to the weight of the adherent matter.

Another disadvantage in an all-steel shovel is found in the positioning of the seam of the tubular handle at the rear thereof, whereby unless the seam is carefully finished, which is not always feasible with cheap implements, the user's hands are subjected to laceration from the edges of the seam.

Accordingly, I have improved upon a stamped steel shovel to the extent of eliminating the foregoing difficulties, while retaining the strength, cheapness and durability requisite in a shovel to be placed upon the market at a competing price.

Briefly adverting to these improvements, I may say that they comprise the formation of the blade and tubular handle from a single integral blank of sheet metal, with the seam of the tubular handle conveniently formed along the upper face thereof. This construction leaves the tubular handle open at its lower end, over which opening and extending preferably in convex form above the central rear portion of the blade, is provided a suitable reinforcing member or pad, welded, brazed or otherwise secured to the blade of the handle. Preferably too, the tubular handle terminates in outwardly extending ears, between which is secured a suitable grip member, thereby completing the shovel, or other implement, fashioned in accordance with my invention.

These and other details, however, may more readily be explained in connection with the accompanying sheet of drawings, wherein:—

Figure I is a plan view of a shovel constructed in accordance with my invention. Fig. II is a side elevation thereof. Fig. III shows a blank adapted to be formed into a shovel. Figs. IV and V respectively illustrate the blanks for forming the reinforcing member and the grip member. Fig. VI is a side view of the former when pressed into shape. Figs. VII and VIII respectively are details in section and plan, showing a modified construction, wherein riveted connections are resorted to; and Fig. IX illustrates a modified blank for the reinforcing member.

Throughout each of the several figures of the drawings, I have employed the same character of reference to indicate similar parts.

By referring to Fig. III, it will be seen that the shovel blank may be cut from flat stock with very little waste, providing as well integral handle-terminals for the grip, in accordance with my improvements disclosed in application, Serial No. 300,261, filed February 9th, 1906.

If the grip member and reinforcing member are to be formed from the same gage of material, these parts may be blanked out as well from the surplus stock, thus effecting a minor economy. For heavy construction, however, it frequently is desirable to employ a heavier gage of metal from which to shape the reinforcing member, since this is subjected to severe strain in the use of the implement.

The formation of the shovel is practically apparent from the drawings.

The blade *a* is suitably shaped or dished, while the handle portions *b b'* are first bent to U-shaped cross-section, and then the tubular portion *b* is completed; all between suitable dies as is well understood in the art. The sides of the handle portion of the blank preferably are cut away to form the narrower neck *b'*, thus leaving the opening of the tubular portion of the handle adjacent to the upper face of the shovel blade. The bottom of said blade, however, preferably is flat and smooth, and merges into the integral handle portion. With the

blade thus shaped to present a substantially smooth flattened contour along its lower face, it is apparent that it will pass much more readily through adherent clays, or other materials, than will a shovel blade which presents an uneven lower surface. Moreover, in my improved construction, the before-mentioned adherence of such materials is reduced to a minimum, with the attendant advantage of decreasing the labor of handling said materials.

Where a grip member is to be provided upon the handle portion, integral terminal ears b^2 b^2 are outwardly flared, and are adapted to receive therebetween any suitable grip member, as a tubular part c formed from the blank shown in Fig. V. This is provided with outer lugs c', which are adapted to overlap and be bent down upon the side pieces or ears b^2 and secure the grip member in place, as explained in my aforesaid application.

In order that the construction shown may be suitably stayed or strengthened, I provide a reinforcing piece d shown as blanked out in Fig. IV, which is adapted to fit over the neck of the shovel blade, and lie upon its upper face where it is welded, brazed, or otherwise secured in place. For ordinary use, this reinforcing member has its upper end d' bent to semi-tubular form to fit above the neck of the shovel, while its lower end, or pad-portion, is suitably arched or given convex shape, in order that its edges may merge into the upper face of the shovel blade. Lateral lugs d^3 are adapted to be turned back over the upper edge of the shovel blade for a short distance, and stay or strengthen it at these points, without impairing the flattened lines or contour of the lower face of said shovel blade; all as will best be understood by making reference to Figs. I and II. The several seams or meeting edges of the shovel, as thus formed, are suitably welded or brazed together, and may then be ground and polished, if desired, thus completing the improved shovel of my invention.

My improvements, however, are susceptible of certain modifications; one of which is illustrated in the lower portion of the drawings. There in an integral shovel blade a, and tubular handle portion b, are formed substantially as before, and a reinforcing piece d is provided, which may be riveted upon the shovel blade, and the upper end thereof is given tubular form and riveted, or otherwise suitably secured about the lower portion of the tubular handle b. This lends somewhat additional strength to the shovel, but preferably I weld the parts, as before explained.

The integral blank may be formed from metal of continuous or varying gage, should it be desirable to strengthen the lower portion as is often requisite with spades or scoops; while usually it is advantageous to form the reinforcing member from metal of somewhat heavier gage than that of the tubular handle. Such features, however, are suggested solely by the uses to which the implement may be put, and as to the several details herein recited, I do not wish them understood as in any way essential to the practice of my invention.

Having now described the preferred embodiments of my invention, I claim the several features thereof, and desire to secure by Letters Patent, the following:—

1. In an implement of the class described, the combination with a blade and handle portion formed from an integral blank of sheet metal; said blade being fashioned with a substantially flat lower face, and the handle portion having a longitudinal seam along its upper face, of a reinforcing member upon the upper face of the blade, uniting said blade and handle portion, substantially as set forth.

2. In an implement of the class described, the combination with a blade and tubular handle portion formed from an integral blank of sheet metal; the said handle portion having its seam disposed along its upper face, and being open at its inner end, of a reinforcing piece extending along the upper faces of the blade and handle portion; said parts being secured together, substantially as set forth.

3. In an implement of the class described, the combination with a blade and handle portion fashioned from sheet metal; said blade having a substantially flat lower face, of a combined pad and reinforcing member, comprising a convex shield secured to the upper face of the blade, and an integral semi-tubular reinforcement secured to the upper face of the handle portion, substantially as set forth.

4. The combination in an all-steel implement, with a blade and tubular handle portion fashioned from an integral sheet metal blank; said blade having a substantially flat lower face and the handle an upper longitudinal seam, of a reinforcing member secured to the upper faces of the blade and tubular handle, comprising a substantially convex shield, and a semi-tubular attachment formed of an integral blank of sheet metal, substantially as set forth.

5. In an all-steel shovel, the combination with a shovel blade and tubular handle portion, fashioned from an integral sheet metal blank; said blade having a substantially flat lower face, and said handle portion having its longitudinal seam along its upper face, of a reinforcing member formed of an integral blank of heavy gage sheet metal, comprising a convex shield welded to the upper face of the blade, and a convex reinforcing member welded to the upper face of the tubular handle, substantially as set forth.

6. In an all-steel shovel, the combination with an integral blade and handle, comprising a blade portion substantially flat along its lower face, a tubular handle portion having its seam along the upper surface, and integral terminals between which is secured a grip member, of a reinforcing member closing the lower end of said tubular handle portion, comprising convex portions respectively welded to the upper surfaces of said handle portion and blade, substantially as set forth.

7. In an all-steel implement of the class described, the combination with a blade portion and tubular handle shaped from a sheet steel blank; said handle portion having its inner tubular opening adjacent to the upper face of the blade, of a reinforcing-part, comprising a convex pad-member united with the upper face of the blade, and an integral convex portion closing the tubular opening and uniting with the lower handle portion, substantially as set forth.

8. In an implement of the class herein described, the combination with a blade and a tubular handle therefor with its lower surface integrally continuing the under face of said blade, of a reinforcing member upon the upper face of the blade extended to cover the lower opening in the tubular handle and secured to both the blade and the handle, substantially as set forth.

Signed at Cleveland, this 6th day of March, A. D. 1907, in the presence of two subscribing witnesses.

JOHN C. ROSS. [L. S.]

Witnesses:
CLARE P. JOHNSON,
ALBERT LYNN LAWRENCE.