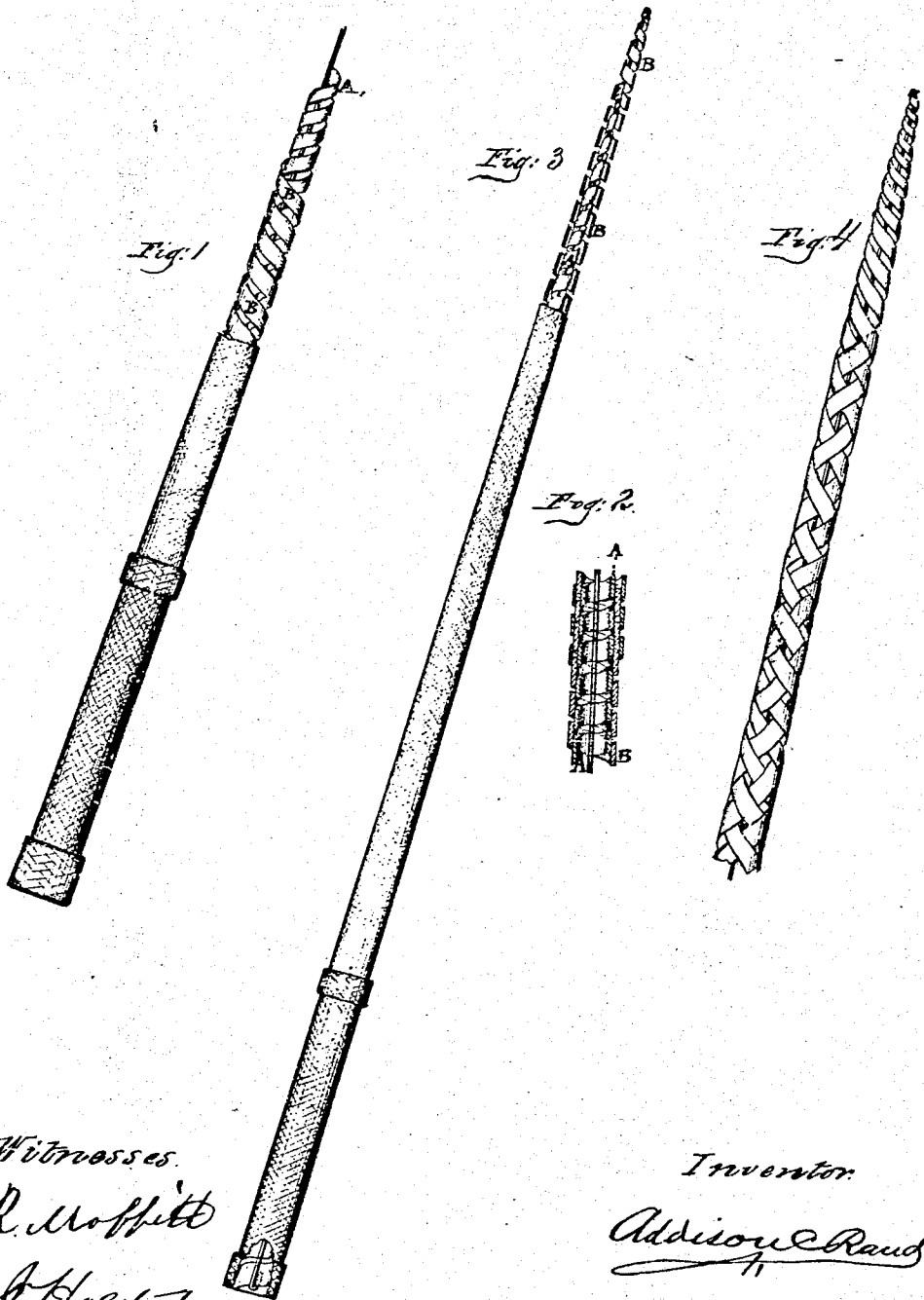


A. C. RAND.

WHIP.

No. 101,914.

Patented Apr. 12, 1870.



Witnesses.
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ADDISON C. RAND, OF WESTFIELD, MASSACHUSETTS.

Letters Patent No. 101,914, dated April 12, 1870.

IMPROVEMENT IN WHIPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ADDISON C. RAND, of Westfield, in the county of Hampden and State of Massachusetts, have invented certain Improvements in the Manufacture of Whips; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention consists—

First, in a stock for a whip, composed of two or more spiral strips of metal, preferably steel, two or more of which are wound spirally in opposite directions, one within the other, the spirals preferably tapering, and either with or without an inclosed stay-rod or case; and

Secondly, in a whip having combined with its outer wrapper or covering, such spiral crossing metal strips.

Figure 1 represents a whip made in accordance with my invention, a portion of the outer covering being shown as removed to expose to view the crossing spiral strips. It also shows a stay-rod within the spiral strips.

Figure 2 shows a small portion of two crossing metal strips in longitudinal section, and a part of the figure shows three coiled strips.

A is the inner spiral strip.

B, an outer spiral strip, wound directly upon A, but in a reverse direction, and if desired, still further spiral strips may be employed, each being coiled upon the last preceding one. Ordinarily two such strips will, however, be sufficient.

The outer coil, when two only are used, may project beyond the inner one, or *vice versa*, and when more than two are used, any one or any number of them may project a greater or lesser distance beyond the end of any of the others, so that there shall be a gradual decreasing strength of stock toward the "tip."

The strips may be wider at one end than at the other, the end toward the tip being the narrower, or they may be made gradually thinner toward the tip throughout their whole length, or they may have both these features; but I do not confine myself to them. The essence of my invention being the employment

of spiral metal strips wound tapering one within another, in opposite directions. A non-metallic core may be used within the inner spiral strip.

Longitudinal strips of metal or other material may be introduced in conjunction with the spiral ones, and such strips may be placed within or outside of the spiral ones, or interposed between any two of them.

When more than two strips are employed, any two of them being wound in reverse directions, the remainder may or may not be reversed in direction, as may be found expedient, or they may be interlaced, passing over and under each other in the act of crossing, either for a portion or for the whole of their lengths, as seen in fig. 4.

By this construction of whips, a very durable article is obtained, and one cheaply made. And notwithstanding metal is employed throughout a greater part, if not the whole of the stock, it allows also of securing that "poise" or proper balance of the whip, whilst carrying or handling it, which is so essential for ease and facility in using it.

Figure 3 shows a complete whip made in accordance with my invention, portions of the wrapper being removed, in order to show a connection of the stay-rod, when used with the metal strip.

This rod serves to steady the strip, prevent any displacement of the coils, which might destroy its efficiency, and also any elongation of the spiral.

In this figure two strips are shown coiled one within another.

I claim—

A stock for a whip, composed of two or more strips of metal, any two or more of which are wound spirally one within another in opposite directions, either with or without an inclosed stay-rod or core.

Also, a whip, having combined with its outer wrapper or covering the crossing metal strips, substantially as described.

ADDISON C. RAND.

Witnesses.

J. H. MOFFITT,
JOHN J. HALSTED.