

UNITED STATES PATENT OFFICE.

ALFRED E. HUNT, OF PITTSBURG, PENNSYLVANIA.

MANUFACTURE OF STEEL.

SPECIFICATION forming part of Letters Patent No. 580,131, dated April 6, 1897.

Application filed August 26, 1896. Serial No. 603,972. (No specimens.)

To all whom it may concern:

Be it known that I, ALFRED E. HUNT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Steel, of which the following is a full, clear, and exact description.

In the manufacture of steel ingots and steel castings I have found it beneficial to add an alloy of aluminium and a more electropositive metal, such as magnesium, after the steel has been melted and refined. In the manufacture of ingots the alloy, which may conveniently contain ten per cent. of magnesium, is preferably added to the steel when in the mold, and it is used in very small proportion—say from one and one-half to four ounces of the alloy per ton of steel, or thereabout. Its effect is to quiet the steel when wild or frothy and to produce other beneficial results. Such alloy is added to molten steel for castings or ingots in the same manner and at the same time as where aluminium alone is employed for a like purpose, but it produces a much more efficient and energetic action upon the steel than if aluminium alone were used, and an effect equal in intensity to that produced by aluminium alone can be produced by use of a much smaller percentage of the alloy. Thus where in steel-ingot manufacture as now ordinarily conducted two ounces of aluminium per ton of steel are added to metal in the ingot-mold one and

one-half ounces, or thereabout, of aluminium-magnesium alloy may be employed to produce a like effect. The influence of the aluminium is also to prevent wasteful dissipation of the more volatile magnesium and to cause it to act directly and energetically upon the steel.

The application of my invention to practical use in the art, whether for the manufacture of castings or ingots, will be understood by the skilled steel-maker without further description than that contained above.

Therefore, without limiting myself in the broader claim of this application to this specific alloy of aluminium and magnesium, what I claim is—

1. In the manufacture of steel, the improvement which consists in adding to the steel after it has been melted and refined a small proportion of aluminium alloyed with a more electropositive metal, substantially as described.

2. In the manufacture of steel, the improvement which consists in adding to the steel after it has been melted and refined a small proportion of aluminium and magnesium alloy; substantially as described.

In testimony whereof I have hereunto set my hand.

ALFRED E. HUNT. [L. S.]

Witnesses:

S. W. GAULT,
THOMAS W. BAKEWELL.