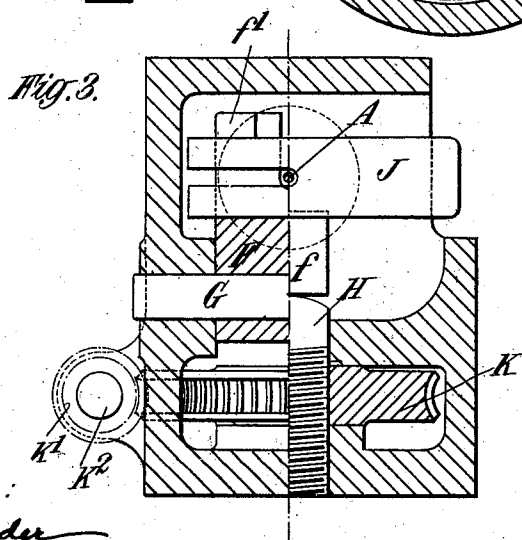
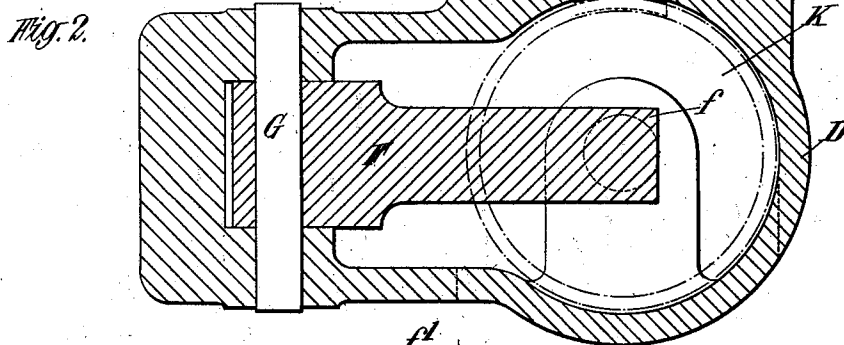


1,010,429.



Witnesses: *Kth*
E. Batchelder
M. M. Taylor.

Inventor
J. A. Horton
by Night & Son Quincy May
Atty. in C.

UNITED STATES PATENT OFFICE.

JAMES ALEXANDER HORTON, OF MANCHESTER, ENGLAND, ASSIGNOR TO THE BRITISH STEEL & WIRE COMPANY, LIMITED, OF MANCHESTER, ENGLAND.

METHOD OF TAPERING WIRE.

1,010,429.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed February 26, 1910. Serial No. 546,227.

To all whom it may concern:

Be it known that I, JAMES ALEXANDER HORTON, a citizen of the United States of America, residing at 221 Ashburton road, Trafford Park, Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Methods of Tapering Wire, of which the following is a specification.

This invention relates to a method of tapering wire and has for its chief object to taper the wire over the whole of its length, whereby wire cables for raising weights and the like purposes can be constructed with a gradual reduction in cross sectional area, corresponding to the reduction of the stress upon the said cable as it is wound upon its drum in elevating loads, such for instance as cages in mines and the like.

According to this invention the wire is caused to pass through a die orifice that is gradually contracted by compression of the material of which the die is composed as the wire passes therethrough thus forming a tapered wire strand having its end finally acted upon of smaller diameter than its first portion.

In order that the said invention may be clearly understood and readily carried into effect the same is described with reference to the accompanying drawings, in which:—

Figure 1 is an elevation part of which is shown in section of a wire tapering machine constructed in accordance with this invention. Fig. 2 is a horizontal section taken on line 2. 2. of Fig. 1, and Fig. 3 is a transverse section of Fig. 1, the left hand portion being taken approximately on line 3. 3. and the right hand portion on line 4. 4. of that figure.

A represents the wire and B the die. The latter is constructed from a solid piece of metal having an external surface conical in form to fit in a correspondingly shaped hole in a die socket C that is carried by the frame D of the machine. As the wire is drawn through the die, the latter is forced into the said conical hole by suitable means thereby reducing the orifice of the die. In the form of apparatus shown for effecting

this purpose a cylindrical or otherwise suitably shaped hole *c* is formed in the die socket C at the rear of the die B to receive the end of a perforated block or die prop E. The latter is adapted to be advanced against the rear end of the die by means of a two-armed lever F that is pivoted at G to the machine frame. One arm *f* of such lever bears against the end of a screwed spindle H and the other arm *f'* is arranged to act upon the die prop through the medium of a thrust block J placed between the said arm of the lever and the die prop. The spindle H is slidably mounted in the machine frame and carries a nut that is formed at its periphery as a worm wheel K, any suitable means being provided for preventing rotation of the spindle H. If desired the worm wheel K may be arranged to impart a rotary motion to the threaded spindle which may engage with a tapped hole in the machine frame. The worm wheel receives its motion from a worm K' mounted upon a driving shaft K². When the die has been used its orifice will be smaller than at the commencement of the operation, and to be employed again for the same gage of wire it would of course have to be reformed.

I do not desire to confine myself to the specific means above stated for gradually compressing the die during the working of the machine as any appropriate means may be used for that purpose.

What I claim and desire to secure by Letters Patent of the United States is:—

The method of uniformly tapering a length of wire, consisting in drawing the wire through an orifice formed in a die that is solid but for said orifice, and gradually and continuously compressing the latter during the passage of the wire therethrough to cause the material of which the die is composed to be forced toward the die orifice and gradually to reduce the size of the latter.

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

JAMES ALEXANDER HORTON.

Witnesses:

JAS. STEWART BROADFOOT,
PERCY WM. HOLT.