(No Model.) 2 Sheets—Sheet 2.

A. SHERWOOD.

WINDMILL.

No. 334,813. Patented Jan. 26, 1886.

Fig. 2.

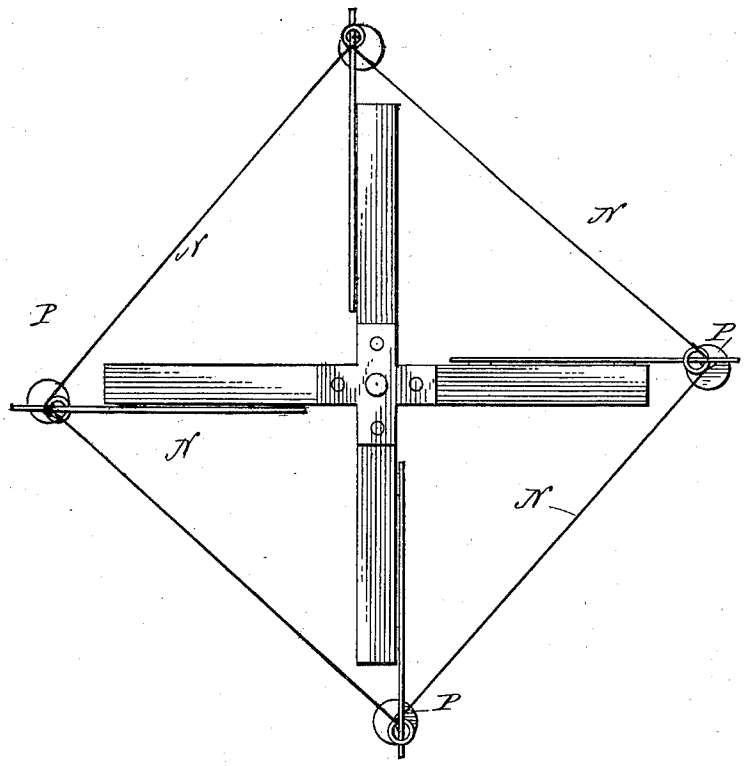


Fig. 3.

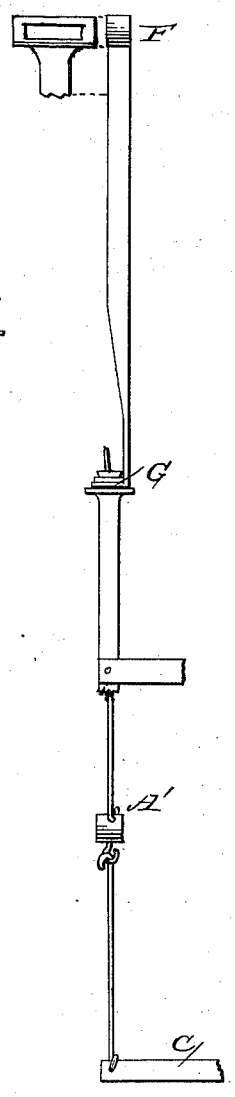
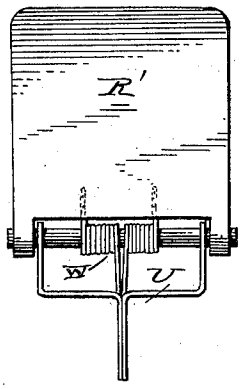


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDMOND B. SLATER, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE CHARLES PARKER COMPANY, OF SAME PLACE.

KEY.

SPECIFICATION forming part of Letters Patent No. 334,814, dated January 26, 1886.

Application filed April 13, 1885. Serial No. 162,003. (No model.)

To all whom it may concern:

Be it known that I, EDMOND B. SLATER, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Keys; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the blank flat; Fig. 2, an edge view of the same; Fig. 3, a side view of the blank, showing the stem end or tip as struck into concavo-convex shape; Fig. 4, an edge view of the same; Fig. 5, a transverse section through the extension; Fig. 6, a perspective view of the blank, showing the extensions partially turned backward; Fig. 7, a perspective view of the key complete. Fig. 8 is a modification.

This invention relates to an improvement in that class of keys such as are made from sheet metal, but provided with a round stem to take a bearing in the lock-case. The round stem has been made in various ways, as by casting metal onto the flat tip of the key, by forming the blank with a groove to be set over the flat tip of the key and brazed thereto, and in various other ways, all of which are more or less expensive.

The object of my invention is a simple and cheap construction, whereby the key may be made entirely from flat sheet metal, and without the necessity of extra pieces applied to form the tip; and it consists in constructing the key from sheet metal, forming a longitudinal extension at the tip substantially equal in length to the length required for the rounded portion, then striking the tip and such extended portion into convex shape in transverse section, and substantially semi-cylindrical, then doubling the extension back onto the tip to bring the two planes together, and so that the exterior will produce a cylindrical shape for the stem, as more fully hereinafter described.

The shape of the bow, the shank, or bit is immaterial to my invention, and I illustrate a common shape.

A represents the bow, from which the spindle B extends, and from one side of which the bit C projects at right angles. Beyond the bit is an extension, D, somewhat greater than one-half the length required for the cylindrical portion of the bit. This blank, as seen in Figs. 1 and 2, is cut from sheet metal of equal thickness throughout.

In the central line of the spindle, and from a point in rear of the bit to the extreme end, the blank is struck into concavo-convex shape, as indicated in Figs. 3, 4, and 5, and substantially semi-cylindrical. The point where such striking up commences on the spindle is distant from the extreme end substantially twice the length of the portion which it is desired to make cylindrical for the stem. After the blank has been thus struck the extension D is doubled back upon the body, concave side inward, as seen in Fig. 6, and brought close down upon the body, as seen in Fig. 7, where it is secured by brazing or otherwise. This produces a rounded tip, and forms a cylindrical portion for the stem extending from the tip back onto the body in rear of the bit, and so that the stem may take a bearing in both plates of the case, substantially as required for keys of this class. By making the extension in a longitudinal line of the tip and spindle and semicircular in shape the bend of the extension forms a rounded or semi spherical end at the tip, and also completely closes and finishes that end.

I have represented the tip end as struck into concavo-convex shape, in order to produce the cylindrical stem when the two parts are doubled together; but it may be struck in plano-convex shape in transverse section, so as to give to each part a semi-cylindrical shape in transverse section, as indicated in Fig. 8. In this striking the tip into the plano-convex shape the dies should be constructed so that the plain side will come midway of the thickness of the bit, as indicated in Fig. 8, in order that when the extension is doubled onto the adjacent portion the bit may extend in a central plane from the stud, and, as indicated in Fig. 9, the extension doubled onto the tip. (Indicated in broken lines.) By this construction the blank may be cut and its stem end struck into shape at a single operation from sheet-steel or other suitable metal, then it is

weights will tend to carry them to a position at right angles to the plane of rotation, and thus present less surface to the wind. They are so adjusted as to operate when the wheel reaches some specified speed.

The weight A^3, suspended by a cord or rope from the arms U′ and W′ may be moved and secured on said rope so as to bear on one or the other of said arms. If it bears on the arm U′, it tends to keep the wings at the proper angle for running the machine, and a greater speed of wind is necessary to operate the wing R, and the reverse is also true.

The wing R′ is made of considerable weight, so as to normally tend to keep the wings at the proper angle, the said wing being normally inclined toward the wind.

Either the float or windlass will operate to move the wing R′ toward the wheel, and so stop the same, the first temporarily, the latter permanently, if so desired.

The pitman-head and crank-pin may be dispensed with and gearing substituted, if so desired.

I claim—

1. A windmill having a wheel with pivoted wings, a crane or pivoted frame supporting said wheel, a wind-wing pivoted to suitable bearings on the crane, a wind-wing also pivoted to the crane and projecting in a direction opposite to the other wing, and a weight supported by a cord or rope having connection to each wing, substantially as and for the purpose specified.

2. A windmill with a wheel having wings pivoted to the arms of the wheel by rods terminating in cranks, a sleeve on the wheel-shaft connecting with said cranks, a crane or pivotal support for the wheel, a wind-wing pivotally supported by said crane and connected to the said sleeve, a wind-wing supported by the crane and projecting oppositely to the other wing and connected to the wings on the wheel, and a weight on a cord or rope which has connection to the wings, substantially as and for the purpose specified.

3. A windmill consisting of a standard, a crane mounted thereon, a wheel having bearings on the crane, wings pivoted to the arms of the wheel by rods having crank-continuations, a sleeve on the wheel-shaft engaging with said cranks, oppositely-projecting pivoted wind-wings, one of which is spring-retained, pivoted to the crane, a weight supported by a cord or rope connected to the wings, a pitman with a swivel-joint operated by the wheel-shaft, and a cord or rope connected to one of the wind-wings and passing down the standard, the whole operating substantially as and for the purpose specified.

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

ALVIN SHERWOOD.

Witnesses:
T. W. SHERWOOD,
LILLIE WALTER.