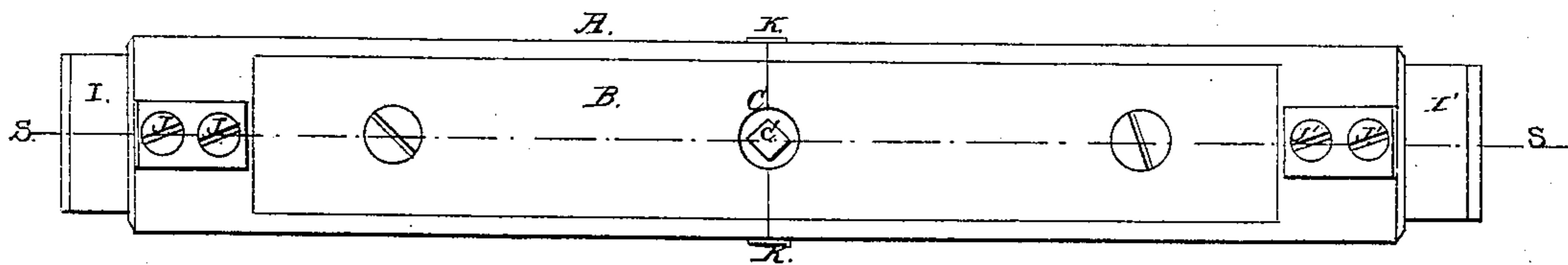


*T. Sheehan,*  
*Millstone Pick.*

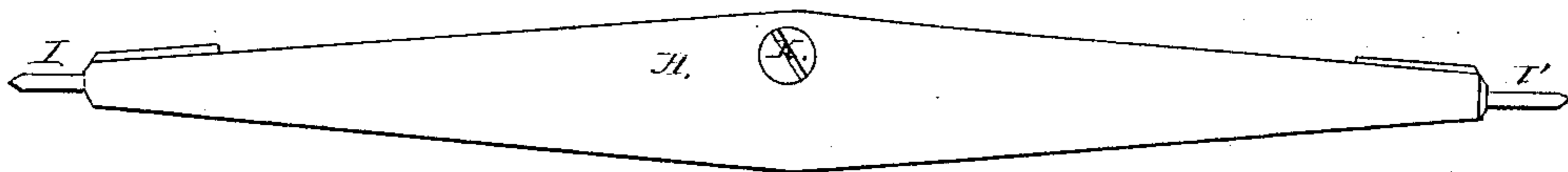
*N<sup>o</sup> 42,882.*

*Fig. 1.*

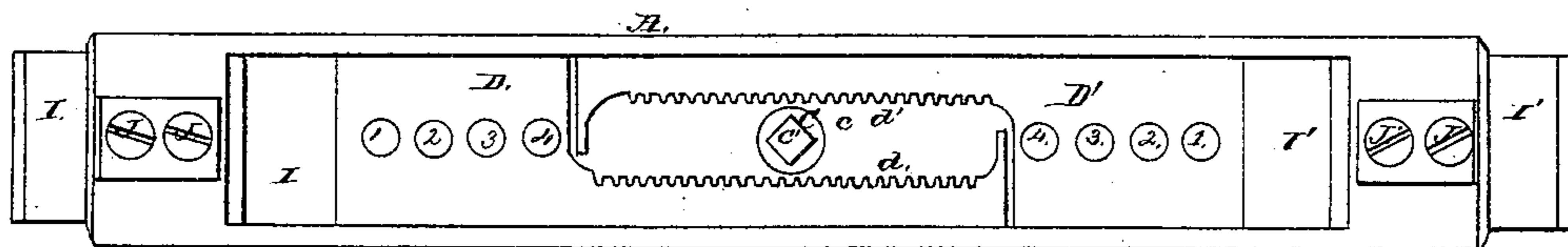
*Patented May 24, 1864.*



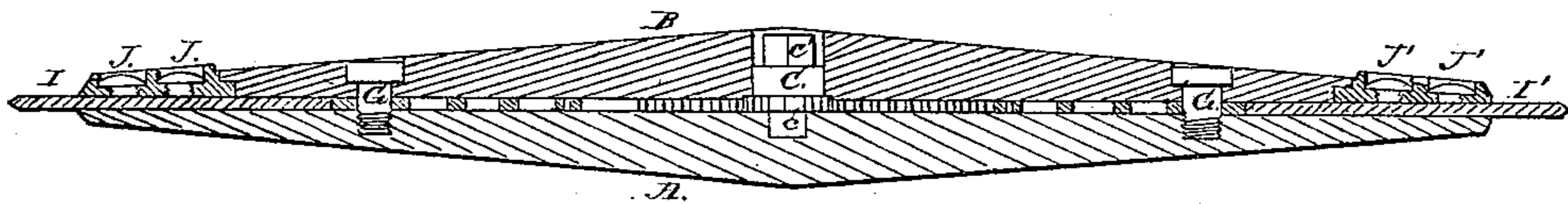
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Witnesses.*

*Thomas D. Stetson*  
*H. A. Albin*

*Inventor.*

*Thomas Sheehan*

# UNITED STATES PATENT OFFICE.

THOMAS SHEEHAN, OF DUNKIRK, NEW YORK.

## MILL-PICK.

Specification forming part of Letters Patent No. 42,882, dated May 24, 1864.

*To all whom it may concern:*

Be it known that I, THOMAS SHEEHAN, of Dunkirk, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Mill Picks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a face view, and Fig. 2 is a side view, of my mill-pick complete. Fig. 3 is a front view of my pick with a part removed to show the interior, and Fig. 4 is a section on the line S S in Fig. 1.

Similar letters and marks of reference indicate like parts in all the figures.

My invention relates to hand-picks, or that class of instruments designed to operate without the introduction of power machinery. This class of picks is usually manufactured from a single piece of steel in the form of a double wedge, and is sharpened on the anvil and grindstone as often as its points become too much dulled. Efforts have been made to use steel points adapted to be removed and sharpened; but the arrangement has been so defective as to prevent the general introduction of such devices. Among the most serious of these defects were either the allowance of elasticity in the cutters or the requiring so thick cutters as to involve a necessity for reheating and drawing down at intervals.

My pick has the same form externally as the ordinary pick, and is adapted to be confined within a suitable handle in the same manner. It avoids the objection to the previously-known expedients for using removable cutters, and allows the use of cutters of such form that no heating and hammering are required, but only grinding and thrusting forward, while the operation is so simple as to present little risk of maladjustment, even in the hands of the least skillful workmen.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation by the aid of the drawings and of the letters of reference marked thereon.

A is a casting, which I prefer to make of malleable cast-iron, and which forms the main case of my pick.

B is a corresponding casting, adapted to fit in the open side of A and to be very firmly secured therein.

C is a turning-pin, mounted centrally in A and B, and provided with a gearing, *c*, and head *c'*, which may be all cast together with C and form a single piece of malleable cast-iron.

D D' are slides formed with racks *d d'*, as represented, adapted to move longitudinally in the space between A and B, according as the wheel *c* is turned in one direction or the other.

1 2 3 4 are holes in the parts D and D', and there are holes in the parts A and B, with which the holes 1 2 3 4, respectively, coincide in position when the parts D and D' have, by the turning of the gear-wheel *c*, been thrust out to a certain extent, as will be obvious.

G and G' are screws inserted in the holes in A B.

I and I' are plates of refined cast-steel, hardened and ground to the proper bevel to act upon the millstone. The breadth of these plates is equal to the greatest breadth of the slides D D', and their thickness also corresponds therewith. The ends of the part A contain a corresponding aperture, which I prefer in practice to form by coring, in the manner familiar to founders, so that the steel pieces I I' may slide easily in these cavities as they are thrust out by the turning of the wheel *c*.

J J' J' J' are set-screws adapted to press tightly upon the steel pieces I I' and hold them very firmly in position when desired. K K are side screws, which confine the part B.

I prefer to employ steel about one and three-eighths inch wide and one-eighth or one-tenth inch thick, and to employ the best quality of double-refined cast-steel, sometimes known as "silver steel," hardened to the highest degree. The cutting-edges may be beveled in the process of manufacturing, and, whether sharpened at first in that manner or by the use of the grindstone alone, they need never be afterward heated for any purpose. So often as they become dull they may be removed by slacking the set-screws J and J' and sharpened on a grindstone to any bevel which experience may dictate or which the miller may choose. I never allow the ends of the steel to project more than a half inch beyond the ends of the casting A. As the cutters are shortened by the successive grinding operations, the cutting-edges approach nearer to the ends of A, and so soon as they become inconveniently near I thrust them out by turning the

part *c*. To effect this latter operation, after slackening the set-screws *J J'*, I first remove the screws *G G'* and then apply the wrench to the head *c'* and operate the slides *D D'* simultaneously by turning *c* until the second hole, 2, comes in line with the screw-holes, and then replace the screws *G G'*, and again tighten the set-screws *J J'*. I repeat this operation as often as required, until the cutter plates are too short for use, even with the screws *G G'* in the hole marked 4.

It will be observed that the holes 1 2 3 4 may be made nearer together than are herein represented, and that two or more series of these holes may be employed, if desired; but I have found the number and proportions represented to serve a good purpose.

I am not aware that any have, prior to my invention, produced a hand-pick with movable cutters which could be used in the ordinary handle, and am confident that none have possessed all the advantages pertaining to mine.

It is found in practice very important that the steel edge of a mill-pick shall be not only formed with a proper bevel and properly hardened, but that it shall be made originally of the best possible quality of steel and maintained in the toughest and hardest condition throughout the entire period of its use. It is also found very important that it shall not be allowed to yield by its elasticity to any appreciable extent. A very slight amount of elasticity in the steel is liable in practice to cause a chipping off instead of properly maintaining the integrity of the stone between the furrows.

It has been common to attain a very rigid condition by forming the entire pick in one mass of steel, as before described. This construction very efficiently prevents all the evils accruing from any undue elasticity in the steel, but it involves so frequent a reheating and reworking of the steel as to almost certainly injure its quality. It is possible to draw down the point of an ordinary pick by the blacksmith's skill with such care that the operation may be repeated as many times as is desired without seriously injuring the quality of the metal; but it is very rare that such can occur in practice with ordinary workmen. There is always a liability to injury, either from overheating of the metal or from imperfect or insufficient hammering.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. A hand mill-pick, *A B*, adapted to thrust out the thin cutters *I I'*, and to support the faces of the same close to the cutting-edges substantially in the manner and for the purpose herein set forth.

2. In mill-picks, the rack *D d*, the locking-screw *G*, and pinion *c*, or their respective equivalents, arranged relatively to the thin cutter *I*, substantially as and for the purpose set forth.

THOMAS SHEEHAN.

Witnesses:

THOMAS D. STETSON,  
H. A. ALBEE.