H. M. BARROWS & W. KENNISH.

Rulers.

No. 199,253. Patented Jan. 15, 1878.

Fig: 1.

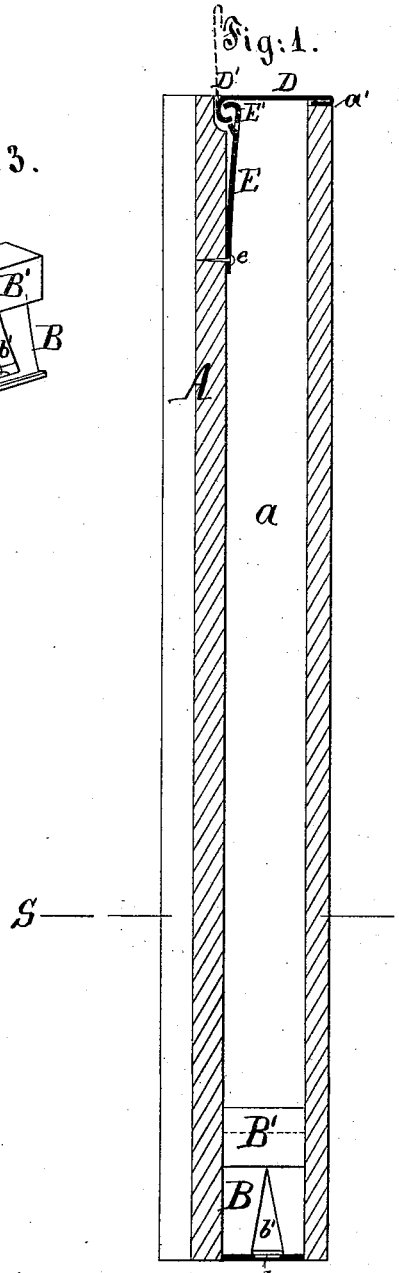

Fig: 4.

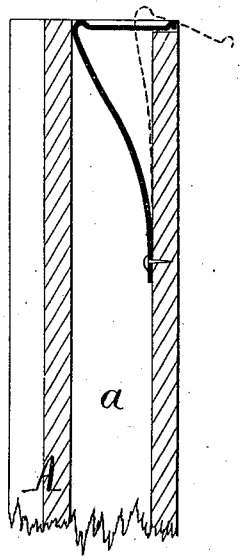

Fig: 2.

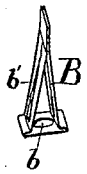

Fig: 3.

Fig: 1a.

Witnesses:

A. Howes Gardner

H. A. Johnstone.

Inventors:

Henry M. Barrows,

William Kennish

by their attorney

T. B. Stetson

New York

UNITED STATES PATENT OFFICE.

HENRY M. BARROWS, OF NEW YORK, N. Y., AND WILLIAM KENNISH, OF NEW BRUNSWICK, N. J., ASSIGNORS TO SAID BARROWS.

IMPROVEMENT IN RULERS.

Specification forming part of Letters Patent No. **199,253**, dated January 15, 1878; application filed August 24, 1877.

To all whom it may concern:

Be it known that we, HENRY M. BARROWS, of New York city, in the county and State of New York, and WILLIAM KENNISH, of New Brunswick, Middlesex county, in the State of New Jersey, have invented certain new and useful Improvements relating to Rulers, of which the following is a specification:

Our improvement is more especially adapted for schools, but may be used with some advantage in various other situations.

We make the ruler hollow from one end to the other, and mount in one end a peculiarly-formed device, which serves as a permanently affixed and substantial pencil-sharpener. It performs the double function of a pencil-sharpener and of a stop to close that end of the hollow ruler. The other end of our hollow ruler is provided with a device operated by a spring. The spring closes and holds it closed under all ordinary conditions. The hollow interior of the ruler between the spring-cover and the fixed stop at the opposite end is sufficiently large to retain both a pen with a suitable handle and a pencil. When it is desired to introduce or remove either, the spring device is easily opened. In what we consider the fullest form of the invention it holds itself open automatically until it is touched by the finger to commence the closing motion.

The following is a description of what we consider the best means of carrying out the invention:

Figure 1 is a longitudinal section through the entire ruler on the line T T in Fig. 1ª. This latter is a cross-section on the line S S in Fig. 1. Figs. 2 and 3 are perspective views of certain parts detached. Fig. 2 shows only the thin hardened steel part, which serves as the pencil-sharpener. Fig. 3 shows the same in a different position with the block attached, which serves to complete the pencil-sharpener by holding the ends of the sheet-steel properly together, and also serves as a stop to close the end of the cavity in the ruler. Fig. 4 is a section of one end of the ruler, showing a modification of the spring device which closes that end.

Similar letters of reference indicate corresponding parts in all the figures.

A is a sufficient mass of well-seasoned wood to form the main body of the ruler. It is worked into the proper form exteriorly, and is grooved longitudinally, as indicated by *a*. A thinner piece, A′, is firmly glued on, thereby forming a complete ruler adapted to perform all the ordinary functions of such well-known device.

One end of the hollow interior *a* is permanently closed by a device which serves at the same time as a peculiarly efficient sharpener for pencils. It is composed chiefly of sheet-steel B, bent around, and having its ends confined in a short block of wood, B′. A circular hole, *b*, is formed by dies or otherwise in the center of the metal portion B, and two tapering slots, *b′*, are formed, one on each side of the central hole. The sheet-steel for the pencil-sharpener, having the one hole *b* and two holes, *b′*, is bent around by the aid of suitable forming-tools into the position represented, so that the ends are brought nearly or quite together. The ends are then inserted in a saw-kerf or analogous groove in the block of wood B′. The whole is forced in and secured by gluing, or otherwise, in one end of the opening *a*.

To sharpen a slate-pencil, the pencil is applied endwise to the end of the ruler, and thrust into the hole *b* as far as it will go, and vigorously turned or partially turned forward and backward a number of times. This presents it to the tapered slots *b′* in the converging parts of the material, so as to reduce the pencil to a sharp, or nearly sharp, point. It is then withdrawn, the stony dust jarred out of the ruler end not having been allowed to pass the block B′, and the pencil is in good condition for use until it shall require a repetition of the treatment.

At the other end of the ruler we remove a very little of the wood at *a′*, and apply a loose-fitting cover of sheet metal, marked D D′, the part D′ being a curved end, which receives a nearly corresponding curved end, E′, of a correspondingly wide sheet-metal spring, E, which is firmly fastened by a pin, *e*, in the interior of the ruler. The spring E tends constantly to straighten itself. Its hooked end E′ engages the hooked end D′ of the cover D.

The bent part or hooked end E′ is shorter than the corresponding part D′ of the cover. When the cover is closed, or nearly closed, the force of the spring E presses against the hooked end D′ of the cover and holds it shut. When the cover is forced entirely open, it presses in such direction as to hold it open. In this latter condition a pencil or pen, or both, may be easily inserted or removed from the hole *a*, after which a gentle force on the cover D will cause it to snap into the shut position, and remain securely closed by the force of the spring E. In this condition the ruler is ready to serve all its ordinary uses.

The taper of the end of the pencil will depend on the inclination of the sides in which the tapering slots *b′* are formed, and on the taper of the slots themselves.

The ends of the sheet metal should be brought nearly or quite together, and they should be extended nearly or quite parallel to each other into the block B′. We can make the width of the sheet metal B a little less than the width of the hole *a;* but the block B′ should be of such size as to fill the hole *a* completely, and be tightly glued to make a strong as well as tight stop. The metal should be hardened.

The sheet metal for the parts D and E should be enough less in width than the hole *a* to allow them to always turn easily. Unlike a cover moving as a slide or mounted in any ordinary means, our spring-cover D can never bind and be difficult to operate by the fingers of a child, but is sure to be easily moved, and so long as the spring remains efficient to securely retain the contents.

Some parts of the invention may be used without the whole. Modifications may be made without sacrificing all the advantages of the invention. We can, for example, make the spring-closing device in a single piece by sacrificing the advantages due to its being able to hold itself open. Fig. 4 shows a form in which the cover and spring are in a single piece, the dotted lines showing the closed and the strong lines showing the open position.

We claim as our invention—

1. The pencil-sharpener B, formed, as represented, with the hole *b* and the tapering slot *b′*, the ends being held together, or nearly together, by the block B′, and the whole embraced by a substantial support, A, as and for the purposes herein specified.

2. A hollow ruler, A A′, provided with a spring-cover, D E, holding the aperture closed by its elastic action, but allowing it to be easily opened, as herein specified.

3. In combination with a hollow ruler, A A′ *a*, and spring-cover D E, the pencil-sharpener B B′, adapted to serve the double purposes of a pencil-sharpener and of a stop for closing the passage *a*, as herein specified.

In testimony whereof we have hereunto set our hands this 17th day of August, 1877, in the presence of two subscribing witnesses.

HENRY M. BARROWS.
WM. KENNISH.

Witnesses:
THOMAS D. STETSON,
WM. E. MOWBRAY.