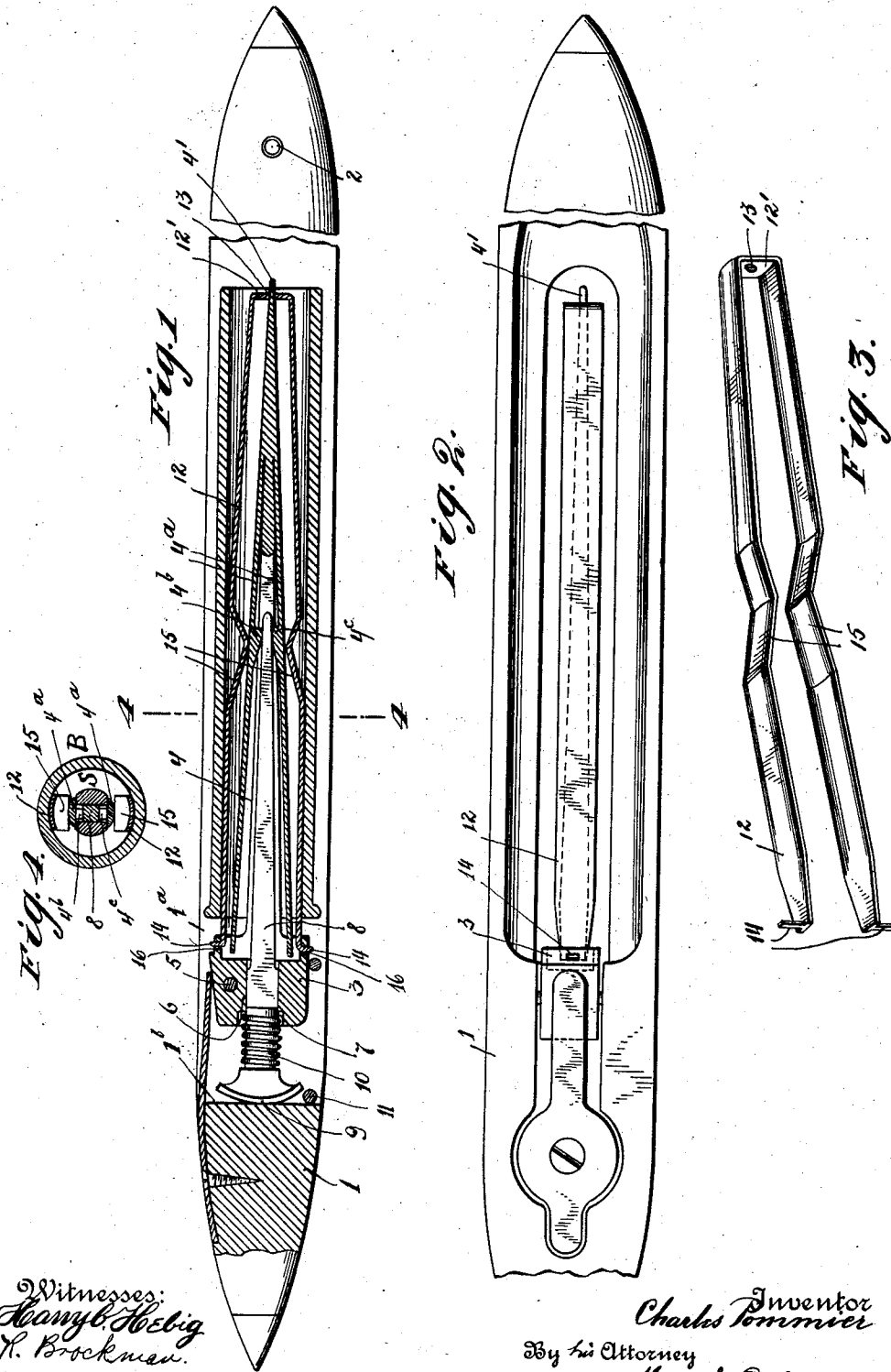


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SHUTTLE.

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CHARLES POMMIER, OF PASSAIC, NEW JERSEY.

SHUTTLE.

1,022,046.

Specification of Letters Patent.

Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that I, CHARLES POMMIER, a subject of the German Emperor, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

The present invention relates to shuttles used in weaving looms or the like for shooting the yarn of the weft from one side of the web to the other between the yarn of the warp and is an improvement of the shuttle disclosed in my Patent No. 1,000,625, issued August 15, 1911.

The object of this invention is to simplify the construction of the shuttles and to provide certain means whereby conical cardboard or paper bobbins and cylindrical wooden bobbins can be easily and readily secured to the spindle of the shuttle without exerting any pressure on the bobbin and the thread and after the bobbin is properly adjusted on the spindle, its frictional engagement with the latter is automatically effected.

To make my invention more clear, the same is illustrated in the accompanying drawing, which forms a part of this specification and in which similar reference letters denote corresponding parts.

Figure 1 is a longitudinal section of the shuttle; Fig. 2 is a top plan view thereof, Fig. 3 is a perspective view of a detail and Fig. 4 is a cross section on line 4—4 of Fig. 1.

1 denotes the tapered hollow shuttle and 2 the eye through which the yarn (not shown) is passed out. The spindle S over which the bobbin (not shown) is to be slipped comprises a boss 3 and a hollow tapered extension 4, and is substantially of the same construction as described and shown in the above named patent. The boss 3 of the spindle is pivotally secured in the side wall 1^a of the shuttle by a pin 5 or the like and is provided with a longitudinal central bore 6 and in its outer end with a recess 7. Slidably mounted in said bore 6 of the boss is a tapered or wedge-shaped rod 8 the rear cylindrical end of which is formed with a rounded head 9 and the forward end of which is adapted in working position to extend longitudinally into the hollow part of the spindle, to operate noses 4^b, 4^c provided on the inner surfaces of resilient flaps 4^a made integral with or secured to the forward

ward end of the extension 4 of the spindle in the manner specified and shown in the patent above referred to. A spring 10 arranged on the rear end of the rod 8 between the head 9 and the boss 3 and engaging with its forward end the recess 7 of the latter has the tendency of partially withdrawing the rod 8 from the hollow extension, so as to release the noses 4^b, 4^c of the flaps 4^a.

In working position, *e. g.* when the spindle occupies the position shown in Fig. 1, the rounded head 9 rests against the opposite end wall 1^b of the hollow of the shuttle and in this position the spring 10 is compressed. But by swinging the spindle around the pivot 5, so that its tapered end projects upward and outward from the shuttle and the boss 3 downward, the head 9 is released and the spring 10 is allowed to expand, causing the withdrawal of the rod in rearward direction. A stop 11 is provided at the bottom of the shuttle to act against the head 9 and thereby limit the movement of the rod. The tapered spindle with its flaps 4^a could, however, be used only for conical bobbins.

When it is desired to use cylindrical bobbins of larger inner diameter in the same shuttle, additional means must be employed that can be easily applied to the spindle. To accomplish this, I provide a strip 12 of resilient material. This strip has a cylindrically curved surface (Fig. 3) and is bent upon itself in form of tongs. The knee portion 12' of the strip has an aperture 13 large enough to engage the pointed end 4' of the spindle. The arms of this bent strip are adapted in working position to extend over the flexible flaps 4^a of the extension 4 and at their rear ends are formed with noses 14 which engage notches 16 provided in the forward part of the boss 3, and by which noses an incidental displacement of the strip 12 will be prevented. At an intermediate portion each of the arms of the strip 12 is provided with a V-shaped bend 15 extending inwardly and arranged at such a point that in working position they will be just above the noses 4^b, 4^c of the flaps. The resilient strip when applied to the spindle, as stated above, will serve to frictionally engage the cylindrical wooden bobbin B slipped over it in the same manner as the flexible flaps 4^a of the spindle engage the conical bobbin. After the strip is applied and the spindle raised, the arms

thereof will offer no resistance to the bobbin, owing to the removal of the rod 8. But when the spindle is returned into its working position, the flaps 4^b, 4^c will be expanded and in their turn will expand the arms of the strip 12, which will frictionally engage the bobbin. Such strips may be made of various sizes, so as to suit different bobbins and afford the advantage that the spindle of the shuttle need not be removed or changed in construction in order to allow of bobbins of various shapes and sizes being used.

What I claim and desire to secure by Letters Patent is:

1. In a shuttle, a longitudinally recessed spindle pivotally supported therein, expandible flaps integral with said spindle, means slidably arranged in said spindle to act against said flaps, and a resilient tong-shaped member having at one end an aperture whereby it is adapted to be removably applied to the said spindle, said member being adapted to be acted upon by said expandible flaps.

2. In a shuttle, a longitudinally recessed spindle pivotally supported therein, expandible flaps integral with the said spindle, means slidably arranged in said spindle to act against said flaps and a resilient mem-

ber having V-shaped bends and adapted to be removably applied to said spindle and to be acted upon by the said expandible flaps.

3. In a shuttle, a longitudinally recessed and tapered spindle pivotally supported therein, expandible flaps integral with the said spindle, means slidably arranged in the said spindle to act against said flaps and a resilient tong-shaped member having an aperture at its forward end to engage the pointed end of said spindle and V-shaped bends, said strip being adapted to be removably applied to said spindle and to be acted upon by the said expandible flaps.

4. In a shuttle, the combination with an expandible tapered spindle having notches at its rear end, of a resilient tong-shaped member having at its forward end an aperture to engage the pointed end of the said spindle, noses at its rear ends to engage said notches and V-shaped bends, said strip being adapted to be removably applied to the said spindle and to be acted upon by the same when expanded.

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

CHARLES POMMIER.

Witnesses:

LAWRENCE L. LEVY,
MAX D. ORDMANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."