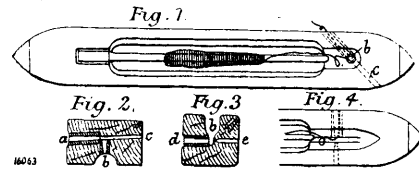


## TEXTILE MACHINERY.

16,063. J. Miniszewski, G. Semenov, and J. Aivass, St. Petersburg. Loom Shuttles. [4 Figs.] July 20, 1896.

—For threading the end of the yarn through the side hole of shuttles as heretofore constructed it is necessary for the workmen to suck the air from said hole, which is very prejudicial to health. This invention enables the workman to effect the same result by blowing air into the side hole of the shuttle. As shown in Figs. 1 and 2, the shuttle is provided with an inclined transverse hole *c*, in which is arranged a conical tube or sleeve *a* preferably made of china clay; in the middle of this hole *c* there is another vertical hole at right angles thereto and also provided with a tube or sleeve *b* of china clay, the upper end of which is flush with the transverse tube *a*, the said tubes or sleeves having a smooth inner surface. The end of the yarn wound on the spool after being rolled with the fingers into a small ball is placed in the inner opening of the vertical hole *b*. It will then be sufficient to slightly blow



air into the transverse hole *c* and through the side hole in the transverse sleeve *a*, as indicated by the arrows to force the small ball, that is to say, the end of the yarn easily through the sleeve *a* out of the shuttle. In the arrangement shown in Figs. 3 and 4 the conical hole in the shuttle is made in two parts *d* and *e*, separated by a vertical hole *b*. The inner end of the part *e* is tapered or contracted and is in line with the geometrical axis of the part or sleeve *d*. Moreover the bore *e d* is not inclined, but is arranged at right angles to the shuttle. The action is the same as with the preceding arrangement. (Accepted July 21, 1897.)