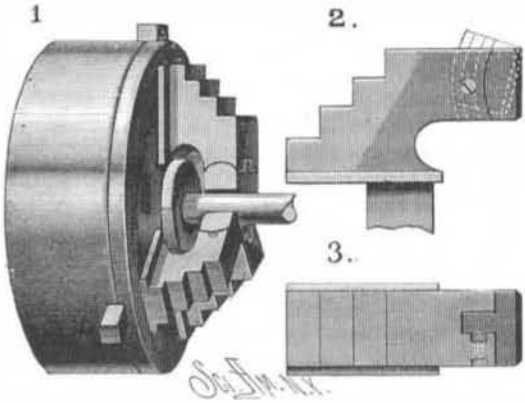


**NEW LATHE CHUCK.**

Those who have been annoyed by the difficulty of firmly holding tapered or headed work in the ordinary chuck will be interested in an invention recently patented by Mr. James S. Gilmore, of 4,727 Penn Street, Philadelphia, Pa. A self-adjusting jaw face, shown in side elevation in Fig. 2 and front elevation in Fig. 3, is fitted in each jaw by making the jaw proper concave on its face in the direction of the axis of the chuck, and grooving it in the same direction; the jaw face is provided with a corresponding convex back and tongue. This jaw is secured by a stud pin screwing through one side of the jaw to a notch between two short side ribs on the tongue. The jaw faces, being free to move along their seats within the limits of the ribs, will come self-actingly to a bearing on a tapered object when screwed up

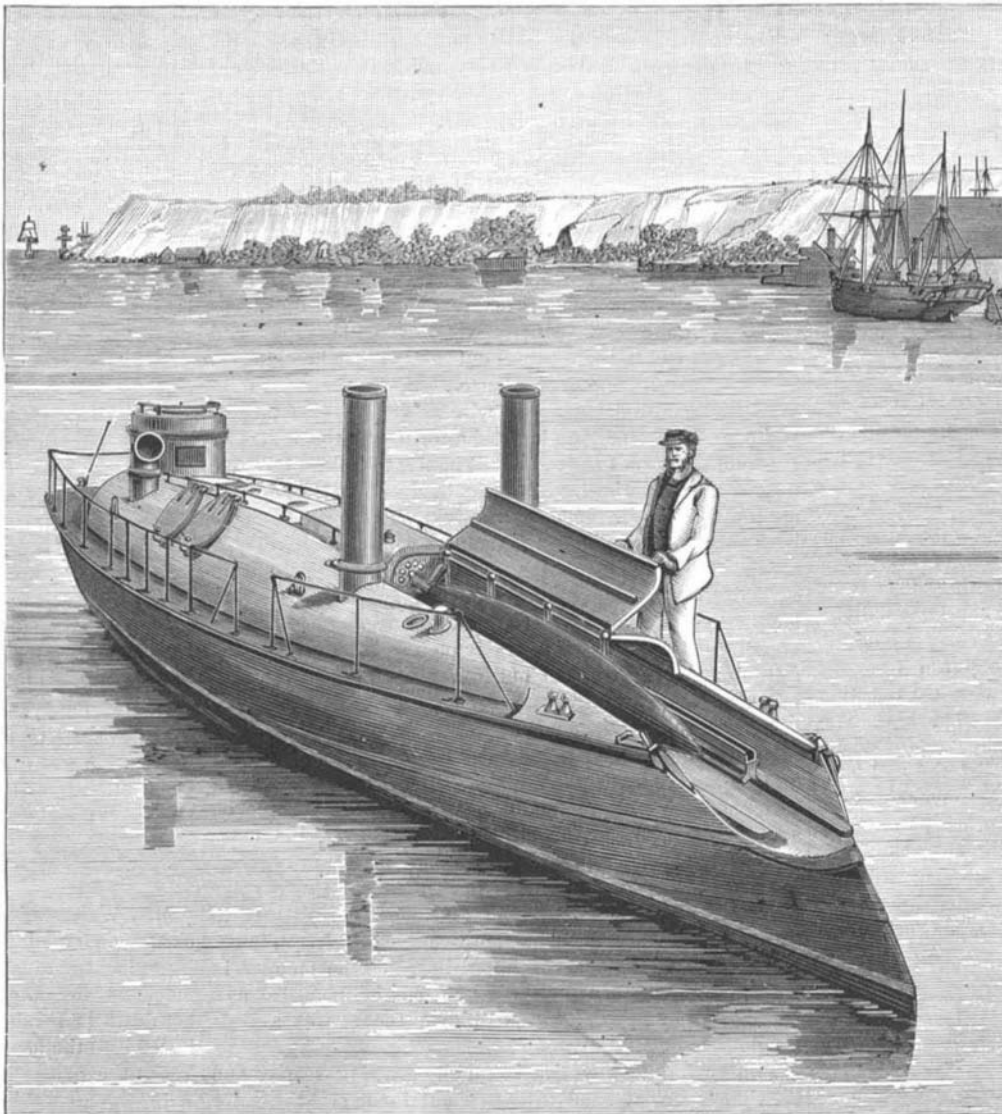
**GILMORE'S NEW LATHE CHUCK.**

to grip them, whether by a universal adjusting device or an independently acting one.

The jaws are also constructed with undercut notches (Figs. 1 and 2) to make a clear space behind the gripping faces to enable them to grasp the shank of a bolt over the head.

**IMPROVED TORPEDO BOAT.**

We give an illustration of a new torpedo boat constructed for the English navy by Yarrow & Co. *Engineering*, from which our cut is taken, says: These boats form part of the equipment of the large war vessels in the navy, and consequently both the dimensions and weight are very limited. The system formerly adopted for discharging the torpedo from this class of boat may be briefly described as follows: On each side of the boat there was a skeleton steel cradle or frame provided with suitable guides into which the torpedoes were placed. These cradles were slung in davits and arranged so that they could be easily lowered below the surface of the water. When the torpedo was completely immersed, it was allowed to pass out of the cradle by its own mechanism, taking a direction parallel to the boat itself, and very excellent practice has been made with this plan; but as a considerable loss of time must clearly ensue in the lowering and starting, and as it was found difficult to aim when the boat was traveling at anything but a very slow speed, the arrangement was not satisfactory. Messrs. Yarrow & Co. have since then adopted a system of steam impulse; it consists in building into the forward part of the hull—as will be seen from the illustration—two troughs or half tubes, parallel to each other, in which the two torpedoes comprising the armament of the craft lie ready for use. Immediately behind, and under a steel covering, are a couple of impulse tubes, consisting simply of two long thin steel cylinders, provided with pistons and piston rods, the forward end of which press against the extreme after end of the torpedo. There are hinged covers which are lowered when the torpedo is in its place; this steam impulse gear is so arranged that at the will of the officer in charge, either one or both torpedoes can be instantaneously ejected by steam from the main boiler without causing any loss of speed to the boat or necessitating the presence of any of the crew on deck. The speed trial of one of these second class torpedo boats, loaded, built for the Admiralty, took place on the Thames last year, when 17.27 knots were obtained. After the speed trials were terminated, the steam impulse gear was tested at Portsmouth, and was found to be highly satisfactory, being, without doubt, far better than the side cradle system previously in use.

**IMPROVED TORPEDO BOAT WITH IMPULSE GEAR.****A Bill to Assist Inventors in Making Drawings.**

The following neat little bill has been introduced in the House of Representatives by the Hon. Mr. Vance, of North Carolina:

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That drawings intended to explain any device or anything whatever that is patentable shall be made at the cost of the Government, under the direction of the proper authorities in the Department of the Patent Office, and without cost in any case to the inventor.

If all members of Congress were as willing to encourage inventors as the Hon. Mr. Vance, the probability is that many thousands more of new inventions and new industries would be annually brought to light. This bill is very good as far as it goes, but does it go far enough? Is it just the thing to allow the inventor to go hungry or thirsty while he is waiting at the Patent Office to give explanations about his drawings? Ought not Mr. Vance to add another section to the bill, covering refreshments, together with lodgings and transportation.

**The Silk Weavers of Lyons.**

Mr. Porter in a letter to the *Tribune* states that it is impossible to compare the earnings of silk operatives in Germany and France with those in the United States, because power machinery is almost exclusively used at home, while in France and Germany 90 per cent of the work is done on the hand loom. The raw material is given out either directly to the men by the large manufacturers or by what are called patron masters, who are really a species of "fogger." These small masters make a decent living, earning from 2,400 to 2,500 francs a year, or about \$500, which enables them to live comfortably. The poor weaver of black silk dress goods only makes 2 francs (40 cents) a day, and on the finer grades 3 francs (60 cents). Many of the toilers at Lyons are born, live, eat, sleep, and die in the same room. While walking through the streets the clatter of the loom is heard away up to the sixth and even seventh story.

"The loom occupies the largest part of the room. Upon a tiny stove the next meal is cooking, and while watching it the wife is arranging the shuttle. There is an air of barrenness about the room, and nothing homelike. A common print or some religious symbol is on the whitewashed wall. No carpet is on the floor. With the weaver it is work or the cafe. The weaver and his wife and children wear outer garments that are clean. They will appear better on the street than their English brethren. Their garments are

principally cotton, and are washed in public. Projecting into the river may be seen hundreds of little stalls, which are rented by the day or hour for a small sum, and here the women assemble and wash the soiled rags of the town. The silk weavers are physically an inferior race, and many of the young men are exempted from military service on account of weakness." In 1883 the silk industry of Lyons gave employment to 150,000 persons.

**MEMORANDUM BOOK AND PAD.**

To the cover of a plain memorandum book, of a size adapted to be carried in the pocket, is attached a slip pad. The other cover of the book is provided with a carbon paper attachment, which is composed of a heavy paper flap attached to the cover by rivets. The frame holding the carbon paper folds back upon a leaf that folds in between the leaves of the book—as shown in the upper engraving—so that when the book is closed the leaf, frame, and paper serve as a bookmark; the leaf also serves to hold the carbon paper

**SILBERMAN'S MEMORANDUM BOOK AND PAD.**

in its proper place, so that when the book is opened for making a memorandum it is only necessary to tip the frame over upon the right-hand side of the book to bring the carbon paper into position for use. A slip is then taken from the pad, placed upon the carbon paper, and the memorandum written with a lead pencil; a facsimile will be produced upon the leaf of the book. The frame will then be raised sufficiently to permit the sheet having the memorandum written upon it to be turned, when the parts will be arranged as before, and the book placed in the pocket ready for the next entry. The book is very convenient and easily used, and, by the use of the frame, the carbon paper is always held in a flat position.

This invention has been patented by Mr. S. J. Silberman, of 79 Canal Street, New York city.

**Steam Engine Practice.**

As a comment on the able *resume* of "Present Steam Engine Practice" in the *SCIENTIFIC AMERICAN* of March 8, 1884, it is not improper to state that, from a number of personal observations and from reported results, the introduction of "high speed" engines in machine shops and iron and other metal manufacturing establishments is not satisfactory.

There are places where the rapidly running engines, with a piston speed of 600 or more feet per minute, are at home; but their proper place is not the machine shop, if reports and facts agree. One of the largest and best known manufactories of metal goods in New England ran its works satisfactorily with a slow moving engine. To accommodate additional demands, the cylinder was rebored and other changes made that added largely to the capacity of the engine. Except for this enlargement the engine required no doctoring, and before and after the change could be relied upon to do its work.

An addition to the works was made three years ago, and a little buzzing engine put in to run it. The claim was made that the little wasp had more power than the old fashioned traveler. But the result comes in frequent repairs and inconvenient stoppages; six hundred dollars having been expended in repairs on the rapid moving engine within two years—four times as much as has been expended on the old engine, that has run evenly for eighteen years.

There are slow moving engines of thirty years ago or more, in the New England States, built, some of them, by concerns now out of existence and bearing the names of men on their claim plates who have "gone over" and left only their memories as mechanics, which do their work as honestly as some of the machines that to-day assume to displace them. They were built for their work, and not to illustrate a theory.

H.