

public opinion, whether right or wrong, by a court already unpopular, add to its unpopularity? I need not occupy space to show that anything that tends to bring our courts into contempt, or to throw suspicion upon them, is subversive of our institutions.

When we see what an outcry is raised in one of the larger States of this Union against its supreme court, for deciding a question of abstract law, *i. e.*, whether a certain proposed amendment to the State constitution was legally adopted so as to become a part of that constitution, and such decision was against the wishes of what claimed to be a majority of the people of the State, and the renomination of the Chief Justice of that court was successfully opposed by some of the leading journals of his own political party for the reason, openly avowed, that his decision on this question was not satisfactory, we may well hesitate before we subject our courts to the odium to which they would certainly be subjected in doing their duty to men accused of heinous crimes and generally suspected by the community to be guilty, where there is yet no sufficient evidence of guilt. And a fair-minded man with an average amount of common sense has often but to carefully sit through and watch an important trial of this kind to know how unjustly juries are sometimes abused by the newspapers and the general public, for performing their plain duty under the law and the evidence submitted to them.

Eugene Lewis.

MOLINE, ILL.

Some New Inventions.

A DESCRIPTION was given in this magazine some months since of a new design in steam-ship construction, with a promise of further information when the design was realized in actual practice. A small steamer, built to test this design, has been launched, and from an examination of the vessel in dock at East Boston a note may be made of the present position of the experiment. The objects sought appear to be speed and safety. To insure these, the hull is extremely sharp and built upon very fine lines, the boat being very long and narrow, and with the greatest width somewhat in advance of the center. The upper part of the vessel is rounded, beginning just above the water-line, the sides bending inward and meeting in the center in the form of a low arch slightly flattened in the middle. To give the ship this peculiar form, the ribs are continuous from the keel upward and over the deck, the outer skin being carried directly over the top of the vessel. On the deck is a small wheel-house, with a dome-shaped roof of heavy glass, one or two hatchways, and the two smoke-stacks. A light railing serves as a guard round the narrow deck, and, beyond the ventilators and sky-lights, there is nothing more visible on the outside. This peculiar form is intended to give great strength to resist the shock and weight of water falling on the deck as the vessel is forced through the waves. It is thought the hull will plunge through the waves instead of riding over them, and that in rough water the deck will be often swept by heavy seas that, finding no hold, will simply roll off without inflicting damage or materially checking the headway. How far this interesting theory may prove correct, experiment can alone decide. At the present writing nothing has been done. This

is explained by an apparent failure of the motive-power put into the vessel. Suitable boilers and engines are to be provided, and the tests will be made upon a complete and thorough scale. The vessel as it now stands certainly presents an admirable opportunity to conduct what might be called physical research in the field of navigation, and it is to be hoped that when the new engines are complete something of value may be added to the science of ship-building.

Objections are sometimes raised against the study of mechanics by girls as being, in a general way, useless, seeing that the feminine mind is not inventive. To the mechanical mind this objection has a certain flavor of decayed absurdity, a mingled air of ignorance and prejudice. How shall the bird fly if it is born and reared in a cage? The most valuable mental faculty in invention is imagination. Women certainly have that. The trouble is not that they cannot invent, but that they have not imagined the necessity of an invention. One of the greatest of American inventors could construct complete in his mind a working carpet-loom, and then make the drawings and build the loom, and it would at once make such carpets as he saw in his mind. Given imagination, there need be only a knowledge of the laws of mechanics, patience, and work. These are the essentials of invention, and they are as much feminine as masculine. The seeing a want prompts to a lively imagination of a way of supplying the want, and this is invention. When women are educated to see the relations of things and understand something of mechanics, feminine inventions will follow quickly enough. In fact, the Patent Office reports already contain a very considerable number of patents issued to women, some of which have proved of great commercial value.

One of the two exhibitions recently opened in Boston devoted liberal space for the display of work by women and girls. From an examination of this display, something may be learned of the more recent inventions brought to a practical commercial position by women. The list is small, but suggestive, as it includes such diverse subjects as iron castings, bronze bearings for journals, and improved furniture. The only criticism that can be made against the display assumes the form of a regret that what seems to be a really good alloy, that has stood the severe test of regular work in heavy machinery, should not be boldly put with the machine tools in another part of the exhibition, where it would be seen of men. In the "woman's department" it is half smothered by the Kensington stitch. Among the inventions patented and exhibited by women, may be mentioned a few that seem to indicate a clear knowledge of what is wanted and the wit and skill to supply the want. A trunk with a tray has the objection that, if a dress is laid in the tray and it does not fill it to the top of the cover, the garment will not stow well, and if the trunk is turned over it will be injured. To obviate this, an improved tray is shown, having a canvas bottom with straps and pockets, and arranged in such a way that it can be placed in any position in the trunk and securely fastened there. The garment is placed in the tray and pinned to the canvas or fastened by the straps, and then, if the trunk is turned over, it cannot get out of place nor be thrown about, even if the trunk is half empty. In furniture three exhibits are made by women. One of these is a

bedstead with the space under the mattress utilized as a bureau, a number of drawers being provided on each side, the exhibit showing considerable skill in designing cabinet work. Allied to this is a large arm-chair for school-teachers, with smaller chairs arranged under the seat in the manner of drawers, and designed to be drawn out to give seats for children who, in the discipline of school life, must "sit with teacher." A bureau is shown, having apparently two sets of drawers. One of these is false and opens as a cupboard door. Within is a shelf that may be drawn out, and is intended to support a washing-bowl, while the space below is for the water-jar. These three exhibits clearly indicate the pressing necessity for economy of space in domestic life in city tenements and apartments, and will, no doubt, fill a want and find a market. The most profitable patents are often those that seem the most simple and commonplace. Perhaps the most promising design by a woman is an adjustable book-cover. Every one is familiar with the art of covering books with paper, but no one before seems to have hit upon the happy thought of a locking device that will keep the paper shield always firmly in position without the aid of paste. The idea was plainly suggested by the many forms of locking paper boxes, and it will, no doubt, prove quite as valuable in a commercial sense. An improved stove-grate, unfortunately not shown in position, a new oil-stove showing a clear understanding of the theory of this class of stoves, a new glaze for pottery, a new life-preserver, and a new plastic material that may be used as a substitute for clay are also exhibited by women. In practical scientific work there is also a creditable display of chemicals and dye-stuffs, all by women. These are only a few of the exhibits made by women that depart in any degree from the conventional needle-work, and they are worthy of notice for two reasons: they indicate an effort to grasp the wants of the world and a right understanding of means to ends; and they also show that there is a steady widening of the field in which women may find profitable employment.

The increasing attention given to outdoor life and sports has naturally led to the introduction of improved appliances for comfort or convenience in fields and woods. In boats, tents, and camping facilities this is specially noticeable. American canoes and traveling boats have exhibited several new types, some of which have been described in this magazine. Of late, attention seems to be given more to camping facilities. Among these is a tent of the common A shape, having rounded ends completely closed, and movable sides, which may be raised so as to make it by day in good weather into a large dining or shelter tent, fully open to the air; while at night or in rough weather one or both of the sides may be let down, closing the tent either partially or completely, one loose corner making a door when required. Another device consists of a lawn seat with a canopy or sun-shade, that may be turned into a single bed with a small, low tent over it for camp use. In camp furniture a new outfit, consisting of six chairs, two beds, and one table, may deserve attention, as all these pieces are designed to be packed into one trunk of medium size. The outfit examined seemed to be strong and well made, and very neatly and compactly fitted to the trunk.

An invention has just been brought out in this country as a substitute for stained glass. In stained glass, each piece of glass, in the mosaic that forms the design or picture, must be inclosed in the lead sash or "leads." These lines of leads cross the window in every direction, and often greatly mar the effect of the design. In the new method of treating window glass there are the same leads, but they are used in a manner that is not possible in stained glass, and for a wholly different reason. The method of preparing the glass is quite simple. A suitable design is prepared in colors, and in its treatment there may be the greatest freedom, as the leads that follow the main lines of the design or picture are merely the divisions between the colors. Over the pattern is laid a sheet of clear glass. A composition that melts only at a high temperature is then placed in a tube having a cone at the lower end and a small opening at the point. The heated composition flows through this, like paint from a color tube, and is allowed to fall on the glass over the pattern, where it leaves a raised line that instantly hardens and clings firmly to the glass. With this fluid pencil the main lines of the pattern are drawn on the glass, making the leads of the future work, and marking the divisions of the colors. It is plain that, in the hands of the designer, a picture, pattern, or geometrical design can thus be drawn directly in free-hand on the glass, which is a wholly novel method of treatment. The lines of the pattern having been drawn in the hot composition, the next step follows at once. Each of the spaces between the leads is then filled in with a colored composition that sets quickly and forms a transparent or translucent adherent film on the glass. In about forty-eight hours this coloring material is dry and hard, and when varnished will stand washing and all ordinary temperatures. The finished work examined appeared to give a closer imitation of stained glass than anything yet produced. The colors are pure and strong, and the designs showed a degree of freedom not before obtained in any decorative treatment of glass. The invention is worthy of examination chiefly on account of this very freedom, as any design or picture can be drawn on the glass and reproduced in transparent colors. The cost is said to be about one half that of the cheaper forms of stained glass.

Charles Barnard.

Free Trade with Canada.

IN the July number of *THE CENTURY* appeared an interesting article from the pen of Mr. Watson Griffin on the above subject. For us Canadians it possessed a peculiar value, indicating as it did the opinion of a well-informed and thoughtful American on the trade relations between the two countries. In a certain degree it was also flattering to Canada, Mr. Griffin freely recognizing the boundless resources of the Dominion and the rapid strides toward prosperity made in the past few years. Dealing with the question of reciprocity, Mr. Griffin has presented us with an American view—how widely entertained I know not—of the trade relationship between Canada and the United States. He urges on his fellow-countrymen to turn their attention to the land so rapidly