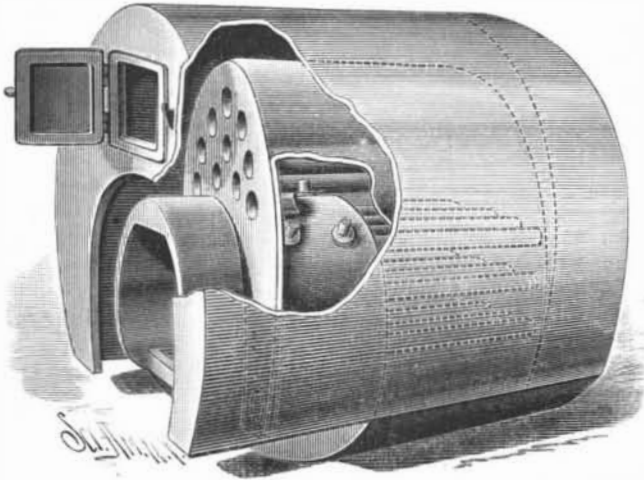


A LOW PRESSURE BOILER FOR STEAM HEATING.

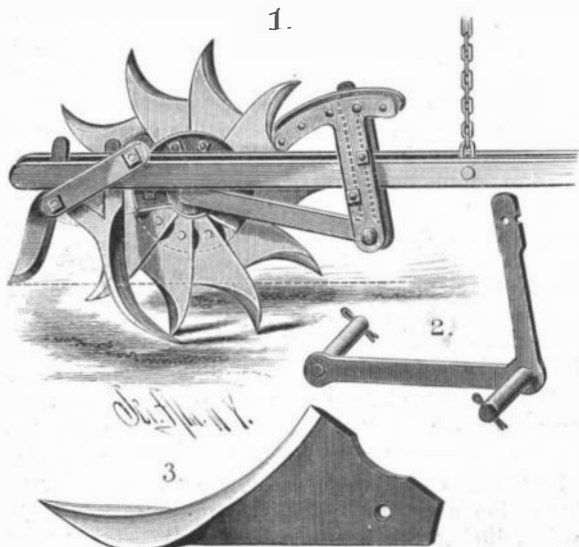
A boiler of simple construction, designed to be very economical of fuel, and more especially intended to serve for steam heating purposes, is shown in the accompanying illustration, and has been patented by Mr. James S. Priest, of Manayunk, Philadelphia, Pa. Within the main inclosing case is arranged a crescent-shaped boiler and crescent-shaped fire chamber, the latter extending back about midway of the lower half of the boiler proper and also projecting forward beyond

**PRIEST'S BOILER FOR STEAM HEATING.**

the front end of the boiler. The boiler proper has two series of flues, one series extending direct from the fire chamber through the lower portion of the boiler to a rear chamber, as shown in dotted lines, and the other series extending from this rear chamber to the front, whence the products of combustion pass rearward over the boiler to an exit flue. The crown sheet of the fire chamber has a number of copper plugs, so that the heat will be more quickly transmitted to the water within the boiler. In the back wall of the boiler case is a doorway, normally closed, similar to one shown in front, to give access to the flues for cleaning them.

AN IMPROVED PULVERIZING ATTACHMENT FOR SEEDERS.

A device for thoroughly pulverizing and breaking all clods and lumps in the ground passed over by a seeder is shown in the accompanying illustration. Upon the seeder beam is clamped a segmental rack, its lower portion affording a bearing for a short shaft which carries a rigidly connected arm supporting a sectional hub, in which are fixed radially extending curved blades, while integral with this shaft and arm is a nearly vertical lever held at such angle as may be desired by moving a pin in the segmental rack. The upper ends of the blades are made substantially in the form of sectors, so that when a series of blades are inserted in the hub sections their approaching edges will abut the one against the other, as shown in Fig. 1, a single blade being represented in Fig. 3. The preferred way of making the short shaft, wheel shaft, arm, and lever, all cast in one piece, is shown in Fig. 2. Just to the rear of the journal of the sectional hub is mounted a cultivator shovel, the standard of which, with a rearwardly extending brace, is held to the beam by side clips, their forward retaining bolt being above and their rearward retaining bolt below the beam. The clip on the side of the beam next the pulverizer blades is made with an extension, by which it is carried toward the blades and then down and to the rear in a vertical plane substantially parallel with

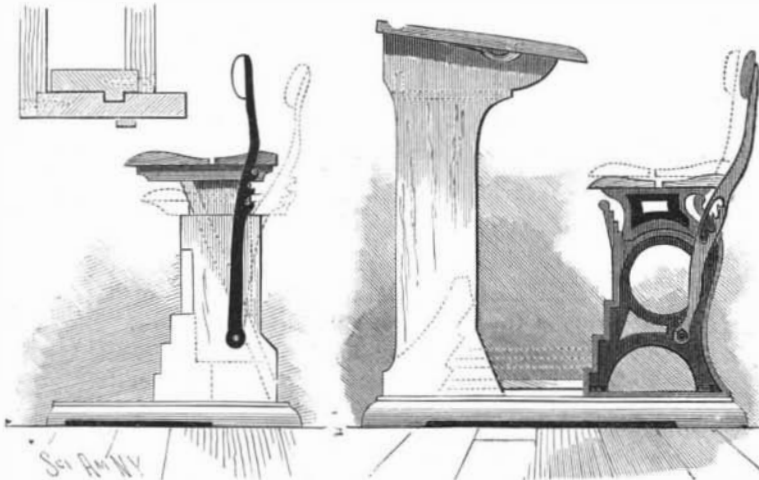
**TORGERSON'S PULVERIZING ATTACHMENT FOR SEEDERS.**

the edges of the blades, thus forming a clearer for them.

For further particulars relative to this invention address the patentee, Mr. Anthony Torgerson, Barnes County, Dakota Terr.

AN IMPROVED ADJUSTABLE SCHOOL SEAT.

A school seat in which the seat and back, as well as the foot rest, are adjustable to suit the size or height of the scholars is shown in the accompanying illustration. The seat may be of a length to accommodate one or more scholars, and may be constructed of wooden slats secured upon metallic frames, or it may be made of wood in the form shown in the two smaller figures. The uprights are made with brackets projecting forwardly from their upper corners, and having a series of steps on their inner sides. The rear corners of the sides are likewise constructed with forwardly extending guide arms or brackets. The lower front corners of the seat frame are adapted to rest upon the steps of the uprights, while their lower rear corners have laterally extending studs or lugs adapted to rest in notches in the rear side of a slot formed in a lever pivoted to the outer side of each of the uprights, these studs bearing against the forwardly projecting guide arms, and preventing the seat from sliding backward off the steps. The back is secured to the upper ends of the side levers, which are thereby connected and braced. The front sides or edges of the uprights have steps adapted to support the inner ends or edges of the foot boards or rests, the front or outer edges of which are supported in a series of notches formed in brackets attached to the desk standards. With this construction, as the seat is raised or lowered, the back is simultaneously thrown in a rearward or forward direction. To raise the seat, it is only necessary to move the lugs into a higher notch in the side levers and then raise the front ends of the frames to a correspondingly higher step, when the seat will be firmly held until its rear edge is again raised for the purpose of placing it at a different height.

**PEDERSEN'S ADJUSTABLE SCHOOL SEAT.**

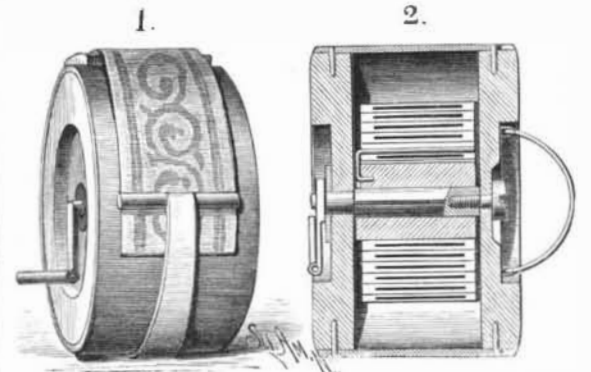
This invention has been patented by Mr. Johannes Pedersen, of Copenhagen, Denmark, and further information relative thereto may be obtained of Mr. Robert Richardi, P. O. box No. 773, New York City.

The Possible Consequences of Using Natural Gas.

A writer in the Cincinnati *Commercial Gazette* says that two hundred years ago, in China, there was just such a craze about natural gas as we have in this country to-day. Gas wells were sunk with as much vim and vigor as the Celestials were capable of, but owing to a gas explosion that killed several millions of people and tore up and destroyed a large district of country, leaving a large inland sea, known on the maps as Lake Foo Chang, the boring of any more gas wells was then and there prohibited by law. It seems, according to the Chinese history, that many large and heavy pressure gas wells were struck, and in some districts wells were sunk quite near to each other. Gas was lighted as soon as struck, as is done in this country. It is stated that one well with its unusual pressure, by induction or back draught, pulled down into the earth the burning gas of a smaller well, resulting in a dreadful explosion of a large district, destroying the inhabitants thereof. Lake Foo Chang rests on this district. The same catastrophe the writer thinks is imminent in this country unless the laws restrict further developments in boring so many wells. Should a similar explosion occur, there will be such an upheaval as will dwarf the most terrible earthquakes ever known. The country along the gas belt from Toledo, through Ohio, Indiana, and Kentucky, will be ripped up to the depth of 1,200 to 1,500 feet and flopped over like a pancake; leaving a chasm through which the waters of Lake Erie will come howling down, filling the Ohio and Mississippi valleys and blotting them out forever.

A CONVENIENT HOLDER FOR RIBBONS, EDGINGS, ETC.

A simple and inexpensive device for holding ribbons or like narrow fabrics within a case, secure from injury by dust and light, and so as to allow ready inspection or sale of the goods, is shown in the accompanying illustration, and has been patented by Mr. George A. Loyd, of Loveland, Col. The case has one fixed head, the other head having pins which enter open slots in the edge; and the spool on which the ribbon is wound, either with or without a measuring tape or band between its coils, is provided with an axial shaft, on one end of which is a crank arm, that may be folded down flat when not in use, as shown in the sectional view, Fig. 2. The other head of the case is provided with a bail, wire, or handle, which may be folded down. The

**LOYD'S RIBBON HOLDER.**

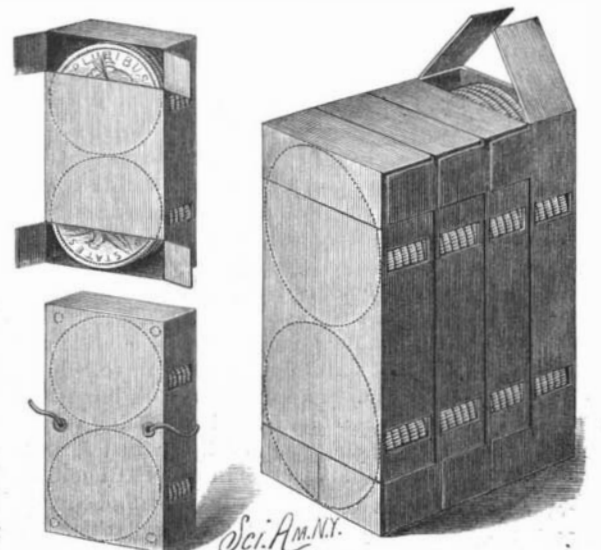
outer end of the ribbon is passed through a guide slot, where it is held in position to show the goods by a spring clamp, attached to a short elastic plate, soldered or otherwise fastened to the face of the tube.

The Glasgow International Exhibition.

In the last issue of this paper, page 182, a résumé of the industries to be represented at the above exhibition was amply set forth. We have now to call attention to an advertisement on another page, giving further information of importance to those contemplating the exposition of their wares. From the prospectus before us, it is evident the Scotch people intend their exhibition shall not be behind any of their neighboring countries in point of size or interest. It is important that those intending to exhibit should apply for space without delay, as the limit of time for applications for space is set for November 1 next. It has been suggested that those industries which are to be represented in the Paris International Exhibition of 1889 might be readily transferred from Glasgow to Paris, after the closing of the Scotchmen's exhibition.

A READY-RECKONING COIN PACKAGE.

A coin package which may be depended upon to hold an equal and exact number of coins of the same denomination in a given space, so that the coins may be viewed and counted without opening the package, is represented in the accompanying illustration. It is made up of a series of packages, each having slits in its side, and with covering and uniting flaps, the latter made integrally with the body of the package, and each lapping the fellow or companion package of the series. The fact that coins are never so abraded by wear as to allow room for one more in such spaces as are assigned in this package renders it practically a self-counter, in which there can be no danger of "shorts" or "overs," and its convenient shape admits of thus uniting several packages of the same or of different denominations into one compact bundle, and of dividing them at pleasure, the different parts still remaining intact. For further information, address the patentee, Mr. George L. Castner, care of Hartmers & Co., Memphis, Tenn.

**CASTNER'S COIN PACKAGE.**