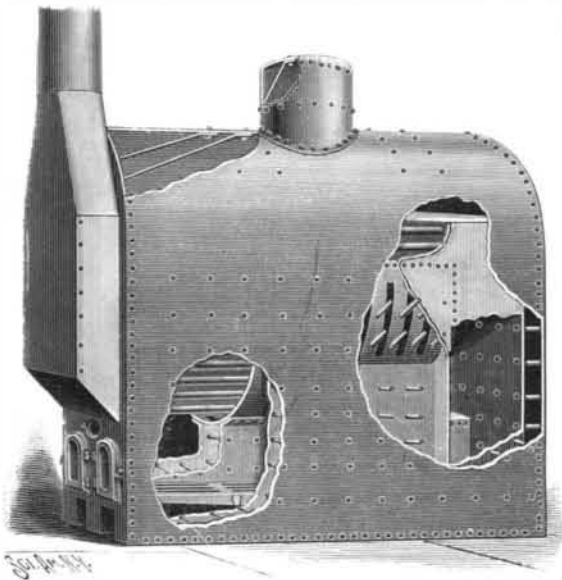


AN IMPROVED STEAM BOILER.

The illustration represents a double fire box return tubular boiler, having a continuous water leg all around and a center leg extending from water end in front to water end in rear. The boiler shown is designed to be 7 feet long, 7 feet wide, and 9 feet 3 inches high, with 300 2-inch tubes and a double fire box affording 30 square feet of grate surface. The improvement has been patented by Melvin De Puy, of No. 19 South Street, New York City. The shell of the boiler is made in upper and lower sections, the upper section being turned downward at the sides to form the outer walls of the side water legs, while the lower section, of somewhat thicker metal, has transverse slots providing communication between the interior of the shell and the side water legs, which, as well as the central leg and the steam section, are braced by stay bolts, as indicated in the broken away portions of the engraving. The crown sheets over the fire boxes, being cylindrical, require no bracing. The spaces between the center water leg and the side water legs are employed as fire boxes, there being at the rear a flue box, through the flue sheet of which extend horizontal flue tubes terminating at the front header. Somewhat more space is provided between the tubes directly over the central water leg, thus promoting the free circulation of water over and through such leg, and, the ends of the side and center water legs being open, the several legs practically form one continuous water leg. It is designed that there shall not be an inch of heating surface wasted or unutilized in this boiler, that all parts may be easily kept clean and readily accessible in



DE PUY'S STEAM BOILER.

case repairs are needed. Although especially adapted for a marine boiler, for tugs, yachts, etc., it is also suitable for use for stationary purposes. The invention has also been patented in Canada.

Utilization of Old Magazines.

What to do with the magazines that crowd upon our tables in ever-increasing numbers is coming to be a serious problem, says a writer in The Evening Post. It probably is not an exaggeration to say that eight or ten periodicals in magazine form come each month to the tables of every one of us who essays to keep informed as to the currents of modern thought. Nowadays it is in the magazine that we expect to find the newest if not the best outcome, not only of the strictly literary art, but of the most recent fruits of investigation.

Here, however, begins the problem that we have hinted at. What shall we do with this printed material after we have made our first perusal? The magazines may well lie upon the table for a few days, brightening the room with their gay covers, but in a week or so after the last one arrives another batch comes along to crowd the earlier ones aside, very likely before we have read the one particular article for which this and that number was bought. Most of all, the others contain something which is in the line of our study or hobby, or is too engaging in its treatment or illustrations to be thrown away without a struggle.

But magazines are bulky and of considerable weight. Our houses are usually small and shelf room is limited. Moreover, one does not like to put unbound pamphlets upon his book shelves. To bind all the magazines twice a year, however, means a very considerable expense; and, even if this in itself were not an objection, it would appear to almost everybody that he was paying out his money and taxing his shelf room for much that was not then, nor ever would be, of any value to him. It is probable that, leaving out of account three or four of the foremost magazines, it will rarely happen that more than two or three articles in a single number of any of our current periodicals will appeal to any one man as worth saving. On the other hand, it will be rare that a month's issue will appear in which something does not present itself as valuable for future reference and desirable to save.

The solution of the problem consists in tearing the

magazines to pieces and binding the separated articles together again, forming selected volumes, each containing what relates to a more or less limited subject—not too limited, unless you are willing to wait a long time to complete a volume.

We find that it is an easy matter to rip off the advertising pages from a magazine by grasping the whole mass of them in the right hand, holding the remainder of the volume firmly with the left, when a sharp jerk will bring away the advertisements without tearing, and at the same time will straighten out the wire stitching that binds the volume. The separation and removal of the remainder of the magazine, signature by signature, is after that a very simple matter, requiring only manual care and the aid of a paper knife. This usually becomes the employment of an otherwise idle evening, when a dozen or even twenty magazines can be disposed of without overtaxing one's time or patience. The rejection of the principal part of the undesirable material goes on as you pull each number to pieces, and your waste basket will fill up rapidly. A second culling will take place later.

Each article, as it is separated from the mass, should be marked (preferably with a lead pencil) with the name of the periodical from which it has been taken, and its date; and should be pinned, to prevent its leaves from going astray. Frontispieces often go with an illustrated article, and should be attached to it at this stage, when, also, extra illustrations may be placed next to it or between its leaves, if they are at hand.

When a hundred or so magazines have been thus treated, an evening may be devoted to going over the pile of articles saved, sorting it out into classes, and preparing the volumes for the binder by arranging the matter in the order in which you wish it bound, removing the pins and placing the pages in an even and careful pile to the amount of each volume.

From fifty to seventy-five articles can be put into a single volume. The more minute one's classification the longer, of course, he will be in acquiring the necessary number of articles to make each book—perhaps two years. The binding of the whole series should be uniform, but this is a matter of taste, and some persons may prefer to make only uniform those volumes which follow one another upon the same subject.

It will often happen—though not so frequently as would seem probable—that two articles upon different subjects, and to go into different volumes, may be printed so that the last page of one is upon the back of the leaf of the first page of the next. In this case, of course, one is obliged to sacrifice one or the other of these pages, but these cases do not occur often enough to cause serious annoyance.

Each man's classification will, of course, depend upon his tastes and pursuits, and each one will throw away a great deal of matter that his neighbor would preserve. It would be an excellent plan, therefore, for two or more families to pool their magazines and select from the mass what each one cared to keep. Undoubtedly this would tend to some cheerful battles, but this would lend interest to the pursuit, cultivate powers of argument, and endow the result with a personal interest which otherwise it would not possess.

Such a collection of bound magazine papers will grow year by year into a more and more valuable adjunct to a library, whether regarded as a means of reference or of recreation. A large number of handsome illustrations can be kept, scattered among the literary material, either with or without any accompanying text, which would otherwise be thrown away. Lastly, this becomes a practicable method of preserving continued stories and series of articles such as are continually published in the magazines, which by this means are brought together into continuity and become a book. This will often be found to have a bibliographic value, because differing in some interesting way from the form in which the matter is subsequently reissued as a book. An interesting instance is "Trilby," which in its parts brought together, as it appeared in Harper's Magazine, contains several features not to be found in the republication.

The Telephones of the World.

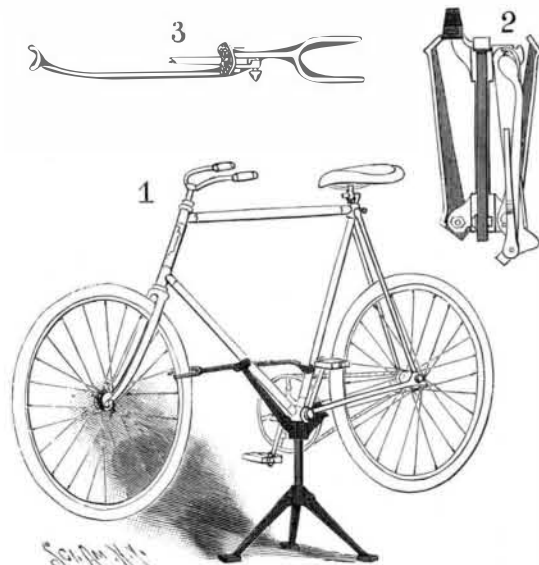
Electrical Engineering, of Chicago, publishes the following list of the number of telephones in use in various countries. It is compiled, says our contemporary, from the latest statistics.

Angola, Province of.....	200	Hungary.....	10,000
Austria.....	20,000	Italy.....	14,000
Australia.....	2,000	Japan.....	3,500
Bavaria.....	15,000	Luxemburg.....	2,000
Belgium.....	11,000	Norway.....	16,000
British India.....	2,000	Portugal.....	2,000
Bulgaria.....	300	Roumania.....	400
Cape of Good Hope.....	600	Russia.....	18,000
Cochin China.....	200	Senegal.....	100
Cuba.....	2,500	Spain.....	12,000
Denmark.....	15,000	Sweden.....	50,000
England.....	75,000	Switzerland.....	30,000
Finland.....	6,000	Tunis.....	300
France.....	35,000	United States.....	800,000
Germany.....	140,000	Wurtemberg.....	7,000
Holland.....	12,000		

The total number of subscribers represented in this list is 1,402,100.

A SUPPORTING STAND FOR BICYCLES.

To support bicycles for display or other purposes, the accompanying illustration represents a simple and strong device that may be quickly adjusted to suit different forms of bicycle frames, and which may also be compactly folded for transportation or packing, Fig. 2 showing the device in its folded position, Fig. 1



WEBSTER'S BICYCLE STAND.

representing it in use, and Fig. 3 illustrating a plan view of a portion of the support. The improvement has been patented by Edward H. Webster, No. 13 Evergreen Avenue, Rutland, Vt. The main post has three folding legs, and on its upper end is a saddle on which may be seated the lower brace bars of the bicycle frame, there being opposite the saddle a projecting ear to which is pivoted a supporting arm carrying a bracket and screw, designed to engage a notch in the ear, by means of which the pitch of the arm may be regulated to the pitch of the front brace bar of the bicycle frame, which the upper end of the arm is forked to engage. Pivoted on the upper end of the arm is a locking bar having a forked end to engage the center brace bar of the bicycle frame, and also a forked arm designed to engage the tire of the front wheel, the parts being held in adjusted position by a locking bolt, whereby the bicycle cannot be accidentally dislodged from the stand.

A SEAL AND TAG FOR RAILROAD FREIGHT CARS.

The illustration represents an inexpensive device for convenient application to the doors of railroad freight cars, to seal the car, preventing its being accidentally opened and unauthorized abstraction of the contents. The improvement has been patented by Edgar De Lamater, of Ogden, Utah. The device is formed of a single strip of metal, the strip having at one end bent over edges or lips to form a passage, as shown in the small view, through which may be passed the other end of the strip, when the device is placed in position to seal the car door. After this has been done, the bent over edges and the end or tag portion of the strip are passed between the dies of a plier or similar tool, pro-



DE LAMATER'S CAR SEAL AND TAG.

ducing the crimps or corrugations, as shown in the large view, and providing the tag with embossed characters indicating the number of the seal, etc. It is evident that the parts thus securely locked together cannot be separated without breaking the seal and insuring immediate detection.

VINEGAR flavor consists of the following mixture: 5 tarragon oil, 250 pear ether, 250 raspberry ether, 50 acetic acid, 100 cognac essence, 5 vanilla essence, 350 90 per cent spirit. This is added to the vinegar according to taste.—D. Droz. Ztg.