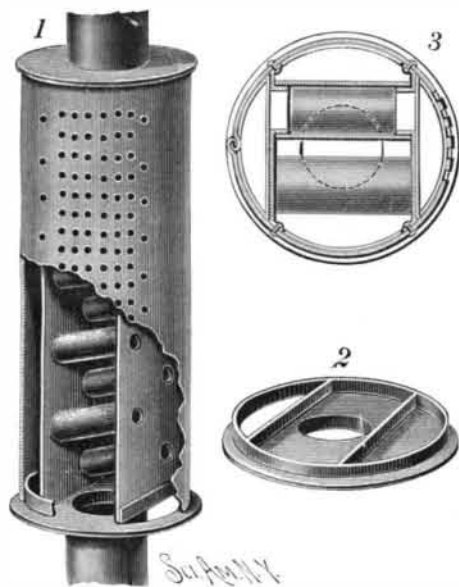


A HEATING DRUM IN THE SMOKE PIPE.

In many cases where the pipe or smoke flue from a furnace, stove, or range, may be passed through another room before reaching its connection with the chimney, it will be possible to heat the second room, at least to a very material extent, by placing in the pipe a heating drum such as shown in the accompanying illustration. It is a patented improvement of Mr. James W. Johnson, of Paullina, Iowa. In the exterior

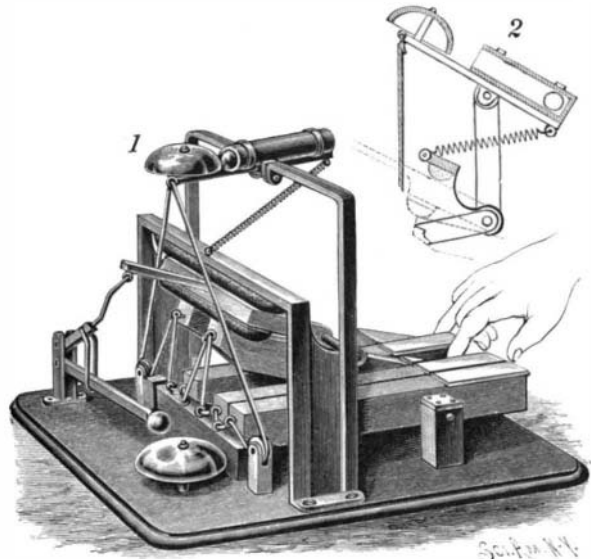


JOHNSON'S HEATING DRUM.

shell of the drum are partitions forming air compartments at the sides, as shown in the broken-away portion of Fig. 1, and there is a central smoke and gas passage crossed by obliquely arranged flues. In the lower head is an opening at one side, as shown in Fig. 2, permitting the air to enter one of the side compartments, whence it passes through the flues and is heated thereby, finally passing through the perforations in the exterior shell into the room. Fig. 3 represents a cross section of the drum. Gas-tight joints prevent smoke and gases from the smoke passage entering either of the air compartments at the sides, and the air passing through the flues is thoroughly heated before being returned to the room through the perforations.

TO FACILITATE ATTAINING CORRECT TOUCH ON THE PIANO.

An instrument designed to facilitate the systematic development of finger technic, affording also an improved exercising device for beginners on the piano, is represented in the accompanying illustration, and has been patented by Mr. Oscar Felden, of No. 707 Hamilton Street, Houston, Texas. It comprises a series of mute keys and two bells or sounding devices of different pitch arranged so that when the keys are wrongly



FELDEN'S FINGER EXERCISING DEVICE.

played one of the bells will be sounded. The keys, pivoted in a suitable frame, have at their rear ends eyes through which extends a cord, the cord also passing through eyes on a fixed transverse beam and around pulleys at its end, and thence connecting with the rear end of a lever fulcrumed on the frame, the lever having at its front end a tube closed at one end, a ball resting normally at the closed end of the tube, as shown in Fig. 2. At the rear end of the lever, facing the open end of the tube, is a bell, a spring normally holding the lever in its inclined position, but when the player holds down a key too long, and until after the second key is pressed to the bottom, a pull is exerted upon the cord which causes the lever to swing up, as shown in Fig. 1, the ball then rolling along the tube and sounding the bell. Over the rear ends of the keys is fulcrumed another lever, having at its under side a cushioned rail normally resting on the keys, whereby the lever is swung upward when either

of the keys is pressed, and on the rear end of this lever is an eye engaged by an arm fulcrumed in a bracket, the arm being connected by a loop with a striker adapted to sound another bell. With the correct touch, neither of the two bells will be sounded, the time it takes the ball to roll through the tube being the time allowed to raise the finger which strikes the first key, but if the player does not hold the key down until the second key is struck, an interval occurs between the two tones and the pivoted arm then actuates the sounder to strike the second bell. The device is thus designed to facilitate the acquirement of a correct legato style of playing, or the holding of the sound of one tone to the exact instant that the next tone commences to sound, for by the pressing upon the second key when the first is still held down one of the bells is sounded, and by allowing an interval between the touch upon successive keys the other bell will be sounded.

Making a Newspaper.*

In a large newspaper office, as in the Tribune in New York, for example, where there may be one hundred men who are attached to the paper as writers, as correspondents, as reporters, and to the strictly editorial department, out of this one hundred, sixty or seventy will be reporters, that is, men who are sent out when any event of interest occurs, when a bank breaks, when a great fire takes place, when there is an earthquake, to inquire into the facts and collect information, and to put that information into form, so that it can be printed the next day. That is one of the most important branches of the profession, and it is paid very liberally, I am glad to say. For instance, I know many reporters who earn ten or fifteen dollars a day, and some who earn more. They have constant employment, and their labor is entirely agreeable to themselves. That is one of the first things, when a young man comes for employment, and you take him on and give him a chance, that he is set to do. There, you see, all this culture that we have been considering is at once brought into action. He must learn accurately the facts, and he must state them exactly as they are; and if he can state them with a little degree of life, a little approach to eloquence, or a little humor in his style, why, his report will be perfect.

Next to the reporter, a very important functionary in the newspaper is the man who reads the other newspapers and makes extracts from them. Mr. Greeley used to think that it was enough to make a good paper if he had an able man to read the exchanges, provided he himself was there in person to add up the returns of the elections. The man who reads the exchanges is a very important man; and, let me say, too, he is a pretty highly paid man. He has to read, we will say, three thousand papers regularly. All the newspapers in the country come into the office, and he does not do anything else. He sits at his desk all day, and a pile of newspapers, or, say, a cord of newspapers, is laid before him every morning; he starts to work and turns them over and over to see what is in them. He has to know what it is that should be taken from them and put into his paper. What is the interesting story? It requires judgment to know this; it requires knowledge and experience as well as talent. It also requires a sense of humor, because there are a great many things that are really important that may not seem so at the first glance, and the newspaper reader has got to judge about that. He must always be on hand and spend a great many hours at his desk; and he is pretty tired when he gets through with his day's task.

Next to the exchange reader in the newspaper organization comes the man whose duty it is to receive manuscripts and examine them and prepare them for the press, to edit them, correct them; where the writer has made a little slip of rhetoric, to put the right word in or the right turn of the phrase; to clarify it all; to make the sentences clean. That is a hard job in the writing of a great many persons.

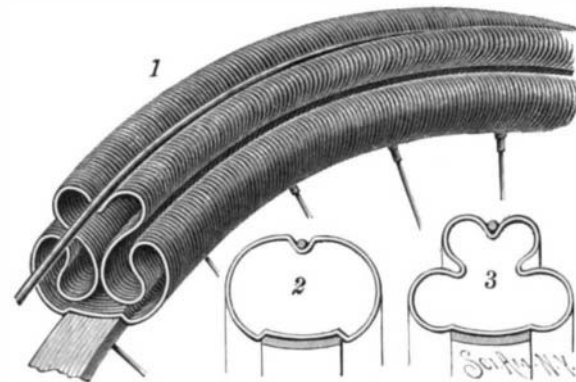
Then finally you come to the editor-in-chief, and he is always a man who gets into his place by a natural process of selection. He comes there because he can do the work; and I have known some young men who had no idea that they would ever have control of a newspaper, who have risen to that place, and who have filled it with wisdom and success and force. Yet at the bottom of it all, it is always a question of character as well as of talent. A fellow that is practicing arts of deception may last a little while, but he cannot last long. The man who stays is the man who has the staying power; and the staying power is not merely intellectual, it is moral. It is in the character.

News is undoubtedly a great thing in a newspaper. A newspaper without news is no newspaper. The main function of a newspaper is to give the news and tell you what has happened in the world, what events have occurred of all sorts, political, scientific, and nonsensical. What a wonder, what a marvel it is, that here, for one or two cents, you buy a history of the entire globe of the day before!

* From a lecture delivered to the students of Union College by Charles A. Dana, editor of the New York Sun, and printed in McClure's Magazine for May.

AN ELASTIC TIRE FOR VEHICLE WHEELS.

The illustration represents a tire designed to have the characteristics of a pneumatic tire, but which is not inflated, and which it is purposed shall be far more durable than the ordinary rubber tire. It is made of spring wire, in sections or as a series of continuous or connected members, presenting a neatly fitting base section for the felly, while its outer surface expands under pressure in contact with the ground. The improvement has been patented by Mr. Alexander Honrath, of St. John, Kansas. Fig. 1 shows the preferred form of construction, Figs. 2 and 3 being sectional views of modified forms. The sections or members are held firmly and compactly in position by a tie rod or wire of suitable size, located in a central recess in the outer surface of the tire. If found desirable in



HONRATH'S ELASTIC TIRE.

practice, the tire may be partially or entirely covered by a casing of leather, rubber, or similar material.

IMPROVED FAUCET FOR BASINS, SINKS, ETC.

This faucet has a valve stem held movably in the valve casing, and provided with a service valve and an auxiliary cut-off valve, both moving with the stem, to permit of readily shutting off the water from the service pipe whenever it may be necessary to repair the service valve, valve seat, or other part of the faucet. The improvement has been patented by Mr. John Byrne, No. 871 East One Hundred and Sixty-ninth Street, New York City. As plainly shown in the sectional view, the casing is made in three sections, screwed one on the other, the middle section having at its upper end a valve seat adapted to be engaged by a disk valve on the square part of a stem moving in the valve casing. The valve preferably has a facing of rubber or leather, to make a tight joint, and it is held in position on the stem by a nut, the upper part of the stem passing through a stuffing box in the top of the upper section. The valve stem is held movable in the casing by a threaded portion screwing in a spider forming part of the middle section, a plan view of which is shown in the small figure, allowing the valve to be opened and closed on turning the handle.

On the lower end of the stem is an auxiliary valve adapted to engage a second valve seat in the lower part of the middle section. This valve is preferably held loosely on a flange on the lower end of the valve stem, and is normally off its seat when the faucet is used in the usual manner, but in order to repair the upper and ordinarily used valve seat or valve, the stem is moved upward beyond the normal position, until the lower valve is engaged with its seat, shutting



BYRNE'S FAUCET.

off the water from the middle and upper section and the spout. On removing the handle, the upper section can now be readily removed, affording access to the valve seat and valve for any repairs which may be necessary or the putting in of a new valve, and obviating the necessity of shutting off the water supply in the service pipe from the main.