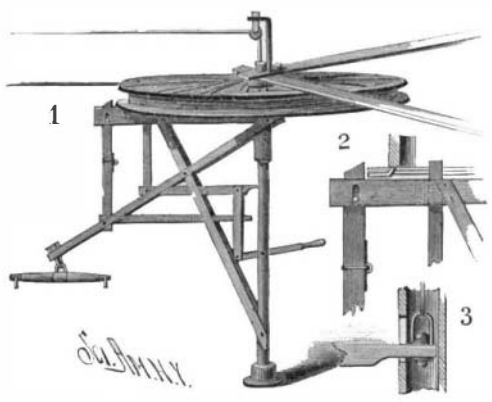
Mysterious Noises.

Apropos of ghosts and haunted houses, the experience of one of the members of the Seybert investigation committee is rather interesting. He is a professor at the University of Pennsylvania, and resides in the suburbs of Philadelphia. At a certain hour each day one of the windows in his house rattles quite violently, and this entirely independent of wind and weather. Naturally, the gentleman was considerably puzzled at the phenomenon, for while there was absolutely no visible cause apparent, each day brought this manifestation of activity on the part of his otherwise quiet window. He determined to discover the cause, and thought at once of the railroad which ran but a short distance from his home. He found, however, that no trains were in the vicinity at that time of day. The recurrence of the noise at precisely the same hour so far impressed him with the belief that it must have a connection with some well observed time-table, that he pushed his investigations further, and included another railroad several miles distant. On comparing his observation with the train schedule, the significant fact was discovered that a heavy train passed a spot within two or three miles of the house at about the same time that the window rattled. Following this clew, he examined the rock formations, and found that an outcropping ledge which received the full force of the train vibrations came to an end immediately under his window. This gave a satisfactory explanation of a phenomenon which in the hands of a less investigative person would have been sufficient foundation for a mild ghost story.

IMPROVED HORSE POWER.

This horse power for hay carriers and other uses is the invention of Mr. John S. Grabill, of Hayesville, O. The lower end of the vertical shaft revolves in a socket bearing attached to the floor. Near the upper end of the shaft, which is made of gas pipe, about one inch and a half in diameter, is loosely mounted a wheel formed with a groove, in which the hoisting rope is wound. The lower hub plate rests upon the inner end of a

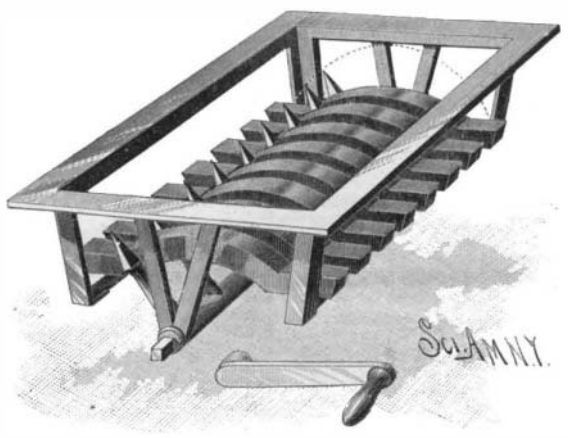


GRABILL'S HORSE POWER FOR HAY CARRIERS.

radial arm, made a little longer than the radius of the wheel. To the inner end of this arm is attached one end of the sweep, which is inclined downward and outward, to bring its outer end into proper position to receive the draught. The shaft, arm, and sweep and its brace form a firm and strong brace to receive the draught and give motion to the wheel. Two brace bars, placed over the upper end of the shaft, hold it in a vertical position. To the outer end of a lever pivoted to the brace is pivoted a vertical bar, made of such a length that when raised its upper end will enter between the spokes of the loose wheel, Fig. 2, and cause it to be carried around with the shaft. To the inner end of the lever is connected by a swivel, as shown in Fig. 3, the end of a trip cord passing up through the shaft, over a guide pulley, and thence to some place where it can be conveniently reached and operated. This lever can also be operated by a hand lever pivoted to the shaft. One end of a right angle lever pivoted to the sweep passes through a slot in the bar, uniting the two levers just described. The other arm of this lever is arranged so as to serve as a brake to check the movement of the wheel when the clutch bar is withdrawn. The weight of the levers holds the clutch bar in gear with the wheel. When the hay fork has been loaded, the trip cord is released, when the clutch bar is raised into gear with the wheel about which the hoisting rope is wound, raising the fork and drawing the hay carrier to the unloading place. After the discharge of the hay, the trip cord is pulled to withdraw the clutch bar, thereby allowing the carrier to run back and descend to be again loaded. The backward movement of the wheel can be checked by the brake.

STOVE GRATE.

The grate bars, shaped as shown in the engraving, are supported upon side bars resting on the lower edges of downwardly extending arms of the fire box. Between the ends of the bars and the bottom edge of the fire box is a space of sufficient height to allow the discharge of cinders. A shaft mounted centrally below the bars is provided with diamond shaped fingers placed in the spaces between the bars. The



BAILY'S STOVE GRATE.

fingers can be moved from side to side by oscillating the crank arm attached to one outer end of the shaft. When resting upon the side bars, the upper ends of the fingers do not extend beyond the top edge of the bars; but when moved toward the center, the ends of the fingers project beyond the top edge of the bars, but do not quite reach to the bottom of the fire box. It will be seen that when the shaft is turned, the sharp edges of the ends of the fingers will easily cut through the fuel on top of the bars, causing the ashes and cinders to fall between the bars or be pushed through the space at the sides, and fall into the ash pit.

This invention has been patented by Mr. M. W. Baily; particulars can be obtained by addressing Messrs. Baily & Baldwin, of Pottstown, Pa.

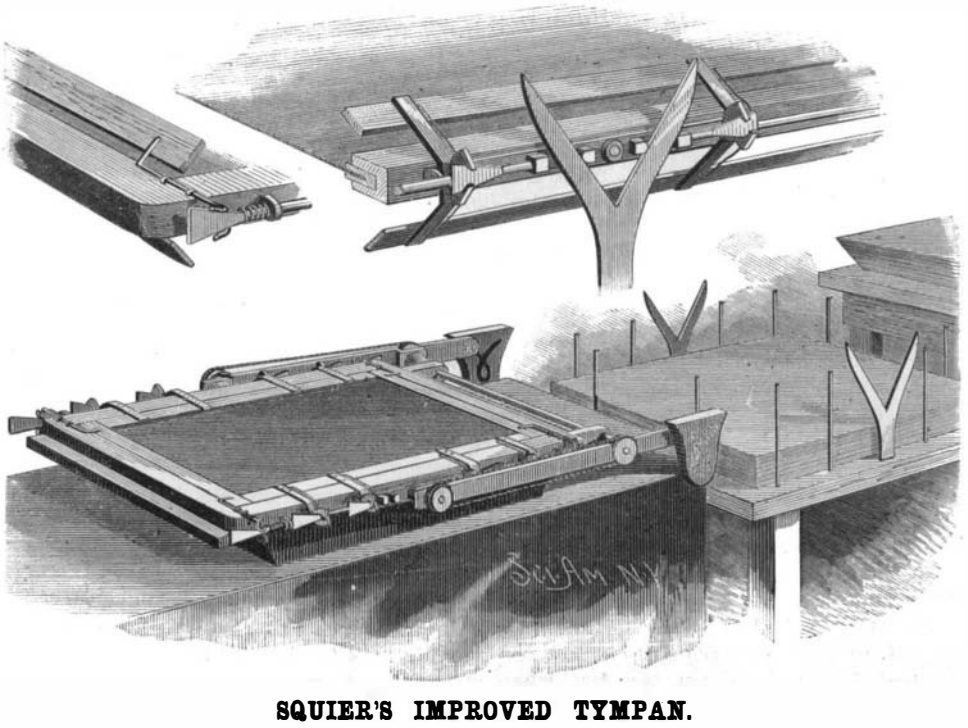
IMPROVED TYMPAN.

Although the tympan shown in the accompanying engraving can be applied to hand cylinder presses, it is especially designed for use with the well known "Washington" hand press. The impression is made on the sheet held by the tympan when in the position shown in the lower cut, the bed plate resting on the carriage, which is on the track plate. On each end of a shaft, held in lugs on the end of the bed, is rigidly held a pulley. Between the lugs and pulleys on the shaft are loosely mounted hubs, formed on bars provided at their ends with pins carrying rollers that work in track grooves, shaped like a letter V having a loop at its bottom, formed on the inner sides of two lugs projecting upward from the end of the track.

The opposite ends of the rods turn on pivots projecting from the outer edges of the side pieces of the tympan at the middle. On the outer end of each pivot is a pulley provided with a pawl and ratchet, that permit it to turn in one direction only. An endless cord passes around the two pulleys on the same side of the frame. As the carriage moves forward, the rollers slide down the tracks in the lugs, swinging the tympan upward. This movement turns the pulleys on the ends of the pivots, and the tympan is swung in a direction contrary to that of the bars; and as the tympan is raised by the bars at the same time that it is being turned, in relation to the bars, in the inverse direction, it is evident that the tympan will remain in a horizontal position, and that the same surface that was presented to the bed will also be presented to the top of the table; in other words, the tympan is not reversed.

As the tympan swings down into position on the table, the prongs of the forks strike lugs of U-shaped pieces and pull them toward each other. This movement causes wedges to enter between the hook ends of levers pivoted to the edges of the side pieces and raise the clamping strips from both sides of the tympan. At the same time the end clamping strips are raised. (The construction of these parts is clearly shown in the upper views.) The printed sheet is thus released and allowed to drop on the table, when a fresh sheet is placed on top of the tympan—on the side opposite the one from which the sheet was just released. When the carriage is moved back, the wedges are withdrawn and the clamping strips are pressed upon the sheet by springs secured to the levers. During this movement, as the pawl and ratchet prevent the pulleys from turning, the tympan swings with the bars, so that that side which was top when the sheet was placed upon the tympan will be swung down upon the bed; that is, the sheet will be under the tympan.

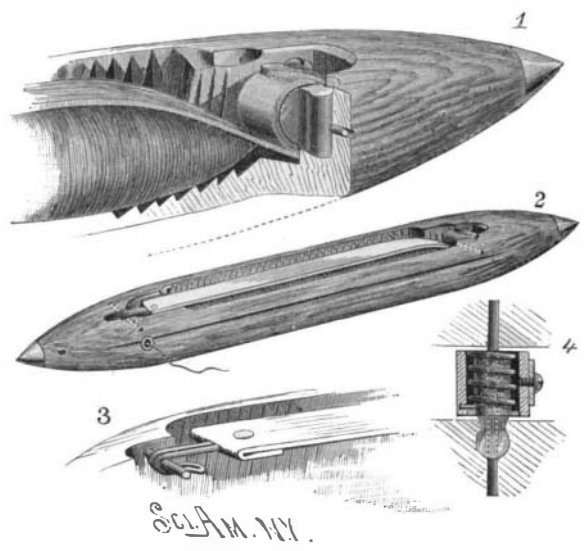
This invention has been patented by Mr. George H. Squier, of Trempealeau, Wis.



SQUIER'S IMPROVED TYMPAN.

LOOM SHUTTLE.

Formed in the shuttle is a chamber for the reception of the cop, which delivers from the end as usual, and is confined in the chamber by a cover strap, and is prevented from slipping longitudinally by the serrations. Usually, the strap consists of a web of elastic fabric secured at one end to the shuttle body, and having at the opposite end a hook to clasp a transverse rod. The



SHAND'S LOOM SHUTTLE.

objection to a strap of this kind is that it is rapidly worn out, and has a tendency to lose its elasticity in a short time. The strap here shown is made of an inelastic material, like leather, and has an elastic connection at one end. This connection, shown in Figs. 1 and 4, consists of a drum mounted on a pin driven through the shuttle and acted upon by a spring. The tendency of this spring is to turn the drum, so as to impart tension to the strap and cause it to bear firmly upon the cop, the drum yielding, however, when it is desired to release the hook (Fig. 3) from the cross bar, in order to lift the strap to remove the cop or insert a fresh one.

This invention has been patented by Mr. Robert Shand, whose address is corner of Alder and Norris Streets, Philadelphia, Pa.

The Inventor of the Telescope.

A long article is contributed to *Ciel et Terre*, in which the writer maintains that the real inventor of the telescope was John Lippershey, a spectacle maker at Middleburg (Netherlands), who was born in Wesel, Germany.

James Metius, who, according to Descartes, has been regarded as the inventor, wrote on the 17th of October, 1608, to the Provinces of Holland, stating that he, *as well as* the spectacle maker of Middleburg, was manufacturing the instrument that brings objects near.

Another document is a petition to the same Provinces from Lippershey for a thirty years' patent. This was refused him the first time because the instrument could not be used with both eyes at once, and a second time (after he had made the instrument double) because telescopes were then being made everywhere.