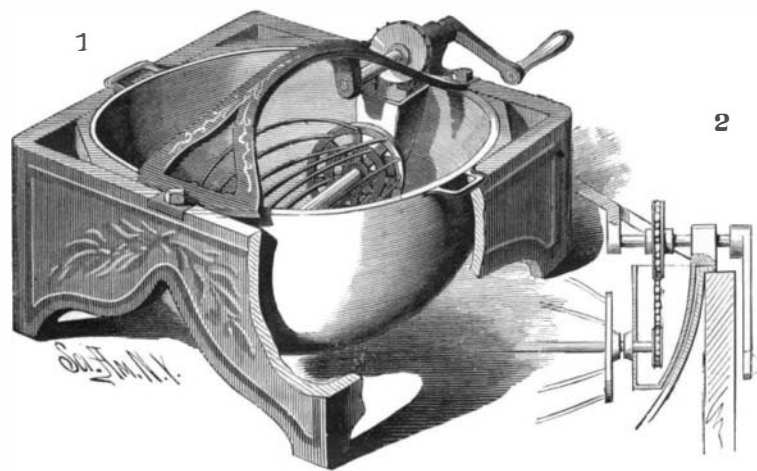


IMPROVED EGG BEATER.

The engraving represents an improved form of egg beater, which may be easily and readily attached to a suitable pan when it is to be used. The rotary egg whip consists of a shaft, having skeleton heads, and wires which are so curved as to make the exterior of the whip conform very nearly in shape with the hemispherical bottom of the pan. By means of this correspondence in shape, the whip may be made to come very near the surface of the pan, thereby permitting small quantities of eggs to be whipped. The frame carrying the whole of the moving mechanism is secured to a wooden stand, in which the pan is placed. The



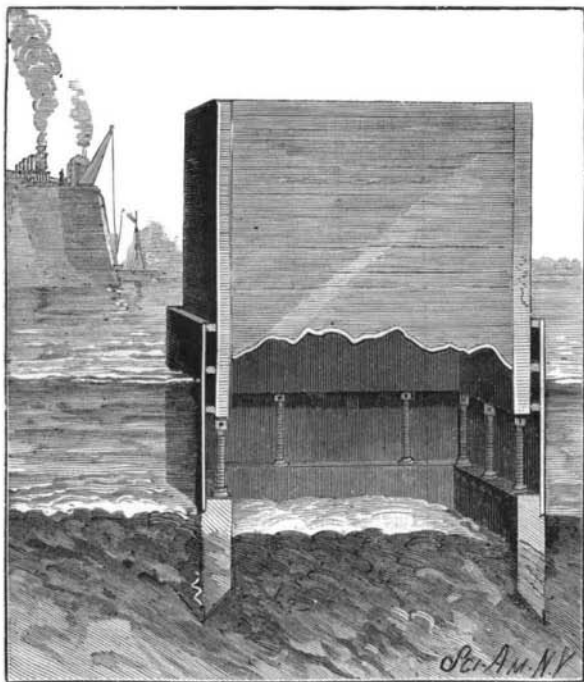
NEWCOMER'S IMPROVED EGG BEATER.

shaft is situated considerably below the upper edge of the pan, in order that a smaller whip may be used and yet have the same effect as a larger one. One end of the shaft rests in a bearing pendent from the frame, and the other end enters a box open at the upper end only, as shown in Fig. 2. That portion of the shaft within the box is provided with a small sprocket wheel, which is in gear with a larger one, on an independent shaft, by means of an endless chain. The independent shaft is furnished with a crank, by means of which the whip may be revolved. The box prevents the contents of the pan coming in contact with the chain or wheels. The apparatus requires but little effort to operate it, each revolution of the beater agitates or lifts the whole batch, and there is no danger of splashing.

This beater is manufactured by the inventor, Mr. J. L. Newcomer, 18 Water Street, Baltimore, Md.

IMPROVED CAISSON.

The object of the invention shown in the annexed cut—patented by Mr. John McGovern, of Murphys-



MCGOVERN'S IMPROVED CAISSON.

borough, Ill.—is to facilitate the work of sinking coal shafts and wells and excavating for bridge foundations in ground, such as mud or quicksand, which breaks into the excavation before it can be timbered. The lower portion of the crib or caisson is constructed of timber and of a size internally corresponding with the finished shaft. The lower portion is beveled to a sharp edge and shod with iron so that it will enter ground readily. The upper portion of the caisson, formed of boiler iron, is bolted to the outside of the lower part, and is long enough to extend some distance upward outside the permanent timbering of the shaft, so as to prevent earth from running into the excavated space at the bottom. On the inside of the upper part are ribs taking against the permanent timbering, thus insuring an equal space all around for inserting timbers. In using the caisson to sink a shaft, it is gradually forced down by jack screws, placed, as shown in the engraving, between the bottom portion and the

lower course of the permanent timbers. After having been driven far enough to give space for a course of timber, the screws are removed, the material excavated enough to permit of the work, and the timbers then put in, after which the screws are again applied. The mud or sand is allowed to remain within the caisson nearly up to the top of the lower part, and only removed as necessary, so that the caisson will be held down to place.

The Novelties Exhibition, Philadelphia.

The Novelties Exhibition of the Franklin Institute will open on September 15, and will probably close the last of October. The building erected for the Electrical Exhibition, held by the Institute last fall, will do service in the present instance, and is expected to be well occupied, as the applications for space have already been quite numerous. The building is located at 32d and Lancaster Avenue, and is very convenient of access, being on the route of several lines of street railways, and but a short distance from the West Philadelphia station of the Pennsylvania Railroad. No applications for space will be received later than September 12, and the exhibitors are limited to the unique. It is to be eminently a display of novelties.

Each exhibitor must pay an entrance fee of \$5 for his season ticket, and will be charged for the space occupied at a certain rate per sq. ft. Where power is required to drive the mechanisms exhibited, it is supplied at 3 cents an hour per horse power, and in case the exhibitor provide his own engine, the indicator card will decide the amount consumed. Judging from the past history of exhibitions in Philadelphia, it is expected that the coming one will be a great success.

Two Fine Meteors.

On the evening of July 6, about eleven o'clock, while engaged in comet seeking with the nine inch reflecting telescope, I was surprised by a sudden, almost blinding, flash of light. Quickly removing my eye from the telescope, and glancing upward, I beheld a magnificent meteor, moving rapidly from a point southeast of the zenith toward the northwest, and disappearing at an altitude of forty degrees. Just previous to its disappearance it burst into three or four fragments, which became of different colors, those in the rear being a vivid green, changing to purple, while the foremost and largest was a brilliant red. No report of the explosion was heard, although listened for. On the following night, in fact at one o'clock in the morning, while resting my eyes momentarily from the telescope, another fine meteor was seen moving from east to west across the northern heavens at an altitude of thirty-five degrees. This left a brilliant train of light lasting about 90 seconds, to the naked eye vision, and in the telescope, which was turned upon it, was visible a much longer time, twisting and curling like a wreath of smoke.

WILLIAM R. BROOKS.

Red House Observatory, Phelps, N. Y., July 8, 1885.

Tempering Steel with Low Heats.

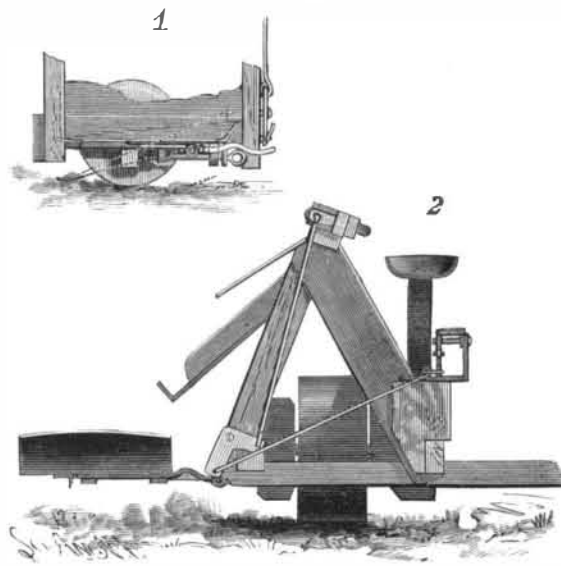
Some curious statements on tempering steel are made in a paper published in *Dingler's Polytechnic Journal*, vol. 225, by Herr A. Jarolimek, "On the Influence of the Annealing Temperature upon the Strength and the Constitution of Steel." Hitherto it has been generally considered that to obtain a specified degree of softness it is necessary to heat the hard steel to a particular annealing color—that is to say, to a definite temperature—and then allow it to rapidly cool. Thus for example, that steel might anneal—be tempered—yellow. It had to be heated to 540 deg., and the supposition was formed and acted upon that it must be allowed only a momentary subjection to this temperature. Herr Jarolimek says the requisite temper which is obtained by momentarily raising the temperature to a particular degree, can also be acquired by subjecting the steel for a longer time to a much lower temperature. For example, the temper which the annealing color—yellow—indicates can be obtained by exposing the hard steel for ten hours to 260 deg. of heat; in other words, by placing it in water rather above the boiling point.

BUNDLE DROPPER FOR HARVESTERS.

We show, in the accompanying engraving, a bundle carrying and dropping device to attach to self-binding harvesters. Fig. 1 is a front elevation of the principal part of a self-binding harvester provided with this improved dropper attachment, and Fig. 2 is a section through the attachment parallel with the line of draught. The dropper consists of a fingered platform, with sides and front end, placed down to the stubble at the side of the binder, and pivoted to and supported by a triangular frame pivoted to the frame of the harvester; the triangular frame is supported by lever connections with the harvester frame. The only at-

tention required to operate the device is simply to trip it by pressing a foot lever, when the fingered end of the dropper platform tilts to the rear, slides from under the collected sheaves, and when clear rises to its original position by gravity or a spring, and holds itself to receive the sheaves again without further aid of the driver. It is simple and light in construction, and in passing furrows or obstructions it rises and slides without danger of breaking. When necessary, it can be instantly detached, like a hinged gate, without disturbing the tripping device. The platform, being low down, gives all the room possible, and when the fall is two feet in the clear from the binder it will hold easily six or more sheaves.

In low delivery of binders, as now most used, as the rear figured end drops the front drops and tends to wedge the load of sheaves up against the binder, thereby obstructing the unloading; this difficulty is overcome by placing the pivot of the platform well to the front. The fingers are curved (more than is indicated in the drawing, Fig. 2), thus permitting the platform to be made shorter. This form prevents the sheaves—while collecting—from sliding off, and drops lower than the common style of fingers, thereby bringing the sheaves for one-half their length in contact with the



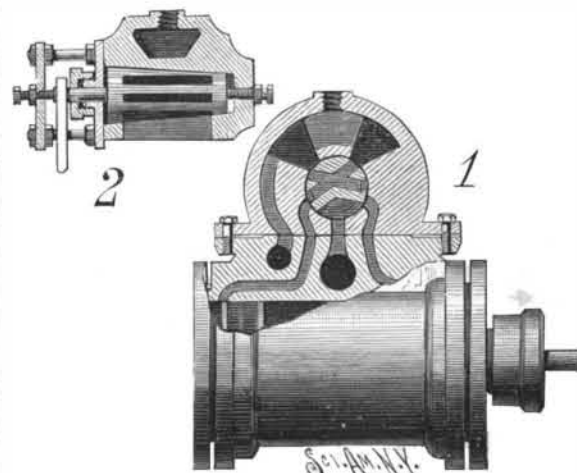
BELL'S BUNDLE DROPPER FOR HARVESTERS.

ground, and insuring the certain unloading of the platform.

This invention has been patented by Mr. Adam H. Bell, of Hillsborough, Ill.

ROTARY STEAM VALVE.

The valve case is attached to the engine cylinder, and is bored out centrally and longitudinally to receive the valve; it is provided with a removable head at one end to permit the insertion and removal of the valve. In the case above the valve is a steam space, a bridge at the middle of the space forming a bearing for the upper surface of the valve and a cut-off for the steam. (The passage supplying steam to the space and the ports are plainly shown in Fig. 1.) The valve is of tapering form, and is ground to its seat. It is made with transverse slots extending the length of the ports, and placed so as to connect the ports with the steam space; it is also made with an exhaust cavity on its under side. Formed upon the large end of the valve is a stem which extends through the removable head. To relieve the friction and allow endwise adjustment, the valve is supported at its ends by pivot screws, as shown in the longitudinal section of the valve and case, Fig. 2. By means of these screws the valve can be readily adjusted to compensate for wear. In case the valve should become, by wear, too small to fit



SYPHER'S ROTARY STEAM VALVE.

tightly, a thimble made with slots corresponding to the ports could be inserted in the case, and the valve then turned down to fit the thimble.

This invention has been patented by Mr. George W. Sypher, of Ellis, Kansas.