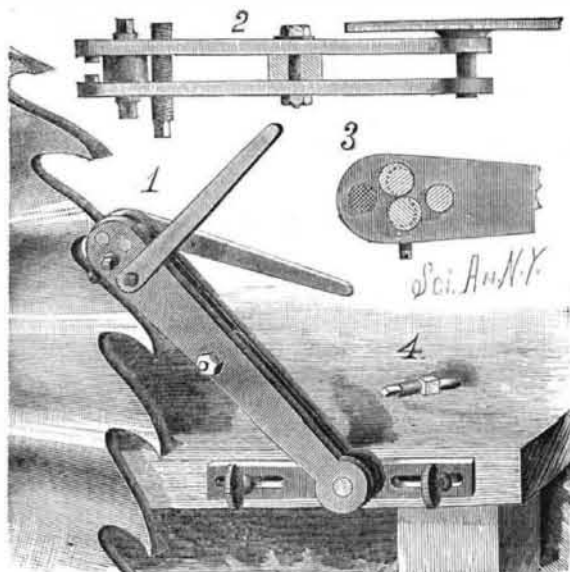


IMPROVED SAW SWAGE.

The frame of the swage consists of two parallel tapering steel plates, held the proper distance apart by a bolt carrying a gauge washer of such thickness that the space between the plates will receive the teeth of the largest saw ordinarily used. The lower ends of the plates are pivoted upon a pin attached to a slotted plate, which is fastened to a filing bench by screw clamps, so that it may be adjusted to different sized saws. Upon the inner faces of the enlarged ends of the saws are serrated jaws, shown in Figs. 2 and 3, which engage each side of a saw tooth, and hold it firmly when the tooth has been entered for swaging. Journaled in the plates at a point slightly above their enlarged ends is an eccentric faced roller, which is revolved by means of a handle attached to one end. This roller is adapted to engage and operate in conjunction with an anvil, circular in form and provided with an eccentric face intersecting its circular bearing face. The anvil is placed immediately under the roller, and is designed to enable the operator to take up any possible wear of the roller resulting from continual use. With this form of anvil the teeth will be swaged with a more or less concaved surface. When it is desired to keep a square front on the teeth, the anvil shown in Fig. 4, having square sides, is employed. The plates are drawn toward each other to make the serrated jaws take firm hold on teeth of varied thickness, by means of a right and left hand screw, which enters correspondingly threaded apertures in the plates, and is operated by a handle.

When the swage is once adjusted to accommodate the saw to be swaged, it will remain stationary until every tooth has been operated upon, except the slight movement necessary to adjust the free end to or remove it from a tooth. The roller and anvils are interchangeable, and can be readily adjusted to work upon either side of a tooth, and can be made in sizes to work

**WARD'S IMPROVED SAW SWAGE.**

successfully upon any ripping saw, from band to circular. The tooth enters between the roller and anvil when the handle is given a third or half turn to swage the tooth, which is then released and the next one placed in position.

This invention has been patented by Mr. Clarence Ward, of Haring, Michigan.

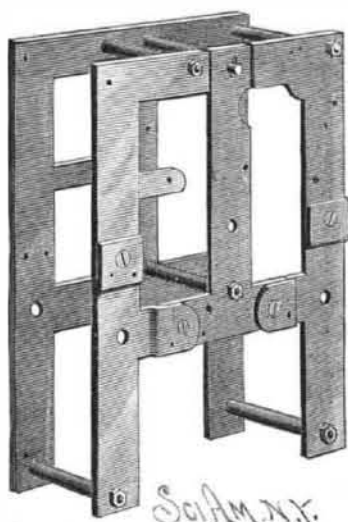
The Discoverer of Anthracite Coal.

Anthracite was discovered in Pennsylvania in 1790, by Nicholas Allen. This Allen, according to the stories and traditions that have been handed down about him must have been a kind of American Rip Van Winkle. He had come down from the Lake Champlain lumber region, and opened an inn on the summit of the Broad Mountain. For a time he led a wandering existence, hunting, fishing, and lumbering, while his wife attended to the wants of thirsty travelers. In one of his hunting excursions he camped out at the foot of the Broad Mountain, at a spot where a coal vein cropped out, and, upon lighting a fire, was astonished at the intense heat it threw off. He also saw that some of the black stone had become red hot. He dug some of it, and carried it home, when his wife, more practical than himself, pronounced it coal. They saw the coal crop out in abundance, and visions of fortunes that might be realized out of it flashed through their minds simultaneously. So, disposing of their effects, they loaded two large covered wagons with the coal, and set out for Philadelphia, with the intention of marketing it there and discovering its true value. They drove along the banks of the Schuylkill, sleeping in the open air at night. At Pottstown three of their horses died, and the coal was dumped into the river. Wearied and disheartened, the pair returned to the old place at the summit of the mountain, and shortly afterward Allen laid his faithful wife to rest over the coal vein that

proved their ruin, and turned his face toward the West, where, after an uneventful career, he enlisted for the campaign under Harrison, and fell at Tippecanoe.

CLOCK MOVEMENT FRAME.

This frame is so made as to permit of removing either of the spring arbors, with their springs, without disturbing the other portion of the movement; or re-

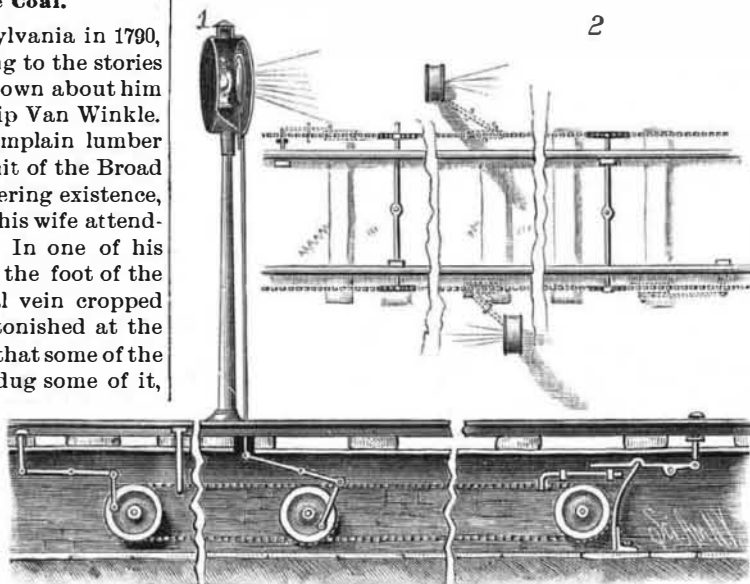
**SANDMARK'S CLOCK MOVEMENT FRAME.**

moving all the gearing on either side without disturbing the central portion. The back plate is of the usual description, but the front plate consists of five pieces—a central part and two upper and lower side parts. The latter are provided with apertures for receiving the outer ends of the spring arbors, and are offset so that the portions which overlap the central part and the lateral parts of the upper side pieces may be secured by screws. By removing either of the lower side pieces, the arbor and spring of the time or striking side may be removed without disturbing the other part of the movement. All the gearing upon either side may be removed by taking off the proper side pieces. The front plate may be removed entire after taking off the nuts from the studs secured to the back plate, and removing the pin from the stud passing through the upper end of the center piece.

This invention has been patented by Mr. S. P. Sandmark, of Ishpeming, Mich.

AUTOMATIC DANGER SIGNAL.

This invention, which has been patented by Mr. E. E. Phillips, of New Castle, Pa., is more particularly applicable to points upon the track that are not visible from each other, as at curves or tunnels. A train approaching one end of a curve will display a signal at the other end to warn a train moving in the opposite direction. The approaching train strikes the head of a stem carried by a lever pivoted to the wall of a pit extending along the side of the track. This depresses the short arm of the lever and raises the long arm, in which a notch is formed, so as to release a spring strip fixed to a plate upon the bottom of the pit. The spring flies forward to a vertical position, carrying with it a rod fixed to an endless chain whose upper length is thereby moved forward. This movement of the chain imparts a rotary motion to three sheaves, around which it passes. As the center sheave is partially rotated, a lever attached to it is so

**PHILLIPS' AUTOMATIC DANGER SIGNAL.**

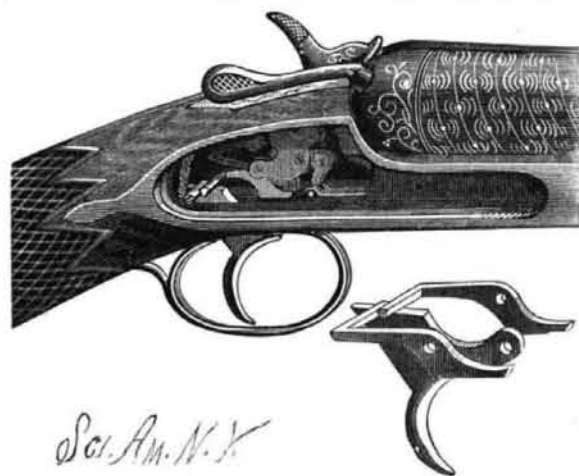
moved as to draw down a slide and expose the lamp in the signal. The partial rotation of the third sheave, at the opposite end of the line, operates a lever so as to elevate a stem attached to it to a position to be struck by the wheels of the train. When the train reaches this point the stem is depressed, and a motion the reverse of the first is given to all the parts of the apparatus. In other words, the slide will be raised to

hide the light, and the bar attached to the chain will be carried back, thereby throwing the spring into engagement with the notch in the first lever, which is thus set so that it may be tripped by the following train. The same system is applied to the other track.

Trains passing over the section of track protected by the apparatus above described would, in the absence of a proper resetting mechanism, trip the parts, so that as they left the section the signal intended to be displayed by trains passing in the opposite direction would already be displayed. This difficulty is obviated in a simple and effective manner by two transverse levers pivoted to the ties, and which are so connected with the chains that the latter are made to move in opposite direction, so that as the train from the north leaves the section, the mechanism is properly arranged to be operated by the next train from the south. These levers are shown in the plan view, Fig. 2.

IMPROVED LOCK FOR FIREARMS.

The lock herewith illustrated is designed for double barreled guns, although it has but one trigger. The operation of the several elements of the lock for cocking, etc., is the same as in ordinary gun locks, so that a description of these parts is unnecessary. The trigger is arranged midway between two sears (shown enlarged in the detached view), which are put in connection with the trigger by arms which extend from their respective locks to the trigger upon which they lap. It is evident that, on cocking the two locks, they will be operated on by the trigger for firing at the same instant, as the trigger will release the two sears from their respective tumblers simultaneously. On cocking the two locks, the sears and their arms are pushed upward by the tumblers and retained half or wholly cocked by the notches in the tumbler, in the usual way. If only one of the locks is cocked, the pulling of

**GOODWIN'S IMPROVED LOCK FOR FIREARMS.**

the trigger will discharge but the one barrel, the uncocked lock being inoperative at the time the other is in condition for firing. Both barrels may be simultaneously discharged, or either one singly.

This invention has been patented by Mr. Charles E. Goodwin, of Saybrook, Ohio.

Recent Sale of Guinness' Brewery.

The Guinness Brewery, in Dublin, has recently been converted into a stock company. While the colossal size of this business is notorious, few would realize the amount of money that would be put into the stock of the new company. The subscriptions for stock were received by Baring Bros. The scene at their office is described as little short of a riot. Men literally fought to get near the counter. Prospectuses sold freely at half a crown and threeshillings apiece. The stock was divided into three classes—ordinary, preferred, and debenture—the premiums on which at this sale ranged from 67 down to 18 per cent. The capitalization had been fixed at £6,000,000. On this sale the market value rose to £8,610,000, or about \$40,000,000. The actual value of the stock and fixtures, beer on hand, manufacturing plant, and real estate was estimated at £2,500,000, showing a public estimation of the value of the "good will" at over £6,000,000, or nearly \$30,000,000. It is said that over one hundred millions of pounds sterling of capital were offered to Baring Bros. The last statement, however, is pronounced as open to doubt.

Prior Publication.

The question was recently raised in England whether the deposit of a specification in the German language in the library of the Patent Office in such a way as to be accessible to the public was such a publication as to avoid a patent subsequently obtained in England. In addition to the deposit of specifications and drawings at the Patent Office, the fact had been duly announced in the *Patent Journal*. Mr. Justice Chitty, before whom the case came, held that the deposit amounted to a prior publication. The true test, he said, was whether the German specifications had been so published in England as to become matter of common knowledge. The fact that they were not in English, he said, was immaterial, as German was a language generally known.