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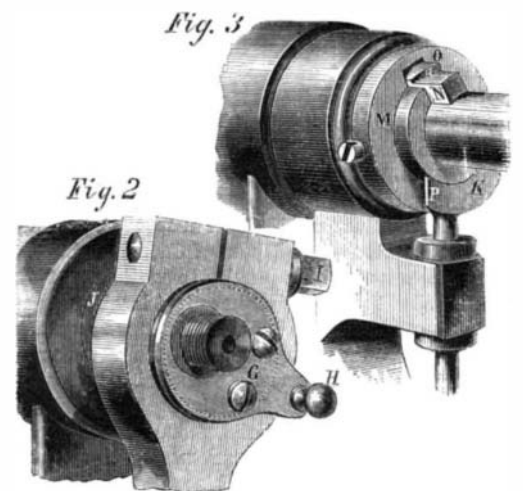
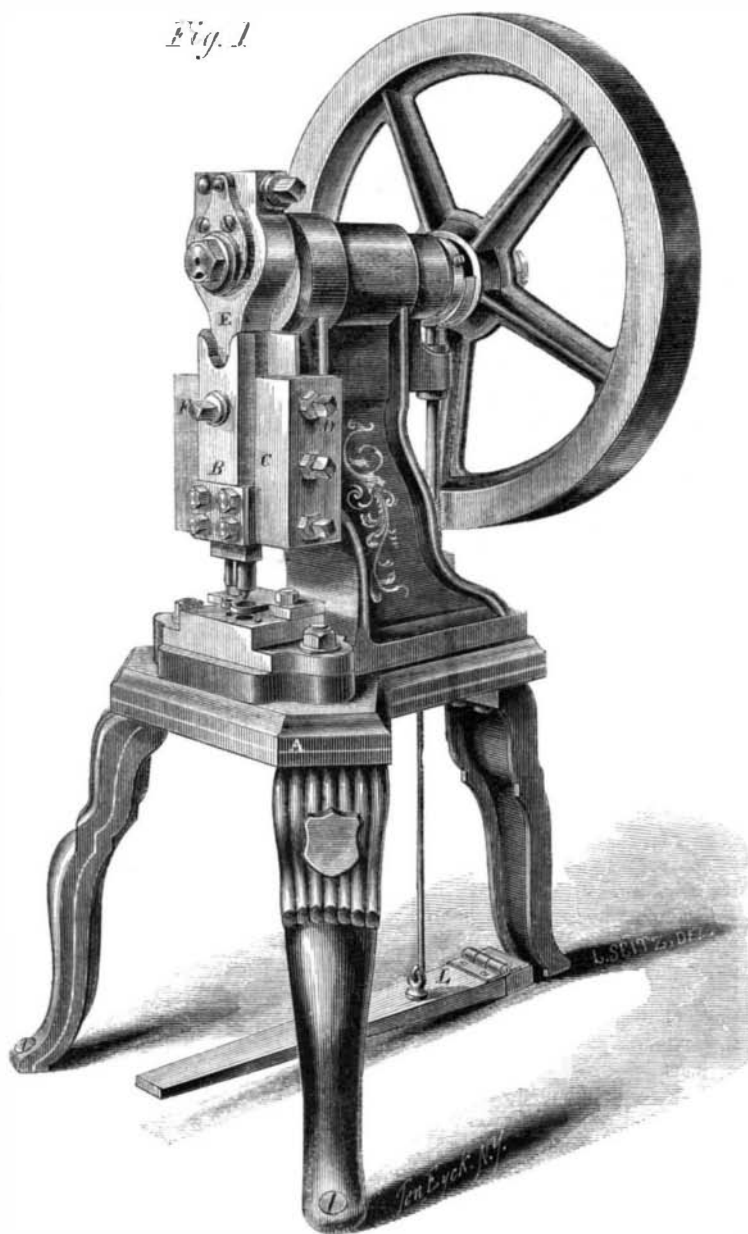
Adjustable Punching Press.

The engravings published herewith represent a new punching press which has several novel features that add very greatly to its efficiency. In appearance it is all that could be desired; and if the mechanical construction and workmanship is equal to that of the model from which this illustration is made, it is certainly superior to anything we have ever seen.

In Fig. 1 we have shown a perspective view of the press, and in Figs. 2 and 3 some of the most important details. The punching machinery is mounted on a handsome iron frame, A, which may be set in any part of the shop most convenient for it. The punches themselves are carried in a slide, B, which works between the jaws of the head, C, cast on the frame. This head is so constructed with reference to its wearing surfaces that they can all be planed without shifting the work, consequently the several faces will be perfectly parallel and true with one another. The gib which takes up the wear of the slide, B, is also peculiar; it is triangular in shape and set so that one face of the right-angle of the triangle bears against the set screws, D; in this way the screws always work against a flat surface. The connecting rod, E, which moves the slide and the punches attached to it, works on a pin at F, the head of which is squared, and has a screw thread turned on it so as to secure the pin in place; the thread extends no further than the thickness of the front part of the slide, so that the journal is entirely smooth and true. The upper end of the connecting rod is enlarged and bored out to receive an eccentric, G, shown in Fig. 2. This eccentric fits accurately in its place and is moved by the handle, H. The top of the rod, E, is cut through to the bore and fitted with a screw, I; this fixture clamps the eccentric tightly and holds it when it is adjusted at the proper point so that it will not slip. By the use of this arrangement the workman can set the stroke of the punch at any desired point for different work with great facility. The punches are driven by the shaft, J, on the end of which a crank pin is turned; this pin has a left-handed thread cut on its extreme end, and is furnished with a nut to keep the eccentric from working out when slackened off. The other end of the shaft has a wheel upon it which is driven by a belt passing around it as usual; here is, in addition, a cam, K (Fig. 3), which is worked by the treadle, I, hinged to the floor, and a

collar, M, which is fastened to the shaft by set screws. These latter details, with some others, constitute what the inventor calls "a touch-off motion," the object of it being to arrest the operation of the punch and cause it to cease its motion at will. The punches always stop when the crank is at its highest elevation, thus rendering accidents to the hands of the workman impossible; many a mechanic mourns the loss of fingers from the punch making one or two

of connection with the driving-wheel and constitutes the touch-off motion spoken of; for when the shaft revolves the pin must be in connection with the fly or driving-wheel, and it continues to operate the punch so long as the workman keeps his foot on the treadle below; when he releases the pressure upon this, however, the spring on the treadle-rod throws the cam, K, up, as shown in Fig. 3. When this occurs, the shoulder on the clutch pin, or key, strikes



STILES'S ADJUSTABLE PUNCHING PRESS.

strokes after it should have stopped. This often occurs even when the belt is thrown off, for the machine generally continues to work from the momentum of the fly-wheel.

The touch-off motion is arranged as shown in Fig. 3. The clutch pin, N, is fitted so as to fill the hole it plays in snugly and yet work easily; one end of this key, so we may call it, is turned true, and has a spiral spring slipped over it, the use of which will be explained hereafter. By examining the clutch pin in Fig. 3, the reader will see that the foremost end is reduced in size, and that it has a beveled shoulder at α ; this shoulder serves to throw the pin, or key, out

on the wedge-shaped part, P, of the cam, and quickly throws the key out of the wheel, leaving the same to revolve freely on the shaft; the other edge of the cam, not seen, is rounded off, so that if the wheel is moved in the wrong direction no injury can occur to the several parts just described. The relation of the punch and the pin, or key, is such that the slide always stops when at the highest point of its stroke, as we before remarked; by bearing on the treadle the cam is withdrawn and the spiral spring mentioned previously throws the key into the driving-wheel as soon as the slot comes opposite to it.

From the arrangement of the parts just described, a punching press is produced which can be adjusted to suit any kind of work in short time. The attachment of the treadle and touch-off motion is also a valuable addition, as it is not only a safeguard against injury to the mechanic, but furnishes a ready method of controlling the action of the machine, either stopping or starting it, as occasion may require, without the workman leaving his job for a moment.

This press was patented on the 26th of Jan., 1864, through the Scientific American Patent Agency, by N. C. Stiles, of West Meriden, Conn. Further information can be had by addressing him at that place.

Cheap Mode of Feeding Horses.

J. Fisk, of Baldwinsville, N. Y., writes to the *Rural New Yorker* that he has a horse, five years old, used as a family carriage horse, which is frequently let to his neighbors. His labor is considerable. In the morning he feeds a bushel basket of cut oat straw; moistens it with water; throws in four quarts of shorts, mixes thoroughly and feeds. At noon gives straw again, and two or four quarts of shorts clear. At night mixes hay and straw—equal parts of each—cuts a basketful and mixes shorts again as in the morning. Feeds also all the potato and apple parings, cabbage leaves, &c., to him. His horse is free from cough, lively, healthy and fat; and this practice he is confident saves him 50 per cent. the cost of keeping a horse the usual way—costs about three minutes' time per day. This is an important item in the days of high feed.