Improved Feed-cutter.

Hardly any innovation of the day is more remarkable than the change of opinion and practice which has taken place in feeding cattle and other stock. Twenty years ago rough feed, or hay in bulk, and such fodder was thought fully sufficient for stock, and the change which has taken place in this respect is very marked. The columns of the various agricultural papers in this country are continually occupied with discussions upon the subject of stock raising, food for horses, cattle, &c. By some, chopped feed is recommended, by others cooked roots, &c., and each and all kinds, methods and plans are animadverted upon in turn to the great benefit of the farmer.

The subject of the engravings presented herewith is a new machine for cutting feed, hay, straw, corn-stalks, &c., and embodies in its construction some points not hitherto embraced in machines of its class. It will be seen on referring to Fig. 1, the perspective view, that the machinery is mounted on a wooden frame, A. The material to be cut is entered at B, and is drawn under the knife, C, by the action of the rollers. The knife is somewhat peculiar inasmuch as it is so made that it will produce a drawing cut, and enter the fodder gradually and without shock or jar; it is fastened to the arms, E, which have counterbalances, F, on their opposite ends, so as to make the machine work regularly and without vibration; for the knife runs at a high velocity. The edge of the feed-board, B, is provided with a metallic edge, against or up to which the knife works so as to clear it. This plate can be moved up so as to compensate for wear. The action of the feed rollers is a novel feature of this machine, for no matter what the thickness of the substance cut, they are held always in the same relative position with the knife, from which circumstance they work much more efficiently. This action is obtained in the following manner:—There are two feed rollers, G and H; the latter having ribs to assist in performing its functions. The shaft of the feed roller, H, runs in bearings in the bars, I (see Fig. 3), one upon each side of the machine. These bars are connected to each other at the bottom by a rod, and to this rod a spiral spring, J, is attached (see Figs. 2 and 3) which runs to the bottom of the frame and is there permanently fixed. The upper ends of the bars, I, are connected to each other by a board or thin iron plate, K, to the back of which another plate, L, is attached, as shown in Figs. 2 and 3. The spring, J, keeps the upper roller down upon its fellow, and the shaft of the upper roller has two hubs, one on each end, which work in curved slots, M, made in the plates, N (see Fig. 2), set on each side of the feed box. These slots are struck from the center of the cutter shaft, therefore as the upper roller rises with the feed introduced to it, it is always in the same distance from, or relative position, with the cutter. By this feature of the machine the fodder is firmly held to the knife and the best possible results obtained. The gearing to effect the rotation of the roller, H, is thus arranged. The lower roller has a pinion, O (see Fig. 3), attached to its shaft, said pinion driving another one, P, which runs in the curved bar, Q; this pinion gears with another, R, above it, constituting a train of three wheels. The pinion, R, engages with a fourth wheel on the shaft of the upper roller, and is kept to its work by means of a link, S, between the two; by this arrangement the rollers are driven continuously without interference with the position of the upper one. The board, K, is attached to prevent hay from being drawn over the top of the upper roller; this board works up and down with the roller. There is also a sheet-iron guard, T, which prevents the cutter from being injured, as well also hay from flying to waste all over the floor, and the cut feed is delivered through the chute, U, into bags or baskets as may be desired. There is one other peculiarity about this machine which deserves notice; this is to prevent injury to the knife or cutter from any hard substance which might accidentally or designedly be introduced with the fodder to be cut. The fly-wheel, V, is fastened to its shaft by a nut and washer; there is no key in it, as is usual, and the adhesion necessary to enable it to perform its duty, is given by the nut aforesaid in connection with two wide collars. The idea of this arrangement is to allow the fly-wheel to slip on its shaft when the cutter strikes a hard substance, thus taking the strain due to its momentum off from the cutter—a very simple and excellent contrivance. The cutter shaft is driven by the spur gear, W, and a pinion, and has a high velocity. The other gears, on the opposite side of the machine in Fig. 1, work the lower feed roller.

Fig. 1

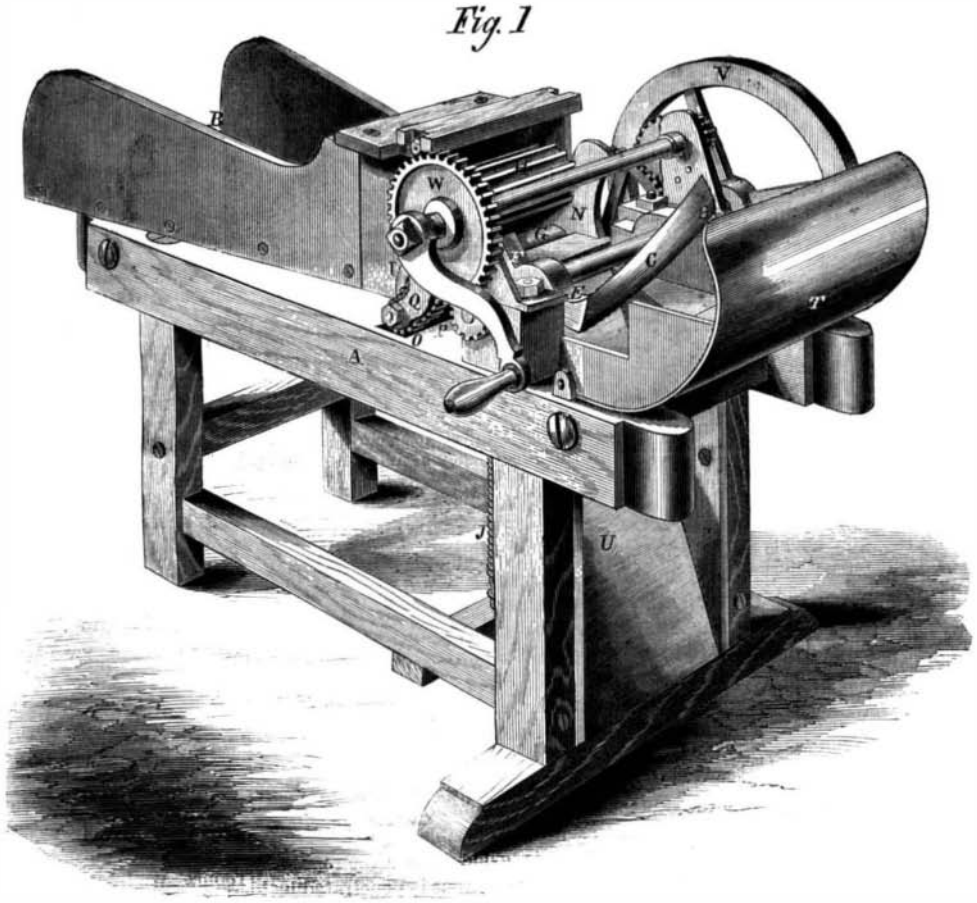


Fig. 2.

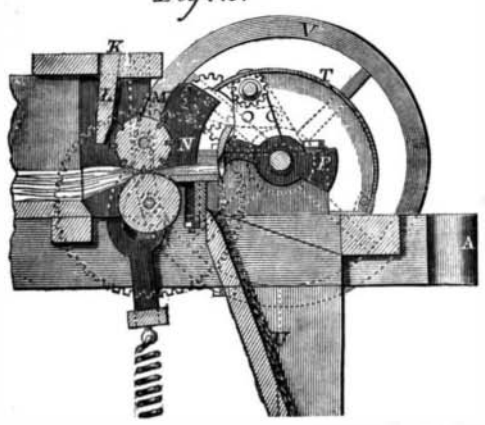
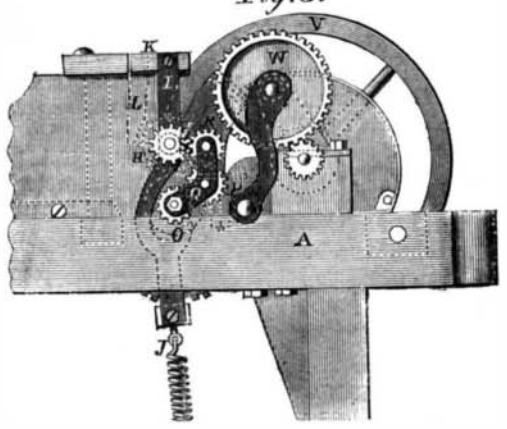


Fig. 3.



HUNT'S "HOOSIER" FEED-CUTTER.

This machine will be found a most useful one to farmers of every class. The arrangement to prevent the knife from being damaged is a very good one; this part of the machine is more costly than any other single detail, and those farmers who live at a distance from the centers of trade find it difficult to get good cutter blades made by ordinary blacksmiths, in the event of accident to the one furnished with the machine. All reasonable chance of injury to this cutter is avoided by the arrangement previously spoken of.

This machine is the invention of F. B. Hunt, of Richmond, Ind., and a patent was granted on the 5th of January, 1864, through the Scientific American Patent Agency. Foreign patents are also being secured by the inventor through the Scientific American Patent Agency. For further information address the patentee as above.

POWER FROM BELTING.

In most of our cities and manufacturing villages steam power is rented extensively for driving machines. Owners of many large buildings put in powerful steam engines, hire out different rooms to small manufacturers, and supply the power from the engine by belting to drive the machines in the different rooms. The custom is to rent so much horse-power, and this is or ought to be measured by the width of belt and its velocity. In justice to those who rent and hire steam power in this manner, there should be a fixed standard of a horse-power communicated by belting; and yet we know there have been and still are differences of opinion upon this subject. On page 392, Vol. IX. (new series) of the Scientific American, we published a rule for calculating the power of belting, and also presented a unit for a horse-power, which is 800 feet velocity per minute for a 1-inch belt, or 400 feet for a 2-inch belt and so on. A manufacturer in this city, who hires his steam power, was told by the maker of a grinding mill which he runs, that it would require five horse-powers to drive it; and according to the above rule this was exactly the amount of power of the belt which he hires. He was, however, charged rent for six horse-powers, and the landlord asserted that this amount was supplied, but furnished no evidence to prove it. There are machines specially designed for testing the power conveyed by shafting, but what is wanted is a reliable standard for the horse-power of belting. The person who hires should not pay for more power than he receives; and the one who rents the power should receive neither less nor more than the price for what he supplies. As there are differences of opinion as to the horse-power of a belt, we suggest that those who supply power by belting ought to publish their rules and the standard which they have set up, in order that this standard may be examined and tested, and all differences of opinion upon the subject settled.

Don't strike finished work with a hammer, take a piece of hard wood instead.