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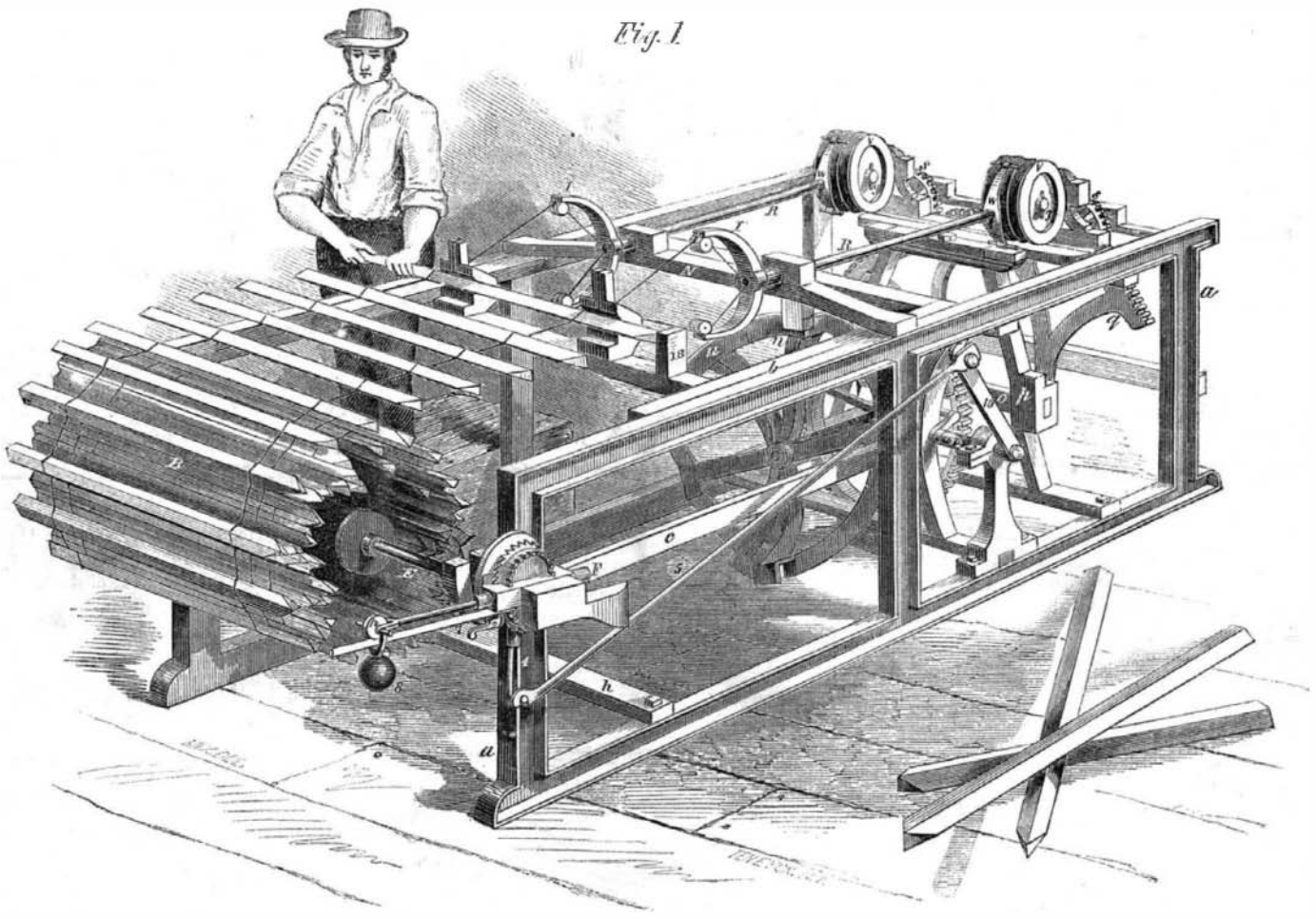
MACHINE FOR MANUFACTURING PICKET FENCES.

The annual expenditure for fencing in our extended country is vast, amounting to a greater sum probably than many persons would estimate. Timber is the material that is most extensively employed for such purposes, and various are the forms in which it is arranged to suit the taste, the place, and purse of the owner, but perhaps none is so universally used as the picket fence.

Fig. 1



MOORE & KELLY'S MACHINE FOR MANUFACTURING PICKET FENCES.

The accompanying engravings illustrate a most ingenious machine for weaving pickets with wire ties into entire webs of fence, so that they may be manufactured in any lumber region, and transported to the place where they are to be be used, or to a market for sale or shipment, in the latter case making wooden fencing to become a new article of commerce.

Fig. 1 is a perspective view of the machine, and Fig. 2 is a back end view. Two lines of wire, at suitable distances apart, are employed to bind and secure the pickets, and each line has two strands. The pickets are fed in between guide jaws by the attendant as shown, each strip between four wires, and these are twisted first to the right in advance of a picket, then to the left behind a picket, so as to hold it securely in place. As each picket is twisted between the wires, it is carried forward around the take-up beam, B, which is similar in nature to that of a power loom. We will now describe the construction and operation of the machine, which, although complex, may be comprehended by any attentive reader.

The machinery is supported in the fixed frame, *a*. The small sliding frame, *b*, is for feeding the pickets between the guide jaws, 18. These guides are moved alternately back and forth the exact distance required between each pair of pickets, and this space can be varied from two to five inches; *v v* are double wire reels situated on the spindles, R R. The wires pass through an eye in the neck of each spindle, which is tubular; thence they are carried through the eyes of the flyers, I I, into slits in the jaws of the guides, 18. The back ends of the spindles, R, have pinions, *t*, Fig. 2, upon them; these gear into wheels, *s s*, which have pinions, *r r*, upon the ends of their shafts. A sector wheel, *y*, has its vibrating shaft at the foot of the frame. This sector gives first the right and then the reverse twist to the wires on the flyers to bind the pickets. It has an intermittent stationary motion, so as to allow for the action of the feed guides, and the space which each picket occupies in the web. This sector rotates the spindles of the flyers through the pinions and gearing shown in Fig. 2. On the shaft of the driving pulley, 30, there is a pinion gearing into the wheel, *w*, on a central horizontal shaft, *i*, on the inner end of which is the cam wheel, *u*. On the other end of this shaft is an eccentric, *m*, which, as it revolves, presses first on one side, then on the other, against a yoke frame, *n p o*, which is thus traversed back and forth. This yoke has a pin in its lower side that takes into guide cheeks, *j j*, on the lower end of the sector wheel, and by the motion of this pin the sector is thus made to move back and forth from one side to the other to produce the twisting action of the wires. The space between the guide cheeks, *j j*, allows for the interval of rest to the flyers for the insertion of each picket.

The small feed sliding frame, *b*, with the guides, 18, receives its intermittent back-and-forth movement by a peculiar cam wheel, *u*. It has a scolloped waved ring upon it, and a small roller on the back end of a rack-bar of the slide frame, *b*, is moved back and forth by the scolloped edge of this cam wheel, so as to feed the pickets. In Fig. 1 the rack-bar is omitted, as it would have covered this cam wheel, but its office will be understood.

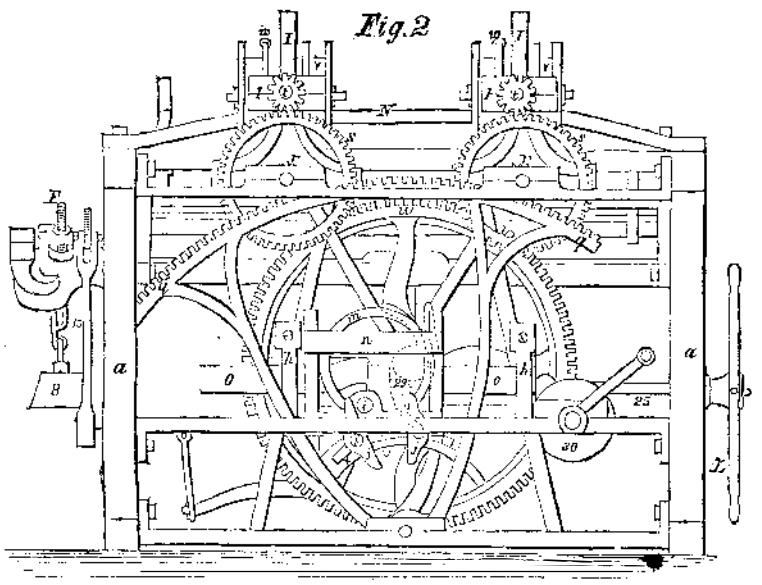
On the inner face of the wheel, *u*, are two pins, situated at equal distances apart, which, as they move round alternately, vibrate the arm, 10, Fig. 1, which gives motion to the connecting rod, 5. In this manner the arm 4, and a pawl that takes into the ratchet wheel, *n*, on the shaft, E, are operated, as the take-up motion of the picket beam, B. The shaft of this beam is also weighted to keep the wire taut and the web of pickets in proper tension. The weight, 8, is secured on a lever, 7, and is also attached on a screw spindle connected to a sliding pulley, *h*. This rod has a screw, F, upon its inner end working through a nut, whereby the weight is gradually advanced from the inner to the outer end of the lever as the web of pickets, B, increases in diameter. This is a peculiar and ingenious take-up motion, and seems to be as applicable to cloth power-looms as to this picket fence machine.

The beam or roll of pickets, B, is elevated and lower-

ed by the lever wheel, L, which turns a shaft, 2 , Fig. 2, thus moving the swing frame, C, on which it is placed. This operation maintains the top tier of pickets, as they are woven, on a line with the twisting flyers of the wires.

A large machiue of this character, capable of turning out 248 feet of fence per hour and requiring the attendance of only one parson, has been in successful operation for some time. But little power is required to drive the machine, and pickets of any thickness and length can be woven in it. It seems to us that it is just such an invention as has long been sought after, for making cheap fencing for the western sections of our country, where timber is scarce, and where the difficulty and expense of fencing are very great.

Fig. 2



Patents exist on the machine and also on the fence which were issued as follows:—One to James Moore, on June 30, 1857, for securing the pickets between twisted strands of wire; and the other for the weaving machine to James Moore and Archibald Kelly, on April 17, 1860. Further information may be obtained by addressing the patentees, Messrs. Moore & Kelly, at Pittsburg, Pa., or S. A. Heath & Co., No. 102 William-street, New York, who have a model of the machine, together with some samples of fence made on the large machine.

OUR SPECIAL CORRESPONDENCE.

Good Roads and Slow Coaches—The Happy and Intelligent Blind Boy—Riding to School on Horse-back—Nature's Record of the Rain-fall in the Rings of Trees—Years of Plenty and of Famine—Splendid Opening for a Great Invention and Speculation—People Adapting Themselves to the Climate, &c.

BELTON, Texas, June 30, 1860.

MESSRS. EDITORS:—Next to the building of railroads, the greatest opening for improvement in the travel of this State is some competition with the one great stage company who monopolize the business, and are coining an immense fortune out of it. They charge from 10 to 15 cents per mile for carrying a passenger, and drive at a snail's pace, making themselves as unaccommodating and unpopular as possible. An opposition to them on the best traveled routes could hardly fail to pay, and it would be welcomed with pleasure by the traveling community.

As you move westward in this State, you find a more rolling, rocky and gravelly country. The road from Austin to this place (60 miles) is the finest natural road that I ever saw. The black loamy soil is sufficiently filled with gravel stones to make it hard and smooth, and the road consists of a series of gentle ascents and descents over the rolling prairie nearly all the way. And yet, over this fine road, our speed in the stage was *less* than four miles an hour!

In the stage we had a blind boy and a deaf-and-dumb young man, both from the State schools at Austin, which, with the large asylum for the insane, are magnificent monuments to the enlightened humanity of the government. The boy exhibited specimens of his writing, his reading with the raised letters, and of his proficiency on the flute. He was engaged in animated conversation with me nearly all the way, showing unusual intelligence and capacity, and he seemed to be one of the happiest lads, notwithstanding his sad deprivation, that I ever saw in my life.

We passed on the road several school-houses, with horses about them tied by long ropes, showing that the scholars were gathered from so broad a district of this sparsely-settled country that many of them were obliged to ride every day to school. It is not merely in the general attention paid to schools that the evidence is found of the rapid progress of this community in intelligence; every department of science is being thoroughly studied by competent observers, and a vast mass of reliable facts have already been collected in relation to the geology, meteorology, zoology, &c., of the State. Some of these are of peculiar interest, and I may make them the subjects of separate communications to your paper. One series of investigations, especially, has attracted much attention, from its bearing on the prospects of dry seasons—a subject which all the inhabitants, of course, regard as of primary importance. A cross section was sawed from a very large and old tree, and the surface planed and varnished, so as to show clearly the width of the annual rings As the tree makes a larger growth —and consequently, a wider ring—in a wet season than it does in a dry one, and as the outside rings have been formed during the time in which a record has been kept of the rain-fall, it is easy to trace back and read the history which Nature has herself made of the wet and dry seasons during the whole age of the tree.

The last five years have been dry, and corn in most parts of Texas has been worth $1.50 per bushel; but for a few years previously, the rains were abundant, and corn was generally worth some 25 cents per bushel. If the attempt is made to keep the corn from the wet to the dry seasons, it is eaten by weevils. Several plans have been suggested for preserving the corn from the attacks of the weevils, and this is a fine field for our inventors. To put up $25,000 worth of corn, at 25 cents per bushel, and keep it until it was worth $1.50 per bushel, would be a very easy way to make $125,000. The most plausible plan is to put it in cisterns, similar to those which are now employed for keeping water for use. It might be necessary to kiln-dry it; and it should doubtless be poured into the cistern during a "norther," which is a *cold, dry* wind. If these plans should not succeed, it would be very easy to expel the atmosphere from the cistern by means of carbonic acid gas, leaving the cistern filled with gas; and there can be hardly a doubt that this plan would be effectual. Perhaps it would be better to build the cistern or receptacle above the ground. I suggest the subject to the scientific and money-making men of Texas, as a promising field for experiment.

The people of the State are, however, about adopting, to a considerable extent, a plan more rational than the keeping of Indian corn from year to year, and that is the cultivation of barley and oats, in the place of corn. These may be sown in time to grow with the spring rains; and, wherever they have been tried, they yield excellent crops. This change of practice by which the people of this new State will adapt themselves to the climate is rendered very slow by the peculiar conservatism of farmers and by the scarcity of barley for seed, which was sold last year in some parts of Texas at $4 per bushel. Perhaps some of your readers who are grain-dealers will be bold enough speculators to ship a lot of barley to Houston for seed, this Fall.

I have now seen most of the settled parts of Texas, and shall, from this point, turn my steps homeward; anxious to get once more where I can hear the raindrops occasionally pattering upon the pavements.

B.

EXPERIENCE AND EXPERIMENTS IN ADJUSTING MILL-SAWS.

MESSRS. EDITORS:—In this letter I propose to give you the results and experiments I have made at intervals of time in filing, setting and adjusting saws. Perhaps there is not so much difference in opinion upon any other one topic as upon this. The lumber interest of this country is an important one, which has long engaged the attention and continual efforts of inventors and others. It is a branch of our manufactures which has generally rewarded (pecuniarly speaking) the efforts of artisans in a satisfactory manner, and hence the importance of thorough research. The market value of lumber is greatly increased in value by good, smooth sawing. Most of the lumber that finds its way to the eastern market is sawed in the common upright saw-mills; and it is my purpose, firstly, to speak of my method of adjusting these kinds of saws.

After the saw has been placed in the "stirrups" or "irons" which hold the saw in the "sash," and made to hang in a perpendicular position, I take a plummet and line, and, placing the line on the point of the top-most tooth, let the plummet fall in the air and swing until it gains its place; then I throw the lowest tooth of the saw three-fourths of an inch out of perpendicular, so that in sawing, while the saw is in the "cut," the top of the saw strikes first. The advantages gained in this way of hanging the saw are as follows:—The log-carriage is more easily moved; a more rapid motion is made by the saw; the sawyer has a better chance to vary the "feed" or cut of the saw than is the case when the saw is hung in a more perpendicular manner.

In setting the saw, experienced sawyers prefer to set the teeth from their points to the back. In this way, the following benefits are derived:—First, in sawing, the dust is thrown out of the cut; the saw cannot rub against the sides of the "stock" while cutting, causing the saw to heat; the strain upon the teeth in sawing heavy timber is not so great, by far, as is necessarily the case when the teeth are set at the points only; and the lumber is freed of its fibrous sawdust, which clings in the cut when the saw is set only at the point, as is usually the case.

In filing, a great advantage is gained in holding the file at right angles with the saw; by so doing, the edge is made square, instead of oval, as it is when the file "rolls" upon the tooth. The upper edge of the teeth require as much care in filing as the under edge; and the reason is that, in the up-stroke of the saw, the fibers of wood are thrown out of the cut, instead of remaining in the lumber to detract from its value.

I have recently been experimenting upon filing two of the middle saw teeth, in such manner as to saw lumber nearly as smooth as it can be planed with machine planers. The result was successful in an eminent degree. Two of the teeth (one in one set and one in the other) I set in a curved line, so that they projected a very little at the side, so as to take a very thin shaving from the two sides of the cut. The top of these two teeth I file in a manner very similar to the method employed in sharpening shears. The above thoughts I have given for the benefit of young and inexperienced sawyers; and it may draw out of experienced mill-men their respective views upon this subject.

WM. B. BUXTON.

Montpelier, Vt., July 14, 1860.

FIRST NEW COTTON.—The first bale of new cotton was received here on the 15th inst., by Nelson Clement, Esq., per steamship *Philadelphia*, from New Orleans. The cotton was raised on the plantation of Judge R. B. Wofford, near Cuero, Texas, and was received by Mr. Clement's house in Galveston, on the 3d inst., for re-shipment to his house here. This is said to be the third or fourth time Judge Wofford has succeeded in sending the first bale of the season. From the sample shown, the cotton is very handsome and free from leaf or dirt.

IMPORTANT improvements in diving apparatuses have been made and patented by Mr. C. E. Heinke, submarine engineer, London. It is stated that the apparatus is completely under the immediate control of the diver, and that it enables him to remain for several hours under water, at great depths, without inconvenience and with freedom of action. It has been tried with success.