BULLARD'S

IMPROVED PATENT

HAY TEDDER,

OR MACHINE FOR

SPREADING AND TURNING HAY.

J. W. JENKINS, JR., GENERAL AGENT,

AT BARRE, MASS.

BARRE:
J. HENRY GODDARD, BOOK AND JOB PRINTER,
1864.

Bullard's Improved Hay Tedder.

The Bullard Hay Tedder was patented in 1861. It has now been in use for three hay-seasons. During this period, the inventor, by personal observation of its actual working and by availing himself of the suggestions of intelligent and practical farmers, has been enabled to make some improvements to fit it more completely for the varying conditions of the hay-field. He is now assured that this machine can follow effectively wherever the mower may lead or the horse-rake can be used.

The hay crop of the United States is second to no other in interest to farmers generally. Till within a few years, all the necessary processes for harvesting this staple were performed with only the aid of the scythe, the hand rake and the fork. This involved the employment of extra labor, at prices much above the average cost of farm hands. The proper period for cutting grass is short at best.

The invention of the mowing-machine, the horse-rake and the horse-fork had materially changed this for the better—each of these performing in its place the work of several men.

Another invention was needed. This was a machine to turn the grass as soon as wilted and leave it tossed up lightly, its fibres crossed in every direction, and in the best condition to be evenly and quickly dried by the circulation of the air. In this mode only can the nutritive ingredients of the grass, the sugar, starch, etc., be preserved; and what is almost of as much importance, in this way alone can be retained the sweetness and the fragrance of the hay, that make it most palatable to the animal.

It is claimed for this machine that it will thoroughly turn four acres of grass in an hour, thus accomplishing the work of from eight to twelve

men. That this labor-saving occurs at a period in the day when time is very precious. That it leaves it lighter for drying and in better condition for the rake and for storage in the barn. But this is not all: it does the work so quickly that the process of turning can be several times repeated, and the curing can by this means be so hastened as to allow the hay to be taken to the barn in the best condition the same day it is cut. That it thus brings the entire process of harvesting the hay in good condition within the compass of any good hay day. And where this cannot be accomplished, hay thus treated may be safely left in the cock for the remainder of the process of curing.

The employment of the Tedder, in connection with the other labor-saving implements for hay-making, almost supercedes the necessity for the employment of extra labor during the hay season. It is claimed that this machine will pay for itself in a single year on any farm producing fifty tons of hay.

The machine is simple in its construction, portable, not of heavy draught, and not liable to get out of repair. It can be used on rough ground, in heavy grass, and never clogs.

On the fifth page are submitted a few of the many testimonials from a large number of farmers and intelligent agriculturists who have used the Hay Tedder.

DIRECTIONS FOR USING THE MACHINE.

1st. Harness the thills three feet four inches high at the point where they rest in the thill strap. If this height of thill should carry the fork too hard to the surface, drop the thills on the horse. The fork must be regulated to the surface by raising or lowering the thills on the horse.

2d. Keep the machine well oiled in all its bearings with the best oil.

3d. Never drop the machine into gear when the horse is moving quick; let the horse stop, or nearly so, when the machine is put in gear.

4th. It is best that the machine should be out of gear while backing the horse.

THE WOOD-CUT on the next page, taken from a photograph, gives an accurate representation of the machine when ready for use.

The arrangements for its manufacture are such, that in future they will be made of the best materials and workmanship, and from the same patterns, wherever made, so as to secure uniformity. This will enable the purchaser to replace any broken part from the nearest manufactory.

THE first public exhibition of the Hay Spreader was at the Fair of the New York State Agricultural Society for 1863, at Utica. While in practical operation during three days of the Fair, it was surrounded by crowds of persons, who gave utterance to their satisfaction with its successful working by loud tokens of applause. During one of these days, for nine consecutive hours it was drawn by a small horse, now driven slowly and then fast, as required by the wishes of the bystanders. The work done was equivalent to spreading the hay on twenty acres of land, and this without any apparent fatigue on the part of the horse. A Premium was awarded the Inventor by the Society, and the following extract from the Report of their Committee on Agricultural Implements is herewith submitted.

Bullard's Hay Spreader and Turner.

THIS is a very valuable instrument, and was in operation on the grounds, working to our entire satisfaction.

A. H. BRAINERD,
GEORGE GEDDES,
T. C. PETERS,
} *Committee.*

It was exhibited with like success at the State Fair at Norristown, Pa., and also at several county fairs in the same state.


WHITEMORE
WORCESTER

TESTIMONIALS.

NEW BRAINTREE, August 24, 1862.

I HEREBY certify that I have used one of Bullard's Hay Spreading and Turning Machines, and have found it to be a great labor-saving machine, easily performing, with the aid of a boy and a horse, the work of eight or ten men, and doing the work as well or better than if done by hand. It is not liable to get out of order, and should an accident happen it is easily repaired.

I have used my machine more or less every fair day during the greater part of the month of July past — on rough and smooth ground, in heavy hay and light — have made no repairs, and the machine is now in as good condition for service as the day it was purchased. I consider it, in point of utility, next to the horse-rake, and of more actual benefit to farmers generally than the mowing machine, and although I thought the price at first a serious objection, I would not now do without it for several times its cost. I cheerfully recommend it to all farmers as a labor-saving, hay-improving machine.

WM. A. MIXTER.

SOUTH HADLEY FALLS, Mass., Sept., 1863.

I have been acquainted with the operation of Bullard's Patent Hay Turner, and consider it of equal or more benefit to the hay maker than the mowing machine.

PAOLI LATHROP.

WORCESTER, Nov. 30, 1863.

Mr. E. W. Bullard: Dear Sir: I bought one of your Hay Spreaders last summer, and used it throughout the season, and I recommend it as an excellent machine and a proper companion for the mowing machine and the horse-rake. It is not like the old English machines, liable to be clogged with grass, and to get out of order and be broken. It does its *work well, and if it is used at the right time, and frequently, it will forward and cheapen the making of hay.*

In discussing its merits with good farmers on my farm, three objections have been mentioned:

1st. The machine is costly; and the answer to this is, that it will cost more to obtain the result of the labor of six or eight men in any other way, especially in the next summer.

2d. It is said that it is not light work for a horse; and this is answered by the simple remark, that it cannot be light work to perform the labor of six or eight men on heavy swaths.

And the third objection is, that when long rains have beat down cut

grass, the spreader cannot pick it up so thoroughly as a faithful man with a fork. This is an extreme case, and not a frequent occurrence. I have not heard of any other objection.

I am Respectfully Yours.

STEPHEN SALISBURY.

LEXINGTON, Mass., Nov. 20, 1863.

Mr. E. W. Bullard: Sir: In regard to the merits of your Hay Tedder, I cannot say too much in its favor.

I have used it to spread and turn about 200 tons of hay the last year; also all the second crop. The substance of my experience is this: That it does as much and more work than ten men, and *much better* than it can be done by hand power.

I think if it did not do one quarter of the work it does, it would still pay, for the reason it does it so well. I think it saves as much labor as a mowing machine, and at a time of day when every moment is precious to haymakers.

J. S. MUNROE.

SUFFIELD, Ct., Nov. 9, 1863.

Mr. Bullard: Dear Sir: I have used your Turner and Spreader in making over 100 tons of hay the past season.

Grass cut in the morning, and the turner and spreader put in motion from nine to ten o'clock, would do to cart soon after dinner. This is the great advantage of the machine—that we can get in our hay the day it is cut.

I remember one day when I had a large quantity down. I kept the turner in motion, and was enabled to get it all in, in good order, before a storm lasting five or six days, saving more than the entire cost of the machine, while the hay of my neighbors was nearly spoiled. It also saves a great portion of labor and expense in making hay.

BYRON LOOMIS.

DEERFIELD, May 19th, 1863.

Mr. Bullard: Dear Sir: I have used your Hay Spreader one season and find it invaluable. I can with truth pronounce it *the farmer's friend.*

Yours Truly.

JOHN H. STEBBINS.

SOUTH WOODSTOCK, Ct., Nov. 25, 1863.

Mr. E. W. Bullard: Dear Sir: I saw one of your hay spreaders at work for the first time last summer, and immediately ordered one, which came in July. On its arrival, my son brought it into the field where I had eight men turning hay. The machine was put in motion, and the men, after witnessing the operations a few moments, enquired what they should do. I answered, "Lean upon the fence and see the machine do the work." And it *did it*, to a charm, turning more hay and better than twelve men could have done in the same time. I consider it one of the indispensable machines on my farm. That with this and the mower, no farmer need employ more than one-third as much help in getting hay. I would not be without this machine for double its cost.

JOHN GILES.

GRAFTON, Mass., Nov. 19, 1863.

Mr. Bullard: Dear Sir: I have used your hay turner and spreader to make from 90 to 100 tons of hay the past season, and can say that, with a boy and horse, it saves the work of eight men at least, besides doing the work vastly better than it can be done by hand. I have the spreader, mower, and horse-rake, and should dispense with both the others and keep the turner if I could not have all three. At the price I had to pay my help the past season, my machine more than paid for itself, and is to-day as good as it was the day I purchased it.

JONATHAN WARREN.

SALINE, Washtenaw Co., Mich., Nov. 30, 1863.

Mr. E. W. Bullard: Dear Sir: I used the hay tedder that I purchased of you last July, for the turning and making of one hundred and thirty acres of grass, and found it to meet my fullest expectations. I found that, with a boy and horse, it was fully equal to eight men, and it did the work much better than I could ever get it done by hand labor.

THOMAS WOOD.

BELMONT, Mass., Nov. 28, 1863.

Mr. Bullard: Dear Sir: Owing to the scarcity of labor during the last hay season, I was induced to buy one of your Hay Tedders, thinking it would lessen the demand for manual labor.

For several years I have had my grass cut by a "mower," and it has required eight men to turn it after the mowing machine. This season one man with the tedder has done the work, and far better than it could have been done by hand. To all farmers who desire to save labor and money, I strongly recommend Bullard's Hay Tedder, as the most valuable machine which I have ever seen.

J. W. HILL.

DOUGLAS, Mass., Dec. 7, 1863.

Mr. E. W. Bullard: Dear Sir: I bought one of your Hay Spreaders last season, with many misgivings as to the utility of such a machine. In fact, I did not believe it would do the work claimed for it. But after the first day's work in heavy hay, I was fully satisfied. It turns the hay most thoroughly; *better* than it can be done by hand.

When this machine is used, the hay dries much faster, and the rake and cart can follow much earlier. In short, I consider the hay turner and spreader a most valuable machine to the farmer.

J. H. DUDLEY.

WEST ROXBURY, Mass., Dec. 2, 1863.

Mr. E. W. Bullard: Dear Sir: I can most cordially recommend Bullard's Hay Tedder to the farmers of Massachusetts as a very useful implement.

It will do the work of ten men, and in a better manner than it can be done by hand. The hay is so thoroughly shaken by it that it is dried evenly, without "green locks." I used the Tedder in harvesting two heavy crops of hay the present season, and regard it as invaluable to any farmer owning fifty acres of land. It is simple in construction, well made, and, when properly used, not liable to get out of order.

EDWARD R. ANDREWS.

GRAFTON, Mass., July 9, 1863.

Mr. E. W. Bullard: I received your hay spreader on Thursday last, and am free to say that it exceeds my most sanguine expectations. It turns hay most admirably, and is the *smartest boy* I ever had.

I feel that you have conferred a great favor upon farmers by inventing and making such a labor-saving machine, and I hope to see it generally introduced upon the large farms. By the recent inventions, a great portion of the severe labor of haying has become a mere pastime.

JOS. B. ADAMS.

SUTTON, Mass., Nov. 30, 1863.

Mr. E. W. Bullard: Dear Sir: You ask my opinion of your Hay Spreader. I am happy to reply that the one I bought of you does its work admirably. My little son, eight years old, manages it with perfect ease, doing the work of *twenty men*, better than it can be done by hand, without breaking or putting it out of order.

Any farmer who cuts twenty tons of hay cannot afford to be without one. When a mowing machine is used the turner should follow it, and whenever a person has used one, he will never dispense with it.

JAMES TAYLOR.

MIDDLEFIELD, Conn., May 14, 1863.

Mr. Bullard: Dear Sir: You ask me how we like Bullard's Hay Tedder. It was worth to us $100 last season, and we would give $100 for its use this season if we could do no better. We follow the mower after the grass has been mown about three or four hours, and find we gain fully one third of a day, and many times more than that. For shaking up hay which has been opened from the cock or windrow it is better than eight men, and no person can do the work half so well. No farmer with enterprise enough to own or hire a mower can afford to do without the hay Tedder.

Yours Truly, etc.

DAVID LYMAN.

LEYDEN, May 23, 1863.

Mr. E. W. Bullard: Dear Sir: I used your Hay Turner last season on about thirty-four acres of mowing, and am satisfied that three men did the haying as quickly as four would without it. I should not be willing to exchange it for six men during the time it is in use. Aside from this, it does the work better, the hay dries quicker, and the expense of keeping it in order I think will be but little compared with that of the mowing machine. *Yours Respectfully.*

LEVI SHELDON.

NEW BRAINTREE, August, 1861.

Mr. Bullard: Dear Sir: I comply with your wish in saying what I think of your Tedder. I have used it in the past hay season, and think it a great labor-saving machine. I can turn four acres of hay in an hour — that would be equal to ten or twelve men, I think — and can do it *better than man can do it*, where it is smooth.

Yours Respectfully.

SULLIVAN CONVERSE.

EXTRACT FROM A TREATISE ON GRASSES,

BY CHARLES L. FLINT, A. M.

Secretary of Massachusetts Board of Agriculture.

After having given the testimony of numerous practical and successful farmers as to the best time for cutting grass, and having shown that grasses contain the highest per centage of sugar, starch and gum at the time of flowering, and that these nutritive constituents are gradually transformed into woody fibre as the transition from the flowering to the ripening of the seed goes on—he then adds:

"But there is another equally instructive suggestion in these transforming processes, and it is this: If grass is cut in a condition ever so succulent, and before the transition of sugar, etc., into woody fibre has commenced, there will even then be some loss of sugar and starch from the action of heat and moisture, especially if the grass is exposed to the rain in the process of curing, and lignifaction, or change to woody fibre, takes place to considerable extent, dependent, of course, on the length of time it is exposed to air and light; so that grass cured with the least exposure to the searching, sifting winds and the scorching sunshine, is, other things being equal, more nutritious than grass cured slower and longer exposed, however fine the weather may be. In other words, grass over-cured in the process of haymaking, contains more useless, woody fibre and less nutritive qualities than grass cured more hastily and housed before being dried to a crisp. There can be no doubt which of the two would be most palatable to the animal. Some loss of nutritive elements must, therefore, take place in the process of curing, however perfect it may be, and the true art of haymaking consists in curing the grass just up to the point at which it will do to put into the barn, and no more, in order to arrest the loss at the earliest possible moment. And this fact of the loss of sugar and starch, or of their transformation into woody fibre by too long exposure to the sun and wind, I think equally well established as that any transformation at all takes place, and as equally suggestive."