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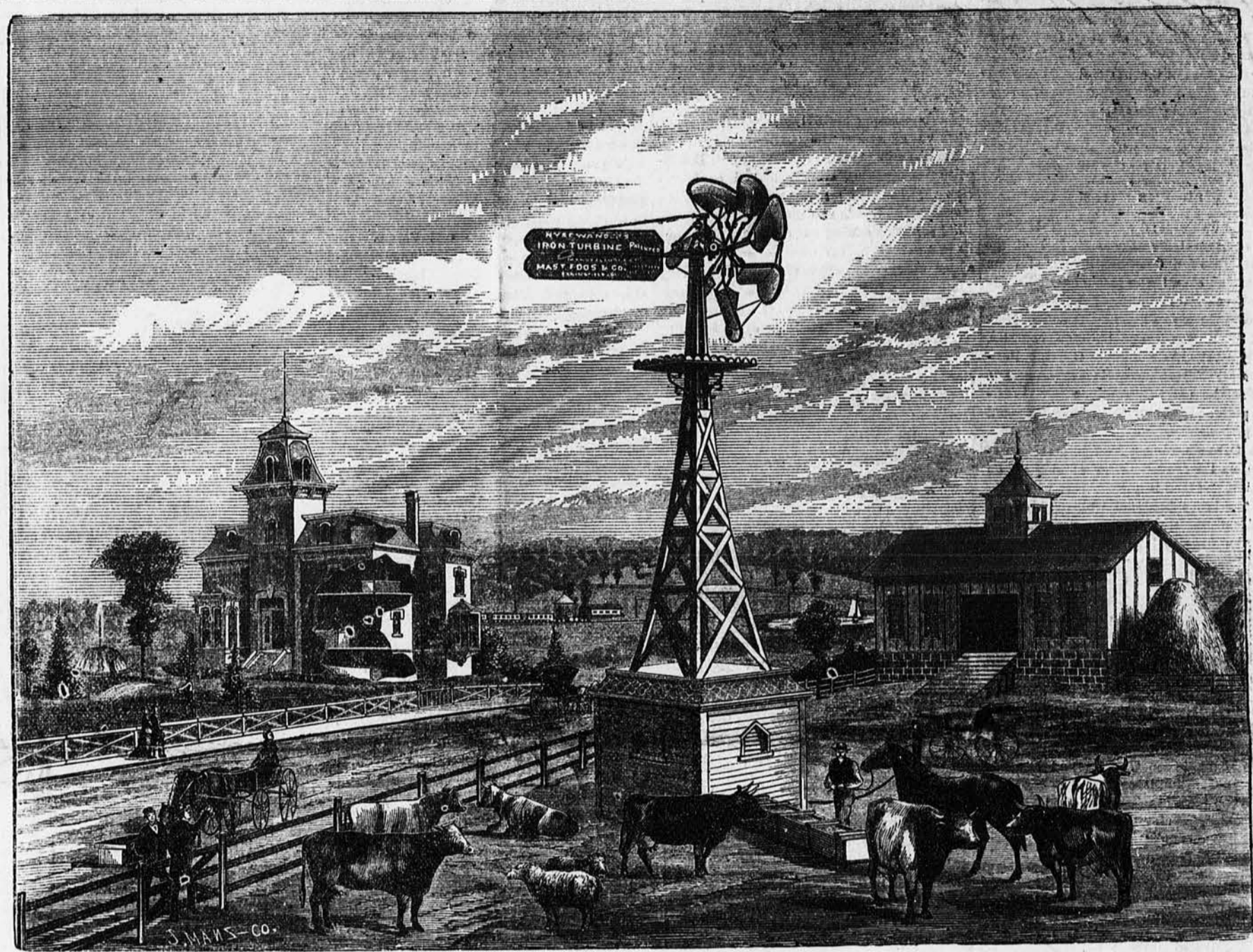
THE IRON TURBINE WIND MILL.

The well known Agricultural House of Messrs Trumbull, Reynolds & Allen supply a want long felt in the introduction of the Iron Turbine Wind Engine, which is represented in the above cut. Objections that have existed in the Wood Wheel Mill are removed by this mill, for it will not blow down in storms. It has no wood about it to swell, shrink, rot, rattle, and be torn to pieces by the wind. It has more power than any other wheel of same diameter. They are the simplest, best made, and least liable to get out of order, and without doubt will be given the preference over any other mill when examined into. A Kansas farmer, with an Iron Turbine Wind Mill over a good well on his farm need have no fear of running short of water for his stock this winter, and most stock men claim that it is better than driving stock to a stream or pond. The above firm proposes putting up the mill and no pay asked until it is in a good running order. For particulars address Trumbull, Reynolds & Allen, Kansas City, Missouri.

DOES WHEAT TURN TO CHESS?

It is quite refreshing to see the advocates of the transmutation of wheat into chess coming forward with arguments and reasons in favor of that theory, based on scientific principles. The trouble has generally been in opposing this theory, that you have to contend against men's ignorance and prejudice rather than their knowledge and arguments. With such men arguments and reasonings based upon scientific facts and principles have no weight. Whatever does not agree with their preconceived notions cannot be true, if for no other reason than that it is opposed to their theory. But it seems that this controversy is to be simplified and elevated at the same time. Mr. Orbicular Sunshine comes forward with a scientific explanation and defence. He recasts the question into this shape: "Does one specific class of cereals ever produce another specific class?" And he lays down the fundamental proposition that such changes do take place, "but always of the same genus." He then labors to prove that wheat and chess belong to the same genus. He says: "In the early stages of their growth it is impossible to detect difference in structure, color or progress of growth." Is this true? Are such botanists as Gray, Ferry and Darlington mistaken when they point out the distinguishing characteristics of these two plants? They claim to be able to distinguish them even in their "earlier stages," by certain characteristic marks, and I think they are right, for I can do the same myself, though but a tyro in botany.

But again, Mr. Sunshine says: "The structural likeness appears further in their seed formations. Both are oblong, and neither of them ovate, or egg-shaped. They both have an epidermis, or thin skin, over the meat part of the seed." Does the shape and covering of seeds determine their generic relations? Is not the "structural likeness" in shape, at least, of the seed of the turnip and the poppy much closer than that of wheat and chess? Are they therefore of the same genus? And is not this the case in thousands of instances in the vegetable world, where there is not the



THE IRON TURBINE WIND MILL.

most remote generic relationship existing? Nor does the epidermis of the grain prove anything, for that of rye resembles that of wheat more closely than does that of chess. Buckwheat also has a similar brany covering. Do all these plants, therefore, belong to the same genus? No sane man believes it. The fact of it is, the gentleman's position is untenable. Wheat and chess do not belong to the same genus; the botanists are correct in classifying them under different genera, wheat under *Triticum*, and chess under *Bromus*. I know nothing of Mr. S's erudition, but judging from his mode of reasoning in this case, I am at liberty to infer that it is not very profound and yet he, doubtless, knows enough of the resemblance and differentiation of vegetable structure to know that the generic differences between wheat and chess are as wide, if not wider, than are those between chess (*Bromus*) and oats (*Avena*), or between wheat (*Triticum*), rye (*Secale*) and barley (*Hordeum*), all of which are well known to belong to different genera. But it appears to me that Mr. Sunshine abandons his first position, that these changes of one specific class to another can only take place between species of the same genus, as he advances with his argument, for he says: "It chess be sown by itself, it will produce its own likeness one or two years, and the third year will bring timothy grass." Are timothy and chess members of the same genus, and that the same that wheat belongs to? Is the "structural likeness" such as to justify this classification? If so by what rule are we to exclude rye, barley and oats, all of which resemble wheat in their "structural likeness" much more closely than does timothy? I submit it to his own examination. Mr. S. makes some very important assertions to which I wish to invite special attention.

In speaking of chess turning to other grass he says: "This I have substantiated in several unmistakable instances." And again, "Occasionally a stalk of wheat and a stool of chess are found upon the same root."

Now here we have two important statements of what purport to be facts, either one of which, properly substantiated, would settle this tiresome controversy. Why has not Mr. Sunshine brought these facts before the

world backed by such proofs as would compel acceptance? Why were they not presented to our Boards of Agriculture or the faculty of some of our agricultural colleges? Such alleged cases have often been presented to such associations of scientific men who were skilled in such investigations, and they always prove either frauds or deceptions. If the above statements be true, the gentleman has done the world a great wrong in not putting these facts in a shape to end this controversy: if they are not true—well, he must be mistaken.

I have been many years looking for evidence of this change, but in every case when I came to examine it closely it turned out to be, not "sunshine," but moonshine, which I think would have been a more appropriate *nom de plume*. Always willing that my name and sentiments shall go together, I subscribe myself,
L. J. TEMPLIN,
Hutchinson, Kansas.

STATE AGRICULTURAL COLLEGE.

EDITORS FARMER: You have been bothered with Russian Hybrid apples so much that I will say only a little about that. W. W. Cone said the truth lately, when he stated that although some of the men who have sold trees under this title may be honest, yet they have done the state great harm. Even the Wealthy, which is an apple of merit, is for Kansas not worth half as much as some others which are grown in every nursery in the state. Because the Wealthy is valuable in Minnesota and Wisconsin, where they have to grow only crabs and apples that will stand very severe cold; is no reason that it is the best tree ever seen in Kansas. We have seen some very fine trees and very good varieties in Kansas. Apples of Russian origin or crosses produced from them are good in their season but the Hybrid part is a fraud. I have lately had a private letter from Thomas Meahan, editor of the *Gardener's Monthly*, in which, in referring to this hybridization of the apple, he says these words immediately after having read the articles in the FARMER: "I get it and regularly read, but having been two months from home, I missed these. There can be graft hybrids, but none have been so originated as to be worthy of name or dissemination."

The college gets along very well so far this term. There are 177 students on the roll. In the botany class I have now thirty-four, nearly double the number ever before; in that class in this college. We are digging and selling some very fine standard pear trees, just now, which are well branched and entirely home grown. The work on the north wing of the main building progresses rapidly; the plasterers are at work; and it will be ready for occupancy by January 1st. We are crowded in the present chapel room and in some of the class-rooms. More room and more teachers are needed. One good feature of the present state of the college is, that nearly every settled county in the state is represented. Cherokee sends seventeen students, and it is the extreme southeastern county. We want to see more of the young people of the state secure the benefits which this institution affords.
H. E. VAN DEMAN,
Manhattan, Kansas.

AROUND THE FARM.

NO. 1.
This is fine weather to do up the odd ends of the summer's work, preparatory for winter just before us. We are very busy getting our ground ready for early spring work, gardening and planting trees. I want to sow some grass seed in the spring, and I am plowing the ground now so that I can sow it early. The ground will also be in better condition to receive the seed if plowed now than it will be if I wait till spring to do the plowing and the season should prove dry. Plowed now, the winter rains, snows, freezings and thaws will saturate and mellow the ground, putting it in the best possible condition for the reception of the seed early in the season.
I have also taken up a large number of my raspberry tips, and buried them for planting early in the spring. The ground is already nicely prepared for their reception; as is also a plot for strawberry plants, and for mulching during the winter. The ground in the old plantation of raspberries is plowed for the reception of mulch.
It is my intention at present to mulch several acres of bushes, small fruit and forest trees, with straw and prairie grass, the ap-

proaching winter. I think I shall accomplish several very important results by doing so. I do not expect that we shall continue to have the very favorable, showery weather we have had during the past few years. Then, if we shall have a drouth, my trees will not suffer nearly so much with the ground mulched. When nature is left to herself she always mulches the ground with falling leaves and decaying grass; this proves to be a very good substitute for artificial cultivation, as it loosens the ground, making it friable, giving it the mechanical texture best adapted for the spreading of the roots in their search for nutriment. Its decay enriches the soil with the very best plant food. But the great advantage of mulch during a drouth is, the retention of moisture and absorption of it from the atmosphere, as the air circulates through the friable covering, and comes in contact with the soil. It will be very valuable on the ground where a young orchard is intended to be planted next spring.

Again, should there be no drouth, it will still have many advantages in making just so much less cultivation, and hoeing and pulling weeds, which is very considerable on several acres of shrubbery and small trees. There is always so much hurrying and heavy work on the farm at the season when weeds require to be looked after and hoed off, namely, at harvesting time, that I have fully resolved to experiment with the proposed mulching.

We are not behind any other part of the state in yield of grain. The prospect for next season is magnificent, and of course we have the extremely low prices to worry over.
S. B. KOKANOUR,
Clay Centre, Kansas.

Mrs. Foster, a lawyer of Clinton, Iowa, has just won a victory in a liquor suit in Clinton, holding the offender on four indictments. A jubilee meeting was held in honor of the event.

Ella Farman, the editress of the *Wide Awake*, is the daughter of a poor clergyman, and is a self-educated woman, whose success in life is almost entirely due to tireless perseverance and industry.

