

Improved Horse Hay Rake.

The teeth of this rake are of the usual curved form, each one set separately in the head and having a bearing against a spring, which insures independence of action and a ready adaptation of the rake to the inequalities of the surface. Horizontal guards, with downward inclining branches, project between the teeth to keep the hay from rising and to turn it more readily into windrows. The rake head is hinged so that it may be moved to raise or depress all the teeth together. They are depressed, when in operation, by the lever seen by the side of the driver in the engraving, and having a foot rest by which it may be moved. A powerful spring on the head keeps the teeth from the ground when not in operation, so that the rake may be used as a vehicle on the road to and from the field. But for convenience in transporting it a long distance or for storing, it is constructed so that it may be taken in pieces in a moment and as readily put together again. This will be recognized by farmers as a valuable advantage. It appears to excellently well adapted to its purpose, its parts being few and easily made.

Patented May 1st, 1866, by Adam R. Reese, who may be addressed for rights and machines at Phillipsburg, N. J. See advertisement on another page.

Mica.

An esteemed correspondent gives the following: "Base-burning coal stoves are now all the rage, and the illuminating part of them is what takes. So many of this kind of stoves are now being made that the question of clear white mica for this purpose is becoming important. There are hundreds of different inferior grades of mica. "Canada Mica" is of several different shades, from the light brown to the intensely black. New York gives us a very good mica, but no mica can be had equal to that found in the Eastern States. The demand has been so great for the past two or three years that the supply from the Eastern States has been exhausted, at least the mines at present open; what further development can be made remains to be seen. Mica has been so scarce during the past season that it has commanded the most unheard of prices. Six dollars being a common rate per pound and some qualities selling as high as twelve dollars per pound."

AN APPEAL FOR HELP--THE CHILDREN'S AID SOCIETY.

New York absorbed for the most part in money-getting has a good heart in the main. Many a man who will not yield a hairsbreadth in a matter of business, is in private a large disbursing of money for charitable and humane purposes. And not only in private but public charities, New Yorkers are always ready to give cheerfully.

Among the many institutions for the amelioration of the poor and distressed thus supported, there is not one more deserving than the one whose name heads this article. In a circular just issued by this society, an appeal for help is made to children throughout the land, as well as adults, for aid to carry on its work of mercy.

The object of this society is to provide food, shelter, and eventually comfortable homes for the poor little homeless wanderers of New York. That the public may realize the magnitude of the work done by this society during the past year, we append the following extract from the circular referred to: "In its five lodging houses for boys and girls are sheltered, partly fed, and clothed, during the year, about 10,461 different boys and 1,283 girls; number of meals provided in 1867-1868, 151,448, and of lodgings, 107,790. Of the boys over 7,000 were orphans. In its twenty industrial schools were 5,609 different children during the year; about 287,000 meals were given and over 6,500 garments; some \$8,000 were spent for bread. During the past year 2,286 persons, mostly children, were provided with homes and employment in the country.

No one who has not seen the filth and slum of the alleys and cellars of this city, the only homes, if any, possessed by the children above provided for, can estimate the mercy of removing 2,286 of these little waifs from these physical and moral hells of filth and vice to the paradise of pure country air and morals.

This is a charity to which all may contribute, except those in actual want. The secretary in his appeal says, "If you have nothing better, we should be glad even of your old clothes to make some poor shivering child warm." Boxes of old clothing can be collected in rural districts and forwarded to the office of the society whose address is given below. It is estimated that it costs twenty dollars to provide a child with a permanent home, and for this purpose as well as the support of the other features of the charity money is needed. The secretary says: "Our work has increased beyond our means; and the 'News Boys' Building Fund' has probably withdrawn some of our largest subscriptions from the current work of the Society. Unless generous donations are made, we shall be obliged to close some of our lodging houses in this inclement season, and suspend or limit our parties to the West."

We sincerely trust that such contraction of the usefulness of this society may not become necessary. Will not the friends of humanity remember during this blessed holiday season these "little ones" and those who are so nobly devoting themselves to their welfare and salvation?

All gifts may be sent to C. L. Brace, Secretary of the Children's Aid Society, No. 8 East Fourth street, near Broadway, New York city.

Protection of Sheep from Dogs.

A correspondent alluding to our article on this subject published on page 389, Vol. XIX, says that his father, a prominent sheep raiser, finding that the "bell wether" was never attacked by dogs, conceived the idea that the use of bells

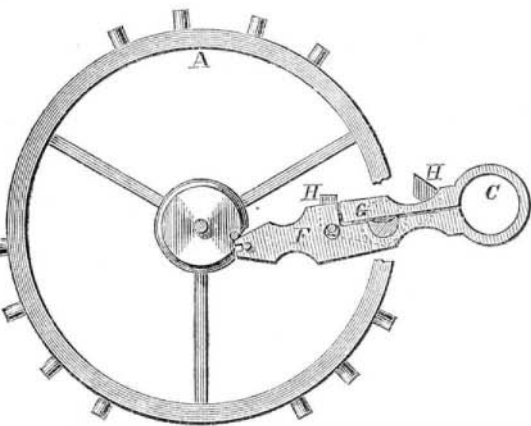
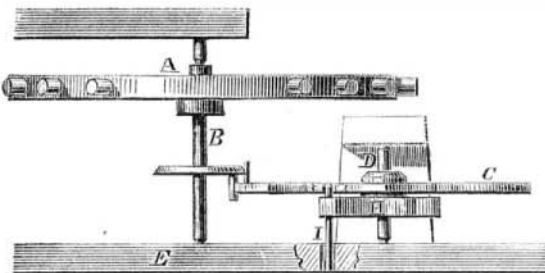


REESE'S PATENT HORSE HAY RAKE.

would tend to frighten away the murderous canines. Accordingly he furnished fifteen or twenty sheep of a flock of a hundred with globular bells, the size of an ordinary teacup. Having seen it practiced for several years successfully our correspondent is certain of its value.

HIETEL AND GEISSLER'S IMPROVED WATCH ESCAPEMENT.

The design of the invention illustrated in the accompanying engravings is to prevent the breaking of the ruby pin or pivots of watch escapements, when subjected to violent shaking or jarring, and to combine, in a simple form, the advantages of the lever and anchor escapements with the perfection of the chronometer movement.



The anchor escapement is found to be, when properly constructed, but little inferior to the free escapement in keeping correct time, and in durability it frequently excels the too complicated lock-spring escapement. But this latter has the decided advantage of allowing unrestricted freedom of motion to the balance, which is not the case with the lever escapement, as the latter causes occasional breaking of the ruby pin or the pivots. When exposed to sudden or violent motion, as when carried by engineers, conductors, and other employes on railroad trains, watches frequently become disordered, because the amount of play allowed to the balance of the lever escapement is insufficient.

A removal of these drawbacks to the lever would soon find

favor not only among the owners of watches, but among watch makers and repairers. This is believed to be effected by the self-correcting spring lever herewith described. It allows the balance to turn freely in either direction, the lever yielding to its motion, but instantly regaining its normal position. It can be applied to all kind of American and foreign lever watches.

A, is the balance mounted on the staff, B; C, the lever vibrating on its staff, D; E being the plate or base. The lever is a spring bar, the spring being the ring at its outer end. It has two arms; one, F, long, and the other, G, short. The long arm fits half way around the staff, D, and the short arm rests against the flattened side of the staff, as seen plainly at G. This flattened portion is slightly hollowed, so that the arm rests against these two extreme points. H are the pallets, mounted on the staff, D, and I is the banking pin, one end passing through a slot in the long arm of the lever, and the other end playing in a groove in the plate, E. The lever and pallets work under ordinary circumstances, exactly like the ordinary lever. When, however, the watch is vehemently shaken so that the balance has a tendency to swing too far in either direction, the ruby pin, when it has brought the lever to one side so that the banking pin is at the end of its slot in the plate, E, push the long arm F, of the lever still further in such direction; the spring of the lever allowing the arm to yield, thereby permitting the ruby pin to pass the lever, when the lever resumes its original position. Thus the action of the spring lever and the over action of the balance, caused by sudden disturbances, have the effect to equalize the motion and distribute the result of the disturbance; the overstrain of the spring tending to retard the too rapid movement of the balance, and also the rapid motion of the balance tending to a rectification of the position of the lever. The advantages of the

device will be apparent to watchmakers.

Patented through the Scientific American Patent Agency, and also in England and France, Nov. 17, 1868, by J. Hietel, J. W. Hietel and J. Geissler. Address Hietel Bros. 327 South 3d street, Philadelphia, Pa.

WHY NOT GROW OUR OWN SILK?

With the stimulus given to American silk manufacture, by the present tariff on silk goods, this industry is assuming unprecedented proportions in the United States. The bulk of all the raw silk used in American silk mills, is imported. Is there any good reason why this should be so? Why should we not ourselves grow all the silk required?

The attempts hitherto made at silk growing in the United States indicate the possibility of its success in many sections. It was successfully grown in South Carolina as early as 1755, in which year Mrs. Pinckney, mother of General Pinckney of revolutionary fame, took to England a quantity of silk grown and spun in that State. Governor N. Johnson cultivated silk successfully as early as 1693. Experiments in the culture of this product in the Carolinas, made at intervals since the above dates, have uniformly been successful; but the cultivation of cotton has so absorbed the attention of Southern agriculturalists, that but little attention has been attracted to results of experiments in silk culture.

Silk growing in Connecticut dates back to a very early period. Governor Law wore in 1747 the first silk coat and stockings produced in that colony. President Stiles of Yale College, took a great interest in the pursuit, for forty years, and the college library contains a manuscript journal of his observations during that period. In Dr. Franklin's time silk was cultivated at Philadelphia. It is recorded that Mrs. Susannah Wright of Columbia, Lancaster, Co. Pa., received in 1771 a premium for a piece of silk sixty yards long, made from cocoons of her own raising, and used for a court dress for the queen of Great Britain. Specimens of this silk are still preserved.

In the more northerly portions of the union, silk growing has not proved very successful, owing to the severity of the climate. The attempts to grow silk in this State some twenty or more years since were failures, probably from this cause. But the southern and middle portions of the country, as well as the greater portions of the Pacific slope, are admirably adapted to this pursuit. California in particular, has advantages for this industry excelled by few localities on the globe.

The present condition of the silk industry in the latter State, is very prosperous, it is estimated that it has increased one fourth during the past year. There are now five millions of mulberry trees under cultivation in that State; two crops of cocoons in a season being the usual production, although three are sometimes obtained. It is also estimated that ten millions of sound cocoons will be the product of 1869. This represents thirty thousand pounds of fiber, produced at a cost twenty-five per cent less than the same quality of silk can be imported.

The conclusions from these facts are unmistakable. Silk manufacturing and silk growing in this country are at last permanent and profitable industries, and will remain so unless destroyed by a false policy on the part of the general government.