

and the joy of the bride be always, in a great degree, supported by the wife.

3. If it be possible, let your husband suppose you think him a good husband, and it will be a strong stimulus to his being so. As long as he thinks he possesses the reputation, he will take some pains to deserve it; but when he has once lost the name, he will be apt to abandon the reality.

4. Cultivate and exhibit with the greatest care and constancy, cheerfulness and good humor. They give beauty to the finest face; and impart charms where charms are not. On the contrary, a gloomy, dissatisfied manner, is chilling and repulsive to his feelings; he will be very apt to seek elsewhere for those smiles and that cheerfulness which he finds not in his own house.

5. In the article of dress, study your husband's taste. The opinion of others on this subject, is of very little consequence, if he approve.

6. Particularly shun what the world calls in ridicule, "curtain lectures." When you shut your door at night, endeavor to shut out at that moment all discord and contention, and look upon your chamber as a retreat from the vexations of the world, a shelter sacred to peace and affection.

How indecorous, offensive, and sinful is it for a woman to exercise authority over her husband, and to say, "I will have it so. It shall be as I like! But I trust the number of those who adopt this unbecoming and disgraceful manner, is so small as to render it unnecessary to enlarge on the subject.

7. Be careful never to join in a jest and laugh against your husband. Conceal his faults, and speak only of his merits. Shun every approach to extravagance. The want of economy has involved millions in misery. Be neat, tidy, orderly, and methodical. Rise early, breakfast early, have a place for everything, and everything in its place.

8. Few things please a man more than seeing his wife notable and clever in the management of her household. A knowledge of cookery, as well as every other branch in housekeeping, is indispensable in a female, and a wife should always endeavor to support with applause the character of the lady and the housewife.

9. Let home be your empire—your world. Let it be the stage on which, in the varied characters of wife, of mother and of mistress, you strive to shine. In its sober, quiet scenes, let your heart cast its anchor, let your feelings all be centred. Leave to your husband the task of distinguishing himself by his valour or his talents. Do you seek for fame at home, and let your applause be that of your servants, your children, your husband, your God.—*Exchange paper.*

SCIENCE AND MECHANICS.

IMPROVED HOISTING APPARATUS.—There has seldom been introduced in this city a more important, practical, and perfect invention than that of an improved hoisting machine, invented by Messrs. G. Hecker and H. Waterman, of this city, and put in operation at the new Flouring Mill, No. 201 Cherry-street. Having been required to prepare the drawings and model of this invention, preparatory to an application for a patent, we have thoroughly examined its construction and operation, but would not attempt a specific description without the aid of an engraving, (which we may procure for another number); but we would say, in general terms, that the windlass-shaft, round which the hoisting rope is coiled, is connected by gear wheels to a shaft, which is occasionally connected, by a friction clutch, to another shaft, which is kept in motion by steam power. The clutch-wheel is ordinarily held fast by a brake, with a weight attached to the end of a lever, therewith connected. The clutch is applied by means of a lever, which, from a fulcrum hinge at one end, passes over the end of the pivot of the clutch shaft. A small chain is connected to the moving end of this clutch lever, and passing over the end of the brake lever, to which it is also connected, and over one or more conducting blocks of rollers, descends down the hoist way to the ground below, passing, in its course, through a hoisting car, the floor of which is six feet square, and the frame thereof seven feet high. Within this car, the chain passes between two pulleys, which are mounted on a lever, and between which is a fulcrum pivot, so that by depressing the lever, the chain is contracted. When the car is loaded, an attendant standing thereon, presses down this hand lever, whereby the brake lever is raised, and the clutch lever brought forward to connect the clutch and put the wheels in motion, which rapidly elevates the car, with its cargo and passengers. But when the attendant chooses to descend, he has only to depress the hand lever gently, sufficient to relieve the wheels from the brake without connecting the clutch, and the car descends gently and steadily by its own weight. Thus, by the one simple motion of the lever, the car is made to ascend and descend at the option of the manager thereof. We shall have something to say in a future number, on the subject of other machinery of the same establishment.—*Scientific Mechanic.*

SYMPATHETIC INKS FOR SECRET CORRESPONDENCE.—*Process 1.*—Dissolve muriate of ammonia in water, and write: the writing will be invisible. When you would make the writing appear, heat the paper by the fire, and the writing will become black.

Process 2.—Write with a solution of sulphate of iron—the writing will be invisible. Dip a feather in an infusion of nut-galls, and with it wet the paper, and the writing will become black.

Process 3.—Write with a dilute infusion of galls; it will be invisible. Dip a feather in a solution of sulphate of iron, and moisten the paper with it, and the writing will become black.

Process 4.—Write with a solution of sub-carbonate of potash; wet this writing with a solution of sulphate of iron; it will take a deep yellow color.

Process 5.—Write with a solution of sulphate of copper; no writing will be visible. Wash the paper with a solution of prussiate of potash; the writing will then assume a redish brown color.

Process 6.—Write with a solution of super-carbonate of soda; moisten the paper with a solution of sulphate of copper, and the writing will become green.

Process 7.—Write with a diluted nitrate of silver, and let the writing dry in the dark; it will be invisible; but expose the paper to the rays of the sun, and the writing will become black.

UNHEALTHY EMPLOYMENT.—It is stated that among all the unhealthy trades, that of knife and sword grinding is the most mortal. In sword-manufactories of France scarcely any of the grinders attained the age of 45, the majority dying before they reach 40. This is accounted for by the fact that they are constantly bent over the grindstone, which, if wet, saturates their clothes with showers of sandy mud and water, and which being constantly undergoing evaporation from the heat of the rooms, keeps them in atmosphere of silicious powder, which flies off the stone, either in the process of grinding, or in turning down the surface of those which have been worn unevenly; and it is a question whether deleterious gases are not generated during the operation of rapid grinding. The effects, at all events, are that all the men are afflicted with diseases of the larynx, bronchitis, and pulmonary consumption, which is transmitted from father to son.

NEW WAGGON SPRINGS.—We learn from an exchange, that a mechanic in Buoks Co. Pa., has constructed a waggon hung upon invisible spiral springs, which promises to be a great improvement in comfort and economy. It is said to be easy and graceful in motion, especially in crossing gullies or rough ground—it having more the motion of a light boat in gliding over the waves, than a vehicle upon wheels. The springs are made of brass wire, (iron wire is better if galvanized;) and though weighing only four pounds will carry a load of a quarter of a ton, and can easily be varied in size to support any weight desired. There is also connected with them, an invention to prevent the carriage wheels touching the body in turning, which is also a great improvement. Measures, we understand are in progress for securing a patent for this invention.

ASSAYING METALS.—This process is very often spoken of in the papers, but many persons, perhaps, who did not know yet would like to know how it is managed. A correspondent of the Boston Post, writing from Charlotte, in North Carolina, gives an account of the process, as he obtained it from one of the officers of the mint there. He says:

The miners have to grind the gold rock fine, keeping it wet constantly; and as it becomes fine, it washes off. They have a kind of hard stone for grinding. They then mix quicksilver with it, and that collects the gold dust. It is washed out, dried, and goes through some heating process. The gold dust is then usually sold to the superintendent of the mint. Sometimes the miners melt the dust and cast it into a bar before offering it at the mint. To find the value, each parcel has to be assayed. The assaying is the most curious and scientific of all the business in the mint. The melter takes the gold dust, melt it, and cast it into a bar, when it is weighed accurately, and a piece is cut off the assayer. He takes it, melts it with twice its weight of silver and several times its weight of lead. It is melted in small cups made of bone-ashes, which absorb all the lead; a large part of the silver is extracted by another process, and the sample is then rolled out to a thin shaving, coiled up and put in a sort of glass vial called a matras, with some nitric acid.

The matrasses are put on a furnace and the acid is boiled some time, poured off, a new supply put in, and boiled again. This is done several times, till the acid has extracted all the silver and other mineral substances, leaving the sample pure gold. The sample is then weighed, and by the difference between the weight before assaying and after the true value is formed. All the silver over and above five penny weights for each lot is paid for by the mint at its value. The miner calls at the mint after his lot of gold has been assayed, and gets its full value in gold coin, the government charging him nothing for coining. That is what one of the officers of the mint here told me, though I had always understood that the government got five per cent for coining.

The gold, after it has been assayed, is melted, refined, and being mixed with its due proportion of alloy, (equal parts of silver and copper) is drawn into long strips, in shape not unlike an iron hoop for a cask; the sound pieces cut out with a sort of punch, each piece weighed, and brought to the right side by a file, if too heavy, when it is milled, or the edge raised, and put into a stamping press, where it comes forth a perfect coin.—*Exchange paper.*