

PUBLIC TAXATION.

We present herewith extracts from the new Internal Revenue Law, recently enacted by Congress. We have not space to give its entire provisions, and have therefore selected such features as more directly concern our readers:—

LICENSES.

- Architects and Civil Engineers—Under which term is included every person whose business it is to plan, design, or superintend the construction of buildings, or ships, or of roads, or bridges, or canals, or railroads (not including a practical carpenter, who labors on a building), for each license—\$10.
- Builders and Contractors—Under which is included every person whose business it is to construct buildings, or ships, or bridges, or canals, or railroads, by contract, for each license—\$25.
- Ditto—Whose contracts exceed \$25,000 per year, for each additional \$1,000—\$1.
- Ditto, ditto—No license shall be required from any person whose building contracts do not exceed two thousand five hundred dollars in any one year.
- Gas-fitters and Plumbers—Under which term is included every person, firm, or corporation, whose business it is to furnish plumbing materials, or fit up plumbing materials, or to furnish gas pipes, gas burners, or other gas fixtures, or to fit the same, for each license—\$10.
- Brewers—Under which term is included every person, firm, or corporation, who manufacture fermented liquors, of any name or description, for sale, from malt, wholly or in part, or from any substitute therefor, for license—\$50.
- Ditto—Manufacturing less than 500 barrels per year, for license—\$25.
- Coal Oil Distillers—Under which term is included any person, firm, or corporation, who shall refine, produce, or distil crude, petroleum, or rock oil, or crude coal oil, or crude or refined oil made of asphaltum, shale, peat, or other bituminous substances, or shall manufacture coal illuminating oil, for each license—\$50.
- General Business—Under which head is included any person, firm, or corporation, engaged in any business, trade, or profession whatsoever, for which no other license is required by existing law, whose gross annual receipts therefrom exceed the sum of one thousand dollars, for each license—\$10.
- Apothecaries—Under which term is included every person who keeps a shop or building where medicines are compounded or prepared according to prescriptions of physicians, or where medicines are sold, for each license—\$10.
- Income—Exceeding \$600 and not exceeding \$5,000, on excess—5 per cent.
- Ditto—Exceeding \$5,000 and not exceeding \$10,000 7½ per cent.
- Ditto—On excess over \$10,000—10 per cent.
- Lawyers—Under which term is included every person whose business it is, for fee or reward, to prosecute or defend causes in any court of record or other judicial tribunal of the United States or of any of the States, or give advice in relation to any cause, for each license—\$10.
- Manufacturers—Under which term is included any person, firm, or corporation who shall manufacture by hand or machinery any goods, wares, or other merchandise, exceeding annually the sum of one thousand dollars—for each license—\$10.
- Patent-right Dealers—Under which term is included every person whose business it is to sell or offer for sale patent-rights, for each license—\$10.
- Confectioners—Under which term is included every person who sells at retail confectionery, sweetmeats, comfits, or other confections, in any building, for each license—\$10.
- Claim Agents and Agents for purchasing Patents—Under which term are included every person whose business it is to prosecute claims on any of the executive departments of the Federal Government, or procure patents, for each license—\$10.
- Distillers—Under which term is included every person, firm, or corporation who distills or manufactures spirits for sale, for each license—\$50.
- Ditto—Any person, firm, or corporation distilling or manufacturing less than 300 barrels per year, for each license—\$25.
- Ditto—Of apples, grapes, and peaches, distilling or
- manufacturing less than 150 barrels per year, from the same—\$12 50.
- Peddlers—Under which term is included any person except persons peddling Bibles, newspapers, or religious tracts, who sells or offers to sell at retail, goods, wares, or other commodities, traveling from place to place in the street or through different parts of the country.
- Ditto, ditto—Traveling with more than two horses or mules, for each license—\$50.
- Ditto, ditto—Traveling with two horses or mules, for each license—\$25.
- Ditto, ditto—Traveling with one horse or mule, for each license—\$15.
- Ditto, ditto—Traveling on foot—\$10.
- Agreement or contract—For every sheet or piece of paper upon which either of the same shall be written—5 cents.
- Bank Check or draft on any bank or trust company for any sum exceeding \$10—2 cents.
- Conveyance—Deed, instrument, or writing, whereby any lands, tenements, or other realty sold shall be granted, assigned, transferred, or otherwise conveyed to, or vested in, the purchaser or purchasers, or any other person or persons, by his, her, or their direction, when the consideration or value does not exceed \$500—50 cents.
- When the consideration exceeds \$500, and does not exceed \$1,000—\$1.
- And for every additional \$500, or fractional part thereof, in excess of \$1,000—50 cents.
- Mortgage of lands, estate, or property, real or personal, heritable or movable whatsoever, where the same shall be made as a security for the payment of any definite and certain sum of money lent at the time or previous due and owing or forborne to be paid, being payable; also any conveyance of any lands, estate, or property whatsoever, in trust, to be sold or otherwise converted into money, which shall be intended only as security, and shall be redeemable before the sale or other disposal thereof, either by express stipulation or otherwise; or any personal bond given as security for the payment of any definite or certain sum of money exceeding \$100, and not exceeding \$500—50 cents.
- Exceeding \$500, and not exceeding \$1,000—\$1.
- And for every additional \$500, or fractional part thereof, in excess of \$1,000—50 cents.
- Provided, That upon each and every assignment or transfer of a mortgage, lease, or policy of insurance, or renewal or continuance of any agreement, contract, or charter, by letter or otherwise, a stamp duty shall be required and paid equal to that imposed on the original instrument.
- Exceeding \$35 and not exceeding \$50—\$1.
- And for every additional \$50, or fractional part thereof, in excess of \$50—\$1.
- Power of Attorney for the sale or transfer of any stock, bonds, or scrip, or for the collection of any dividends or interest thereon—25 cents.
- Power of Attorney of proxy for voting at any election for officers of any incorporated company or society, except religious, charitable, or literary societies, or public cemeteries—10 cents.
- Power of Attorney to receive or collect rent—25 cents.
- Power of Attorney to sell and convey real estate, or to rent or lease the same—\$1.
- Power of Attorney for any other purpose—50 cents.
- Probate of Will, or letters of administration: Where the estate and effects for or in respect of which such probate or letters of administration applied for shall be sworn or declared to exceed the value of \$2,000—\$1.
- Exceeding \$2,000, for every additional \$1,000, or fractional part thereof, in excess of \$2,000—50 cents.
- Lease agreement, memorandum, or contract for the hire, use, or rent of any land, tenement, or portion thereof, where the rent or rental value is \$300 per annum or less—50 cents.
- Where the rent or rental value exceeds the sum of \$300 per annum, for each additional \$200, or fractional part thereof, in excess of \$300—50 cents.
- Legacies—
- First—Where the person or persons entitled to any beneficial interest in such property shall be the lineal issue or lineal ancestor, or brother or sister, to the person who died possessed of such property,

as aforesaid, at the rate of \$1 for each and every \$100 of the clear value of such interest in such property.

Second—Where the person or persons entitled to any beneficial interest in such property shall be a descendant of a brother or sister of the person who died possessed, as aforesaid, at the rate of \$2 for each and every \$100 of the clear value of such interest.

Third—Where the person or persons entitled to any beneficial interest in such property shall be a brother or sister of the father or mother, or a descendant of a brother or sister of the father or mother, of the person who died possessed, as aforesaid, at the rate of \$4 for each and every \$100 of the clear value of such interest.

Fourth—Where the person or persons entitled to any beneficial interest in such property shall be a brother or sister of the grandfather or grandmother, or a descendant of the brother or sister of the grandfather or grandmother of the person who died possessed as aforesaid, at the rate of \$5 for each and every \$100 of the clear value of such interest.

Fifth—Where the person or persons entitled to any beneficial interest in such property shall be in any other degree of collateral consanguinity than is hereinbefore stated, or shall be a stranger in blood to the person who died possessed, as aforesaid, or shall be a body politic or corporate, at and after the rate of six dollars for each and every hundred dollars of the clear value of such interest; provided, that all legacies or property passing by will, or by the laws of any State or Territory, to husband or wife of the person who died possessed, as aforesaid, shall be exempt from tax or duty.

Succession to Real Estate—Where the successor shall be a lineal issue or lineal ancestor of the predecessor, a duty at the rate of \$1 per centum upon such value.

Where the successor shall be a brother or sister or a descendant of a brother or sister of the predecessor, a duty at the rate of \$2 per centum upon such value.

Where the successor shall be a brother or sister of the father or mother of the predecessor, a duty at the rate of \$4 per centum upon such value.

Where the successor shall be a brother or sister of the grandfather or grandmother or a descendant of the brother or sister of the grandfather or grandmother of the predecessor, a duty at the rate of \$5 per centum upon such value.

Where the successor shall be in any other degree of collateral consanguinity to the predecessor than is hereinbefore described, or shall be a stranger in blood to him, a duty at the rate of \$6 per centum upon such value.

Marvels of the Alchemists.

The pretended secret of the alchemists was the transmutation of the baser metals into gold, which they occasionally exhibited to keep the dupes who supplied them with money in good spirits. This they performed in various ways. Sometimes they made use of crucibles with a false bottom. At the real bottom they put a quantity of gold or silver. This was covered by a portion of powdered crucible mixed with gum or wax, and hardened. The material being put into a crucible and the heat applied, the false bottom disappeared; and at the end of the process, the gold or silver was found at the bottom of the crucible. Sometimes they made a hole in a piece of charcoal, filled it with oxide of gold or silver, and stopped up the hole with a little wax; or they soaked the charcoal in solutions of these metals; or they stirred the mixture in the crucible with hollow rods, containing oxide of gold or silver within, and the end closed with wax. By these means the gold or silver wanted was introduced during the operation, and considered as a product.

Sometimes the cunning wights used solutions of silver in nitric acid, or of gold in aqua-regia, or an amalgam of gold or silver, which, being adroitly introduced, furnished the requisite quantity of metal. A common exhibition was to dip nails into a liquid, and take them out half converted into gold. The nails were one-half gold, and the other half iron, neatly soldered together, and the gold was covered with something to conceal the color, which the liquid was capable of removing.

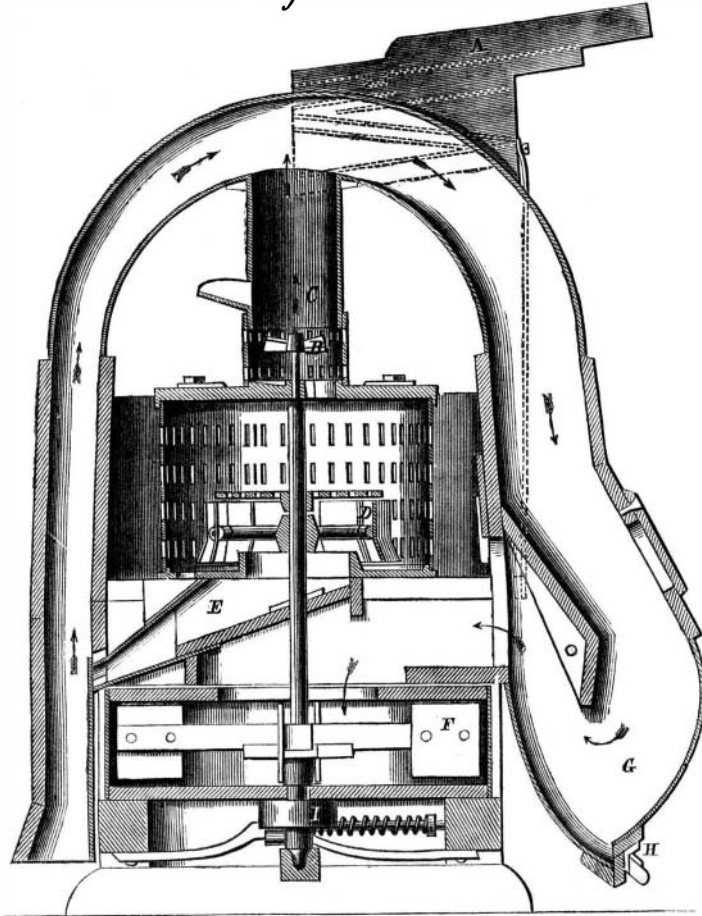
On every side we hear one great truth uttered from earth, and air, and sea, and sky, and plant, and animal:—"The material is nothing, the workmanship is everything."

Great nonsense. Without good material the best workmanship is lost.

Improved Grain Separator.

Many persons have an idea that grain, as it appears in the process of transportation, is always clean, and that the farmer has simply to put it in bags and carry it to the miller to be ground into meal or flour. This is not the case, and the labor and expense of cleaning quantities of wheat, rye, or oats, is really very great. The amount of dust and refuse

Fig. 1.

**PATTERSON'S GRAIN SEPARATOR.**

which accumulates is astonishing, and forms no inconsiderable portion of a cargo.

The separator and cleaner here represented is claimed to be very thorough and perfect in its action. In its operation it is easy; it occupies but little room, is readily kept in order by any person, and is economical of power. The grain to be cleaned is poured into the hopper, A, in which there are four inclined zinc screens, having chutes at their lower ends so constructed that the grain passes over each one alternately, thus separating the oats and straw from the material to be cleaned. From the last screen the grain falls on to the arms, B, in the cylinder, C. These arms revolve very swiftly so that the grain is distributed all over, and falls in a shower on to the beaters, D. These beaters break up all smut balls and similar substances. From the beater, D (which is shown enlarged in Fig. 2), the grain falls into the air chamber, E, from whence it issues at the bottom. It will be seen that the fan, F, draws the air through the chamber, E, so that the chaff and other substances fall to the bottom at G, and are ejected through the trap, H. The main shaft is driven by a pulley, I, at the bottom.

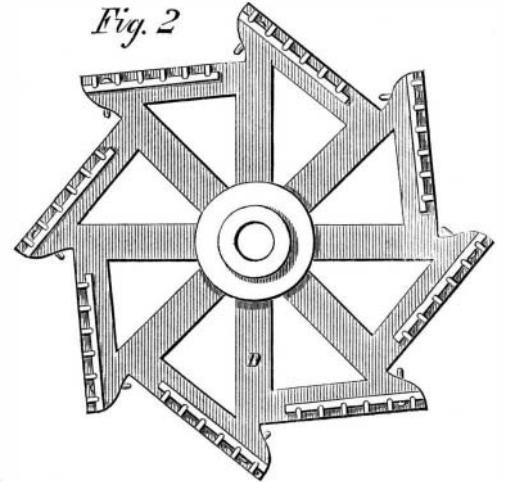
This separator was patented through the Scientific American Patent Agency, by J. W. Patterson, of Monticello, Minn., on Dec. 15th, 1863; for further information address the inventor at that place.

Improved Bobbin-winder.

This convenient little machine is intended for winding the thread upon bobbins used in the shuttle sewing machines. The small bobbin in the shuttle is filled with thread, and the thread is wound from the spool on which it is sold in stores. Ordinarily, thread wound upon bobbins does not lay smooth and even, and is liable to catch and bother the operator in

machine, the bobbin revolves rapidly, and the thread is laid in smooth and even layers upon it. There is a knob, E, on the end of the spindle by which it can be withdrawn, and there is also a slot, F, and spring in the cylinder which the stem that carries the pressure roller works in. By means of this slot the roller can be raised and partially turned, so as to allow the pin, G, to rest in the horizontal portion of

Fig. 2



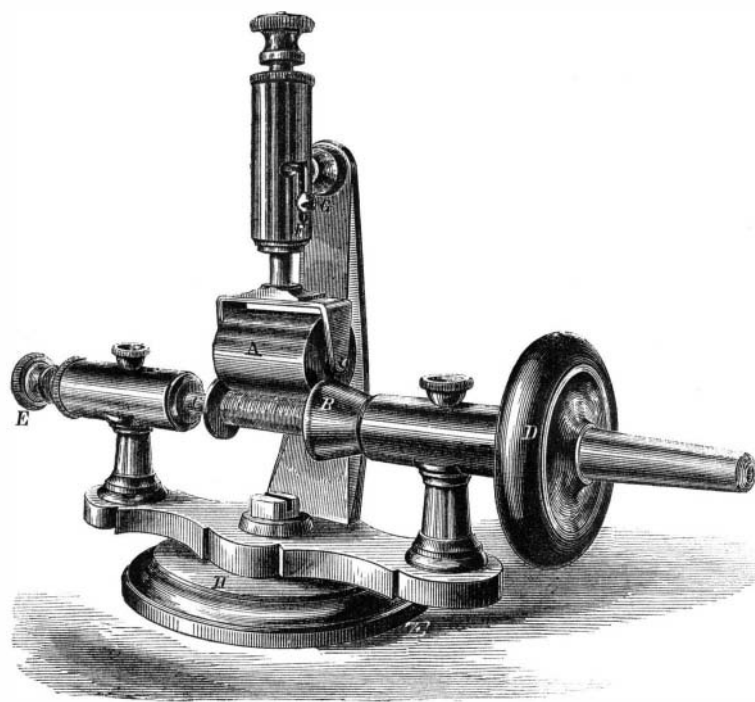
the slot; when this is done the bobbin can be quickly withdrawn or inserted, as the case may be. The base, H, of the machine swings on a center at I, so that it can be set at any angle; it should be secured to the table of the sewing machine.

When one coil of thread has been wound on the bobbin the roller rises as the next begins to form and rest upon it; it may be seen, therefore, that there is but the thickness of the thread between the first and second coil or layer, and that the thread will run evenly, and not over-ride in consequence. One-third more thread can be put on with this machine than can be done by the ordinary method. It also makes a better or more regular tension on the thread, and does away with the difficulties experienced in the old way of winding.

This is a very useful attachment to the sewing machine, and was invented by A. C. Kasson, of Milwaukee, Wis.; a patent was issued through the Scientific American Patent Agency on June 21st, 1864. For further information address the inventor as above.

Saltiness of the Sea as affecting Navigation.

Surprise has been expressed that vessels going to Sebastopol take a smaller cargo than if they were only going to Constantinople, or that they diminish their cargo in the latter port before entering the Black Sea. The reason is this—the density of water of different seas is more or less considerable, and the vessels sailing in them sink more or less, according to their density. The density arises from the quantity of salt contained in the water; and consequently, the saltier the sea is, the less a vessel sinks in it. As, too, the more sail a vessel carries, the deeper she penetrates the water, it follows that the more salt the water the greater the quantity of sail that can be carried. Now, as the Black Sea is sixteen times less saltier than the Mediterranean, a vessel which leaves Toulon or Marseilles for Sebastopol must take a smaller cargo than one that only goes to Constantinople, and a still smaller one if it is to enter the sea of Azoff, which is eighteen times less salt than the Mediterranean. The Mediterranean is twice as salt as the Atlantic; once more than the Adriatic, five times more than the Caspian Sea, twelve times more than the Ionian Sea and seventeen times more than the Sea of Marmora. The Dead Sea contains more salt than any other sea; it is asserted on good authority that two tuns of its water yields 589 pounds of salt and magnesia.

**KASSON'S BOBBIN-WINDER.**

center, C, at the other, and when the friction roller, D, which is covered with rubber, is brought in contact with the belt or any revolving wheel of a sewing