RECENT INVENTIONS.

Newspaper Wrapper.

The object of this invention is to provide a wrapper for newspapers and other like matter, which can be secured over the paper very quickly and easily without the use of adhesive material. The wrapper has on the inner surface a wire provided with loops at the projecting ends. This wire is held on the wrapper by a strip of paper secured on the inner surface of the wrapper and over the wire. When the wrapper is folded over the paper, the projecting ends of the wires are twisted together; or one projecting end of the wire is passed through the loop of the other end. The engraving shows the manner of applying the wrapper, and represents the package when secured. This invention has been patented by Georgia Fay, 2107 East Grace Street, Richmond, Va.

New Bottle Stopper.

This invention, although applicable to bottles for containing different substances, is more especially designed for such bottles as are used in chemical laboratories, including bottles used for containing various reagents and acid or corrosive liquids. These bottles are usually fitted with two different kinds of stoppers, known respectively as the "flat headed" stopper and the "hood" stopper. Both have their special advantages and both their peculiar defects. The invention shown in the engraving combines all the advantages of these two forms of stoppers without the defects of either. It consists in a bottle stopper having its plug or body part provided with a hood or shield arranged to cover the mouth and outer end of the neck of the bottle, and having a pendent flange arranged to fit outside of the rim or collar of the neck of the bottle, and this, again, surmounted by a flat sided head or finger piece. This useful invention has been patented by Mr. F. F. Jewett, of Oberlin, O.

What Paint best Protects Iron?

Mr. Louis Matern writes as follows to the *Carriage Monthly:* While perusing the supplement of the SCIENTIFIC AMERICAN, I noticed in vol. xv., No. 379, an article on painting the New York and Brooklyn suspension bridge, wherein it is stated that the trustees of the bridge company had agreed upon the following mixture, as being the best protective paint for iron, namely: 70 pounds of first quality white oxide of zinc, 30 pounds of best white lead, 6 gallons of raw Calcutta linseed oil. The above named mixture has but one advantage—its color—but all the following disadvantages:

1. It needs driers to harden the paint, thereby losing its durability—as all driers, so far as known, to some extent deteriorate the oil, through destroying its binding quality.

2. It, through excess of zinc white when dry, becomes brittle. Not giving way to expansion or contraction, it cracks, making channels for water to corrode the iron, which in turn undermines the paint, causing it to peel off.

3. All American white lead is made by the wet process, and holds a good deal of sugar of lead, which at once charges the iron with rust when exposed to damp, rendering it entirely unfit for the purpose wanted. Even the strictly pure Dutch process made white lead in some measure attacks the iron when exposed to damp, as all old carriage painters are well aware. This sugar of lead also destroys the adhesiveness of oil.

4. The mixture will not harden through where it is spread thickly, but forms a shriveled mass.

These four disadvantages of the mixture I consider the worst of all conditions. Any mineral paint would answer the purpose much better.

RED LEAD THE BEST.

I maintain that the paint that most effectually protects iron is red lead. Not in color is it as well suited; but that is only a secondary consideration, and easily overcome by painting it over with any color desired. Red lead contains the following advantages for the preservation of the iron, which is the main object to be gained:

1. It dries easily with raw linseed oil, without an oil destroying drier. All known driers decompose oil.

2. After drying, it remains elastic, giving way both to the extension and contraction of the iron, without causing the paint to crack.

3. It imparts no oxygen to iron, even when constantly exposed to damp—a fact to which all farm wagon makers can testify.

4. It hardens, where it has been spread thickly, without shriveling, forming the toughest and most perfect, insoluble combination of all paints. As proof of this assertion, it is used by calico printers for red figure prints, holding out against soap and water; by gas pipe fitters, as the best paint to resist ammonia and tar; by the English iron ship builders, for painting the hulls of iron ships—namely, two coats of red lead and two of zinc white; by wagon and plow makers, for painting wagon gears and plows; by knowing carpenters, for painting wood that comes in contact with damp brick in walls, as it preserves wood from rot, insects, etc.

For those among us who are uninstructed how to mix pure red lead for paint, it should be made known that pure red lead powder, after being slightly pressed down with the finger, shows no lead crystals. When they are visible, it is merely partly converted, and not first quality. It should be ground in pure old linseed oil, and if possible used up the same day, to prevent it combining with the oil before it is applied, losing in quality. No drier is necessary, as in the course of a few days the oil forms a perfect, hard combination with the lead. American linseed oil is as good as any imported, where the manufacturer has given it age, and not subjected it to heat, as is the custom, by steaming it in a cistern to qualify it quickly for the market. It deteriorates in quality when heated above 160° Fah.

This red lead paint spreads very easily over a surface, and the best of finish can be made with it, even by a novice in painting.

Success of the American Eclipse Expedition.

Professor E. S. Holden, of the Washington Observatory of Madison, Wisconsin, with his party of observers, who were sent out by the United States Government to the Caroline Islands to make observations on the total eclipse of the sun of May 6, has arrived at San Francisco in good health. Professor Holden reports that the weather on the day of the eclipse was favorable, and that a number of excellent photographs were taken showing good views of the corona. Some fine observations of the spectra were made. The supposed planet Vulcan was not, however, discovered.

The Caroline Islands are a group in the South Pacific, and lie near the equator, between 140° and 150° west longitude, and are distant about 2,500 miles southwesterly from San Francisco.

The party went from New York city to Lima last March, thence in the United States sloop of war Hartford to the Caroline Islands.

The full reports will be looked for with interest, as the duration of the eclipse was comparatively long, and the opportunities for observation good.

Aeronautical Exhibition, Paris.

An exhibition of everything that relates to ballooning was held in the Trocadero Palace, Paris, from 5th to 15th of June, to celebrate the centenary of the invention of balloons. It comprised—

1. Raw materials used in the construction of balloons, such as silk, cotton, rope, nets, cane, etc.

2. Gas balloons, captive or steering, montgolfiers, and separate parts used in the construction or working of balloons.

3. Parachutes, kites, and mechanical birds.

4. Books, MSS., plans, photos, drawings, and models relating to aeronautics.

5. Instruments for use in meteorology, such as barometers, thermometers, hygrometers, registering appliances, and photographic apparatus.

6. Apparatus for making pure hydrogen, carbureted hydrogen, and carbureted air.

7. Light motors, gas and petroleum engines.

8. Electrical apparatus, susceptible of being utilized in aeronautics, such as motors, telegraphs, telephones, and electric lamps.

9. Appliances for aerial correspondence, by optical telegraphy, or by carrier pigeons.

No charge was made for space; but exhibitors had to arrange their exhibits at their own expense.

The number of inventors in France who are now turning their attention to this science is considerable, including M. Tissandier, with his elongated balloon and electrical motor; M. Brisson, with his navigable aerial vessel; M. Tissot, with his aerostatic bird; M. Cayrol, with his winged balloon; and M. Pompeien, with his elongated balloon.

The Christian Era.

The much debated question as to the correctness of the hitherto accepted reckoning of the years which have elapsed since the birth of Jesus has again been mooted by Professor Sattler, of Munich, in the columns of a German contemporary. Professor Sattler (according to the *Jewish Chronicle*) claims the distinction of having solved the problem, and of having demonstrated the fact that the current year is probably 1888 instead of 1883. He bases his proofs mainly on three coins which were struck in the reign of Herod Antipas, son of Herod the Great, and which date, consequently, from the first half of the first century of the current era. Madden admits the genuineness of these coins, and other numismatic writers do the same. The evidence they offer coincides with the narrative of the Gospels and with astronomical calculations. The following are the results at which Professor Sattler has arrived: Jesus was born on the 25th of December, 749 years after the founding of Rome, and commenced his public career on the 17th of November, 780 years after the founding of Rome. He was then 30 years 10 months and 22 days old. The date on which he commenced his career fell in the 15th year of the Emperor Tiberius, and in the 46th year after the building of Herod's Temple. This is in accordance with St. Luke iii. 1 and St. John ii. 20. According to Josephus ("Antiquities," xv., 11, 1), the construction of Herod's Temple was commenced in the 18th year of that monarch, or in the year 734 after the founding of Rome, in the month of October. If we add the 46 years which elapsed after the building of the Temple we arrive at the end of the year 780, the year during which Jesus entered on his career. If, moreover, we subtract from 680 (779 years 10 months and 17 days) 30 years 10 months and 25 days, there remain 748 years 11 months and 25 days, which gives us the date of his birth—the 25th of December of the 749th year after the founding of Rome. Jesus died on the 7th of April, 783 of the Roman era, that is to say, on the Friday before Passover; for it has been ascertained by exact calculation that Passover fell that year on the 7th of April, 783; and as the latter year was a Jewish leap year, and consisted, accordingly, of 13 months, his public career lasted two years and seven months. Between the 17th of November, 780, and the 9th of April, 783, three Passovers were celebrated, viz., 781, 782, and 783. Those years correspond with the 27th, 28th, 29th, and 30th of the Christian era as at present calculated. Remembering, however, that the year of the birth of Jesus corresponds with the year 749 of the Roman era, and taking this year as the starting point of the Christian reckoning, the years of Jesus' career must be the 31st, 32d, 33d, and 34th of the new era. It thus results, according to Professor Sattler, that the Christian reckoning is at fault by five years, and that we are now in 1888, and not in 1883.—*English Mechanic.*

Eradicating Lawn Weeds.

During the last thirty years I have tried every mode of eradicating these suggested by every published correspondence, and, taking the result and cost of time into consideration, I have come to the conclusion that the best method of proceeding is, after the first cutting in the spring, to put as much salt on each weed through the palm of the hand as will distinctly cover it. In two or three days, depending on the weather, they will turn brown. Those weeds that have escaped can be distinctly seen and the operation repeated. The weeds thus treated die, and in about three weeks the grass will have grown, and there will not be a vestige of disturbance left. Two years ago I converted a rough pasture into a tennis ground for six courts. Naturally, the turf was a mass of rough weeds. It took three days to salt them, and the result was curiously successful.

I had one lawn with more daisies than grass, and on Sept. 2, 1881, I took up the turf, scratched the ground, relaid the turf upside down, scratched this also, well seeded it, sprinkled it with soil, and in one month it was green and hardly distinguishable from the other parts of the lawn. Similar trials had been made in each month from March, and as late as August 12, but the earth cracked.—*Berkshire in The Garden (London).*

Test for Wines.

M. Pradines has recently published a test for wines, by which wines may be examined for their purity. He proposes with this test to answer three questions. First, is the wine natural, secondly is it diluted, and lastly, has no product of the grape been used in its preparation? The reagent used consists of pure ammonia saturated with rectified ether, which is then filtered and kept in well stoppered flasks protected from the light. To make the test, pour some water in a test tube, add with a pipette or burette about fifty drops of the wine to be tested, shake the mixture, allow five or six drops of the reagent (Diano-Pradines) to run into the mixture, and shake again. If the wine is good in quality, a beautiful green coloration appears along the line of contact between the reagent and the mixture. If the mixture takes a pale green coloration the wine has been diluted with water, and the amount of dilution is approximately measured by the varying paleness of the tint produced. If this pale green coloration becomes rapidly clouded and obscured, the wine has been diluted with water and colored with some coloring agent. If the mixture gives no color or takes a grayish red tint, amaranthine or brick color with no trace of green, the wine is compounded. In this last case the colorations vary infinitely, modified by the coloring matters used in the wine's fabrication.

Kerosene as an Insecticide.

From reports made by C. V. Riley, entomologist of the Department of Agriculture, it appears that kerosene oil is a valuable agent for the destruction of insects inimical to corn, maize, cotton, and oranges, and by implication should equally affect other forms of insect life destructive to vegetation. Emulsions made with milk do not appear to be necessary, judging from the results of these experiments. For chinch bugs a mixture of one pound of coarse resin soap dissolved in ten gallons of water, to which is added about a pint of kerosene, was effectual applied in the form of a spray from a pump or by means of a watering can with rose nozzle. For rust mite and for the scale insect on orange trees, and for the cotton worm, a mixture of five pounds of common yellow (resin) soap, dissolved in one gallon of water, and one gallon of kerosene similarly applied, cleaned the plants and prevented further depredations for a considerable time.

BRICKS impregnated at a high temperature with asphalt are being successfully used in Berlin for street pavement. By driving out the air and water the bricks will take up 15 or 20 per cent of bitumen, and the porous, brittle material becomes durable and elastic under pressure. The bricks are then put endways on beton bed and with hot tar. The pavement has been laid down in a part of a thoroughfare where neither granite nor compressed asphalt had hitherto withstood the wear.