

INDUSTRY and MECHANICS

MACHINE FOR MIXING PAINT

Excellent Device Constructed of Medium Sized Oil Barrel and Rear Wheel of Brake Bicycle.

As a considerable amount of painting had to be done on our farm, I devised the following paint mixing machine, which greatly reduced the work of mixing and also mixed the paint far better than it would have been possible to do by hand, writes Wilson S. Sutfin in the Popular Electricist.

A medium sized oil barrel was procured and also the rear wheel of an old coaster brake bicycle. The head of the barrel should be removed and the entire coaster brake taken off the bicycle wheel. A board about six inches wide and long enough to project over the end of the barrel so as to hold a small motor, was then obtained. In the center of this board a hole was bored large enough for the



Paint Mixer.

shaft, upon which the paddles are located, to revolve freely. This bearing must be kept oiled. The shaft was then fastened on the hub of the bicycle wheel.

Any small motor of one-hp. horsepower or over will furnish sufficient power. In our case we used the washing machine motor. The pulley, if possible, should be removed and reversed on the shaft. The small projecting end must then be tightly wound with adhesive tape. If the pulley has no projecting end, the pulley itself may be wound with tape. The rest of the drawing is self-explanatory.

When the lead and oil are first placed in the barrel, they must be stirred for about ten minutes. Then the stirring outfit can be lowered into the barrel, the rim of the wheel resting on the pulley of the motor.

DUSTING BY COMPRESSED AIR

Problem of Removing Fine Rock Dust From Workmen's Clothing Solved by New York Employes.

Compressed air has superseded steam as the motive power for driving rock drills on many of the large excavating jobs in New York city. The men who direct the operations of the air drills and the men who work in the trenches have discovered a new use for the compressed air after the day's work is done.

The powerful drills pulverize a large amount of rock and the dust is wafted all over the vicinity in which the drilling is being done. The men's clothes become covered with a layer of the pulverized rock, which is extremely difficult to remove by ordinary methods.

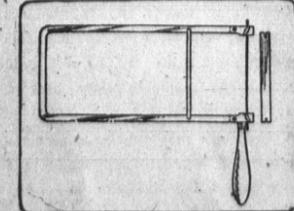
The problem of removing this fine rock dust perplexed the men until one of them found the solution by removing the end of the hose which carries the compressed air to a drill and directing the powerful air current on his dust-covered clothes. With a hissing sound the air rushed out and swept away the rock dust instantly. In five minutes the man had cleaned his clothes to perfection.

Now all the men working on jobs where compressed air is used are using the up to date method of cleaning their apparel.

SAWING COPPER AND BRASS

Saw Frame Is Made More Rigid So as to Keep Blade From Breaking—Tension Can Be Varied.

Desiring to do some sawing on copper and brass with a hand scroll saw, I stiffened the frame in the manner shown so that it would keep the saw from breaking. A notch was cut in each end of a strip of wood, just long enough to fit tightly in the saw frame.



Using Hand Scroll Saw.

writes L. L. Llewellyn of Hayward, Cal., in the Popular Mechanics. The tension of the saw blade can be varied by changing the location of the strip of wood.

MAKE POLES OUT OF GLASS

German Manufacturing Concern Puts Wire in Them to Secure Proper Solidity and Strength.

Near Frankfurt, in Germany, there is a manufacturing plant which turns out glass poles for telephone and telegraph wires, says an exchange. In order to give them solidity and strength there is a thick framework of woven wire in the glass. These poles are taking the place of the wooden ones in many sections of Germany.

It may be that in time all such telegraph and telephone poles throughout the world will be made of glass because there are so many advantages in them. In the first place, they will last practically for all time, except in cases of unusual accident, where they may be broken, as in railroad wrecks. They will last even longer than iron or steel, as weather has practically no effect upon them, nor can insects get into them and destroy them.

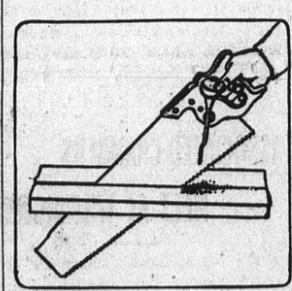
And in these days when wood is becoming more and more valuable it will be quite a saving of the precious wood to make such things of glass. Experiments are also under way for the manufacture of railroad ties of glass in which wire netting is imbedded in the glass.

Paving blocks are made of glass and have proved to be a most valuable material for street surfaces, being fitted together in such a manner as to be water tight, no water running down between the blocks. There are, in Lyons, France, a number of streets paved with glass, and they have a better resistance than stone, and also are not such great conductors of heat as stone. These glass paving blocks are now said to be actually cheaper than the granite blocks.

DUST BLOWER FOR HANDSAW

Enables Carpenter to Keep Line He Is Following Clear of Sawdust—Worked by Thumb.

Carpenters will welcome the hand-saw blower and hanger designed by a California man. With it they will be able to keep the line they are following always clear of sawdust so that they can cut along it accurately. The blower is removably attached to the upper part of the saw handle, where it can be operated by the workman by the pressure of his thumb. It consists of a rubber bulb with a metal tube depending from it and bent inwardly below the handle of the saw so that it lies close along the saw blade and the exhaust from it is directly in the



Handsaw Blower.

path of the tool. Anyone who has used a saw to any extent knows how the wood dust collects in front of it, often so obstructing the mark to be followed that it cannot be seen. Instead of the carpenter having to stop and blow the sawdust away, as heretofore, he can now keep the track clear by an occasional pressure of his thumb on the blower bulb, the out-rushing air sweeping the powdered wood out of the way.

NOTES OF INDUSTRY AND MECHANICS

France has a total of 4,693,412 workmen employed in its industries.

There are 64 trades unionists per thousand inhabitants in Denmark.

In Germany the lithographic trades unions have a membership of almost 100,000.

Bricklayers, masons and plasterers' international has a membership of almost 100,000.

Derbyshire, Devonshire and Westmoreland provide the finest marble found in England.

Venezuela has prohibited the importation and sale of dynamite except by the national government.

A locomotive using naphthaline for fuel and rated at 70-horsepower recently was built in France.

Pennsylvania produced more than 32 per cent of the Portland cement in the United States last year and Indiana about 12 per cent.

Gold is being mined at a depth of more than 5,000 feet in South Africa, and it is believed that the shafts can be sunk 3,000 feet more.

Lever-operated clamps for the hands and feet have been invented in England to take the place of ankle spikes for pole climbers, with the added advantage that they can be used on metal poles.

New Map of Balkans



AS is often the case with individuals so it is with nations. Some will make the greatest efforts toward the realization of some end, and in return get the least recompense in comparison with others who deserve less. Bulgaria is a splendid example of a people that in the Balkan war accomplished the most, but got the least. Whose fault it was history will not fail to tell.

It is not officially shown that in the war with Turkey, Bulgaria sent against the enemy 720,211 men and 1,532 guns, facing in Thrace the bulk of the Turkish army, consisting of 757,980 men and 1,390 guns. Serbia had mobilized, on paper, 201,115 men and 120 guns, facing a Turkish force of 90,000 men with 120 guns. Greece raised some 80,000 men against the Turkish 5th division, consisting of 20,000 men and 63 guns. Montenegro had 40,000 soldiers operating against the Turkish third division, consisting of some 28,000 men and 34 guns. Bulgaria claimed 69,500 square kilometers (27,800 square miles). That left for Greece 29,500, or with Crete, 38,113 square kilometers (11,800 or 15,245 square miles); for Serbia, 22,400, and for Montenegro 6,800 square kilometers (8,980 and 2,760 square miles).

Division of Territory. Serbia, however, repudiated the antebellum treaty with Bulgaria, and Greece refused to arbitrate its differences with the same nation. This led to the second war, at the end of which, by the Bucharest treaty, Bulgaria was despoiled of the fruits of its signal victories and gigantic efforts in the struggle against the Ottoman empire. This is approximately the territorial division sanctioned by that treaty:

1. Bulgaria before the war had 96,000 square kilometer (38,000 square miles), and a population of 950,000. 8. Albania, the newest Balkan nation, will contain some 55,000 square kilometers (22,000 square miles), with 950,000 inhabitants. Map is Temporary. Such is the map of the Balkans at present. That it is ephemeral every one who knows the situation clearly will agree. It is changing every day. Turkey is recapturing a new island on the Aegean nearly every week. It is a question whether even Samos will not be taken back. Enver Bey has recently said that the Ottoman army will not rest until it has regained all the territory necessary for the preservation of the Ottoman empire. One thing is certain, and that is that Bulgaria will never rest within the present artificial limits. The new territory it obtains is very small and not a rich one. Only Xanthi, Gumuldjina and Dedeogathli are important acquisitions in Thrace. In Macedonia it gets insignificant cities like Strumnitza, Neurocope, Petrich, Djumaya and Bansko.

The new land is a good tobacco country. At Gumuldjina and Xanthi is obtained the best tobacco for cigarettes. Djumaya tobacco is the only other rival in the field. American and English companies are exploiting it. It is now hoped that with the splendid commercial facilities Bulgaria offers to foreign capitalists the tobacco industry will prosper all the more.

Bulgaria, old and new, is rich with various minerals, especially copper, zinc, tin and coal. The syenite granite is found in abundance also. The Raykoge district of the newly acquired land is famous for its scenery, mineral waters, forests and healthy climate. Elie-Teppey, the highest peak of the Perrin mountains, is known as a second Jerusalem and Mecca. Thousands, both of Christians and Moslems, climb it every year. On a clear morning Saloiki bay can be seen from the peak.



Balkan Boundaries as Arranged by Recent Treaties. Heavy Dotted Lines Show Frontier; Light Dots Show Old Limits.

After the war it got only 26,000 square kilometers (10,400 square miles), with 920,000 inhabitants. Subtracting the 8,000 square kilometers (3,200 square miles), with 260,000 inhabitants, which Roumania seized, the total area of Bulgaria is 114,000 square kilometers (45,600 square miles), with 5,060,000 inhabitants.

2. Serbia before the war had 48,000 square kilometers (19,200 square miles), with 3,000,000 inhabitants. After the war it got 46,000 square kilometers (18,400 square miles), with 1,610,000 inhabitants, or a total of 94,000 square kilometers (37,600 square miles), with a population of 4,550,000.

3. Greece before the war had 65,000 square kilometers (26,000 square miles), with nearly 3,000,000 of people. After the war it got 55,000 square kilometers (22,000 square miles) and 2,120,000 inhabitants, or a total of 120,000 square kilometers (48,000 square miles), with 4,740,000 inhabitants.

4. Montenegro before the war possessed 9,000 square kilometers (3,600 square miles) of land, with 300,000 inhabitants. After the war it obtained 10,000 square kilometers (4,000 square miles), with 350,000 inhabitants, or a total of 19,000 square kilometers (7,600 square miles), with 650,000 inhabitants.

5. Roumania before the war had 131,000 square kilometers (52,400 square miles), with a population of 6,850,000 inhabitants. After the war it got 8,000 square kilometers (3,200 square miles), with 260,000 inhabitants, and now has all told 139,000 square kilometers (55,200 square miles) and a population of 7,110,000.

6. European Turkey before the war had 170,000 square kilometers (68,000 square miles), with 6,650,000 inhabitants. After the war it was left with 25,000 square kilometers (10,000

SAM JOHNSON WAS REBUKED

Clevelander Who Had Temerity to Whistle at Tramp Is Promptly and Justly Reproved.

Sam Johnson swears that this happened to him Wednesday morning. There was a ring at the back door bell, and he answered, being the only member of the household astir. He opened the door, and there stood a hobo, who said in part:

"Couldjser spare a poor feller a bite ter eat?"

"I'll see," said the hospitable Sam. "Just wait outside while I look."

He looked into the larder, and there found a few things left over which he thought might appeal to a hungry man. Then he went to the door to apprise the tramp of his success. The tramp wasn't there. He was on the back step of the next house, telling the same sad tale.

Sam called "Hey, there!" but the tramp didn't pay any attention. "Hey, you!" shouted Sam, with similar results. Then Mr. Johnson put his fingers to his mouth and gave a shrill whistle. The tramp turned and regarded him angrily.

"Say," said the tramp, "who do you think you're callin' to—a dog?"—Cleveland Plain Dealer.

The New Way.

The Political Friend to the Candidate—Here's a thousand for your campaign. Put it where it will do the most good.

The Candidate—Any string tied to it?

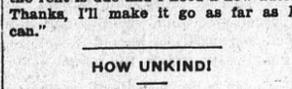
"No."

"You merely want me to use it where it will do the most good?"

"Sure."

"All right. Let me see. I've got a note to meet, some margins to cover, the rent is due and I need a new auto. Thanks, I'll make it go as far as I can."

HOW UNKIND!



"Wilson says he's a heap sight better than the people who talk about him."

"Shouldn't be surprised. What were you going to say about him?"

Speeding the Sitstill.

"Now, take radium; it's worth—"

"I don't care what it is worth!"

"Don't care what it is worth? Why, man—"

"No, I don't care what it is worth either by the gram, pound or ton. I am interested in the price of steak, and if you'll be careful to close the door after you go out I am going to try to earn enough to purchase a pound or—"

What, must you go? Well, good-by."

A Story With a Moral.

"Say, Uncle By, why do you let your farm run down so shamefully? A little work would put it in good shape."

"I know it. But what's the use? A feller was along here a while ago and told me there might be valyoooble minerals under both my medders—an maybe radium in th' ridge up yonder. I'd be a dum fool to waste my time farmin', wouldn't I?"

Splendid Idea.

"Some of the gags they get off in the continuous performances are enough to make one forewear the theater."

"I agree with you. But they are going to remedy that soon."

"Fine. In what way?"

"Haven't you heard? The movies are going to put on up-to-date vaudeville acts."

The Two Finally Agree.

"Well, there's one thing I will say in favor of the hats and gowns of the present time."

"Say it."

"They're every bit as funny and grotesque as the pictures in the fashion magazines—show them to be."

An Unlucky Man.

"Well, I'll pay you that dinner I lost on the Giants. What will you have?"

"I think I'll take steak and mushrooms."

"I'm afraid to take a chance on mushrooms. A man as unlucky as I am would be apt to get toadstools."

Looked Bad.

"You knew your lesson today," said the head of the team accusingly.

"Yes, captain."

"Well, let it pass this time, but it looks as if you were neglecting your football."

Preparation.

Ed—I hear he is preparing for one of those trips to the north or south pole.

Fred—How far has he got?

Ed—Oh, he's written all the press-agent stuff.

Paraphrasing "All is Vanity."

What shadows we are, what shadows we pursue!—Burke.

CAP and BELLS



SOME ANNOYING PASSENGERS

Retired Sea-Faring Captain Relates Tale of Man Who Knew Every Thing by Map He Carried.

Captain Robert Warr, now retiring from sea life after forty-nine years of it, said on the Campania: "Yes, it is true that sea captains are sometimes annoyed by passengers who think they know more about navigation than the navigator himself. I know a captain to whom a passenger once said: 'What town is this we are approaching, cap?'"

"Derwent, sir."

"No, cap, you are mistaken. Look at this map here. According to this map it's Fordham-on-Tyne."

"The captain said nothing, and a moment later the passenger asked: 'What channel is that, captain?'"

"Egg channel, sir."

"Why, man, you're wrong again! The map gives it as Mellin's Channel."

"Three or four times this sort of thing went on. Then the passenger asked what kind of bird it was that was following the vessel. 'Hain't you better refer to your map?' retorted the captain."—London Opinion.

The Minister Scored.

The young lawyer didn't like the minister, and so he thought to corner him.

"Now, doctor," he asked, "suppose the parson and the devil should have a lawsuit, which party do you think would win?"

"The devil, unquestionably," replied the minister.

"Ah!" chuckled the young lawyer. "And will you tell us why?"

"Because he would have all the lawyers on his side."—Ladies' Home Journal.

A Personal Application.

"Say, parson," said Elder Berry at the church board meeting, "here are the resignations of all of the quartet choir."

"My, my," said Dr. Fourthly in distress, "what is the trouble?"

"Your announcement Sunday morning," replied Elder Berry sternly; "you know you said: 'Providence having seen fit to afflict all our choir with bad colds, let us join in singing 'Fraise God from Whom All Blessings Flow.'"

There was a change of curates in the parish, and shortly after one of the prominent men of the congregation asked his chauffeur:

"How do you like the new curate, Barney?"

"Middlin'," replied Barney, "but he can't come up to the old one. 'T' was himself could tell you all about hell. Shure, to hear him describin' it you'd think he was born, bred and reared there."—Harper's Magazine.

UNKIND.



"A fellow threatened today to knock my brains out."

"And why didn't he do it—didn't you have them with you?"

Between Poets.

Two poets sat having a frugal glass.

"I wish Burns and Poe were with us tonight," said one. "We could have a rollicking time."

"I'd rather have Croesus here," said the other. He could buy a few drinks. Those other fellows wouldn't have a cent."

Timely Caution.

"Give me, I notice you like to write your name on the eggs you pack."

"Yes," admitted the dairymaid. "Do you object?"

"Not at all," said the farmer. "You have a pretty name. Write it upon all the eggs you please. But don't set down any dates."