Scientific gemurican.

 will be necessary, which, with government fee, you will
need to send whenever you desire to have us proceed. You did 1
by mail. by mail.
Y..of Pa.- Your sketch shows a common re.action
wheel, center vent, having three curved shutes. You can use a few or as many of such shutes as you choose.
C. P. \& Co. of N. T.-Multipy the area of your pis. square inch, and into the speed of your piston per min-
ute, and divide the product of this by 33,000 . The quo-
tientwill be the horse power of your engine. Deduct tientwill be the horse power of your engine. Deduct one fourth of this amount for friction.
W. J. C.. of N. C.-It is generally believed by those of water, the effect is greater during cold than warm
weather: what the difference is, if any, we cannot tell. In our own experience, we have been led to believe that with the same head of water, and area of sluice, the ef. than during the day
addition of some salt and a little sulphate of zinc, is ex cellentfor outhouses and fence.s, but do not use salt for inside whitewashing. A whitewash or whiting-Paris not suitable for side walls. Sulphuric acid and water is used to bite-in files. the Chomi.st in which the article was, to which you re ferred. The Dictionary doesnotgiveit.
L. B., of N. Y.-We did not say that could not be made without sulphur; but that matches no substitute for the sulphur, which is a different thing.
We know that matches have been made without sul. phur, by dipping them into stearine. The name of the
person to whom you refer we cannot give now. There

 Weather Proor Patatit. The patent has been sustained by
awa had azencies ane estabished for the paint hrough
out he United States. Satisfactory assuran ces will be giv.
 liam Blake, deceased, 119 Pearl st.. New York; or to
JOSHUALIPPINCOT.
Jrr., Nos.
street.Philadel phia.


PHOSE SUPBRBIOR MACHINISTS, TOOLS-
3uth Can only be obtained or Carpenter \& Plass, foot or 3uth st., Yast River. .tew ew ork, now supplyinstarge or
ders. and have constantly on hand every variety and ca
pacity a nd waranted accurate and subsantial in every
respect.


## PiTVNT HCARM WHISTLE-For Speaking



## 

D. HUMPHREY, Manufacturing, Chemist, and
 $292 *$
29







##     <br> pumatamatut Hitums.



TO INENOROS ENGIEERS, ND Machin

WTVAY PUMPS AND FIRE ENGINES-Steam


 Histing Fumping, and Pile driving Engines, from 35 to $^{*}$
orse power.
7 CENTSA-YEAR ${ }^{2}$ OO 16 monthsfor $\$ 1$. THE




DRYAN, Metal. Iron, and Copper Sash Maker

 for churches, cottages, and public buildings, their grea
strengh, ilhthes, and durability making hem frar more
desirable than lead or wood lights. Contracts for suply





TMPORTANOTS INVENT


























Wobworus Patevt panik. Finyive






Northamerigiv hachive avi cor


















Vorchose ROTARY PLANiNG MACHNE












