

—Life of Edison, No. 9— EDISON PROVED GREAT CHEMIST IN WAR DAYS

Made Himself Name in New
Field When U. S. Took
Up Arms.

This is the ninth of twelve exclusive
stories on Thomas A. Edison by Major
William Joseph Hammer, his scientific
associate and lifelong friend.

BY WILLIS J. BALLINGER
As Told by William Joseph Hammer, Life-
long Friend of Edison.
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When the World War broke out,
Edison was approaching the biblic-
al allotment of three-score years
and ten.

His life's work had been prac-
tically accomplished. Yet, while
young men offered their bodies for
their country, this man old in years
volunteered a mind still young in
creative capacity.

Edison was elected the honorary
head of the naval advisory board.
His contributions during the World
war were numerous and remark-
able.

Our collision with Germany had
cut our industries off from many
chemicals. Particularly were we
short of carbolic acid, of which Edi-
son was the largest user in the
United States.

Phenol Was Tied Up

Edison found how to produce it
synthetically, but he needed phenol
for this purpose. He secured the
co-operation of other interests, im-
proved his process and turned out
7,000 pounds of carbolic acid a day
in 1915, from the phenol.

But this used up great quantities
of phenol, and a shortage of phenol
meant considerable suffering. In
the first place it is an ingredient
of aspirin.

It threatened to cut us off from
the consolation of music, for phenol
is used in making phonographic
records.

More imperative still, the chemi-
cal is vital to the making of picric
acid, which is used for filling bombs.

Made Good as Chemist

With accustomed energy, the
wizard of electricity turned chem-
ist with tremendous success. He
developed on a large scale the man-
ufacture of phenol and, less than a
year after America entered the war,
there were fifteen phenol plants
turning out 64,146,499 pounds of the
substance, valued at over \$23,000,-
000.

There arose the great war prob-
lem of rubber. How were we going
to shoe our ambulances? How
were we going to find a substitute
that has ramifications throughout
our industrial life and which is,
also, a war necessity?

The United States consumes

three-fourths of the world's rubber
output and grows none of it. Here
was a pretty problem, indeed. And
it was one that taxed the genius of
the grand old man to the limit.

Wanted 8 Per Cent Yield

"We see him rearing golden rod
fourteen feet high. We see him
getting a sap yield from his giant
golden rod plant of 6 per cent."
"When I get 8 per cent yield, the
rubber problem is solved," he mut-
tered determinedly.

The world generally regards Edi-
son's incandescent lamp as his great-
est accomplishment. His favorite
invention was the phonograph.

The "Jumbo" dynamo certainly
baffled him more than any of his
successful inventions. Up to the
time of the "Jumbo," a dynamo
could be lifted about by several men.

Edison produced one weighing
thirty tons, which drove a six-ton
armature 350 revolutions a minute
by means of a direct connected
steam engine.

Ran Ragged by "Jumbo"

The dynamo is a device for trans-
lating the mechanical energy of a
steam engine into electric energy.
The most efficient dynamo in the
world at that time was the "Gram-
me," which had only an efficiency
of 41 per cent, whereas the Edison
dynamo translated 90 per cent of
the steam power into electricity.

The "Jumbo" dynamo solved the
problem of economically generating
electricity on a huge scale.

This invention "ran Edison and
his associates ragged." The ter-
rific strain of the centrifugal forces
on the armature was so great that
it often caused the copper bar wind-
ings to fly off and strike into the
magnets.

Finally Made to Behave

On one occasion the connecting
rod of the engine was thrown across
the room. Edison had to gold
plate all contacts, as the heat
caused oxidation. Day after day,
night after night, a crew of perspi-
ring men put up with the whims of
Lady Dynamo until finally she was
made to behave herself.

Edison's discovery of the principle
of the phonograph was once de-
scribed to Hammer by the inventor.
"One day," Edison said, "I was
talking into a phone diaphragm, at
the back of which was attached a
needle."

"I was feeling the power of the
sound waves on the needle when,
all of a sudden, I raised by voice
to a shout, and the needle stuck so



BY BEN STERN

PUBLICATION of the delegate
apportionment for the 1932
conventions of both major
political parties has caused a sud-
den spurt of activity among party
leaders and managers of candidates.

This is more true of Democrats
than Republicans, for by combina-
tion of six heavily populated coun-
ties the nomination of any candi-
date could be made out and dried.
Republican leaders are content to
rest on their oars, more or less, and
let affairs take their course.

This is largely a result of their
own ill-concealed opinion that 1932
is bound to be a Democratic year,
unless, of course, President Hoover
makes a sudden come-back in pop-
ularity.

Leaders and managers of the
Mayr-South Bend group were
pleased with the apportionment of
delegates, for they feel that their
strength is in the cities.

It is claimed that the pull of Paul
V. McNutt, Indiana law school dean,
outstanding candidate for the nom-
ination for Governor, is concen-
trated in the rural sections.

Antipathy to McNutt in the cities
is not evidenced among the rank
and file. It exists among the
"bosses," who opine the dean will be
uncontrolled if elected.

They argue that he "won't play
ball."

If this idea gains strength, Mc-
Nutt's popularity with the rural
delegates will not be sufficient to
carry him over to the nomination.

Let the Mayr crowd line up Mar-
ion county, their own of St. Joseph,
and Vanderburgh, Lake, Allen and
Vigo and they may be able to stop
McNutt. Overtures toward this end
have been made and the "follow up"
is now on.

Of one thing, the supporters of
Frank Mayr Jr. for Governor
should be sure, and that is he will
not make any showing of strength
in the Marion county delegation.

Mayor Reginald H. Sullivan has
pledged his personal support to
Frank Dailey and if there would be
a division those delegates not con-
trolled by city hall would go to Mc-
Nutt.

The only real evidence of pro-
Mayr thought exhibited here so far
has been by Hendricks Kenworthy,
Ninth ward chairman, who is prac-
tically the manager for Walter My-
ers in his contest for the nomi-
nation in United States senator.

Kenworthy believes that the best
chance of scoring for Myers is to
play with South Bend. In return
for their support of Myers he has
indicated he will carry those dele-
gates he can control over to their
camp.

But Hendricks counts without his
chief, E. Kirk McKinney, who will
allow no independent action of this
type.

Kirk has made up his mind that
all theatrical candidates from Mar-
ion county will get a fair shake. He
intends to divide the delegate vote
equally, the smart organization
thing to do.

He may allow Kenworthy to carry
a handful of votes to the South
Bend crowd, but even that is doubt-
ful, for Kirk is trading Marion
county support for patronage and
any weakening of the strength
means that many less jobs.

There is no doubt that this coun-
ty, with 205 delegates, will control
the convention, if ably managed.
But, after all, smart management
is really too much to expect of the
Democrats, in view of their form
sheet showing.

hard that it drew blood from my
finger.

"In an instant I recalled the prin-
ciple of my automatic telegraph and
wondered if I couldn't make a rec-
ord of those sound waves and then
have them retransmitted. I be-
lieved that I could make the thing
talk back to me."

With his finger still feeling the
prick of the needle on that dia-
phragm, Edison sat down and
quickly sketched in a model of the
device that was to catch the sound
waves.

He drew a cylinder about which
was to be wrapped tin foil, to which
was attached a diaphragm with a
mouthpiece to talk into and a needle
protruding in the back and touch-
ing the cylinder, which was turned
by a crank.

One of his assistants, James Mac-
Kenzie, the man who had taught
Edison how to telegraph in his boy-
hood days and who was now a pen-
sioned employee in his laboratory,
looked at Edison's sketch and asked
what it was for.

"What do you think it is for?"
Edison asked.

Mac replied that it looked like a
sausage filling machine.

"No," said Edison, "that is going
to talk."

Next—Edison's school days . . .
Attempting to read an entire library
of books . . . "Scooping" the big city
newspapers with his tiny Weekly
Herald . . . His shyness . . . Deco-
rated by France as a Commander
of the Legion of Honor.

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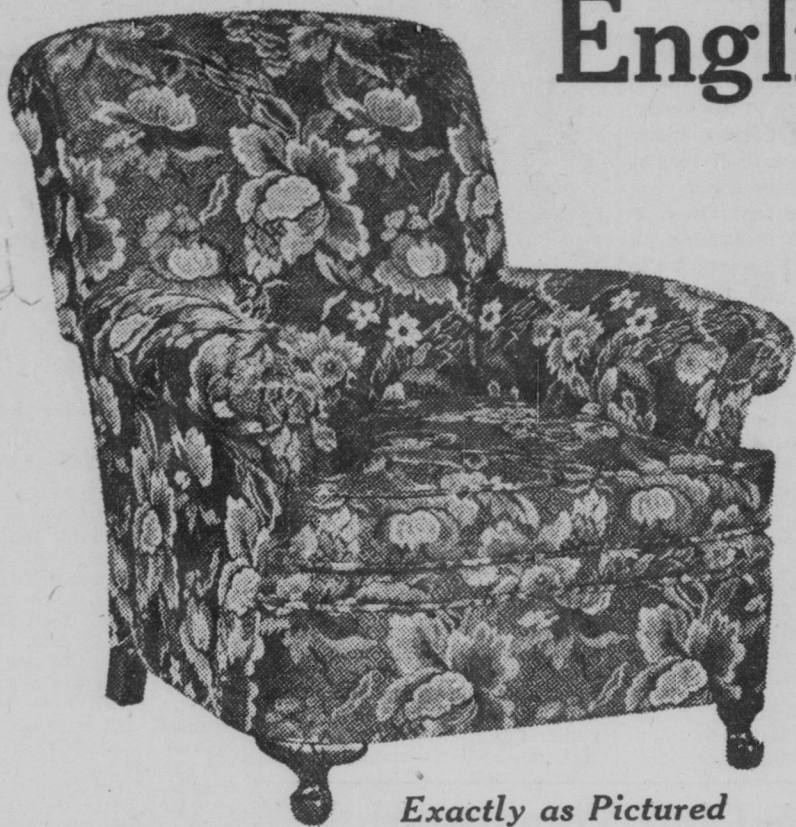
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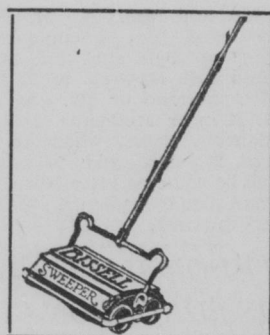
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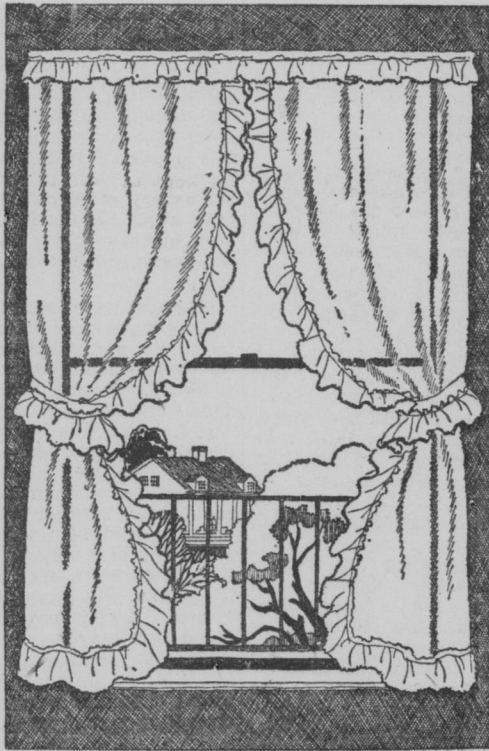
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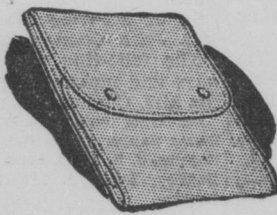
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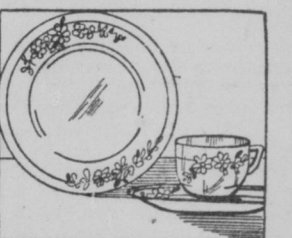


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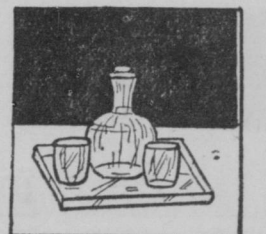


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