

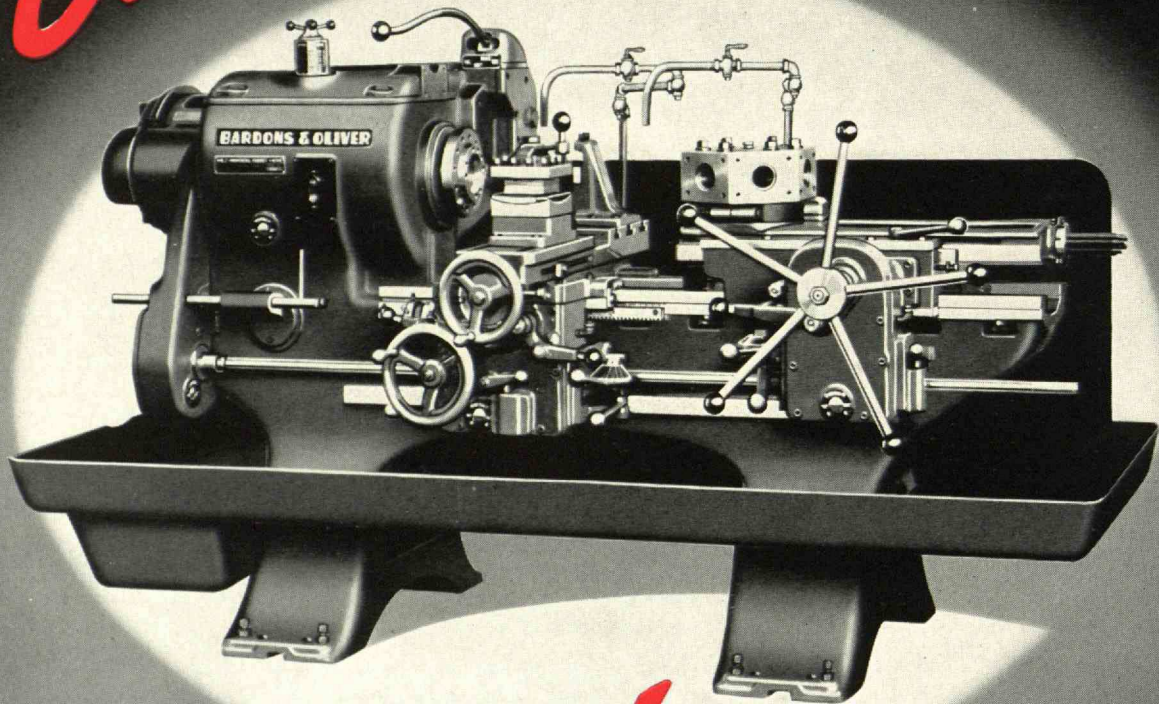
March 1943

TECHNOLOGY REVIEW

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Leadership...



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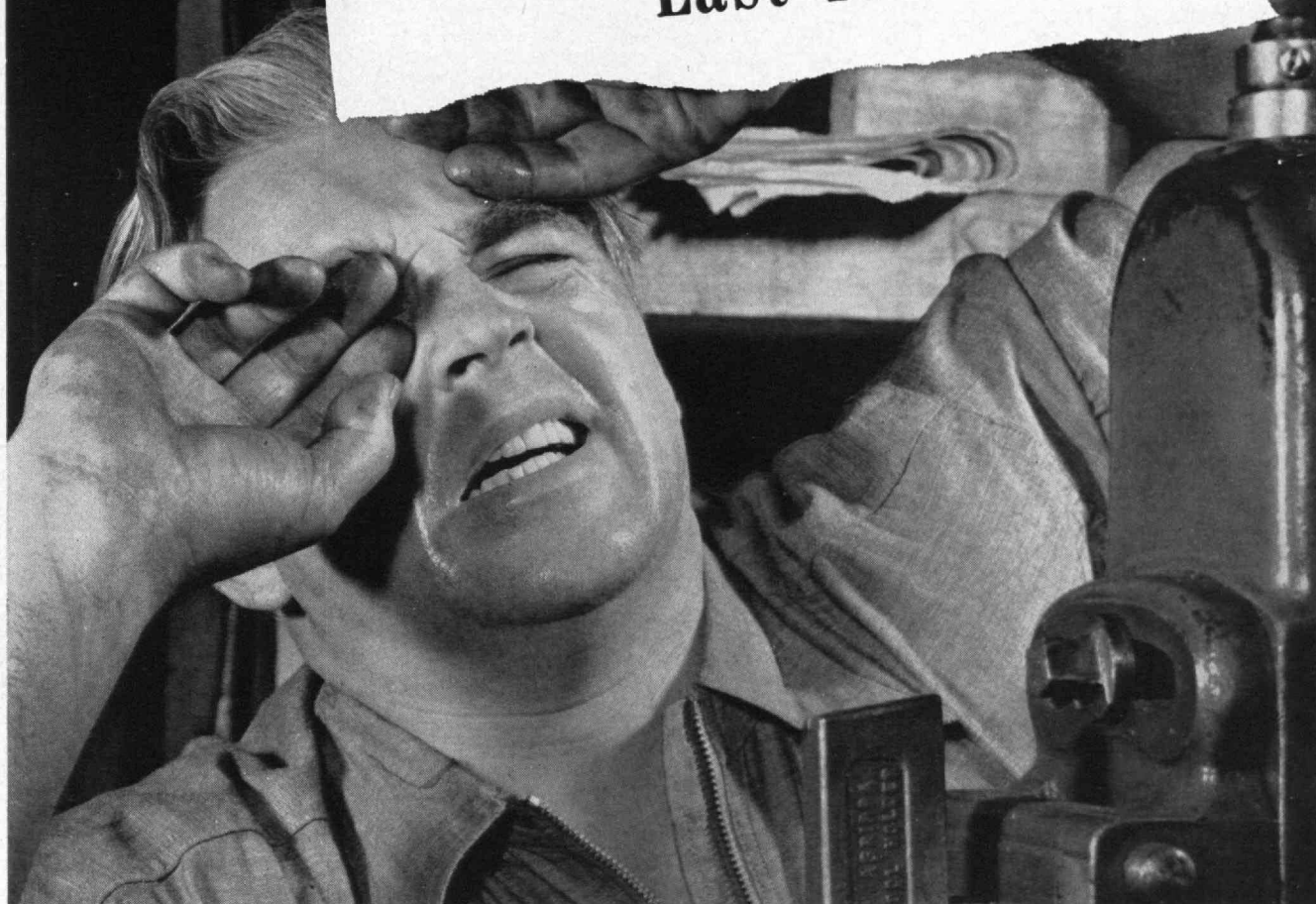
SIDNEY E. HORTON '90 DIRECTOR

BARDONS & OLIVER, INC.

1133 W. 9 TH ST. . . CLEVELAND, OHIO

THIS IS NO MILITARY SECRET

Eye Accidents Cost Industry
9,455,000 Man-Days
Last Year



The tremendous number of eye accidents that are slowing up our vital war production are also robbing America of the invaluable services of much skilled labor.

American Optical Company offers the means of minimizing eye injuries—a complete line of protective, comfortable goggles, for every type of industrial

eye hazard. More than this, AO trained Safety Engineers will gladly work with *your* Safety Director in every possible way toward installing and maintaining the most effective and economical eye protection program for your plant.

Get in touch with your nearest American Optical Company Branch Office as soon as possible.

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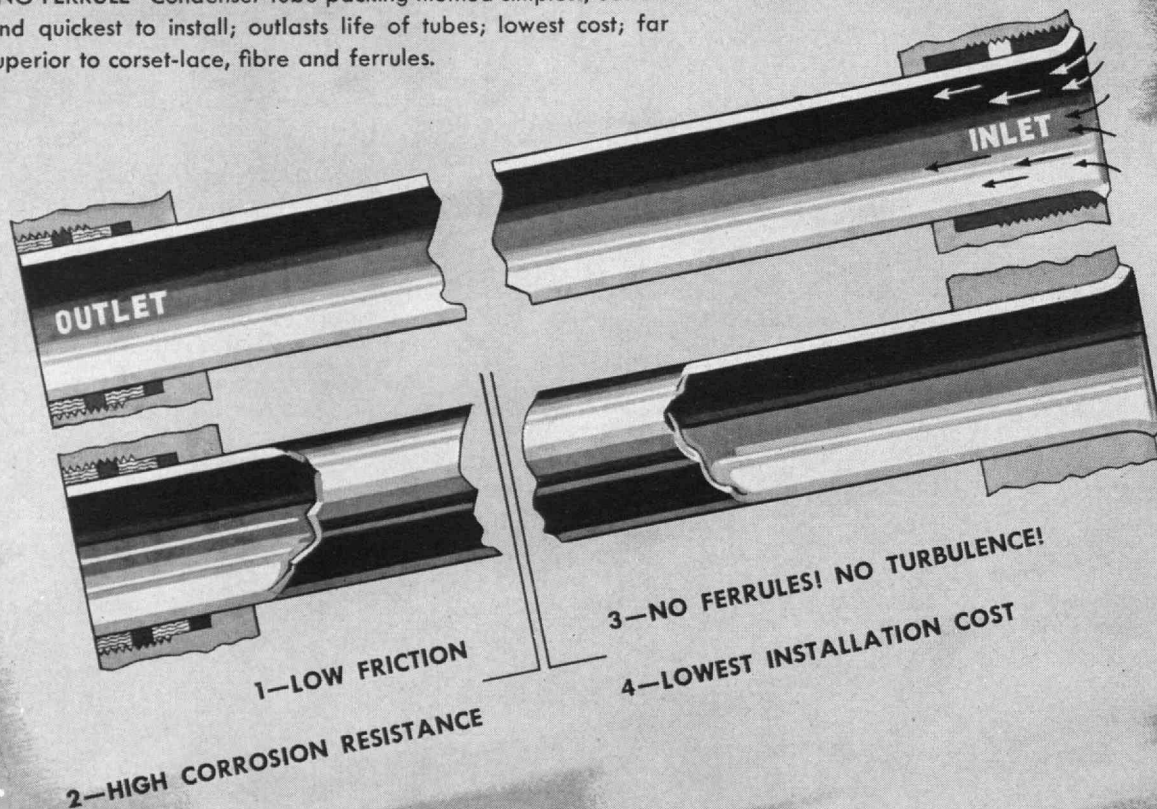
THE TECHNOLOGY REVIEW, March, 1943. Vol. XLV, No. 5. Published monthly from November to July inclusive at 10 Ferry Street, Concord, N. H. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription \$3.50; Canadian and foreign subscription \$4.00. Entered as second-class matter at the Post Office at Concord, N. H., under the Act of March 3, 1879.



Make CONDENSER *tubes* *last* MANY YEARS *longer ...*

10,000 INSTALLATIONS

Naval, Marine and Industrial service proves John Crane Metallic "NO FERRULE" Condenser-tube packing method simplest, easiest and quickest to install; outlasts life of tubes; lowest cost; far superior to corset-lace, fibre and ferrules.



JOHN CRANE *Metallic* CONDENSER PACKING

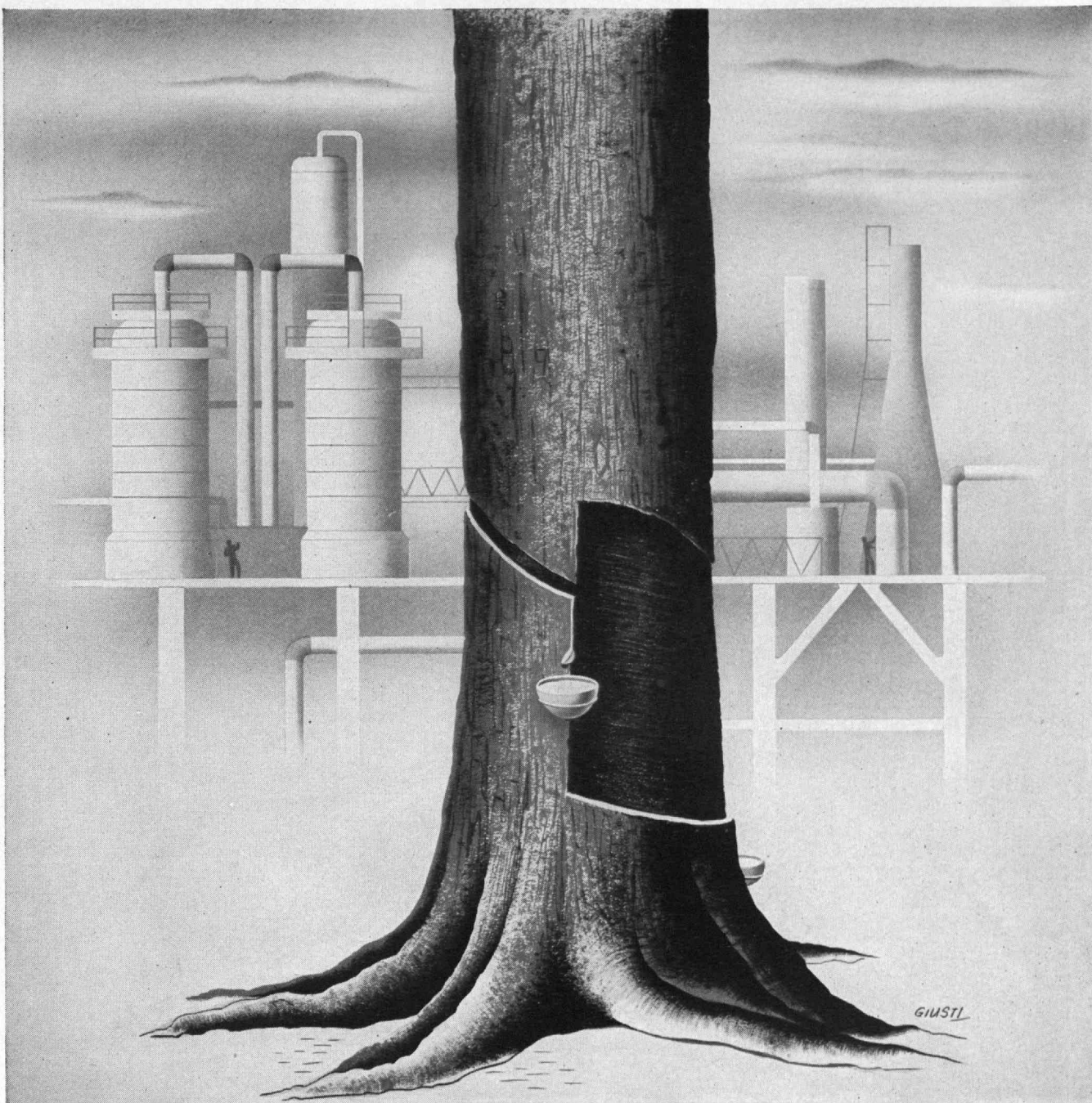
"NO-FERRULE" METHOD FOR NEW AND OLD CONDENSERS

The New John Crane "No Ferrule" method bonds the tube to the tube-sheet in this way:

Illustration top left shows outlet-end of old condenser packed with Metallic and Fibre Expansion Rings. Perfect Bond. Free to expand . . . Inlet-end shows Fibre Expansion Bushing with Lead-slug-insert, bonding tube to tube sheet . . . On new condensers, bottom illustration, inlet-end is packed same as on old units. Outlet-end is beiled (no packing). Ask for comparative studies showing advantages of metallic packings over fibre and corset-lace ferrules.

CRANE PACKING COMPANY, 1800 Cuyler Avenue, Chicago, Illinois
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The only world-wide service of its kind . . .
49 engineers in U. S. A., South America,
Canada, England.



RUBBER TREES are growing in America

This is a lightning war—a struggle of speeding machines and men. You can't fight and work—*fast*—without rubber. Victory rolls on it!

With most of the world's natural rubber in the hands of the treacherous Jap, America's petro-chemical industries must achieve—almost overnight—huge synthetic rubber production.

Badger is helping to do this big, complicated job. It is co-operating directly with the chemical and petroleum indus-

tries in the design and construction of a large percentage of the new plants for the production of Butadiene—a primary material in the manufacture of Buna-S, one of the principal synthetic rubbers.

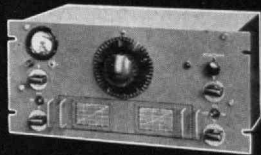
Behind Badger's ability and wholehearted effort to help America solve the critical rubber problem are years of experience in chemical processing, distillation, fractionation and refining.

This experience also enables Badger to do other important war jobs—building

plants and equipment for the production of smokeless powder, T.N.T., alcohol, aviation gasoline and many other strategic materials.

E. B. Badger
AND SONS COMPANY
BOSTON EST. 1841
 NEW YORK • PHILADELPHIA
 SAN FRANCISCO • LONDON

PROVEN UNDER FIRE



National Radio Equipment, designed for peacetime use, is proving out in the hardest tests of war. Receivers and parts that look familiar to any Ham are coming off our lines in steadily increasing quantities to serve in combat communications. National takes especial pride that war brought no sudden redesign of our products.

Just as in peacetime, our equipment was tailored to serve the amateur, so now the same basic designs have been modified to meet the specialized needs of United Nations fighting men. As in peacetime, National designs are being steadily improved, but under the pressure of war, years of research and development are being telescoped into months.

There are many technical developments that we wish we could tell you about now. When the war is won, you will be able to see them in the finest equipment National has ever built.

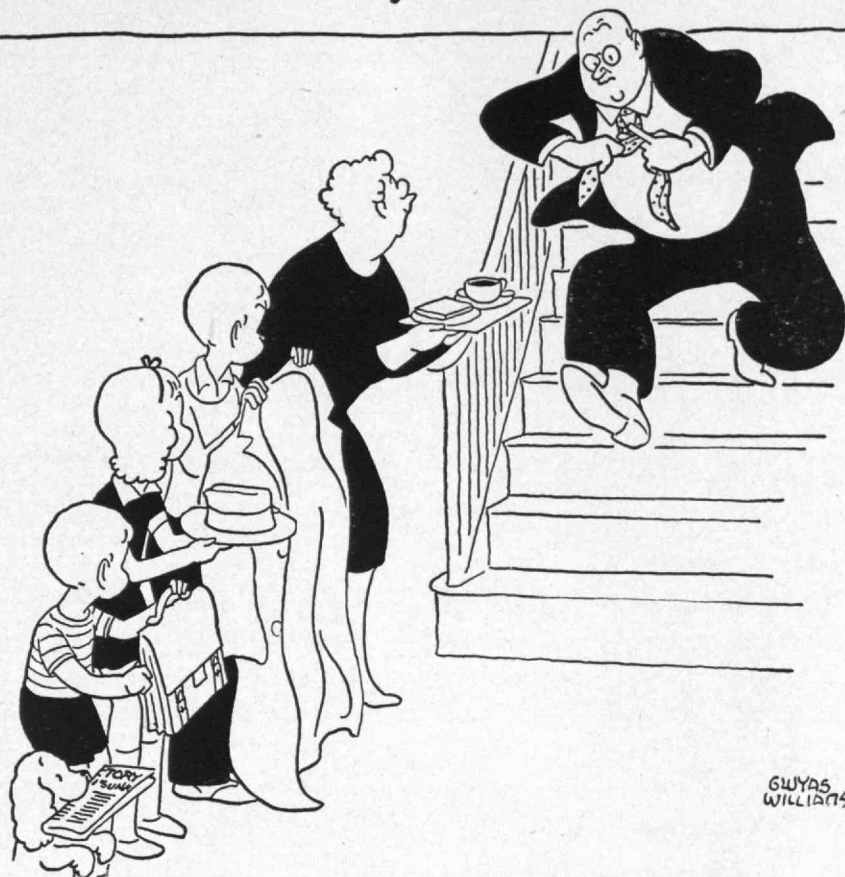


NATIONAL COMPANY, INC., MALDEN, MASS.



OFFICIAL U. S. NAVY PHOTOGRAPH

Wartime readjustments . . . #6



GIL TURNER HAS TO LEAVE HOME TEN MINUTES EARLIER WHEN IT'S HIS DAY TO DRIVE THE CAR POOL

The men in Gil's car pool eat on the run, once a week. But they're better neighbors now, *for having to depend upon each other.*

Many wartime readjustments have their saving side. They make lost luxuries seem less important—and basic values look *larger.*

This war-born insight, applied to the family budget, puts taxes and War Bonds first, then life insurance. All three help the war effort (much of your life insurance premium goes into Government bonds). Insurance also provides a lot of family protection for the modest price you pay.

Life insurance in this company, like the car pool, is a *mutual* proposition. But here you share your risks with a nation-wide group, instead of a neighborhood. And your insurance has a

guaranteed value that grows steadily, year by year.

Uncertainty need not keep you from buying now, for the liberal New England Mutual contract even helps carry itself if the going gets tough!

New England Mutual contracts meet present-day needs because:

- 1 **DIVIDENDS** begin at the end of the *first* year.
- 2 **CASH VALUES** begin at the end of the *second* year.
- 3 **A PREMIUM LOAN** is available beginning with the *second* annual premium.

Let a Career Underwriter show you how valuable these features can be

New England Mutual Life Insurance Company of Boston

George Willard Smith, President Agencies in Principal Cities Coast to Coast
The First Mutual Life Insurance Company Chartered in America—1835

Pool Insurance Problems, too!

Like the car pool, life insurance is a *mutual* matter. And so is life insurance counsel.

Sound counsel calls for mutual trust and confidence. A good way to get good advice on your wartime financial readjustments is to talk them over fully and frankly with competent underwriters.

A number of them are listed below. They're alumni of your college and they talk your language. They are also trained representatives of the First Mutual Life Insurance Company Chartered in America.

Out of their experience you'll get *practical*, constructive suggestions. They'll help you make the most of your limited life insurance dollars—help you protect your present policies with premium loans if necessary. Check your protection *now when you need it most.*

RAYMOND P. MILLER, '18

Salem

■

ARTHUR C. KENISON, '19

Boston

■

BLAYLOCK ATHERTON, '24

Nashua

If none of these folks is near you, you can get similar service at the New England Mutual office in your city. Or use the coupon below, and the Home Office will be glad to have a competent representative get in touch with you. No obligation, of course.

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Please have one of your representatives get in touch with me, without obligation on my part.

Name _____

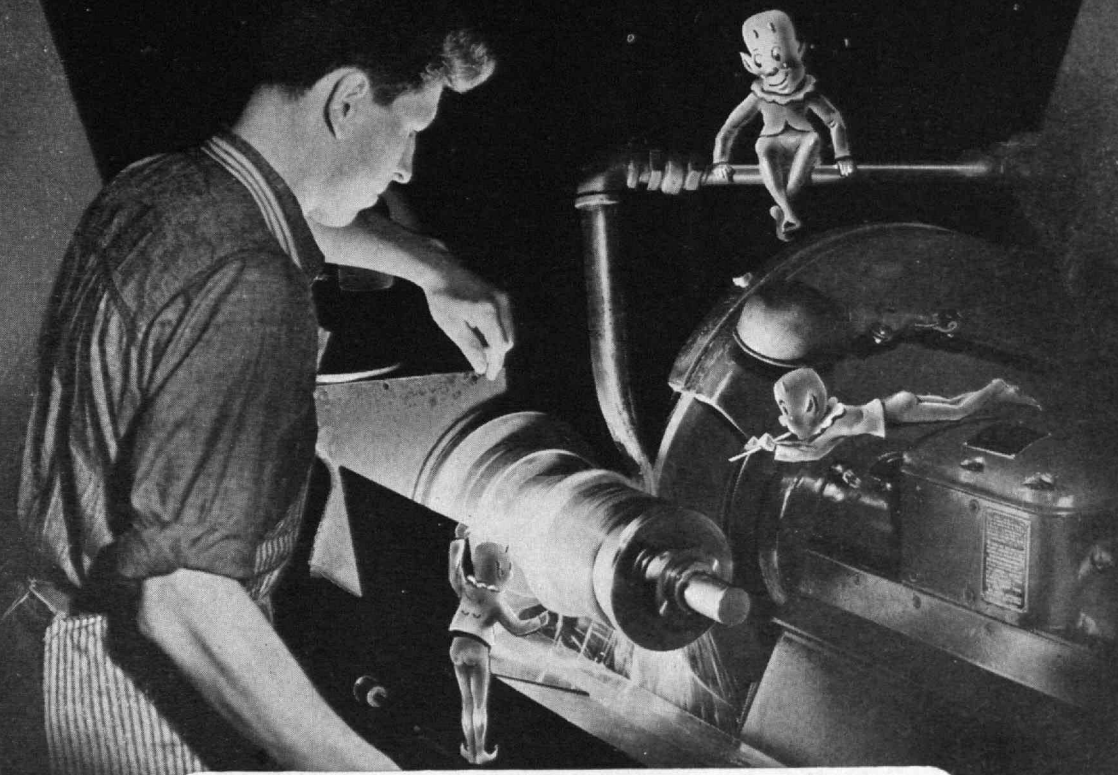
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There are GRINDLINS too, as well as Gremlins



As the fiendish little Gremlins dance on the wings of the airplane, and ride the radio beams,

just so, devilish little Grindlins tease and hamper the precision grinding machine operator.

"Your wheel is too soft, buddy," gleefully chirps the Grindlin. "Too soft, nix," says the voice of experience. "I true it more frequently because it has worn down to a smaller diameter."

"Ah, I've made your wheel glaze," he taunts. "True enough, you young imp" is the retort, "but I'll just increase the work speed, then watch it cut."

Think this over: Why be heckled by Grindlins while production lags. Norton engineering experience has met up with all their tricks that slow production and impair finish.

NORTON COMPANY • Worcester, Massachusetts
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THE TABULAR VIEW

Plenipotentiary. — The commencement address to Technology's Class of 1943, published in this issue of *The Review* (page 233), was a discussion of the place of trained men in warfare; the speaker knew well whereof he spoke. CLARENCE D. HOWE, '07, who began his professional career on the staff of the Institute, went on to the faculty of Dalhousie University, and later developed the engineering and construction firm which bears his name, was elected to the Canadian Parliament in 1935 and was immediately appointed to the cabinet as minister of railways and canals and also minister of marine. When war demanded, he became minister of munitions and supply. Presenting him at commencement exercises, President Compton characterized this post as "the most important position in Canada under the Prime Minister. In the United States we would recognize its significance if we imagined Donald Nelson, William Jeffers, General Somervell, Harold Ickes, and James Byrnes all combined into one individual."

Godspeed. — PRESIDENT KARL T. COMPTON's valedictory to graduating seniors each year is an epitome of the attitude toward life and toward education which the Institute expresses. His address this year to the wartime Class of 1943 (page 235) is a powerful assertion of the faith and ideals actuating the advancement of knowledge as Technology seeks to contribute toward it. In the *Institute Gazette* section of this issue (page 244) are published excerpts from Dr. Compton's annual talk to Alumni, discerning and defining problems all educational institutions must now foresee.

Impact. — Effects of war on the Institute and how the potentialities of the Institute are reckoned on as part of the national effort were discussed in the baccalaureate address this year by PAUL V. McNUTT, chairman of the War Manpower Commission. Mr. McNutt's address (page 237) surveys the necessities imposed upon technological and scientific schools by war and the ways in which the schools can best meet them.

Futures. — Consideration of possible effects of the continuation of wartime controls into peacetime and appraisal of the virtues and shortcomings of free enterprise as it has operated in the nation's history were the core of the Alumni Banquet address of B. EDWIN HUTCHINSON, '09, Vice-president of the Chrysler Corporation and former President of the Alumni Association. Mr. Hutchinson's forceful paper appears on page 239.

Costs. — What accidents meant to the nation in terms of energy wasted during 1942 is surveyed in this issue (page 230) by EDWARD R. SCHWARZ, '23, Professor of Textile Technology at the Institute and Editorial Associate of *The Review*. President of the Massachusetts Safety Council, Professor Schwarz has long been active in industrial protection.