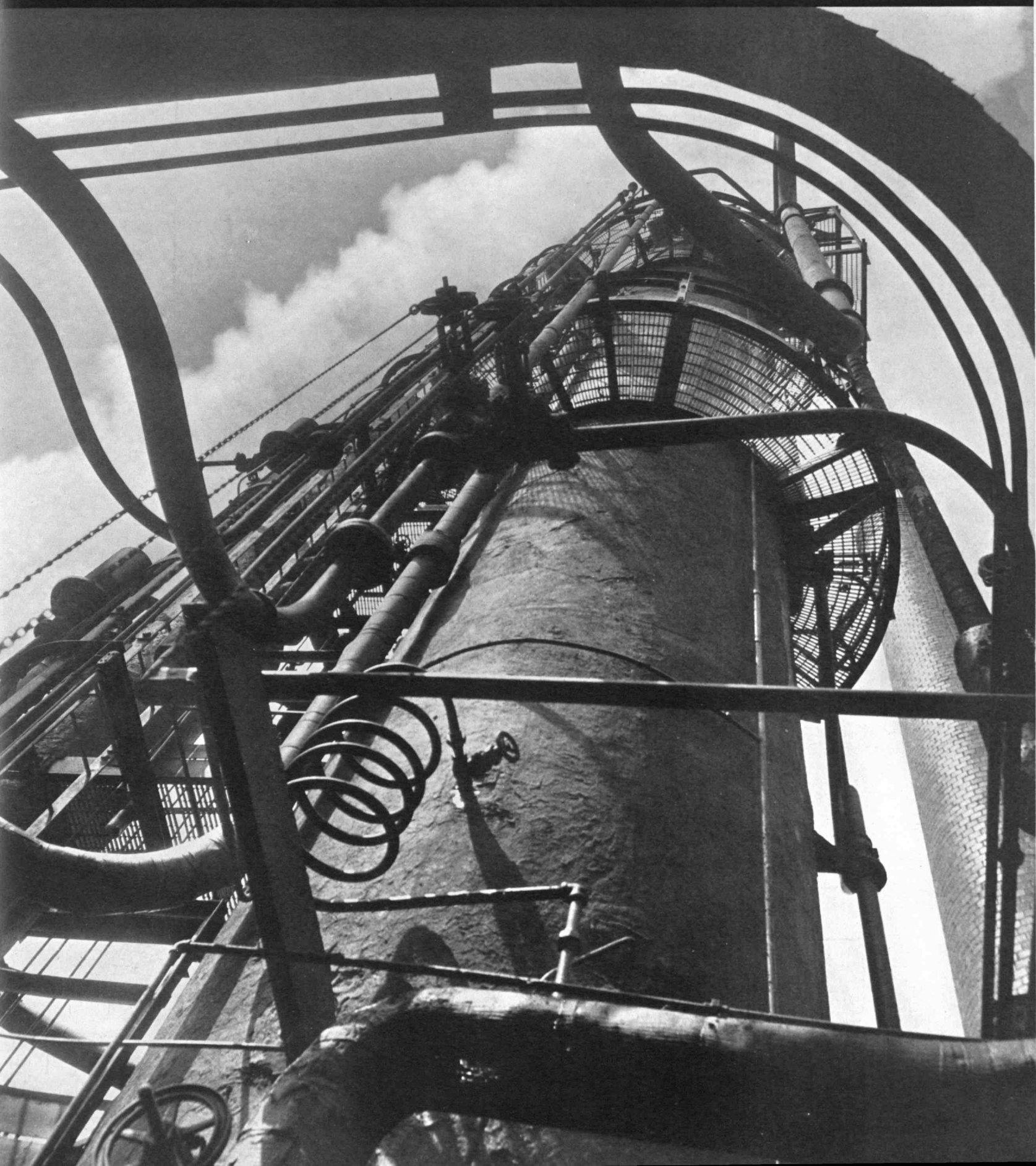


April 1933

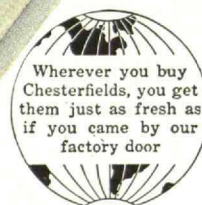
TECHNOLOGY REVIEW





*B*y the way, you know
friends sometimes offer me
Chesterfields, and about the
only thing they say is, "I be-
lieve you'll enjoy them!"

they Satisfy



*— the Cigarette that's Milder
the Cigarette that Tastes Better*

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THE TABULAR VIEW

LAST January The Review presented a judicial examination of the six basic methods that have been devised for producing better houses cheaper. In this issue it presents a tentative plan for slum clearance, embodying a revision of current ideas about the development of real property and calling for a complete change from a speculative basis to an investment basis for land and house values. ¶The author of this plan is Professor ROSS F. TUCKER, '92, Head of the Course in Building Construction at M. I. T. Before coming to Technology in 1926, he was on the construction staff of the Thompson-Starrett Company. A gifted and skilled engineer, he pioneered in the development of reinforced concrete construction and he has made many other important contributions to the art of building. During the War he supervised the construction of water supply and sewage systems for Nitro, W. Va. It is reported that Professor Tucker, a great lover of animals, was called suddenly to take charge of the above project, and being unwilling to leave a pet cat, packed it in a basket and took it with him on the train. In West Virginia, the cat became quite a mountaineer and, as befitting a construction engineer, stood steadfastly by, for better or for worse, during the construction of the great project. ¶The articles on housing published in The Review supplement a series of three volumes under the title of "The Evolving House," which the Technology Press is publishing. The first of these volumes, "A History of the Home" is now available.

CHARLES SINGER, author of the article on optics on page 247, is an outstanding authority on the history of science. After a classical education, he took degrees in science and in medicine, and he has lectured at Oxford on the History of Biology and at University College, London, where he is now Professor of the History of Medicine. He was President of the Third International Congress of the History of Medicine, held in London in 1922, and President of the International Congress of the History of Science, held in London in 1931. Among his published works are: "Studies in the History and Method of Science," "Greek Biology and Greek Medicine," "Early English Magic and Medicine," "Greek Science and Modern Science: a Comparison and a Contrast," "The Discovery of the Circulation of the Blood," "From Magic to Science," "A Short History of Medicine," "A Short History of Biology," "On the Frontiers of Science," "Science Through the Ages: A Sketch of the History of Science," and "Neolithic Representations of the Human Form from the Islands of Malta and Gozo" (with the Hon. Th. Zammit, C.M.G.). ¶Professor TENNEY L. DAVIS, '13, is a Contributing Editor to The Review and since 1926 has been an Associate Professor of Organic Chemistry at Technology. His contributions include: "Primitive Thinking" (July, 1929), "The Pill of Immortality" (May, 1931), and "Science and the Purposes of Life" (May, 1932).



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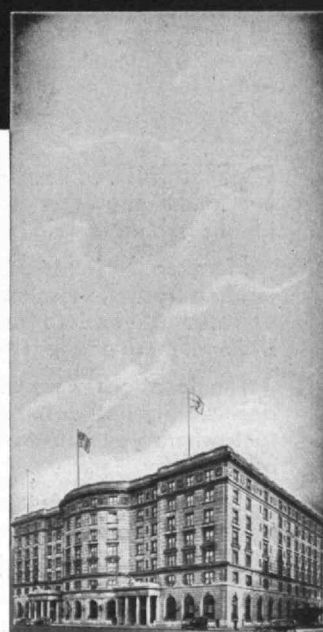
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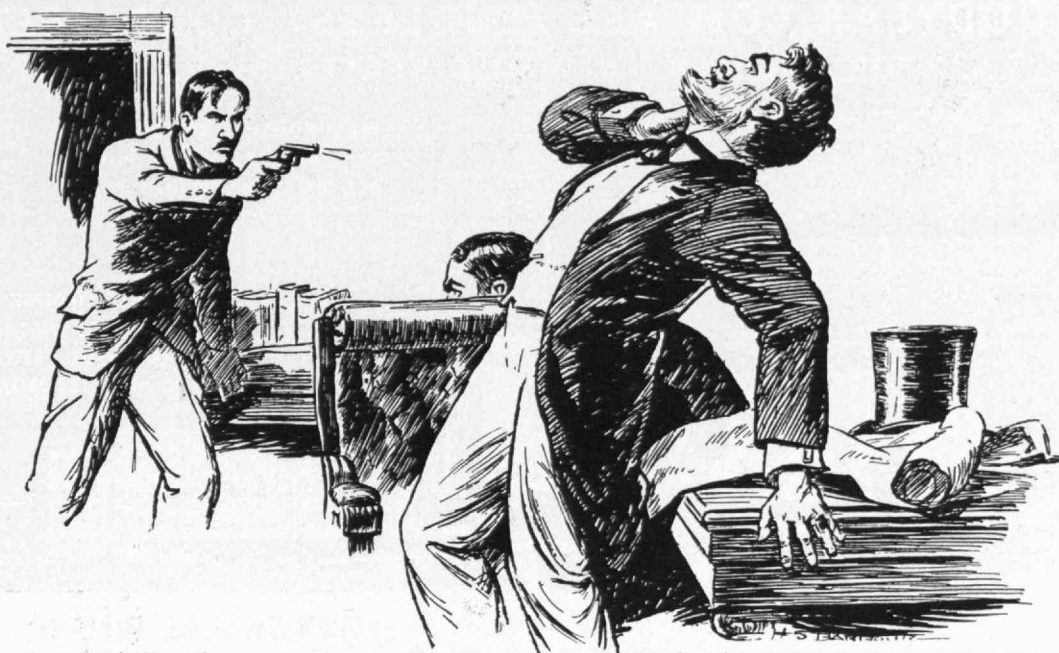
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**CLUB
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 in New York

End of Homestead Strike



In the summer of 1892, while financial panic swept the U. S., the most bitter and bloody labor dispute of U. S. history focused public attention on the Homestead steel mills, near Pittsburgh. There Amalgamated Association, powerful steel unit in six-year old American Federation of Labor, clashed in a finish fight with labor's Number One Enemy, Carnegie Steel's Henry Clay Frick.

Rejecting all of the Union's demands, tycoon Frick declared a general lockout in the Homestead mills, next day found the town an armed camp in the hands of the workmen. After several pitched battles between strikers and strike breakers, militia men were ordered in, established martial law. Newspapers filled with stories of strikers privations fanned public sentiment against Frick and Carnegie Steel Company to white heat. Weeks dragged by, mills remained idle, and iron fisted Frick was forced to play a waiting game.

As *TIME*, had it been printed three weeks after the first outbreak, on July 28, 1892, would have reported subsequent events:

For weeks screaming headlines have focused popular attention on the Homestead Strike, battle between organized steel workers and individualistic Henry Clay Frick. Nowhere throughout the U. S. had the newspaper headlines screamed louder than in a small ice-cream parlor in Worcester, Mass.

There the owners, two dark haired excitable anarchists, Emma Goldman and thin slavic Alexander Berkman, awaited impatiently each new dispatch from the strike center. In each new outbreak they

pictured the growing pains of an impending social revolution, itched to lend a helping hand.

Impulsively they started for Pittsburgh, ran out of funds in New York. Emma Goldman unable to raise money soliciting on the streets, begged, borrowed Berkman's train fare to Pittsburgh. As all negotiations between strikers and Frick collapsed, Berkman appeared at the Carnegie Steel offices, describing himself as the representative of a New York employment agency.

Five times last week Berkman tried to interview Scot Frick. Five times he was refused audience. The fifth time, starting to leave the waiting room he wheeled suddenly, pushed past the colored attendant, marched straight into the private office of Carnegie Steel's Chairman. Grizzled, unimaginative Frick rose from a conversation with one of his assistants, turned towards the door.

Berkman took two steps forward, drew a pistol from his pocket, fired point blank. As Frick fell to the floor, like a flash his assistant grappled with Berkman. More shots, cries for help, brought attendants running to find Frick shot twice in the neck, stabbed several times with a poisoned file.

Frick, streaming blood, braced himself against a desk. As Berkman rode off to jail, he continued to work until an ambulance arrived. Immediately he wired to Scotland—sojourning Carnegie. "I am still in shape to fight the battle out."

Later in the afternoon Homestead strikers were dazed by the news of the terroristic act in which none of them had any part. Said Hugh O'Donnell, leader of the workers, "The bullet from Berkman's pistol went straight through the heart of the Homestead Strike."

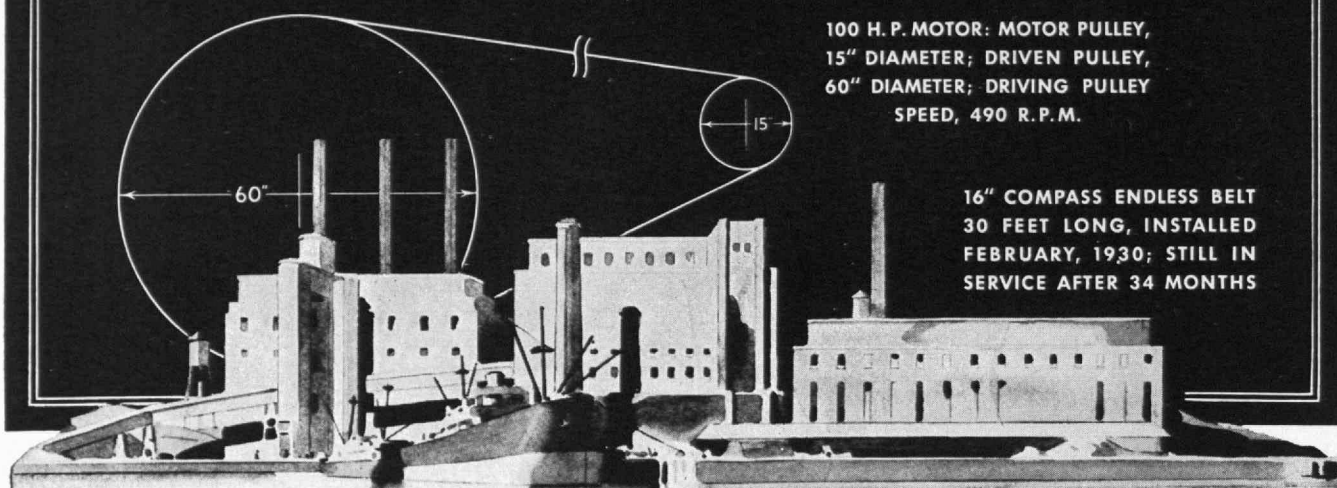
Meanwhile the U. S. public, partial to all martyrs, read new screaming headlines making Frick a new hero, turning public opinion against strikers.

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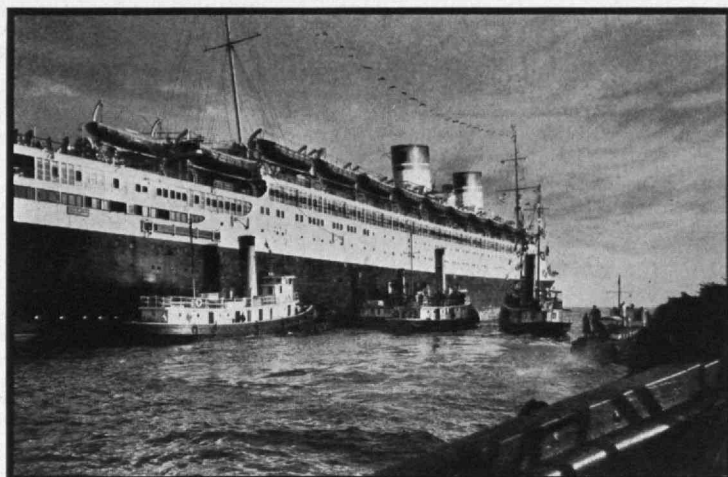
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THE TECHNOLOGY REVIEW

A NATIONAL JOURNAL DEVOTED TO SCIENCE, ENGINEERING, AND THE PRACTICAL ARTS

Edited at the Massachusetts Institute of Technology

VOLUME 35

NUMBER 7

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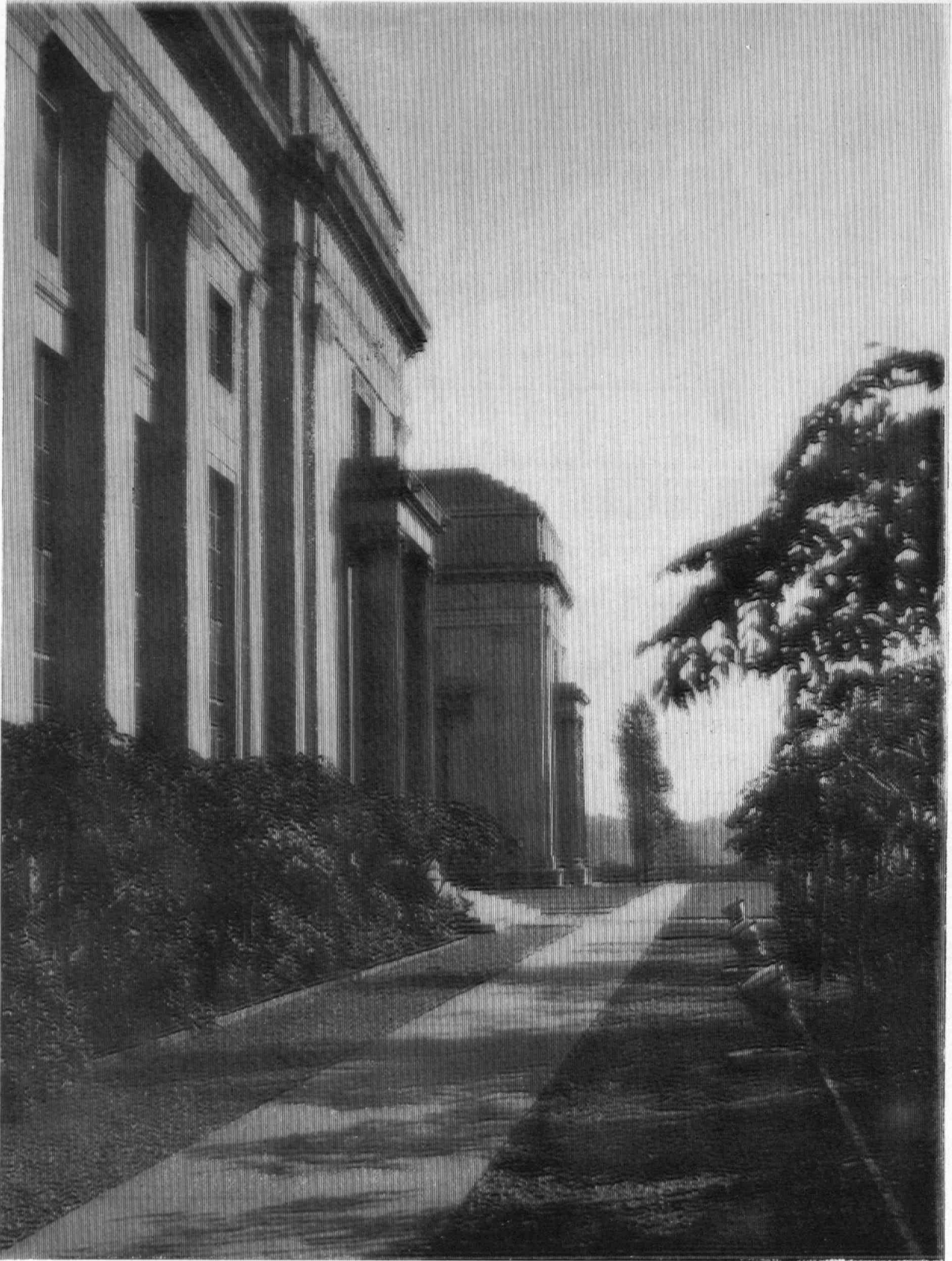
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A NEW ENGRAVING PROCESS

The above picture, taken in the Institute's Great Court, is printed from an engraving made by a new process entirely different from the usual photo-etching method. The photograph to be reproduced is mounted on a revolving cylinder, where it is scanned by an "electric eye." The faint electrical impulses sent out by this "eye," averaging one six-hundred millionth of the current necessary to excite a 60-watt bulb, are amplified up to one-third of a horse power and used to operate a sharp engraving tool, which cuts into the rotating zinc plate to a depth varying from a thousandth to one nine-thousandth of an inch. The tool follows the "scan" of the electric eye and cuts areas of light and dark, corresponding to the light and dark elements of the picture.

By this process a single-column newspaper cut has been made in about four minutes, and three-color plates finished in a half hour. The inventor of the machine is Walter Howey, Director of International News Photos. One of the machines has been installed by the Boston Daily Record, which made the above cut available to The Review

THE TECHNOLOGY REVIEW

Vol. 35, No. 7



April, 1933

Slum Clearance

A Plan for the Adequate Housing of Poor People

BY ROSS F. TUCKER

AGITATION for more and better housing has resulted in but little except to make generally known that the poorest people are frequently compelled to live on the most expensive land in our cities and that a great portion of the population of this country are unable to rent or buy a new house. Much criticism has been directed at the building industry as being responsible for this condition, whereas as a matter of fact, the building industry is much less to blame than the system of economics which has dominated all of our housing development and which has permitted unrestrained private initiative to exploit the people for speculative gain. As a result, we find most of our cities badly planned, seriously congested, reeking with slums, spotted with blighted areas and shifting their business and residential centers from place to place to escape the consequences of the failure of the community itself to plan its own destiny or adequately to provide for its own growth and development.

Students of the housing problem are divided into two schools of thought, one of which maintains that the solution of better housing for those in the lower income group lies in some form of state subsidy, wherein the community will assume a part of the economic load. This is merely a device to tax one section of the people to promote the welfare of another section not so fortunate, and, except for those in the very lowest income group, for whom no other solution is to be found, such

IT IS TIME FOR THE ENGINEER-ECONOMIST TO TAKE CONTROL OF HOUSING IF THERE IS TO BE ANY AMELIORATION OF THE INTOLERABLE CHAOS NOW PREVAILING

a plan is socially unsound. The other school seeks to find the answer in multiple housing, wherein speculative costs are to a certain extent curtailed by limiting dividends and the economies of large scale production are invoked to soften the ultimate rental price. Both of these proposals, however, persist in accepting a fundamentally unsound premise which is that people in the lower income groups must continue to live on expensive land. If the burden of ten dollar land or even of two dollar land must first be loaded upon people of small incomes, it is manifest that only by repeating and perpetuating all of the evils of over-crowding can any satisfactory housing be provided and then only for those in the relatively higher income brackets. It has been shown that no family in the lower income groups should spend more than 20% of its income for rent, and it has been shown also by repeated housing experiments that the best that can be expected of multiple housing, in which the conditions of light and sanitation and density of population are satisfactorily solved, is a rental of ten dollars per room. Thus on a basis of four rooms, or forty dollars per month, such housing would be available only to families having an income of \$2400 a year — which means that over two thirds of the people would still be unable to rent them.

The principle of multiple housing is wrong in any event, and its only justification lies in the necessity of crowding more people onto the land in order to distribute

the cost of the land over a greater number. Multiple housing means congestion. It limits the tenant to the confines of his own apartment. He has no freedom of movement. His light and air are the little that the placement of his rooms and the number of his windows afford. He has no place to go, except into the street or perhaps into the court if there is one. With the increased leisure that the shorter working day will bring, he will seek recreation and companionship where it can be found, which, as likely as not will be in the corner saloon, or in its equivalent which may not be so conspicuously conducted.

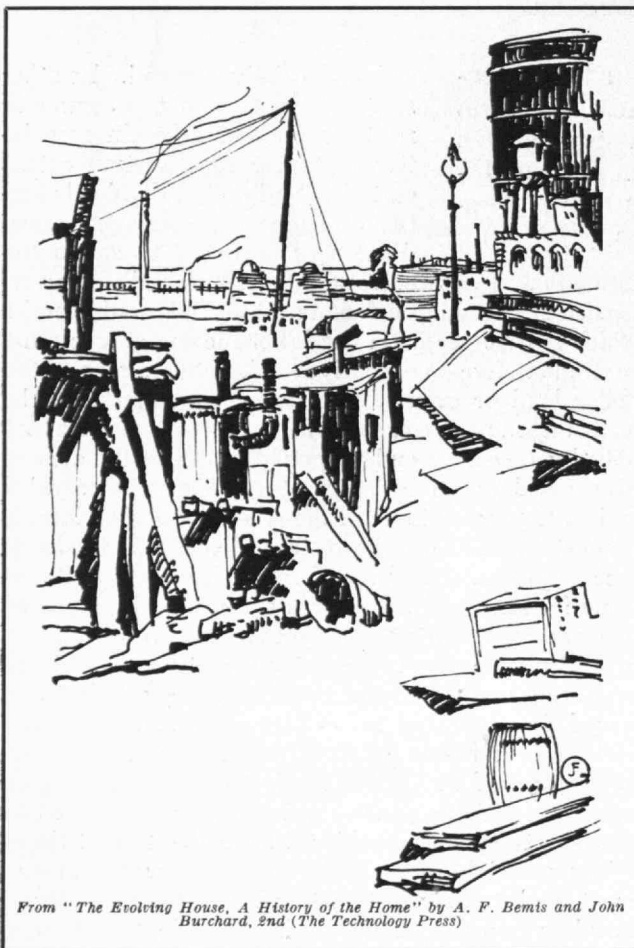
The key to the problem of slum clearance lies in the creation of a low cost house built on low cost land under a financial plan that will eliminate the grotesque speculative costs that have hitherto characterized all of our dwelling house construction. It has been estimated by some investigators that, roughly speaking, the cost of a house is divisible into four parts, namely, one quarter for land, one quarter for labor, one quarter for materials and one quarter for financing.

The value of the land that the home-owner buys is a speculative value, built up by realty promoters to ensnare the unwary. The vociferous farmer has the country all on edge because of his nine billion dollars of farm mortgages but the inarticulate home owner is carrying a burden of nearly three times as much in suburban mortgages with such patience and fortitude as he may, and a large part of this indebtedness has been

manufactured for him by those who have had a hand in the financial legerdemain by which he acquired his home. For example, a farm is bought, with a payment down and the balance deferred in a purchase money mortgage. The land is subdivided into small lots, streets and sidewalks are constructed, trees are planted, water, gas and electric services are installed, the costs of all of which are charged back to the salable areas. On top of this an expensive sales organization is imposed and again, on top of this, the largest profit that the traffic will bear. Meanwhile, the town, county and state change the rate of assessment for taxes, from farm land to improved land, and these also are handed over, carefully concealed in the price that the purchaser is asked to pay. High powered advertising, shrewd and unscrupulous agents and brokers, baiting the trap with the lure of easy and deferred payment, and further speculative profits, snare the home owner into taking title. Or further to facilitate the sale of the land, the speculative builder is taken into partnership. His function is to build flimsy but superficially attractive houses, in which the arts of stage setting and window dressing are developed at the expense of the substance of the house. The home is then offered for sale at a price that gives the speculative builder a profit out of all proportion to the real value, and also one for which he has risked little or none of his own money. The sale is facilitated by another financial snare in which the mortgage with its deadly tentacles carefully concealed, plays an inconspicuous but often fatal part. Thus the home buyer takes title with a millstone hung around his neck, at a total cost far above the real value of his home. The original land owner, the promoter, the speculative builder and the money lender have each taken a toll as large as each could exact, and the pyramiding of these costs results in a condition that puts the purchase of a home beyond the reach of any with an income of less than \$2300 a year. This is the condition of which our critics complain, and with complete justification.

THE solution for the problem of the adequate housing of people in the middle and lower thirds of the annual income group, that is to say, of people with incomes of less than \$2300 a year, lies in a total revision of our ideas as to the development of real property and a complete change from a speculative basis to an investment basis for land and house values, or in other words, in the restraining of private initiative in the interest of the people for whom heretofore private initiative has done nothing, except to condemn them to live in second-hand and third-hand and fourth-hand houses that have been abandoned by those whom private initiative has already exploited.

The first thing to be done is to set up a Planning Authority. Just as the Port of New York Authority has been established to govern and regulate the economic development of New York Harbor, and just as a Power Authority has been created to control the development of hydroelectric power in the interest of the people, so should there be a Planning Authority endowed with like power to guide and direct the growth of all towns and cities. The Port Authority, representing the sovereign will of the People, restrains private initiative in the



From "The Evolving House, A History of the Home" by A. F. Bemis and John Burchard, 2nd (The Technology Press)